

# Use Cases for the EFM Package

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U.S. Department of Transportation

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## BACKGROUND

The EFM Initiative is intended to improve the efficiency and productivity of freight movements by evaluating and promoting innovative e-business concepts that support coordination and information sharing among supply chain partners. EFM is an open-architecture, Internet-based solution that promotes the use of standards to allow supply chain partners to efficiently track freight shipments as they move through the supply chain. EFM provides shippers—the supply chain owners—with visibility to meet very tight performance standards and improve operational efficiencies. EFM offers uniform access to existing customized database formats, computing platform independence, and adaptable services. EFM allows each supply chain partner to exchange data with other supply chain partners via Web services using eXtensible Markup Language (XML) data standards in a service oriented architecture (SOA) and open-source software products. The framework employs secure encryption and digital certificates, ensuring that any information exchanged between partners is authorized and secure, that data is not corrupted in-transit, and that the data transmitted is complete. EFM provides a gateway for automated interfaces and software capabilities that are designed to support computer-to-computer interactions over the Internet.

Accurate, visible information provides supply chain partners with the actionable intelligence they need to improve operational efficiency and increase agility in a fast-paced global business environment. Without this information, supply chain partners can face delayed shipments, disrupted assembly lines, congested cargo transfer points, and stressed inventories. Many large firms use logistics software and electronic data exchange to standardize data flows...but small to medium-sized firms often do not because of the high implementation cost and technical expertise required to effectively use the software and standards. The Electronic Freight Management (EFM) framework supports in-transit visibility to all supply chain owners, from the largest to the smallest. EFM can be used by all supply chain partners—from shippers to 3PLs to customs brokers—creating a truly integrated, “shared view” of the status of shipments across the globe and helping to increase the competitiveness and the effectiveness of the supply chain.

All supply chain partners can benefit from using supply chain visibility tools like EFM. While as few as two partners in the supply chain can benefit from using EFM, the value and operational efficiencies grow as more supply chain partner’s link into EFM. As more partners adopt EFM, fewer manual transactions are required; a more complete “shared picture” among partners enables better and more responsive decision-making.

As part of this EFM Initiative, USDOT has sponsored the development of what is known as the EFM Package. The EFM Package is a collection of documents and computer source code which may be downloaded, free of charge, for use by organizations wishing to take advantage of the benefits of EFM. The complete set of documents and the source code is available at the EFM website <http://efm.us.com>.

## INTENDED AUDIENCE

This document is one of several in the EFM Package and is provided as a guide for supply chain partners wishing to deploy web services under the EFM Package architecture. This document provides a complete set of the Use Cases that have been assembled as part of the EFM Package. Originally developed for FHWA as part of the FIH Architecture by Booz Allen Hamilton, it has been updated to reflect the updated architecture of EFM as documented within the EFM Package. For each of these use cases, a corresponding service has either been built-out, or at a minimum, has a default interface and behavior included in the EFM Package core platform.

A partner wishing to deploy the EFM package should review these use cases as a starting point for consideration in adopting the EFM package. The coverage of corresponding business processes that these use cases address, as well as the robustness or completeness of the ‘matching’ use cases should be considered. These use cases focus on business processes associated with freight movement and are intended to be completely independent from a particular method of implementation. As such, use case required to facilitate the service-oriented architecture of EFM are not included.

## EFM PACKAGE USE CASES

This document provides the EFM implementer a suite of Use Cases addressing business functions as well as EFM system functions. These Use Cases should be considered as “templates”; that is, they define the content areas that should be defined, and broadly describe general situations in which EFM would be used. Since they lack the specificity that would come from particular implementations, adopters should modify and more fully develop them as needed to provide the level of functionality that the supply chain stakeholders have decided is important.

The Use Case descriptions and diagrams that follow examine the consignment of goods between supplier and customer - within the global context of the international movement of freight, done within the EFM environment. The information presented here is intended to identify the actors involved in arranging for and completing the transport of goods across multiple modes, though the templates are admittedly most robust for shipments involving air cargo.

This document has been developed according to the UN/CEFACT Modeling Methodology<sup>1</sup> (UMM), though modified because the EFM represents a particular technology implementation.

### Business Domain

This business domain subsection defines the overall frame of reference for the business processes that are subsequently defined in the template Use Case descriptions. We have adopted the domain defined by the “BPAWG Reference Model of the International Supply Chain”.<sup>2</sup> It

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<sup>1</sup> UN/CEFACT Modeling Methodology, UN/CEFACT Techniques and Methodologies Group, document CEFACT/TMWG/N090R10, November 2001.

<sup>2</sup> UN/CEFACT Business Process Analysis Working Group, document CEFACT/BPA/BP044, March 2003.

adopts the Model’s Level 2 Ship Case (Index: D-P&SI-1.U-Ship-2-4), but reinterprets it to allow definitions that are more robust within the scope of EFM’s applicability.

**Table 1. UMM Business Domain View, Description of Business Domain Model**

<b>Describe Business Domain Model</b>	
Business Domain Model Name	Re-interpretation of the BPAWG Reference Model of the International Supply Chain – Ship Use Case
Description	Provide transportation services end-to-end along the supply chain, from physical origin (“Despatch Party”) to physical destination (“Delivery Party”), in an intermodal and international context.
Industry	Intended to apply to the broadest array of process and product industries that have the capability of practicing electronic business transactions with trading partners.
Business Area	The enterprise business area represented is the normative category “Logistics”.
Business Justification	Products are physically moved in business transactions that support international trade.
Category Schema	Various schema are available to describe the international supply chain, such as the Supply-Chain Council’s “Supply-Chain Operations Reference”.
Stakeholders	Consignor; Despatch Party; Consignee; Delivery Party’ Transport Services Providers and Logistic Service Providers; Carriers (air and truck); Government agencies such as Customs Authorities and Port Authorities.

**Table 2. UMM Business Domain View, Description of Business Area**

<b>Describe Business Area</b>	
Business Area Name	Logistics
Description	Booking transport, then physically moving a consignment through a supply chain to its ultimate destination, providing status reports as needed en route.
Scope	Consignor fulfills its commitment to a Consignee to have goods delivered to Consignee’s designated location. Various transport intermediaries fulfill their commitments to the Consignor to provide physical carriage or related services aimed at goods delivery.
Process Areas	Planning, Distribution
Objective	The objective of this business area is to provide the physical and information assets needed, when they are needed, to successfully transport a consignment of goods from consignor to ultimate consignee.
Business Opportunity	Goods may be transported from Consignor, which may be the supplier, to Consignee as part of a profitable business product sales transaction.
Category	Logistics
Business Areas	The Ordering and Payment business areas may be within the scope of the Logistics business area.

## Business Requirements

The following several subsections of this File define the business collaborations that take place within the above-documented domain. The Template Use Cases define the business flows, and also the typical groups of data and messaging that are often exchanged.

In the ISO Open-edi model ontology,<sup>3</sup> these Template Use Cases primarily address the Actualization phase of the Logistics business area. They secondarily address the Negotiation phase (through negotiating and booking transport with transportation providers) and the Post-Actualization phase (through delivery verification services).

## Canonical Process Areas and Business Process Contexts

Development of the Template Use Cases in this domain begins with the expression of a set of seven canonical process areas:

1. Place Order.
2. Book transport. A booking is defined as the process of making a reservation for space on a means of transport for the movement of goods.
3. Dispatch shipment.
4. Transport shipment.
5. Clear Customs.<sup>4</sup> Customs clearance procedures vary per country. Although the World Customs Organization (WCO) has developed a data set that defines the messages that importers, exporters, and carriers should use in their communication with Customs agencies, it is not yet widely used. The Use Cases describing the Clear Customs canonical process are therefore described at a very high level and will need to be further defined, developed, and modified per the specific requirements of the implementing party's Customs agency.
6. Schedule delivery
7. Receive shipment

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<sup>3</sup> SO/IEC 14662: 1997, "Open-edi Reference Model".

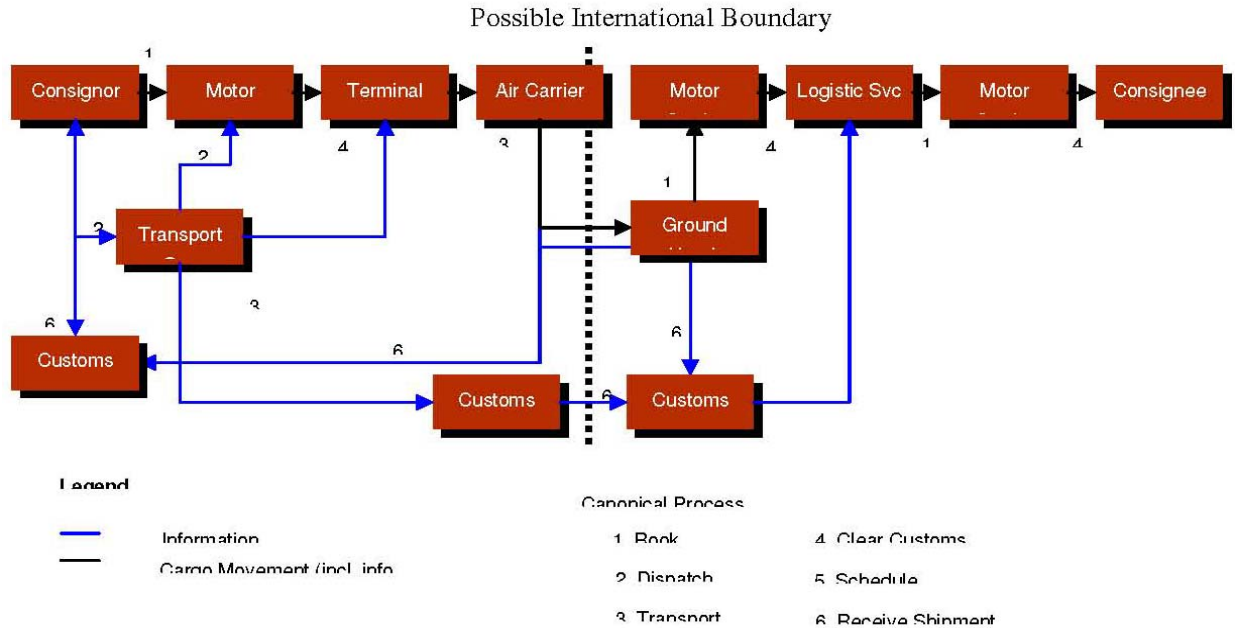
<sup>4</sup> Customs clearance procedures vary per country. Although the World Customs Organization (WCO) has developed a data set that defines the messages that importers, exporters, and carriers should use in their communication with Customs agencies, it is not yet widely used. The Use Cases describing the Clear Customs canonical process are therefore described at a very high level and will need to be further defined, developed and modified per the specific requirements of the implementing party's Customs agency.

Each canonical process area is further defined by one or more contexts; that is, specific points involving specific actor types along the supply chain where the canonical process area is practiced. These contexts, each of which will be later defined with a Template Use Case, include:

1. Place Order
  - a. Buyer arranges for purchase of goods
2. Book transport
  - a. Book consignment with transport service provider
  - b. Book consignment with carrier
3. Dispatch shipment
  - a. Dispatch consignment to outbound motor carrier
  - b. Dispatch shipment to inbound motor carrier (GHA)
  - c. Dispatch shipment to inbound motor carrier (LSP)
4. Transport shipment
  - a. Consolidate shipment for transport
  - b. Split shipment for transport
  - c. Divert shipment
  - d. Conduct carriage of shipment
5. Clear Customs
  - a. File export goods declaration
  - b. File export cargo declaration
  - c. File import goods declaration
  - d. File import cargo declaration
6. Schedule delivery
  - a. Schedule delivery with transport services provider
  - b. Schedule delivery with terminal operator
  - c. Schedule delivery with logistic service provider
  - d. Schedule delivery with consignee
7. Receive shipment
  - a. Receive consignment from outbound carrier
  - b. Receive shipment from carrier
  - c. Receive shipment from inbound carrier
  - d. Receive consignment from carrier
  - e. Resolve discrepancies

## EFM Supply Chain Model

Figure 1 visually depicts the EFM supply chain model used to develop the Template Use Cases. The diagram portrays the handoffs between the different supply chain partners in a truck-air-truck supply chain. Variations to this model are possible but have not been addressed in detail in this document. It is not the intent of this document to be exhaustive and thus cover all possible scenarios or Use Cases.



**Figure 1. EFM Supply Chain Hand-off Diagram and Use Cases**

## EFM Status Model

Table 3 lists the different statuses used in the Template Use Cases. Wherever available, the statuses are taken from UN Recommendation 24, Trade and Transport Status Codes. It is not the intent of these Use Cases to present a comprehensive or exhaustive list of codes for implementers to use. Implementers are encouraged to refer to UN Recommendation 24 and select those statuses that make the most sense for their particular circumstances. The statuses selected below are believed to be sufficiently common for the stated Business Domain Views (Reference Tables 1 and 2).

**Table 3. EFM Statuses**

UN Code	Name	Description
N/A	Consignment, Created	In the EFM implementation, the user has created the consignment and it is now known within EFM.
N/A	Booking, Received	A party has received a booking for goods/consignment/equipment or means of transport.
6	Booking, Completed	The goods/consignment/equipment or means of transport has been booked.
71	Ready for Transportation	The goods/consignment/equipment is ready for transportation
64	Collection/pick-up awaited	The goods/consignment/equipment is awaiting collection/pick-up.
27	Despatch, completed	The goods/consignment/equipment has been dispatched.
1	Arrival, completed	The goods/consignment/equipment means of transport has arrived.
15	Consolidated	The goods/consignments have been consolidated.
21	Delivery, Completed	The goods/consignment/equipment has been delivered.
24	Departure, completed	The means of transport has departed.
25	Departure, delayed	The means of transport has been delayed in departure.
12	Cleared, by customs	The goods/consignment/equipment/means of transport has been cleared by customs.
17	Customs Clearance, refused	The goods/consignment/equipment/means of transport has been refused to be cleared by the customs authorities.
74	Transport, Re-arranged	Used in the context of these Template Use Cases to refer to a diverted shipment.
88	Split consignment	The consignment of goods has been split.
100	Transshipment	The goods/consignment/equipment has been transferred to another means of transport.
147	Provisioning, fuel	The goods/consignment/equipment/means of transport has been delayed in transit.
115	Discrepancy	There is a discrepancy in the details.
N/A	Discrepancy, resolved	The discrepancy has been resolved to the satisfaction of the reporting actor
126	Customs clearance, in progress	Customs clearance is in progress.
209	Delivery, scheduled	The delivery has been scheduled.
241	Missing, document	The document for the goods/consignments/equipment is missing.
123	Accompanying documents delivered	All documents accompanying the cargo have been delivered.

## REFERENCES

The EFM design aligned with relevant existing and emerging international standards. In the preparation of these Template Use Cases, the following standards were leveraged or otherwise referenced:

- OASIS' Universal Business Language – data model, data dictionary, message schemas
- WCO Data Model<sup>5</sup> – Customs clearance data model, data dictionary, and messages
- UN/ECE Recommendation 24, Trade and Transport Status Codes – status codes and descriptions.

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<sup>5</sup> At the time of publication of this document, WCO Data Model v.2 is the most current version. Version 2 only includes messages <sup>for</sup> Customs filing but not Customs response messages. Future EFM implementations look to take full advantage of version 3.0 (expected to be released in Fall 2008), which should cover Customs response as well as filing.

## **Appendix A**

# **Template Use Cases Associated With Business Process Contexts**

Use Case Description	
Name	1a. Buyer Arranges for Purchase of Goods
Canonical Process Area	Place Order
Actors/Roles	Buyer Manufacturer / Supplier
Description	The Buyer enters purchase order (PO) information into their existing purchasing system and transmits a copy to the selected source.
Pre-condition(s)	- Buyer has already determined source selection.
Post-condition(s)	- Source has prepared order fulfillment.
Main Scenario	<ol style="list-style-type: none"> <li>1. Buyer enters a purchase order into internal purchasing system.</li> <li>2. A copy of this PO is forwarded to the selected source.</li> <li>3. PO Data contains: <ul style="list-style-type: none"> <li>• PO Number</li> <li>• PO Date</li> <li>• Customs Information</li> <li>• Terms (Payment)</li> <li>• Terms (Transportation)</li> <li>• Key Dates <ul style="list-style-type: none"> <li>▪ Expected Delivery Date</li> <li>▪ Latest Ship Date</li> <li>▪ Earliest Ship Date</li> </ul> </li> <li>• Parties <ul style="list-style-type: none"> <li>▪ Production Office</li> <li>▪ Seller (Vendor)</li> <li>▪ Forwarder</li> <li>▪ Shipper</li> <li>▪ Ordering Party</li> </ul> </li> <li>• Item Information (Qty, Part No, Other...)</li> <li>• Packaging</li> <li>• Port/Countries</li> <li>• Mode of Transport</li> </ul> </li> <li>4. The source begins fulfillment process.</li> </ol>
Alternate Scenarios	None
Messages	1. Purchase Order
UBL 2.0 Coverage	Order

Use Case Description	
Name	2a. Book Consignment with Transport Service Provider
Canonical Process Area	Book transport
Actors/Roles	Consignor (manufacturer, shipper, exporter, seller) Transport services provider (freight forwarder, consolidator)
Description	The consignor contacts the transport services provider to request that the transport services provider reserve space on a means of transport for the movement of the goods. This activity is called the booking request. The transport services provider confirms the status of the booking with the consignor (e.g. the booking is accepted or rejected).
Pre-condition(s)	<ul style="list-style-type: none"> <li>- The consignor has prepared a consignment for shipment.</li> <li>- The consignment exists within EFM.</li> <li>- Export / import requirements have been met.</li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- The consignment is ready for pickup.</li> <li>- The transport services provider arranges for carriage with a carrier.</li> <li>- The consignor prepares relevant documents.</li> </ul>
Main Scenario	<ol style="list-style-type: none"> <li>1. Consignor selects the consignment(s) for which a booking request will be created.</li> <li>2. Consignor fills out a booking request (consignment data that was previously entered will be pre-populated to avoid excessive data entry)               <ul style="list-style-type: none"> <li>Header-level (repeats per consignment)                   <ol style="list-style-type: none"> <li>a. Booking request number</li> <li>b. UCR (one or multiple)</li> <li>c. Consignor information                       <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>d. Consignee information                       <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>e. Transportation service provider                       <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>f. Country/airport information                       <ol style="list-style-type: none"> <li>i. Airport/Country of departure</li> <li>ii. Airport/Country of destination</li> <li>iii. Final destination</li> </ol> </li> <li>g. Date/time                       <ol style="list-style-type: none"> <li>i. Date/time of booking request</li> <li>ii. Requested delivery date</li> </ol> </li> <li>h. Terms                       <ol style="list-style-type: none"> <li>i. Freight terms</li> <li>ii. Delivery terms</li> </ol> </li> </ol> </li> </ul> </li> </ol>

Use Case Description	
Name	2a. Book Consignment with Transport Service Provider
	<ul style="list-style-type: none"> <li>i. Special Instructions</li> <li>Line-level (repeats within each consignment)</li> <li>j. Packages               <ul style="list-style-type: none"> <li>i. Number of packages</li> <li>ii. Type of packages</li> <li>iii. Marks and numbers</li> </ul> </li> <li>k. Goods               <ul style="list-style-type: none"> <li>i. Item number</li> <li>ii. Item description</li> <li>iii. Item quantity</li> </ul> </li> <li>l. Measurements               <ul style="list-style-type: none"> <li>i. Net weight</li> <li>ii. Gross weight</li> <li>iii. Volume dimensions</li> </ul> </li> </ul> <ol style="list-style-type: none"> <li>3. Consignor submits the booking request to the selected transportation service provider.</li> <li>4. EFM updates the consignment(s) with the information from the booking request.</li> <li>5. EFM transmits the booking request to the selected transport services provider.</li> <li>6. Transport services provider receives the booking request and validates the information (validation is an internal process that is outside EFM)</li> <li>7. Transport services provider assigns a House Air Waybill (HAWB) number to the consignment. (The same HAWB number may be assigned to more than one consignment if the shipment is consolidated. Once a HAWB number is assigned, the consignment becomes (part of) a shipment. Reference Template Use Case 3a, Consolidate Shipment for Transport.)</li> <li>8. The transport services provider confirms the booking with the consignor           <ul style="list-style-type: none"> <li>a. Date/time of when booking was accepted</li> <li>b. UCR</li> <li>c. HAWB number</li> <li>d. Status – Booking, Accepted</li> </ul> </li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. Consignor – Transport services provider booking request</li> <li>2. Transport services provider – Consignor booking confirmation</li> <li>3. Transport services provider – Motor carrier booking request</li> <li>4. Motor carrier – Transport services provider booking confirmation</li> <li>5. Transport services provider – Air carrier booking request</li> <li>6. Air carrier – Transport services provider booking confirmation</li> <li>7. Motor carrier – Transport services provider booking options</li> <li>8. Air carrier – Transport services provider booking options</li> </ol>
UBL 2.0 Coverage	<ol style="list-style-type: none"> <li>1. Forwarding Instruction</li> </ol>

Use Case Description	
Name	2b. Book Consignment with Carrier
Canonical Process Area	Book transport
Actors/Roles	Transport services provider (freight forwarder, consolidator) Carrier (motor carrier, air carrier)
Description	A transport services provider contacts the carrier(s) who would actually transport the consignment(s) to arrange carriage for the consignment(s). Within the business scope defined for the template Use Cases, this commonly involves making arrangements with a motor carrier and an air carrier.
Pre-condition(s)	- The transport services provider has agreed with a consignor to transport a consignment.
Post-condition(s)	- Pickup arrangements can be made. - With transport arrangements in place, the transport documents are created, transforming the consignment into a shipment (shipment refers to the logistical view of the cargo being shipped, see Use Case "Create consignment")
Main Scenario	<ol style="list-style-type: none"> <li>1. Transport services provider selects the consignment(s) for which transport arrangements are to be made.</li> <li>2. Transport services provider makes a booking request, selecting a motor carrier. The booking request contains the same basic information as the booking request from the consignor.</li> <li>3. Motor carrier receives the booking request and offers different shipping options to the transport services provider. <ol style="list-style-type: none"> <li>a. Pickup Date / Time</li> <li>b. Delivery Date / Time</li> <li>c. Freight charges</li> <li>d. Terms</li> </ol> </li> <li>4. Transport services provider negotiates with motor carrier for terms of pickup and/or delivery.</li> <li>5. Transport services provider selects the desired option for pickup / delivery.</li> <li>6. Motor carrier books transport according to the negotiated terms and confirms the booking with the transport services provider. <ol style="list-style-type: none"> <li>a. Pickup Date / Time</li> <li>b. Delivery Date /Time</li> <li>c. Freight charges</li> <li>d. Terms</li> <li>e. Status = Booking, Completed</li> </ol> </li> <li>7. Transport services provider selects the consignment(s) for which transport arrangements are to be made.</li> <li>8. Transport services provider creates load plan, assigning packages to ULDs</li> <li>9. Transport services provider assigns a Master Air Waybill number to the consignment. (the same MAWB number may be assigned to more than one consignment in an arrangement referred to as a consolidation, discussed in Use Case "Transport Shipment")</li> <li>10. Transport services provider makes a booking request, selecting an air carrier. The booking request contains: <ol style="list-style-type: none"> <li>a. Booking request number</li> <li>b. Transport services provider (Requestor) information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>c. Shipper (consignor) information <ol style="list-style-type: none"> <li>i. Name</li> <li>ii. Address</li> </ol> </li> </ol> </li> </ol>

Use Case Description	
Name	2b. Book Consignment with Carrier
	<ul style="list-style-type: none"> <li>d. Consignee information               <ul style="list-style-type: none"> <li>i. Name</li> <li>ii. Address</li> </ul> </li> <li>e. Consignment information               <ul style="list-style-type: none"> <li>i. AWB number</li> <li>ii. AWB origin and destination airports</li> <li>iii. Quantity                   <ul style="list-style-type: none"> <li>1. Total/partial shipment</li> <li>2. Number of pieces</li> <li>3. Weight</li> <li>4. Volume</li> <li>5. Nature of goods</li> </ul> </li> <li>iv. Special instructions</li> <li>v. Total weight</li> <li>vi. Dimensions</li> </ul> </li> <li>f. ULD information               <ul style="list-style-type: none"> <li>i. Quantity (number of ULDs)</li> <li>ii. Weight</li> <li>iii. Nature of goods being shipped</li> <li>iv. Special considerations</li> <li>v. ULD Detail                   <ul style="list-style-type: none"> <li>1. Type</li> <li>2. Serial Number</li> <li>3. Owner</li> </ul> </li> </ul> </li> <li>g. Flight information               <ul style="list-style-type: none"> <li>i. Carrier</li> <li>ii. Flight number</li> <li>iii. Date/time of scheduled departure</li> <li>iv. Airport of departure</li> <li>v. Airport of destination</li> </ul> </li> <li>h. Special considerations</li> <li>i. Rate information               <ul style="list-style-type: none"> <li>i. Service type</li> <li>ii. Rate</li> </ul> </li> </ul> <p>11. Air carrier receives booking request and responds with schedules, available capacity information, and rate quotes</p> <ul style="list-style-type: none"> <li>a. Booking request number</li> <li>b. Transport services provider (Requestor) information               <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ul> </li> <li>c. Consignment information               <ul style="list-style-type: none"> <li>i. AWB number</li> <li>ii. AWB origin and destination airports</li> <li>iii. Quantity                   <ul style="list-style-type: none"> <li>1. Total/partial shipment</li> <li>2. Number of pieces</li> <li>3. Weight</li> <li>4. Volume</li> <li>5. Nature of goods</li> </ul> </li> <li>iv. Special instructions</li> <li>v. Total weight</li> <li>vi. Dimensions</li> </ul> </li> </ul>

Use Case Description	
Name	2b. Book Consignment with Carrier
	<ul style="list-style-type: none"> <li>d. Flight information               <ul style="list-style-type: none"> <li>i. Carrier</li> <li>ii. Flight number</li> <li>iii. Date/time of scheduled departure</li> <li>iv. Airport of departure</li> <li>v. Airport of destination</li> <li>vi. Rate information</li> </ul> </li> <li>12. Transport services provider chooses an itinerary.</li> <li>13. Air carrier books transport according to the negotiated terms and confirms the booking with the transport services provider.               <ul style="list-style-type: none"> <li>a. Booking request number</li> <li>b. Transport services provider (Requestor) information                   <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ul> </li> <li>c. Consignment information                   <ul style="list-style-type: none"> <li>i. AWB number</li> <li>ii. AWB origin and destination airports</li> <li>iii. Quantity                       <ul style="list-style-type: none"> <li>1. Total/partial shipment</li> <li>2. Number of pieces</li> <li>3. Weight</li> <li>4. Volume</li> <li>5. Nature of goods</li> </ul> </li> <li>iv. Special instructions</li> <li>v. Total weight</li> <li>vi. Dimensions</li> </ul> </li> <li>d. Flight information                   <ul style="list-style-type: none"> <li>i. Carrier</li> <li>ii. Flight number</li> <li>iii. Date/time of scheduled departure</li> <li>iv. Airport of departure</li> <li>v. Airport of destination</li> </ul> </li> <li>e. Status = Booking, Completed</li> </ul> </li> <li>14. Transport services provider confirms the booking status with the consignor</li> </ul>
Messages	<ul style="list-style-type: none"> <li>1. Consignor – Transport services provider booking request</li> <li>2. Transport services provider – Consignor booking confirmation</li> <li>3. Transport services provider – Motor carrier booking request</li> <li>4. Motor carrier – Transport services provider booking confirmation</li> <li>5. Transport services provider – Air carrier booking request</li> <li>6. Air carrier – Transport services provider booking confirmation</li> <li>7. Motor carrier – Transport services provider booking options</li> <li>8. Air carrier – Transport services provider booking options</li> </ul>
UBL 2.0 Coverage	<ul style="list-style-type: none"> <li>1. Forwarding Instruction</li> </ul>

Use Case Description	
Name	3a. Dispatch Consignment to Outbound Motor Carrier
Canonical Process Area	Dispatch Shipment
Actors/Roles	Consignor (manufacturer, shipper, exporter) Carrier (motor carrier, air carrier) Transport services provider
Description	A transport services provider, having previously booked transport with a motor carrier, contacts the motor carrier to schedule a pickup of the shipment. Arrangements are made to tender the shipment, detailing the schedule and special consideration, if any. The motor carrier confirms the request and schedules assets (equipment and driver). When the carrier arrives at the pickup location, the consignor tenders the shipment. The carrier loads the goods on the conveyance and submits documents such as Waybill /Bill of Lading or Manifest and other information confirming the acceptance of the shipment to the consignor.
Pre-condition(s)	- The consignor has prepared the goods for shipment. - The consignor has prepared all required documentation. - The consignor has booked transport with the transport services provider, who has in turn booked carriage with the motor carrier.
Post-condition(s)	- The motor carrier takes possession of the goods. - The motor carrier begins transport of the goods to the origin airport.
Main Scenario	<ol style="list-style-type: none"> <li>1. Upon preparing one or more consignment for transportation, the consignor changes the status to "Ready for Transportation" (UN Rec 24, Code 71)</li> <li>2. The consignor and transport services provider arrange for pickup of one or more consignments with a motor carrier. The pickup request contains information regarding: <ol style="list-style-type: none"> <li>a. Consignor information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>b. Carrier information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>c. Transport services provider information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>d. Service requested</li> <li>e. Booking number</li> <li>f. Consignment information <ol style="list-style-type: none"> <li>i. ID (UCR)</li> <li>ii. Weight</li> <li>iii. Number of pieces</li> <li>iv. Dimensions/volume</li> <li>v. Description of goods</li> <li>vi. Special considerations</li> <li>vii. Equipment detail</li> </ol> </li> </ol> </li> </ol>

Use Case Description	
Name	3a. Dispatch Consignment to Outbound Motor Carrier
	<ol style="list-style-type: none"> <li>1. Type</li> <li>2. ID</li> <li>3. Other equipment information as needed</li> </ol> <p>g. Pickup information</p> <ol style="list-style-type: none"> <li>i. Pickup location</li> <li>ii. Date / time requested</li> <li>iii. Delivery location</li> <li>iv. Requested Date/time of delivery</li> </ol> <p>3. The motor carrier receives the pickup request and schedules internal assets, such as driver, conveyance and equipment based on the information contained in the request</p> <p>4. The motor carrier responds to the transport services provider and consignor with a pickup confirmation.</p> <ol style="list-style-type: none"> <li>a. Consignor information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>b. Carrier information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>c. Transport services provider information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>d. Service to be provided</li> <li>e. Booking number</li> <li>f. Consignment information <ol style="list-style-type: none"> <li>i. ID (UCR)</li> <li>ii. Weight</li> <li>iii. Number of pieces</li> <li>iv. Dimensions/volume</li> <li>v. Description of goods</li> <li>vi. Special considerations</li> <li>vii. Equipment detail <ol style="list-style-type: none"> <li>1. Type</li> <li>2. ID</li> <li>3. Other equipment information as needed</li> </ol> </li> </ol> </li> <li>g. Pickup information <ol style="list-style-type: none"> <li>i. Pickup location</li> <li>ii. Scheduled Date / time of pickup</li> <li>iii. Delivery location</li> <li>iv. Scheduled Date/time of delivery</li> <li>v. Driver ID</li> <li>vi. Conveyance ID</li> </ol> </li> </ol>

Use Case Description	
Name	3a. Dispatch Consignment to Outbound Motor Carrier
	<ol style="list-style-type: none"> <li>5. The motor carrier creates transport documents (Manifest and Bill of Lading) and electronically sends them to the consignor</li> <li>6. Upon receipt of the pickup confirmation, the status of the consignment (s) changes to "Collection/pick-up awaited" (UN Rec 24, Code 64)</li> <li>7. The consignor prints the Manifest and Bill of Lading documents prior to the arrival of the motor carrier for pickup (see Template Use Case "Print Documents")</li> <li>8. The motor carrier arrives for pick-up at the consignor location and loads the goods on the conveyance.</li> <li>9. The consignor gives the signed hard-copy Manifest and Bill of Lading to the driver, who ensures that the contents of the documents match the goods actually being loaded</li> <li>10. When the goods have been loaded, the motor carrier confirms the loading with the consignor. The confirmation contains information regarding: <ol style="list-style-type: none"> <li>a. Consignment information <ol style="list-style-type: none"> <li>i. ID (UCR)</li> <li>ii. Weight loaded</li> <li>iii. Number of pieces loaded</li> <li>iv. Dimensions/volume</li> <li>v. Description of goods loaded</li> <li>vi. Special considerations</li> <li>vii. Equipment detail <ol style="list-style-type: none"> <li>1. Type of equipment loaded</li> <li>2. ID of equipment loaded</li> <li>3. Other equipment information as needed</li> </ol> </li> </ol> </li> <li>b. Loading information <ol style="list-style-type: none"> <li>i. Loading location</li> <li>ii. Date / time loading was completed</li> <li>iii. Delivery location</li> <li>iv. Scheduled Date/time of delivery</li> <li>v. Driver ID</li> <li>vi. Conveyance ID</li> </ol> </li> <li>c. Manifest #</li> <li>d. Bill of lading #</li> </ol> </li> <li>11. When loading is completed, the status of the consignment changes to "Despatch, completed" (UN Rec 24, Code 27)</li> <li>12. The consignor sends a Dispatch Advice to the consignee, advising him that the goods have been shipped.</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. Dispatch Advice</li> <li>2. Bill of Lading</li> <li>3. Manifest</li> <li>4. Consignor – carrier pickup request</li> <li>5. Carrier – consignor pickup request confirmation</li> <li>6. Carrier – consignor loading confirmation</li> </ol>
UBL 2.0 Coverage	<ol style="list-style-type: none"> <li>1. Despatch Advice</li> <li>2. Waybill</li> </ol>

Use Case Description	
Name	3b. Dispatch Shipment to Inbound Motor Carrier (GHA)
Canonical Process Area	Dispatch Shipment
Actors/Roles	Carrier (motor carrier, air carrier) Transport services provider Ground handling agent
Description	The ground handling agent at the destination airports unloads the goods from the conveyance. The transport services provider has previously booked transport with the inbound motor carrier for transportation from the airport to the logistic service provider warehouse. The motor carrier, based on the scheduled arrival time, schedules its assets (equipment and driver). The driver arrives at the airport, loads the goods on the conveyance and creates documents such as Waybill /Bill of Lading or Manifest confirming the acceptance of the shipment.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- The conveyance has arrived at the airport of destination.</li> <li>- The shipment has been unloaded from the conveyance.</li> <li>- The transport services provider has booked transport with the inbound motor carrier.</li> <li>- The motor carrier has been notified of the arrival of the conveyance.</li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- The motor carrier begins transport of the goods to the logistic service provider.</li> <li>- The motor carrier schedules a delivery with the logistic service provider.</li> <li>- The logistic service provider schedules assets (equipment, human resources, warehouse space)</li> </ul>
Main Scenario	<ol style="list-style-type: none"> <li>1. The ground handling agent at the destination airport unloads the goods from the conveyance.</li> <li>2. The ground handling agent completes an electronic motor carrier transfer containing the following information: <ol style="list-style-type: none"> <li>a. Ground handling agent information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>b. Carrier information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>c. Logistic service provider <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>d. Date of transfer</li> <li>e. Estimated time of arrival</li> <li>f. Number of ULDs</li> <li>g. Number of documents</li> <li>h. (Air) Waybill number</li> </ol> </li> </ol>

Use Case Description	
Name	3b. Dispatch Shipment to Inbound Motor Carrier (GHA)
	<ul style="list-style-type: none"> <li>i. Equipment Detail               <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Type</li> <li>iii. Owner</li> </ul> </li> <li>j. Driver ID</li> </ul> <ol style="list-style-type: none"> <li>3. The motor carrier schedules internal assets (conveyance and driver) based on the motor carrier transfer notice and any previous booking request received from the transport services provider</li> <li>4. The ground handling agent delivers the ULDs and accompanying documents (if any) to the motor carrier</li> <li>5. The motor carrier verifies that the freight received matches the contents of the motor carrier transfer.</li> <li>6. The motor carrier confirms the transfer and updates the status of the shipment to "Received" (UN Rec 24, Code 74)</li> <li>7. The ground handling agent changes the status of the shipment to "Despatch, completed" (UN Rec 24, Code 27)</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. Ground handling agent – carrier transfer</li> <li>2. Carrier – ground handling agent transfer confirmation</li> </ol>
UBL 2.0 Coverage	None

Use Case Description	
Name	3c. Dispatch Shipment to Inbound Motor Carrier (LSC)
Canonical Process Area	Dispatch Shipment
Actors/Roles	Carrier (motor carrier, air carrier) Logistics services provider (container freight stations, 3PL, warehouse)
Description	Having deconsolidated, sorted and packed the shipment, the logistics services provider arranges with a motor carrier to schedule pickup of the shipment. Arrangements are made to pick up the shipment, detailing the schedule and special consideration, if any. The motor carrier confirms the request and schedules assets (equipment and driver). When the carrier arrives at the logistic pickup location, the logistic service provider or the carrier loads the shipment onto the carrier's conveyance. The carrier creates documents such as Waybill /Bill of Lading or Manifest and other information confirming the acceptance of the shipment to the consignor.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- The logistic service provider has received the shipment.</li> <li>- [Optional] The logistic service provider has performed any value-added services (deconsolidate and sort shipment, re-pack, etc.)</li> <li>- The logistic service provider has prepared all required documentation.</li> <li>- Customs authority (import) has cleared the consignment.<sup>6</sup></li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- The motor carrier moves the goods to the consignee location/warehouse.</li> <li>- The motor carrier notifies the consignor of the delivery.</li> </ul>
Main Scenario	<ol style="list-style-type: none"> <li>1. After deconsolidating the shipment (s), the logistic service provider changes the status to "Ready for Transportation" (UN Rec 24, Code 71)</li> <li>2. The logistic service provider arranges for pickup with a motor carrier. The pickup request contains information regarding: <ol style="list-style-type: none"> <li>a. Carrier information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>b. Logistic provider information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>c. Consignee information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>d. Service requested</li> <li>e. Booking number</li> <li>f. Shipment information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Weight</li> <li>iii. Number of pieces</li> </ol> </li> </ol> </li> </ol>

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<sup>6</sup> If the cargo has been transferred in-bond to the logistic service provider warehouse, it cannot be dispatched for delivery until Customs has formally cleared the goods for import.

Use Case Description	
Name	3c. Dispatch Shipment to Inbound Motor Carrier (LSC)
	<ul style="list-style-type: none"> <li>iv. Dimensions/volume</li> <li>v. Description of goods</li> <li>vi. Special considerations</li> <li>vii. Equipment detail               <ul style="list-style-type: none"> <li>1. Type</li> <li>2. ID</li> <li>3. Other equipment information as needed</li> </ul> </li> <li>g. Pickup information               <ul style="list-style-type: none"> <li>i. Pickup location</li> <li>ii. Date / time requested</li> <li>iii. Delivery location</li> <li>iv. Requested Date/time of delivery</li> </ul> </li> <li>3. The motor carrier receives the pickup request and schedules internal assets, such as driver, conveyance and equipment based on the information contained in the request</li> <li>4. The motor carrier responds to the logistic service provider with a pickup confirmation.               <ul style="list-style-type: none"> <li>a. Consignee information                   <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ul> </li> <li>b. Carrier information                   <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ul> </li> <li>c. Logistic service provider information                   <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ul> </li> <li>d. Service to be provided</li> <li>e. Booking number</li> <li>f. Shipment information                   <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. (Air) Waybill number (s) (HAWB / MAWB)</li> <li>iii. Weight</li> <li>iv. Number of pieces</li> <li>v. Dimensions/volume</li> <li>vi. Description of goods</li> <li>vii. Special considerations</li> <li>viii. Equipment detail                       <ul style="list-style-type: none"> <li>1. Type</li> <li>2. ID</li> <li>3. Other equipment information as needed</li> </ul> </li> </ul> </li> </ul> </li> </ul>

Use Case Description	
Name	3c. Dispatch Shipment to Inbound Motor Carrier (LSC)
	<ul style="list-style-type: none"> <li>g. Pickup information               <ul style="list-style-type: none"> <li>i. Pickup location</li> <li>ii. Scheduled Date / time of pickup</li> <li>iii. Delivery location</li> <li>iv. Scheduled Date/time of delivery</li> <li>v. Driver ID</li> <li>vi. Conveyance ID</li> </ul> </li> <li>5. Upon receipt of the pickup confirmation, the status of the shipment (s) changes to "Collection/pick-up awaited" (UN Rec 24, Code 64)</li> <li>6. The logistic service provider creates transport documents (Manifest and Bill of Lading), sending electronic versions to the motor carrier and printing hard copies prior to pickup.</li> <li>7. The motor carrier arrives for pick-up at the logistic service provider location and loads the goods on the conveyance.</li> <li>8. The logistic service provider gives the signed hard-copy Manifest and Bill of Lading to the driver, who ensures that the contents of the documents match the goods actually being loaded</li> <li>9. When the goods have been loaded, the motor carrier confirms the loading with the logistic service provider. The confirmation contains information regarding:               <ul style="list-style-type: none"> <li>a. Shipment information                   <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Weight loaded</li> <li>iii. Number of pieces loaded</li> <li>iv. Dimensions/volume</li> <li>v. Description of goods loaded</li> <li>vi. Special considerations</li> <li>vii. Equipment detail                       <ul style="list-style-type: none"> <li>1. Type of equipment loaded</li> <li>2. ID of equipment loaded</li> <li>3. Other equipment information as needed</li> </ul> </li> </ul> </li> <li>b. Loading information                   <ul style="list-style-type: none"> <li>i. Loading location</li> <li>ii. Date / time loading was completed</li> <li>iii. Delivery location</li> <li>iv. Scheduled Date/time of delivery</li> <li>v. Driver ID</li> <li>vi. Conveyance ID</li> </ul> </li> <li>c. Manifest #</li> <li>d. Bill of lading #</li> </ul> </li> <li>10. When loading is completed, the status of the shipment changes to "Despatch, completed" (UN Rec 24, Code 27)</li> <li>11. The logistics services provider sends a Dispatch Advice to the consignee, advising him that the goods have been despatched.</li> </ul>

Use Case Description	
Name	3c. Dispatch Shipment to Inbound Motor Carrier (LSC)
Messages	<ol style="list-style-type: none"> <li>1. Logistic service provider – carrier pickup request</li> <li>2. Carrier – logisitc service provider pickup request confirmation</li> <li>3. Carrier – logistic service provider loading confirmation</li> </ol>
UBL 2.0 Coverage	Despatch Advice

Use Case Description	
Name	4a. Consolidate Shipment for Transport
Canonical Process Area	Transport shipment
Actors/Roles	Transport services provider (freight forwarder, consolidator)
Description	A transport services provider consolidates two or more consignments into one shipment.
Pre-condition(s)	- Transport services provider has received the consignment(s).
Post-condition(s)	- Transport is booked for the consolidated shipment. - Transport documents are created for the consolidated shipment. - The consolidated shipment is packaged and dispatched.
Main Scenario	<p>Consolidation refers to “The grouping together of individual consignments of goods into a combined consignment for carriage.” (UN/CEFACT TBG3 Trade and transport terms). Multiple consignments (multiple invoices) are grouped together in one shipment (one transport document). Consolidation is a common business practice motivated by financial savings or logistic efficiency reasons.<sup>7</sup></p> <ol style="list-style-type: none"> <li>1. Transport services provider selects two or more consignments to consolidate into one shipment. Consignments can be consolidated if they have one or more of the following data elements in common: <ol style="list-style-type: none"> <li>a. Consignee</li> <li>b. Transport services provider</li> <li>c. Destination airport</li> </ol> </li> <li>2. A shipment is created. To the extent possible, common data from the consignments is retained and pre-populated in the shipment to avoid redundant data entry. <ol style="list-style-type: none"> <li>a. ID (MAWB #)</li> <li>b. Date</li> <li>c. Shipper information <ol style="list-style-type: none"> <li>i. Name</li> <li>ii. Address</li> </ol> </li> <li>d. Consignee information <ol style="list-style-type: none"> <li>i. Name</li> <li>ii. Address</li> </ol> </li> <li>e. Carrier information <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>f. Country / Airport information <ol style="list-style-type: none"> <li>i. Airport of departure</li> <li>ii. Requested routing airport (if any)</li> <li>iii. Airport of destination</li> </ol> </li> <li>g. Handling information</li> </ol> </li> </ol>

<sup>7</sup> It is not the intent of EFM to provide algorithms or functionality to optimize loads or help with decision making regarding consolidations. It is assumed that most users will have internal value-added applications or other tools that perform these functions.

Use Case Description	
Name	4a. Consolidate Shipment for Transport
	<ul style="list-style-type: none"> <li>h. Goods information <ul style="list-style-type: none"> <li>i. Number of pieces</li> <li>ii. ULD ID</li> <li>iii. Gross weight</li> <li>iv. Chargeable weight</li> <li>v. Nature and quantity of goods</li> </ul> </li> <li>i. Charges</li> <li>j. Flight information <ul style="list-style-type: none"> <li>i. Flight number</li> <li>ii. Schedule</li> </ul> </li> </ul> <p>3. The shipment is assigned a shipment ID number (most commonly a Master Air Waybill Number although EFM should support users' unique identification schemes). EFM maintains the relationship between the shipment ID (MAWB #) and each UCR with which it is associated.</p> <p>4. EFM maintains a line-item-level and package-level association between the shipment and its component consignments (i.e. it is able to distinguish from which consignment each line item or package in the shipment originated, and vice versa)</p> <p>5. Upon creation of the consolidated shipment, the status of each component consignment changes to "Consolidated" (UN Rec 24, Code 15).</p> <p>6. The shipment is identified as a consolidated shipment. Authorized users are able to trace a shipment to its component consignments and vice versa. Users that wish to view the status of a consignment are able to also view the status of the shipment into which the consignment has been consolidated (if applicable).</p>
Messages	None
UBL 2.0 Coverage	None

Use Case Description	
Name	4b. Split Shipment for Transport
Canonical Process Area	Transport shipment
Actors/Roles	Carrier (air carrier) Logistic service provider (Third party logistic provider, warehouse)
Description	A carrier or logistic service provider splits a shipment into two or more shipments.
Pre-condition(s)	- Carrier or logistic service provider has received the shipment.
Post-condition(s)	- Each part of the split shipment is loaded onto a conveyance for transport. - Transport documents are amended to reflect the change.
Main Scenario	<p>Split refers to a consignment (one invoice) that is transported on more than one conveyance (more than one transport document). Splits are not uncommon in the air freight industry, where a carrier may have to leave freight behind due to limited conveyance capacity. A logistic service provider may also split a consignment or shipment, after performing value-added activities such as re-packaging, for distribution.<sup>8</sup></p> <ol style="list-style-type: none"> <li>1. Carrier or logistic service provider selects the consignment to split into two or more shipments.</li> <li>2. From the chosen consignment, the carrier or logistic service provider selects the items or packages and their quantities that are to be transported separately from the rest of the consignment.</li> <li>3. The selected goods or packages are assigned to a new or existing shipment. EFM maintains the relationship between the consignment and shipment at the item or package level, allowing a user to trace an item or package from the consignment to the shipment and <i>vice versa</i>. EFM also maintains a relationship between the UCR and the shipment ID.</li> <li>4. When a split has been performed on a consignment, its status is changed to "Split consignment" (UN Rec 24, Code 88)</li> <li>7. To the extent possible, data from the split consignment is retained and populated in the shipment to avoid redundant data entry. The shipment ends up containing: <ol style="list-style-type: none"> <li>a. ID (depending upon circumstances, this may be a MAWB # or Bill of Lading #, but EFM supports users' unique identification schemes)</li> <li>b. Date</li> <li>c. Shipper information <ol style="list-style-type: none"> <li>i. Name</li> <li>ii. Address</li> </ol> </li> <li>d. Consignee information <ol style="list-style-type: none"> <li>i. Name</li> <li>ii. Address</li> </ol> </li> </ol> </li> </ol>

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<sup>8</sup> It is not the intent of EFM to provide algorithms or functionality to determine if and when a shipment should be split. It is assumed that most users will have internal value-added applications or other tools that perform these functions.

Use Case Description	
Name	4b. Split Shipment for Transport
	<ul style="list-style-type: none"> <li>e. Carrier information               <ul style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ul> </li> <li>f. Airport information (is split for air carriage)               <ul style="list-style-type: none"> <li>i. Airport of departure</li> <li>ii. Requested routing airport (if any)</li> <li>iii. Airport of destination</li> </ul> </li> <li>g. Delivery information (if split for delivery)               <ul style="list-style-type: none"> <li>i. Location</li> <li>ii. Address</li> <li>iii. Estimated time of arrival</li> </ul> </li> <li>h. Handling information</li> <li>i. Goods information               <ul style="list-style-type: none"> <li>i. Number of pieces</li> <li>ii. ULD ID (for air carriage)</li> <li>iii. Chargeable weight</li> <li>iv. Package type</li> <li>v. Gross weight</li> <li>vi. Nature and quantity of goods</li> </ul> </li> <li>j. Charges</li> <li>k. Flight information               <ul style="list-style-type: none"> <li>i. Flight number</li> <li>ii. Schedule</li> </ul> </li> </ul>
Messages	Transportation status update
UBL 2.0 Coverage	1. Transportation Status

Use Case Description	
Name	4c. Divert Shipment
Canonical Process Area	Transport shipment
Actors/Roles	Transport services provider (freight forwarder, consolidator)
Description	A transport services provider diverts a shipment.
Pre-condition(s)	- Carriage for the shipment has been initiated.
Post-condition(s)	- Arrangements are made for transport to the new destination. - Transport documents are amended to reflect the change.
Main Scenario	<p>Diversion refers to a change in destination while the goods are in transit.<sup>9</sup></p> <ol style="list-style-type: none"> <li>1. Transport services provider chooses one or more shipments to divert.</li> <li>2. To divert a shipment, the transport services provider changes one of the following: <ol style="list-style-type: none"> <li>a. Routing - airport of departure, airport of destination, etc.</li> <li>b. Supply chain partners (a.k.a. "friends of the shipment") – carrier, customs broker, etc.</li> <li>c. Flight information – flight number, flight schedule, etc.</li> </ol> </li> <li>3. When a shipment is diverted, its status changes to "Transport re-arranged" (UN Rec 24, Code 76)</li> <li>4. The change in shipment status can be traced back to a consolidated shipment's component consignments (if applicable).</li> <li>5. The transport services provider notifies the carrier of the diversion. <ol style="list-style-type: none"> <li>a. Shipment ID</li> <li>b. Any changes to previously transmitted data elements, including but not limited to routing information, flight information, charges.</li> </ol> </li> <li>6. [If change of supply chain partners] – affected supply chain partners are notified of the change. Added supply chain partners become friends of the shipment. (Reference Template Use Case, "Update Supply Chain Partners").</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. Transport services provider – carrier diversion notification</li> <li>2. Transportation status update</li> </ol>
UBL 2.0 Coverage	<ol style="list-style-type: none"> <li>1. Transportation Status</li> </ol>

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<sup>9</sup> It is not the intent of EFM to provide algorithms or functionality to determine if and when a shipment should be diverted. It is assumed that most users will have internal value-added applications or other tools that perform these functions.

Use Case Description	
Name	4d. Conduct Carriage of Shipment
Canonical Process Area	Transport shipment
Actors/Roles	Carrier (air carrier)
Description	A carrier conducts carriage of the shipment, including departure, transit and arrival.
Pre-condition(s)	- The conveyance has been loaded.
Post-condition(s)	- The shipment arrives at the destination airport.
Main Scenario	<ol style="list-style-type: none"> <li>1. The conveyance departs from the departure airport. The departure date and time are recorded in the shipment and its status changes to "Departure, completed" (UN Rec 24, Code 24)</li> <li>2. The conveyance completes its journey and arrives at the airport of destination. The arrival date and time are recorded in the shipment and its status changes to "Arrival, completed" (UN Rec 24, Code 1)</li> </ol>
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. The departure has been delayed. The shipment status changes to "Departure, delayed" (UN Rec 24, Code 25)]</li> <li>2. The conveyance makes a refuelling stop at an intermediate airport. The date and time of the stop, the location of the stop and the expected departure time are recorded in the shipment and its status changes to "Provisioning, fuel" (UN Rec 24, Code 147). Upon departure, the time is recorded in the shipment and its status changes to "Departure, completed" (UN Rec 24, Code 24)</li> <li>3. The conveyance makes a stop at an intermediate airport and the shipment is transferred onto another conveyance to continue its journey. The shipment status changes to "Transshipment" (UN Rec 24, Code 86)</li> </ol>
Messages	Transportation status update
UBL 2.0 Coverage	Transportation Status

Use Case Description	
Name	5a. File Export Goods Declaration
Canonical Process Area	Clear Customs
Actors/Roles	Consignor [optional] Customs broker or agent Customs
Description	The consignor clears Customs on the export side. Some consignors file directly with Customs while others file through a Customs broker or other agent.
Pre-condition(s)	- Consignment is ready for dispatch from the consignor. <sup>10</sup> - Commercial documents have been prepared.
Post-condition(s)	- Consignment is ready to begin the international leg of its journey.
Main Scenario	<ol style="list-style-type: none"> <li>1. Consignor or consignor's agent prepares a Customs export declaration.</li> <li>2. Consignor or consignor's agent submits the export declaration to Customs in the country of export. The status of the consignment changes to "Customs clearance, in progress" (UN Rec 24, Code 126)</li> <li>3. Customs processes the declaration and clears the consignment for export. <sup>11</sup></li> <li>4. Customs notifies the consignor or its agent of the clearance. The status of the consignment changes to "Cleared, by customs" (UN Rec 24, Code 126)</li> </ol>
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. Customs may not be able to clear the consignment due to various reasons, the most common of which is missing documents. In this instance, Customs notifies the consignor or its agent and requests that additional documents be provided before the consignment can be cleared. The consignor or its agent provide the requested documents and Customs clears the consignment for export.</li> <li>2. Customs may decide to inspect the consignment. In this scenario, Customs notifies the consignor or its agent of the inspection. Customs then proceeds to inspect the consignment, following which it clears it for export.</li> <li>3. Customs refuses to clear the consignment for export. In this instance Customs notifies the consignor or its agent of its decision. The consignment status changes to "Customs clearance, refused" (UN Rec 24, Code 17).</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. WCO Data model Export Declaration (EX1, EX12, EX22)</li> <li>2. Customs response</li> </ol>
UBL 2.0 Coverage	None

<sup>10</sup> Pre-conditions will likely vary due to countries' different filing requirements.

<sup>11</sup> Customs processing is generally assumed to occur outside EFM in systems proprietary to the Customs Authority.

Use Case Description	
Name	5b. File Export Cargo Declaration
Canonical Process Area	Clear Customs
Actors/Roles	Carrier Customs
Description	The carrier clears Customs on the export side.
Pre-condition(s)	- Conveyance has been loaded and is ready for departure.
Post-condition(s)	- Conveyance departs.
Main Scenario	<ol style="list-style-type: none"> <li>1. Carrier prepares a Customs cargo declaration.</li> <li>2. Carrier agent submits the cargo declaration to Customs in the country of export.</li> <li>3. Customs processes the declaration and clears the conveyance. <sup>12</sup></li> <li>4. Customs notifies the carrier of the clearance.</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. WCO Data model Cargo Report Export</li> <li>2. WCO Data model Conveyance Report</li> <li>3. Customs response</li> </ol>
UBL 2.0 Coverage	None

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<sup>12</sup> Customs processing is generally assumed to occur outside EFM in systems proprietary to the Customs Authority.

Use Case Description	
Name	5c. File Import Goods Declaration
Canonical Process Area	Clear Customs
Actors/Roles	Consignee <sup>13</sup> [Optional] Customs broker Customs
Description	The consignee clears Customs on the import side. Some consignees file directly with Customs while others file through a Customs broker or other agent.
Pre-condition(s)	- Consignment has departed the country of export. <sup>14</sup> - Commercial documents have been prepared.
Post-condition(s)	- Consignment is delivered to the consignee.
Main Scenario	<ol style="list-style-type: none"> <li>1. Consignee or its Customs broker prepares a Customs import declaration.</li> <li>2. Consignee or its Customs broker submits the import declaration to Customs in the country of import. The status of the consignment changes to "Customs clearance, in progress" (UN Rec 24, Code 126)</li> <li>3. Customs processes the declaration and clears the consignment for import. <sup>15</sup></li> <li>4. Customs notifies the consignee or its Customs broker of the clearance. The status of the consignment changes to "Cleared, by customs" (UN Rec 24, Code 126)</li> </ol>
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. Customs may not be able to clear the consignment due to various reasons, the most common of which is missing documents. In this instance, Customs notifies the consignee or the Customs broker and requests that additional documents be provided before the consignment can be cleared. The consignee or Customs broker provide the requested documents and Customs clears the consignment for import.</li> <li>2. Customs may decide to inspect the consignment. In this scenario, Customs notifies the consignee or Customs broker of the inspection. Customs then proceeds to inspect the consignment, following which it clears it for import.</li> <li>3. Customs refuses to clear the consignment for import. In this instance Customs notifies the consignee or Customs broker of its decision. The consignment status changes to "Customs clearance, refused" (UN Rec 24, Code 17).</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. WCO Data model Import Declaration (IM1, IM12, IM22)</li> <li>2. Customs response</li> </ol>
UBL 2.0 Coverage	None

<sup>13</sup> It is assumed for the purposes of these Template Use Cases that the consignee will be the importer or record. It is understood that some other party may be responsible for clearing import Customs. When implemented, this Use Case can be modified accordingly.

<sup>14</sup> Pre-conditions will likely vary due to countries' different filing requirements. For example, in the US the declaration can be filed at lift off, but in other countries it may only be filed when the conveyance arrives at the port of entry. Implementers are expected to modify this Use Case according to circumstance.

<sup>15</sup> Customs processing is generally assumed to occur outside EFM in systems proprietary to the Customs Authority.

Use Case Description	
Name	5d. File Import Cargo Declaration
Canonical Process Area	Clear Customs
Actors/Roles	Carrier Customs
Description	The carrier clears Customs on the import side.
Pre-condition(s)	- Conveyance has arrived. <sup>16</sup>
Post-condition(s)	- Conveyance is unloaded.
Main Scenario	<ol style="list-style-type: none"> <li>1. Carrier prepares a Customs cargo declaration.</li> <li>2. Carrier agent submits the cargo declaration to Customs in the country of import.</li> <li>3. Customs processes the declaration and clears the conveyance. <sup>17</sup></li> <li>4. Customs notifies the carrier of the clearance.</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. WCO Data model Cargo Report Import</li> <li>2. WCO Data model Conveyance Report</li> <li>3. Customs response</li> </ol>
UBL 2.0 Coverage	None

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<sup>16</sup> This pre-condition varies based on countries' specific requirements. For example, in the US Customs and Border Protection require that the carrier provides advance notification.

<sup>17</sup> Customs processing is generally assumed to occur outside EFM in system proprietary to the Customs Authority.

Use Case Description	
Name	6a. Schedule Delivery with Transport Services Provider
Canonical Process Area	Schedule Delivery
Actors/Roles	Carrier Transport services provider
Description	The outbound motor carrier schedules a delivery of one or more shipments with the transport services provider.
Pre-condition(s)	- The carrier has picked up one or more shipment (s) from one or more consignor (s). - The conveyance is en route or routing for the conveyance has been planned.
Post-condition(s)	- The driver and conveyance arrive at the transport services provider location for delivery. - The goods are unloaded at the transport service provider location. - The transport services provider creates load plans and loads the goods onto Unit Load Devices for air transport.
Main Scenario	<ol style="list-style-type: none"> <li>1. The outbound motor carrier selects the transport services provider at whose location the cargo is to be delivered (on one or more conveyances). (If the transport services provider has more than one location, the carrier selects the appropriate location)</li> <li>2. The carrier schedules a delivery appointment. The carrier provides the following information to the transport services provider in order to schedule the appointment: <ol style="list-style-type: none"> <li>a. Delivery information <ol style="list-style-type: none"> <li>i. Date and time</li> <li>ii. Location</li> </ol> </li> <li>b. Conveyance information <ol style="list-style-type: none"> <li>i. Number of conveyances</li> <li>ii. Conveyance ID (if known)</li> <li>iii. (Optional) Driver name (s)</li> </ol> </li> <li>c. Shipment information <ol style="list-style-type: none"> <li>i. UCRs of all consignments contained in the conveyance</li> <li>ii. Consignor (s)</li> <li>iii. Consignee (s)</li> <li>iv. Number of pieces delivered (e.g. pallets, packages)</li> <li>v. IDs of any equipment delivered</li> </ol> </li> </ol> </li> <li>3. The transport services provider receives the delivery appointment notification.</li> <li>4. Based on the information provided in the delivery appointment notification, the transport services provider schedules internal resources to receive the cargo (e.g. staff, equipment).</li> <li>5. The transport services provider confirms the delivery appointment with the motor carrier (the appointment confirmation number may be used in the cargo receipt process).</li> </ol>
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. The outbound carriage may be performed by the transport services provider, in which case this function will be performed by that partner's internal value-added application.</li> </ol>

<b>Use Case Description</b>	
<b>Name</b>	<b>6a. Schedule Delivery with Transport Services Provider</b>
Messages	<ol style="list-style-type: none"> <li>1. Carrier – transport services provider delivery appointment notification</li> <li>2. Transport services provider – carrier delivery appointment confirmation</li> <li>3. Bill of Lading</li> <li>4. Manifest</li> </ol>
UBL 2.0 Coverage	<ol style="list-style-type: none"> <li>1. Waybill</li> </ol>

Use Case Description	
Name	6b. Schedule Delivery with Terminal Operator
Canonical Process Area	Schedule Delivery
Actors/Roles	Transport services provider Terminal operator
Description	The transport services provider schedules a delivery of the shipment with the terminal operator.
Pre-condition(s)	- The Customs authority in the country of export has cleared the goods for export. - Transportation has been booked with the air carrier. - The goods have been loaded onto air containers (ULDs).
Post-condition(s)	- The cargo is transferred to the air carrier for loading onto the conveyance.
Main Scenario	<ol style="list-style-type: none"> <li>1. The transport services provider selects the terminal operator to whom the cargo will be transferred at the airport of departure (on one or more conveyances).</li> <li>2. The transport services provider schedules a delivery appointment, providing the following information to the terminal operator: <ol style="list-style-type: none"> <li>a. Delivery information <ol style="list-style-type: none"> <li>i. Date and time</li> </ol> </li> <li>b. Conveyance information <ol style="list-style-type: none"> <li>i. Number of conveyances</li> <li>ii. Conveyance ID (if known)</li> <li>iii. (Optional) Driver name (s)</li> </ol> </li> <li>c. Shipment information <ol style="list-style-type: none"> <li>i. Shipment IDs (MAWB numbers) of all shipments contained in the conveyance (s)</li> <li>ii. Number of pieces delivered (e.g. pallets, packages)</li> <li>iii. IDs of any equipment delivered</li> </ol> </li> <li>d. Flight information <ol style="list-style-type: none"> <li>i. Carrier</li> <li>ii. Flight number</li> <li>iii. Flight date and time</li> </ol> </li> </ol> </li> <li>3. The terminal operator receives the delivery appointment notification.</li> <li>4. Based on the information provided in the delivery appointment notification, the terminal operator schedules internal resources to receive the cargo (e.g. the staff and equipment required to move the cargo within the facility, the space required to temporarily store the cargo, etc).</li> <li>5. The terminal operator confirms the delivery appointment with the transport services provider. (the appointment confirmation number may be used in the cargo receipt process).</li> </ol>
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. The transport services provider may contract with a separate cartage company for this portion of the transportation. In this case, the transport services provider arranges for the transportation with the motor carrier and the motor carrier schedules the delivery and transfers the cargo to the terminal operator.</li> </ol>

Use Case Description	
Name	6b. Schedule Delivery with Terminal Operator
Messages	<ol style="list-style-type: none"> <li>1. Transport services provider – terminal operator delivery appointment notification</li> <li>2. Terminal operator – transport services provider delivery appointment confirmation</li> <li>3. Master Air Waybill</li> </ol>
UBL 2.0 Coverage	<ol style="list-style-type: none"> <li>1. Waybill</li> </ol>

Use Case Description	
Name	6c. Schedule Delivery with Logistic Service Provider
Canonical Process Area	Schedule Delivery
Actors/Roles	Inbound motor carrier, Logistic service provider
Description	The inbound motor carrier schedules an appointment for delivery of cargo from the destination airport to the location of the logistic service provider.
Pre-condition(s)	- The main conveyance (i.e. aircraft) has departed from the airport of departure. - (Optional) The aircraft has arrived at the airport of destination.
Post-condition(s)	- Cargo is unloaded from the aircraft. - The inbound motor carrier delivers the cargo to the logistic service provider.
Main Scenario	<ol style="list-style-type: none"> <li>1. The motor carrier selects the logistic service provider to whom the cargo will be transferred.</li> <li>2. The motor carrier schedules a delivery appointment, providing the following information to the logistic service provider: <ol style="list-style-type: none"> <li>a. Delivery information <ol style="list-style-type: none"> <li>i. Date and time</li> <li>ii. Location</li> </ol> </li> <li>b. Conveyance information <ol style="list-style-type: none"> <li>i. Number of conveyances</li> <li>ii. Conveyance ID (if known)</li> <li>iii. (Optional) Driver name (s)</li> </ol> </li> <li>c. Shipment information <ol style="list-style-type: none"> <li>i. Shipment IDs (MAWB numbers) of all shipments contained in the conveyance (s)</li> <li>ii. UCRs of all consignments contained in the conveyance (s)</li> <li>iii. Number of pieces delivered (e.g. pallets, packages)</li> <li>iv. IDs of any equipment delivered</li> <li>v. Customs In-bond number (if applicable)</li> </ol> </li> </ol> </li> <li>3. The logistic service provider receives the delivery appointment notification.</li> <li>4. Based on the information provided in the delivery appointment notification, the logistic service provider schedules internal resources to receive the cargo (e.g. the staff and equipment required to receive, deconsolidate, sort and prepare the shipment for delivery to the consignee, the space required to temporarily store the cargo, etc).</li> <li>5. The logistic service provider confirms the appointment with the motor carrier (the appointment confirmation number may be used in the cargo receipt process).</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. Motor carrier – logistic service provider delivery appointment notification</li> <li>2. Logistic service provider – motor carrier delivery appointment confirmation</li> <li>3. Bill of Lading</li> </ol>
UBL 2.0 Coverage	<ol style="list-style-type: none"> <li>1. Waybill</li> </ol>

Use Case Description	
Name	6d. Schedule Delivery with Consignee
Canonical Process Area	Schedule Delivery
Actors/Roles	Inbound motor carrier, Consignee
Description	The inbound motor carrier, after picking up the Customs-cleared and deconsolidated freight from the logistic service provider, schedules a delivery appointment with the consignee.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- Goods have been cleared with Customs.</li> <li>- The logistic service provider has booked transportation with the motor carrier.</li> <li>- The logistic service provider has completed value-added services such as deconsolidation and sorting.</li> <li>- The motor carrier has picked up the goods from the logistic service provider and is either on-route or has planned its route and delivery times.</li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- The motor carrier delivers the goods to the consignee.</li> </ul>
Main Scenario	<ol style="list-style-type: none"> <li>1. The motor carrier selects the consignee location (s) (e.g. warehouse, distribution center) where the cargo will be delivered.</li> <li>2. The motor carrier schedules a delivery appointment, providing the following information to the consignee:               <ol style="list-style-type: none"> <li>a. Delivery information                   <ol style="list-style-type: none"> <li>i. Date and time</li> <li>ii. Location</li> </ol> </li> <li>b. Conveyance information                   <ol style="list-style-type: none"> <li>i. Number of conveyances</li> <li>ii. Conveyance ID (if known)</li> <li>iii. (Optional) Driver name (s)</li> </ol> </li> <li>c. Shipment information                   <ol style="list-style-type: none"> <li>i. UCRs of all consignments contained in the conveyance (s)</li> <li>ii. Number of pieces delivered (e.g. pallets, packages)</li> <li>iii. IDs of any equipment delivered (e.g. pallet number)</li> <li>iv. Customs Clearance number</li> </ol> </li> </ol> </li> <li>3. The consignee receives the delivery appointment notification.</li> <li>4. The consignee confirms the appointment with the motor carrier (the appointment confirmation number may be used in the cargo receipt process).</li> </ol>
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. The transport service provider schedules the delivery on behalf of the motor carrier.</li> <li>2. The logistic service provider may be providing distribution services, in which case that party will assume the motor carrier role.</li> </ol>
Messages	<ol style="list-style-type: none"> <li>1. Motor carrier – consignee delivery appointment notification</li> <li>2. Consignee – motor carrier delivery appointment confirmation</li> </ol>
UBL 2.0 Coverage	<ol style="list-style-type: none"> <li>1. Receipt Advice</li> <li>2. Transportation Status</li> </ol>

Use Case Description	
Name	7a. Receive Consignment from Outbound Carrier
Canonical Process Area	Receive Shipment
Actors/Roles	Transport services provider, carrier
Description	The transport services provider receives the consignment from the outbound motor carrier.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- Outbound motor carrier has picked up the cargo from the consignor.</li> <li>- Outbound motor carrier has scheduled an appointment with the transport services provider.</li> <li>- Outbound motor carrier's conveyance has arrived at the transport services provider's location.</li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- The transport services provider stages the goods for consolidation onto ULDs.</li> <li>- The transport services provider creates Master Air Waybill (s)</li> <li>- The goods are moved from the transport services provider's location to the departure airport facility for transfer to the air carrier.</li> </ul>
Main Scenario	<ol style="list-style-type: none"> <li>1. The conveyance carrying the consignment (s) arrives at the transport services provider location.</li> <li>2. The driver of the conveyance provides the delivery appointment number that is used to retrieve information about the delivery. In this manner, the transport services provider determines what is being delivered.</li> <li>3. [Optional] The identity of the driver, the conveyance, and the consignment (s) being delivered are confirmed against those provided in the delivery appointment.</li> <li>4. The driver takes the conveyance to the allocated dock.</li> <li>5. The driver and/or the transport services provider unloads the cargo from the conveyance (s).</li> <li>6. The transport services provider weighs the cargo as it is unloaded from the conveyance.</li> <li>7. The driver presents the documentation related to the delivered shipment (s) to the transport services provider. In a paperless environment this step may be omitted.</li> <li>8. As cargo is unloaded, the transport services provider enters information about the receipt against the shipment transaction in EFM. The following types of information are recorded: <ol style="list-style-type: none"> <li>a. Information about the receipt <ol style="list-style-type: none"> <li>i. Receipt ID</li> <li>ii. Date/time of receipt</li> <li>iii. Receiver name /ID</li> <li>iv. Driver Name /ID</li> <li>v. Conveyance ID</li> <li>vi. Delivery appointment number</li> </ol> </li> <li>b. Consignment information <ol style="list-style-type: none"> <li>i. UCR</li> <li>ii. Number of packages</li> <li>iii. Types of packages</li> <li>iv. Weight of packages</li> <li>v. Dimensions of packages</li> </ol> </li> </ol> </li> </ol>

Use Case Description	
Name	7a. Receive Consignment from Outbound Carrier
	<ul style="list-style-type: none"> <li>vi. Indication as to whether all documentation is received as expected</li> <li>9. The transport services provider provides proof of delivery to the driver. This formally indicates that the shipment was transferred to the transport services provider.</li> <li>10. The status of the shipment and all associated consignments changes to "Received" (UN Rec 24, Code 74)</li> <li>11. The transport services provider sends a receipt advice to the consignee indicating receipt of the cargo.</li> </ul>
Alternate Scenarios	<ul style="list-style-type: none"> <li>1. The transport services provider may operate its own fleet and as the outbound cartage company. In this case, the receipt of cargo function will be performed by the transport services provider's internal application.</li> </ul>
Messages	<ul style="list-style-type: none"> <li>1. Transport services provider – motor carrier receipt confirmation</li> </ul>
UBL 2.0 Coverage	<ul style="list-style-type: none"> <li>1. Receipt Advice</li> <li>2. Transportation Status</li> </ul>

Use Case Description	
Name	7b. Receive Shipment from Carrier
Canonical Process Area	Receive Shipment
Actors/Roles	Terminal operator, carrier
Description	The terminal operator receives the cargo from the outbound motor carrier who transports the cargo from the transport services provider after the cargo has been consolidated and loaded onto ULDs.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- Outbound motor carrier has picked up the cargo from the transport services provider.</li> <li>- Outbound motor carrier has scheduled an appointment with the terminal operator.</li> <li>- Outbound motor carrier's conveyance has arrived at the departure airport facility.</li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- The cargo is transferred to the air carrier who stages it for the intended flight.</li> <li>- [Optional] The cargo may be scanned by the Customs authority for security purposes.</li> <li>- The cargo is loaded on the conveyance.</li> </ul>
Main Scenario	<ol style="list-style-type: none"> <li>1. The conveyance carrying the shipment (s) arrives at the departure airport facility.</li> <li>2. The driver of the conveyance provides the delivery appointment number that is used to retrieve information about the delivery. In this manner, the terminal operator identifies what is being delivered.</li> <li>3. [Optional] The identity of the driver, the conveyance, and the shipment (s) being delivered are confirmed against those provided in the delivery appointment.</li> <li>4. The driver takes the conveyance to the allocated location.</li> <li>5. The driver and/or a ground handling agent unloads the cargo from the conveyance (s).</li> <li>6. [Optional] The terminal operator weighs the cargo as it is unloaded from the conveyance.</li> <li>7. The driver presents the documentation related to the delivered shipment (s) to the terminal operator. In a paperless environment this step may be omitted.</li> <li>8. As cargo is unloaded, the terminal operator enters information about the receipt against the shipment transaction in EFM. The following types of information are recorded: <ol style="list-style-type: none"> <li>a. Information about the receipt <ol style="list-style-type: none"> <li>i. Receipt ID</li> <li>ii. Date/time of receipt</li> <li>iii. Receiver Name / ID</li> <li>iv. Driver Name / ID</li> <li>v. Conveyance ID</li> <li>vi. Warehouse location</li> <li>vii. Delivery appointment number</li> </ol> </li> <li>b. Shipment information <ol style="list-style-type: none"> <li>i. Air Waybill Number</li> <li>ii. Air carrier Name / Code</li> <li>iii. Handling unit quantity</li> <li>iv. Handling unit ID</li> </ol> </li> </ol> </li> </ol>

Use Case Description	
Name	7b. Receive Shipment from Carrier
	<ul style="list-style-type: none"> <li>v. Handling unit type</li> <li>vi. Weight per handling unit</li> <li>vii. Indication as to whether all documentation is received as expected</li> </ul> <p>9. The terminal operator provides proof of delivery to the driver. This formally indicates that the shipment was transferred to the terminal operator.</p> <p>10. The status of the shipment and all associated consignments changes to "Received" (UN Rec 24, Code 74)</p>
Alternate Scenarios	<ul style="list-style-type: none"> <li>1. The transport services provider may operate its own fleet and thus serve as the cartage company. In this case the transport services provider would assume the role of the carrier.</li> <li>2. The transportation from the transport services provider to the departure airport facility may be by rail instead of by truck.</li> </ul>
Messages	<ul style="list-style-type: none"> <li>1. Terminal operator – carrier receipt confirmation</li> </ul>
UBL 2.0 Coverage	<ul style="list-style-type: none"> <li>1. Receipt Advice</li> <li>2. Transportation Status</li> </ul>

Use Case Description	
Name	7c. Receive Shipment from Inbound Carrier
Canonical Process Area	Receive Shipment
Actors/Roles	Logistic service provider, carrier
Description	The logistic service provider receives a shipment from the inbound motor carrier who transports the cargo from the destination airport.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- The cargo has been unloaded from the conveyance (aircraft)</li> <li>- The inbound motor carrier has scheduled a delivery appointment with the logistic service provider.<sup>18</sup></li> <li>- The cargo has arrived at the logistic service provider location.</li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- [Optional] The logistic service provider deconsolidates the cargo and stages it for distribution.</li> <li>- The logistic service provider creates Bill of Lading or Manifest for the distribution portion of the transportation.</li> <li>- The goods are moved from the logistic service provider's warehouse to the consignee's warehouse or distribution center.</li> </ul>
Main Scenario	<ol style="list-style-type: none"> <li>1. The conveyance carrying the goods arrives at the logistic service provider warehouse.</li> <li>2. The driver of the conveyance provides the delivery appointment number that is used to retrieve information about the delivery. In this manner, the logistic service provider determines what is being delivered.</li> <li>3. [Optional] The identity of the driver, the conveyance, and the shipment (s) / consignment (s) being delivered are confirmed against those provided in the delivery appointment.</li> <li>4. The driver takes the conveyance to the allocated dock.</li> <li>5. The driver and/or the logistic service provider unloads the cargo from the conveyance (s).</li> <li>6. The driver presents the documentation related to the delivered shipment (s) to the logistic service provider. In a paperless environment this step may be omitted.</li> <li>7. As cargo is unloaded, the logistic service provider enters information about the receipt in EFM. The following types of information are recorded: <ol style="list-style-type: none"> <li>a. Information about the receipt <ol style="list-style-type: none"> <li>i. Receipt ID</li> <li>ii. Date/time of receipt</li> <li>iii. Receiver name /ID</li> <li>iv. Driver Name /ID</li> <li>v. Conveyance ID</li> <li>vi. Delivery appointment number</li> </ol> </li> <li>b. Consignment information <ol style="list-style-type: none"> <li>i. UCR / Air Waybill</li> <li>ii. Number of packages</li> </ol> </li> </ol> </li> </ol>

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<sup>18</sup> It should be noted, however, that it is not the intent of this Use Case to serve as the first notification that the logistic service provider receives of the incoming shipment. The intent of EFM is to provide status and notification as early in the supply chain as possible to allow partners to better plan their internal resources.

Use Case Description	
Name	7c. Receive Shipment from Inbound Carrier
	<ul style="list-style-type: none"> <li>iii. Types of packages</li> <li>iv. Weight of packages</li> <li>v. Dimensions of packages</li> <li>vi. Indication as to whether all documentation is received as expected</li> </ul> <ul style="list-style-type: none"> <li>8. The logistic service provider provides proof of delivery to the driver. This formally indicates that the shipment was transferred to the logistic service provider.</li> <li>9. The status of the shipment and all associated consignments changes to "Received" (UN Rec 24, Code 74)</li> <li>10. The logistic service provider sends a receipt advice to the consignee indicating receipt of the cargo.</li> </ul>
Alternate Scenarios	<ul style="list-style-type: none"> <li>1. The logistic service provider may provide the transportation services instead of a separate cartage company. In this case, the logistic service provider will assume the role of the motor carrier and the receiving function may be performed by an internal application.</li> <li>2. The transportation between the destination airport and the logistic service provider may be by rail instead of by truck. In this case the carrier will be a railroad company and the receipt and data exchange requirements may be different.</li> </ul>
Messages	<ul style="list-style-type: none"> <li>1. Logistic service provider – carrier receipt confirmation</li> </ul>
UBL 2.0 Coverage	<ul style="list-style-type: none"> <li>1. Receipt Advice</li> <li>2. Transportation Status</li> </ul>

Use Case Description	
Name	7d. Receive Consignment from Carrier
Canonical Process Area	Receive Shipment
Actors/Roles	Consignee, carrier
Description	The consignee receives the consignment from the inbound motor carrier who transports the cargo from the logistics service provider after deconsolidation.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- Inbound motor carrier has picked up the cargo from the logistic service provider.</li> <li>- The inbound motor carrier has scheduled a delivery appointment with the consignee.</li> <li>- The cargo has arrived at the consignee's location.</li> </ul>
Post-condition(s)	- The consignment life cycle ends and the transaction is archived according to the archival requirements of the consignee or supply chain owner.
Main Scenario	<ol style="list-style-type: none"> <li>1. The conveyance carrying the goods arrives at the consignee's warehouse or distribution center.</li> <li>2. The driver of the conveyance provides the delivery appointment number that is used to retrieve information about the delivery. In this manner, the consignee determines what is being delivered.</li> <li>3. [Optional] The identity of the driver, the conveyance, and the shipment (s) / consignment (s) being delivered are confirmed against those provided in the delivery appointment.</li> <li>4. The driver takes the conveyance to the allocated dock.</li> <li>5. The consignee unloads the cargo from the conveyance (s).</li> <li>6. The driver presents the documentation related to the delivered shipment (s) to the consignee. In a paperless environment this step may be omitted.</li> <li>7. As cargo is unloaded, the consignee enters information about the receipt in EFM. The following types of information are recorded: <ol style="list-style-type: none"> <li>a. Information about the receipt <ol style="list-style-type: none"> <li>i. Receipt ID</li> <li>ii. Date/time of receipt</li> <li>iii. Receiver name /ID</li> <li>iv. Driver Name /ID</li> <li>v. Conveyance ID</li> <li>vi. Delivery appointment number</li> </ol> </li> <li>b. Shipment information <ol style="list-style-type: none"> <li>i. UCR / Air Waybill</li> <li>ii. Number of packages</li> <li>iii. Types of packages</li> <li>iv. Indication as to whether all documentation is received as expected</li> <li>v. Indication as to whether the consignment was split</li> </ol> </li> </ol> </li> <li>8. The consignee provides proof of delivery to the driver. This formally indicates that the shipment was delivered to the consignee.</li> <li>9. The status of the shipment changes to "Received" (UN Rec 24, Code 74).</li> <li>10. The consignee sends a receipt advice to the consignor indicating receipt of the cargo.</li> <li>11. The status of any related consignments changes to "Received" (only upon receipt of the entire consignment (i.e. all line items))</li> </ol>

Use Case Description	
Name	7d. Receive Consignment from Carrier
	12. Receipt of the entire consignment closes out the transaction within EFM. Transaction data can be viewed but not edited.
Alternate Scenarios	1. The logistic service provider may own its own fleet and thus provide the motor carriage and distribution services instead of contracting them with a separate cartage company. In this case the logistic service provider would assume the role of the motor carrier.
Messages	Consignee – carrier receipt confirmation
UBL 2.0 Coverage	Receipt Advice

Use Case Description	
Name	7e. Resolve Discrepancies
Canonical Process Area	Receive Shipment
Actors/Roles	Consignee, logistic service provider, transport services provider
Description	Upon receipt of the shipment, the consignee counts the quantity of goods received and compares it against the quantity of goods ordered and/or shipped. A discrepancy is any variation between ordered goods versus received goods, and most commonly includes variations in quantity (shortages or overages).
Pre-condition(s)	- Cargo has been received. - Cargo has been broken down, sorted and counted.
Post-condition(s)	- Discrepancy is resolved and the transaction is closed out.
Main Scenario	<ol style="list-style-type: none"> <li>1. Consignee records the quantity of goods received per shipment line.</li> <li>2. EFM compares the quantity received against the quantity ordered in the related consignment. If the consignment has been split, the quantity is compared against that portion of the consignment that has been shipped as part of the received shipment.</li> <li>3. EFM displays and saves any variations between the quantities received versus the quantities expected.</li> <li>4. If there are variations, the status of the shipment changes to “Discrepancy” (UN Rec 24, Code 115). EFM makes it easy for the user to find where the discrepancy is within the shipment, even if the shipment is large, comprised of many line items.</li> <li>5. If a shipment has the “Discrepancy” status, it cannot be closed out.</li> <li>6. The consignee can also manually record a discrepancy, such as when the discrepancy is not easily established via an automated process. (An example of such a discrepancy is if the wrong items have been shipped).</li> <li>7. After the discrepancy has been identified, the consignee has the option of entering instructions for the logistic service provider or transportation services provider.</li> <li>8. The consignee notifies the logistic service provider and/or transportation services provider of the discrepancy and (if applicable) any special instructions.</li> <li>9. Upon receipt of the discrepancy notification, the logistic service provider and/or transportation services provider take the steps necessary to resolve the discrepancy<sup>19</sup></li> <li>10. When the discrepancy has been resolved, the consignee is notified of the actions taken and of the outcome.</li> <li>11. When the consignee is satisfied with the resolution of the discrepancy, the status of the shipment is changed to “Discrepancy, resolved”</li> <li>12. The shipment can be closed out (see details in Template Use Case 6d, Receive Consignment from Carrier).</li> </ol>
Messages	Discrepancy/status

<sup>19</sup> This is a process that is more than likely performed within supply chain partners’ internal systems and may not be automatically transparent within EFM. Alternatively, if this is a task that is manual and can be automated within EFM, a more detailed (or perhaps another) Use Case would be created to describe the functionality.

Use Case Description	
Name	7e. Resolve Discrepancies
UBL 2.0 Coverage	Transportation Status

## **Appendix B**

# **Template Use Cases Associated with Business Functions**

Use Case Description	
Name	Create Consignment
Actors/Roles	Consignor
Description	<p>A consignment is defined by UN/CEFACT as a separately identifiable collection of goods items (available to be) transported from one consignor to one consignee via one or more modes of transport. A consignment is a view at the goods being shipped from a contractual standpoint (i.e. a consignment includes the invoiced goods). This means that when the consignor fulfills or partially fulfills an order and invoices the consignee, he is creating a consignment.</p> <p>The term "shipment" is used in EFM to identify the logistical point of view, and has the standard UN/CEFACT definition of an identifiable collection of one or more line items (available to be) transported together from the seller i.e. original shipper, to the buyer i.e. ultimate consignee. In EFM, a consignment may be split into multiple shipments and multiple consignments may be consolidated into one shipment. Such activities are driven by business (logistical or financial) reasons such as for logistical that are beyond the scope of EFM. Descriptions of these activities are given in Template Use Cases 3a (Consolidate shipment for transport) and 3b (Split shipment for transport).</p> <p>The term "consignment" is a standard term that has been adopted for use by EFM. However, it is possible that the following synonymous terms may be currently in use: sales order, order, purchase order, and even shipment. Such usage of the term "shipment" is misleading, because it may be interpreted to mean both shipment and consignment. EFM places an emphasis on the distinction between consignment and shipment to be in alignment with international standards.</p> <p>Upon creation, the consignment is uniquely numbered using a UCR number. (see "EFM Implementation of UCR")</p>
Pre-condition(s)	<ul style="list-style-type: none"> <li>- Order has been received by supplier</li> <li>- Goods are available and ready for consignment</li> </ul>
Post-condition(s)	<ul style="list-style-type: none"> <li>- The consignor initiates transportation arrangements for the consignment</li> <li>- The consignor creates the commercial documents for the transaction</li> </ul>

Use Case Description	
Name	Create Consignment
Main Scenario	<ol style="list-style-type: none"> <li>1. User selects to create new consignment.</li> <li>2. EFM assigns UCR according to pre-established EFM UCR business rules (see “EFM Implementation of UCR”) The UCR cannot be modified by the user at any time.</li> <li>3. User enters data about the consignment <sup>20</sup> <ol style="list-style-type: none"> <li>a. Consignee information               <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>b. Consignor information               <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>c. Transport service provider information               <ol style="list-style-type: none"> <li>i. ID</li> <li>ii. Name</li> <li>iii. Address</li> </ol> </li> <li>d. Packages (this may be added at a later time, depending upon whether the consignment is created before or after it is picked and packed)               <ol style="list-style-type: none"> <li>i. Number of packages</li> <li>ii. Package type</li> <li>iii. Marks and numbers</li> </ol> </li> <li>e. Measurements               <ol style="list-style-type: none"> <li>i. Net Weight</li> <li>ii. Gross Weight</li> <li>iii. Volume dimensions</li> </ol> </li> <li>f. Countries               <ol style="list-style-type: none"> <li>i. Country of departure</li> <li>ii. Country of origin</li> <li>iii. Country of destination</li> </ol> </li> <li>g. Special Instructions</li> <li>h. Goods (this may repeat multiple times per order)               <ol style="list-style-type: none"> <li>i. Item number (ID)</li> <li>ii. Item description</li> <li>iii. Item quantity</li> </ol> </li> <li>i. Date</li> </ol> </li> <li>4. User saves the consignment</li> <li>5. EFM updates status to “Consignment, Created”</li> </ol>

<sup>20</sup> This is a very basic and preliminary list of data elements. A data dictionary and data model must be developed and the data expanded upon and aligned with UBL or CC. Some categories of data are omitted – Customs-related information such as value, invoiced amount, HS numbers, order total, some additional parties such as ultimate consignee, notify party, broker, etc.

Use Case Description	
Name	Create Consignment
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. User selects to create a new consignment by file upload</li> <li>2. User navigates to the relevant file and selects it for upload</li> <li>3. EFM creates a new consignment with the data from the uploaded file. EFM creates a UCR for the consignment.</li> <li>4. If desired, user modifies the editable data.</li> <li>5. User saves the consignment.</li> </ol>
Messages	Not applicable
UBL 2.0 Coverage	None

Use Case Description	
Name	Define Supply Chain Partners
Actors/Roles	Consignment owner
Description	The consignment owner populates a list of the supply chain partners who are authorized to conduct EFM transactions for this consignment.
Pre-condition(s)	<ul style="list-style-type: none"> <li>- The consignment has been created.</li> <li>- The partners for the supply chain are registered in EFM.</li> <li>- Supply chain roles (e.g. air carrier) have been defined within EFM.</li> <li>- Responsibilities per role have been defined within EFM.</li> </ul>
Post-condition(s)	- The partners are authorized to conduct EFM transactions for this consignment.
Main Scenario	<ol style="list-style-type: none"> <li>1. The owner selects one or more consignments.</li> <li>2. The owner enters the partner (s) per role.</li> <li>3. The supply chain partner information for the consignment is saved in EFM.</li> </ol>
Messages	Not applicable
UBL 2.0 Coverage	None

Use Case Description	
Name	Update Supply Chain Partners
Actors/Roles	Consignment owner Authorized supply chain partners
Description	The actor accesses a consignment and adds or modifies supply chain partners.
Pre-condition(s)	- The partners have been defined.
Post-condition(s)	- Newly defined partners gain access to the consignment. - Dropped partners lose the ability to access the consignment.
Main Scenario	<ol style="list-style-type: none"> <li>1. The owner or authorized supply chain partner selects one or more consignments.</li> <li>2. The owner or authorized supply chain partner enters and/or modifies the supply chain partner list.</li> <li>3. The updated supply chain partner information for the consignment is saved in EFM.</li> </ol>
Messages	Not applicable
UBL 2.0 Coverage	None

Use Case Description	
Name	Check Status
Actors/Roles	Authorized supply chain partners
Description	Authorized supply chain partners make a query to view the recorded milestones associated with a particular consignment or shipment.
Pre-condition(s)	- The consignment or shipment has been created. - Supply chain partners have been defined.
Post-condition(s)	- None
Main Scenario	<ol style="list-style-type: none"> <li>1. User enters a search criteria to find one or more specific consignments or shipments.</li> <li>2. User selects one or more consignments or shipments.</li> <li>3. User requests the status of the selected consignment or shipment.</li> <li>4. For each selected consignment or shipment, EFM returns all associated statuses and their attributes.</li> </ol>
Messages	1. Transportation Status
UBL 2.0 Coverage	1. Transportation Status

Use Case Description	
Name	Print Documents
Actors/Roles	Any authorized supply chain partner
Description	An authorized user prints documents for an associated transaction (consignment or shipment). Documents can be printed on-demand, although it is possible for documents to be printed automatically, at pre-defined times. <sup>21</sup>
Pre-condition(s)	- A transaction exists in EFM.
Post-condition(s)	- None
Main Scenario	<ol style="list-style-type: none"> <li>1. User selects transaction (s) for which to print documents.</li> <li>2. User selects the documents to print.</li> <li>3. The documents are automatically populated with data from the transaction.</li> <li>4. The user is given the option of saving the documents or printing them.</li> <li>5. Once the documents are created, they cannot be modified. New versions of the documents can be created if changes are required, but not allowing changes to saved documents ensures that the integrity of the document is preserved.</li> </ol>
Messages	None applicable
UBL 2.0 Coverage	None

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<sup>21</sup> International transactions can be accompanied (physically or electronically) by a large number of different types of documents (e.g. commercial documents such as invoice or packing list, transport documents such as Bill of Lading or manifest, and government documents such as a Customs goods declaration). It is not the intent of this Use Case to specify every possible document that can be printed in EFM. Rather, EFM implementations will specify the document requirements.

Use Case Description	
Name	Create Reports
Actors/Roles	Any authorized supply chain partner
Description	An authorized user creates reports according to user-defined criteria. Reports can be created on-demand ( <i>ad hoc</i> reporting), although it is possible for reports to be created automatically, at pre-defined times and according to pre-defined criteria (canned reports).
Pre-condition(s)	- A transaction exists in EFM.
Post-condition(s)	- None
Main Scenario	<ol style="list-style-type: none"> <li>1. User enters criteria / parameters to create a report.</li> <li>2. User can choose to save the report, so that it can be generated in the future.</li> <li>3. EFM generates the report based on the entered parameters and returns it to the user in electronic or hard-copy format, per the user's preference.</li> </ol>
Alternate Scenarios	<ol style="list-style-type: none"> <li>1. Reports can be automatically scheduled to be generated at user-defined time intervals.</li> </ol>
Messages	None applicable
UBL 2.0 Coverage	None

# **Appendix C**

## **System Template Use Cases**

Use Case Description	
Name	Authenticate User
Actors/Roles	Web Service Requestor Web Service Provider
Description	The web service requestor sends a service request to the web service provider and the service provider will authenticate the requestor to ensure that the requestor is indeed who it claims to be.
Pre-condition(s)	The service requestor sends a service request to the service provider
Post-condition(s)	A secure communication channel is established if the requestor is authenticated. Otherwise, the service request is rejected.
Main Scenario	<ol style="list-style-type: none"> <li>1. The service provider receives a web service request from a requestor</li> <li>2. The service provider extracts the requestor's digital certificate from the request's header information</li> <li>3. Based on the digital signature of the certificate, the service provider verifies the validity of the requestor's digital certificate to ensure that the certificate indeed belongs to the requestor</li> <li>4. A secure communication channel is established for data exchange between the requestor and the provider</li> </ol>
Messages	Not applicable
UBL 2.0 Coverage	None

Use Case Description	
Name	Authorize User
Actors/Roles	Web Service Requestor Web Service Provider
Description	The web service requestor sends a service request to the web service provider and the service provider will authorize the requestor to ensure that the requestor has the proper rights to access the EFM's resources.
Pre-condition(s)	The service requestor sends a service request to the service provider
Post-condition(s)	The requestor is either granted or denied the access to the data/operation that it requested
Main Scenario	<ol style="list-style-type: none"> <li>1. The service provider receives a web service request from a requestor</li> <li>2. The service provider extracts the requestor's role information from the request's header information</li> <li>3. Based on the requestor's role information and specific business rules, the service provider determines whether the access rights should be granted or denied</li> <li>4. The service provider serves the request if the requestor is authorized, otherwise, the service provider denies the request</li> </ol>
Messages	Not applicable
UBL 2.0 Coverage	None

Use Case Description	
Name	Authenticate Data
Actors/Roles	Web Service Requestor Web Service Provider
Description	The web service requestor sends a service request to the web service provider and the service provider will verify the data contained in the request to ensure data integrity as well as data confidentiality.
Pre-condition(s)	- The service requestor sends a service request to the service provider
Post-condition(s)	- The payload data of the message is authenticated
Main Scenario	<ol style="list-style-type: none"> <li>1. The service provider receives a web service request from a requestor</li> <li>2. The service provider extracts the message signature from the request</li> <li>3. The service provider uses the public key of the service requestor's digital certificate to decrypt the message signature</li> <li>4. The service provider performs an algorithm against the payload data</li> <li>5. The results from Step 4 are compared against the decrypted message signature (Step 3).</li> <li>6. A match indicates an authentic data. Otherwise, data authentication failed.</li> </ol>
Messages	Not applicable
UBL 2.0 Coverage	None