The Consumer Goods FORUM
The Global Network Serving Shopper & Consumer Needs

The "Upstream Integration Model" TRANSPORT

Alternative Building Block for "Despatch, Receipt and Consumption" if 3rd parties (transport service providers) are included for transport

Version 1.0

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Disclaimer

Transport

Scope

The purpose of this document is to describe additional functionality on transport for the Upstream Integration Model (UIM). Transport is the process of conveying freight from the point of despatch to the point of receipt.

This additional functionality is an alternative building block for despatch, receipt and consumption building block if manufacturer or material supplier makes use of a transport service provider to manage the transport. In addition to the current UIM model based on 2 parties being manufacturer and material supplier, a new party is introduced, the transport service provider.

In a next stage this alternative building block will be enhanced with more logistic services like warehousing.

The current UIM (version 2.2) standardizes the upstream business processes and data interchanges between manufacturers and suppliers for use in electronic communications and covers needs in the following areas of material management:

- Procurement
- Material forecasting
- Inventory Management
- Despatch, Receipt & Consumption of Materials
- Financial Settlement

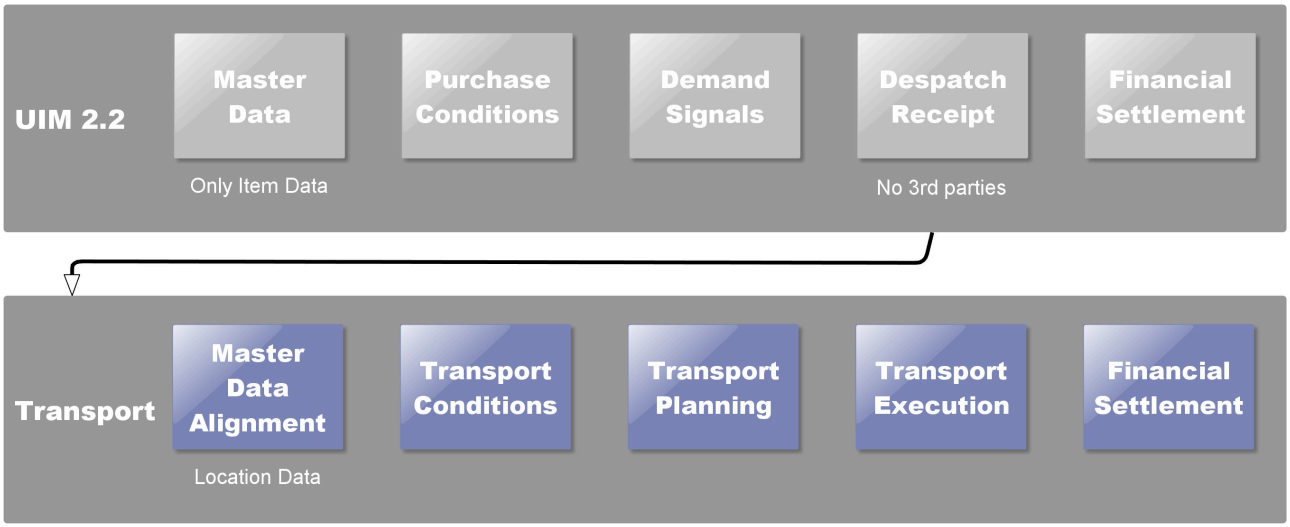
This document describes high level business processes and related data interchanges to cover the transport building block including the following business functions :

- Transport Procurement
- Transport Planning (Forecasting)
- Transport Execution
- Financial Settlement

And introduces the new party: the transport service provider.

These business functions are broken down to the next parts:

- Master Data Alignment
- Transport Conditions
- Transport Planning
- Transport Execution
- Financial Settlement



The UIM Transport building block adds necessary business processes to the standard UIM
It opens up the Despatch & Receipt Block to 3rd Parties in a separate block.

Transport focuses on the management of:

- Upstream inter company scenarios (material supplier location to manufacturer location),
- Intra-company scenarios (manufacturer location to manufacturer location).
- Freight Forwarding scenarios.
- Domestic and international (continental) transport from the most simple to the more complex scenarios

As in the UIM where a material supplier can use the model with their suppliers further upstream, the transport service providers can use the transport functionality with their suppliers. This is especial related to what is called 4PL and 3 PL scenario's or multi-players as mentioned throughout this document.

Parties and roles

The UIM is, with the extension of transport, now based on the interactions between the following functional parties:

- Manufacturer
- Material Supplier
- Transport Service Provider

The operational roles these parties can have in the processes can be different. Often in business process management descriptions a role is also referenced as actor. For example the manufacturer and the material supplier can organize the transport and therefore have then the role of transport service buyer or act as the transport service buyer.

Throughout this document and in the definition of the transport building block, specific terms are used to depict the types of parties (trading partners) and actors (the roles of the parties).

Parties:

Party	**Description**
Manufacturer	As per UIM
Material Supplier	As per UIM
Transport Service Provider	An umbrella term for entities that provide transport services for another entity. Can be a carrier, freight forwarder, customs broker etc.). Also referenced as multi-player.

A party will have multiple physical locations, such as warehouses, distribution centres and stores. Generic location names are used to further detail the physical locations of the parties in relation to the relevant business process: Inventory Location, Ship from Location, Ship to Location, Pick-up Location and Drop-off Location.

Roles:

Role (Actor)	**Description**
Consignor	An entity which is a goods sender
Consignee	An entity which is a goods receiver
Transport Service Buyer	An entity which purchases any combination of transport services from another entity.
Transport Service Seller	An entity which organizes transport and transport related services (Freight Forwarder, 3rd Party Transport, …) and/ or which executes transport or transport related services (carrier, shipping line, consolidation centre, customs broker, …),

Terminology:

Throughout this document the following definitions are used:

A consignment is a separately identifiable collection of goods items to be transported or available to be transported from one consignor to one consignee via one or more modes of transport where each consignment is the subject of one single transport contract. *A consignment can contain several consignment items, which can be contained in several pieces of transport equipment.*

A consignment item is a (collection of) load unit(s) that can be identified (uniquely) within the consignment and may be treated/handled in the same way during transportation (and associated administrative processes). *A consignment item may relate to several logistic units. Also multiple different consignment items may relate to the same logistic unit.*

A shipment is an identifiable collection of one or more trade items available to be transported together from the shipper (original consignor/ shipper), to the receiver (final/ ultimate consignee). Typically the shipment is the entity communicated between trading partners in the despatch and receiving advice. *A shipment may contain several shipment items.*.

A shipment item is a (collection of) trade items and/ or logistic units that can each be identified (uniquely) within a shipment. *A shipment item must relate to one trade item, and may relate to several logistic units containing the trade item.*

A logistic unit is a unit of any composition made up for transport and or storage which has to be managed throughout the supply chain. A logistic unit may refer to the transport equipment that contains it.

A trade item is any item (product or service) upon which there is a need to retrieve pre-defined information and that may be priced, or ordered, or invoiced at any point in any supply chain. *A trade item may contain several individual items.*

A transport means is a particular device used to convey goods or other objects from place to place during logistics cargo movements.

Transport equipment is a piece of equipment used to hold, protect or secure cargo for logistics purposes.

If parties are communicated and are identified, GLN is mandatory.

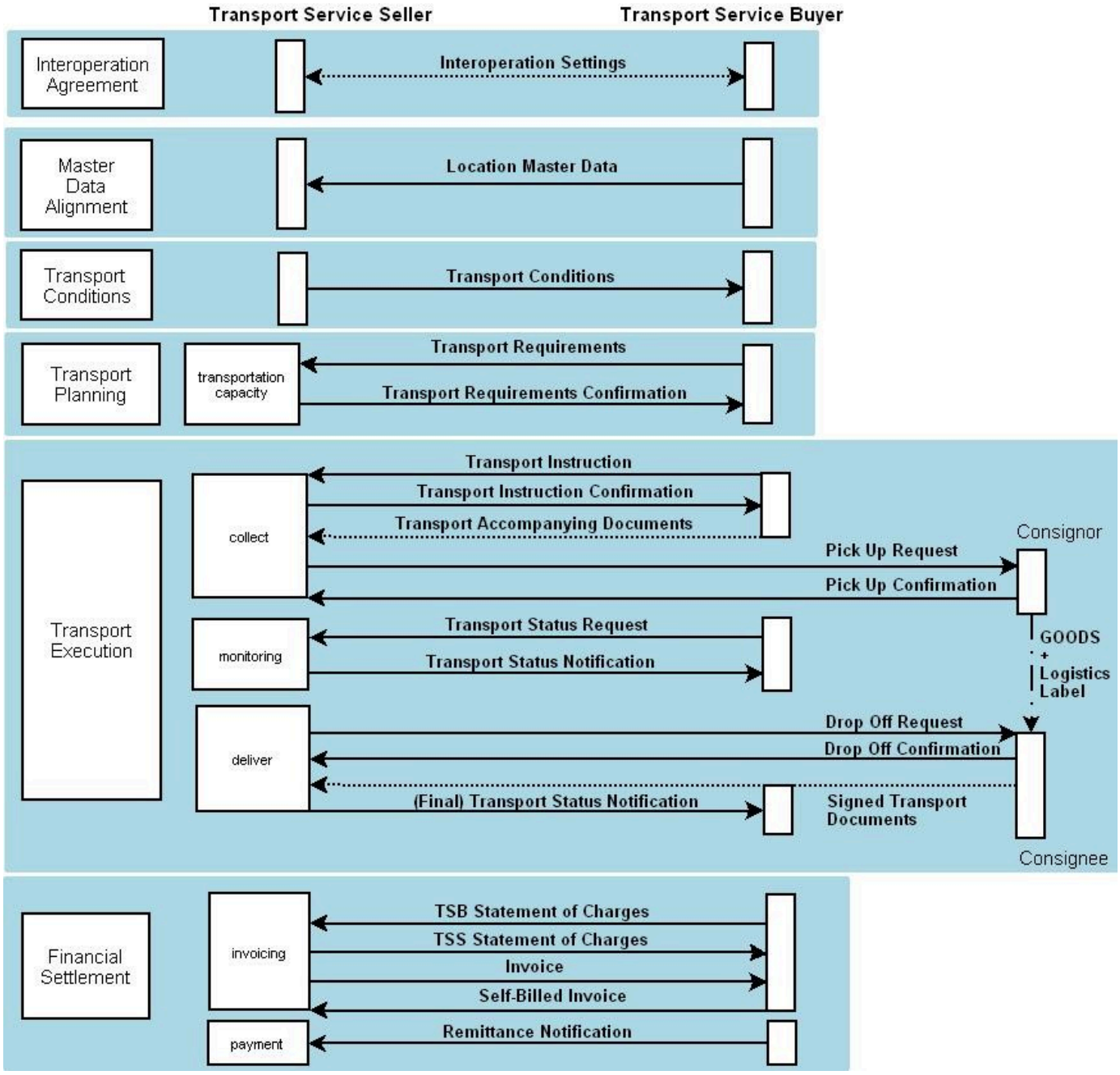
If trade items are communicated, GTIN is mandatory.

If shipments are communicated, GSIN (GS1 Global Shipment Identification Number) is recommended.

If logistic units are communicated, SSCC is mandatory.

If consignments are communicated, GINC (GS1 Global Identification Number for Consignment) is recommended.

The transport building block is made up of the following business processes:



Source: GS1 Logistics Interoperability Model (LIM) Report

1 Business Processes

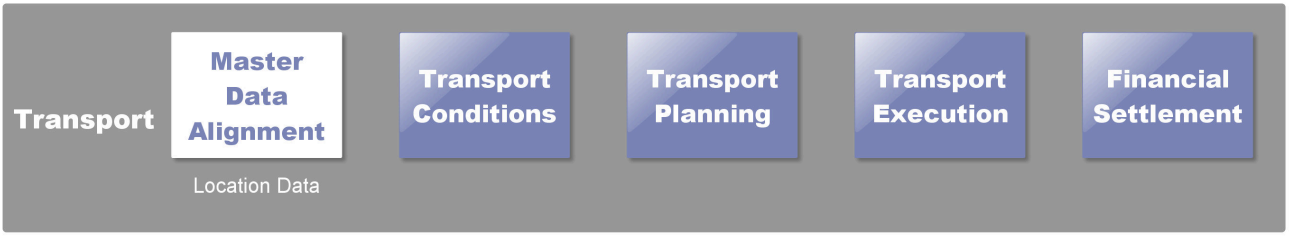
1.1 Interoperation Agreement

Scope

The scope of the Interoperation Agreement is an agreement on the operational and tactical elements between the Transport Service Provider and the Manufacturer or Material Supplier, as both parties can ask for the management of their transport. The agreement ideally contains the following components for which the roles and responsibilities as well as parameters and targets have to be defined: master data management, transport capacity management, service delivery, frequency of rate review, payment, claims, systems security, confidentiality/non-disclosure agreement, traceability requirements, service levels (and other performance measures), quality management and requirements and escalation procedures.

Agreements are bilateral, are set up at the beginning to define the bass for the business processes to be applied and reviewed periodically.

1.2 Master Data Alignment



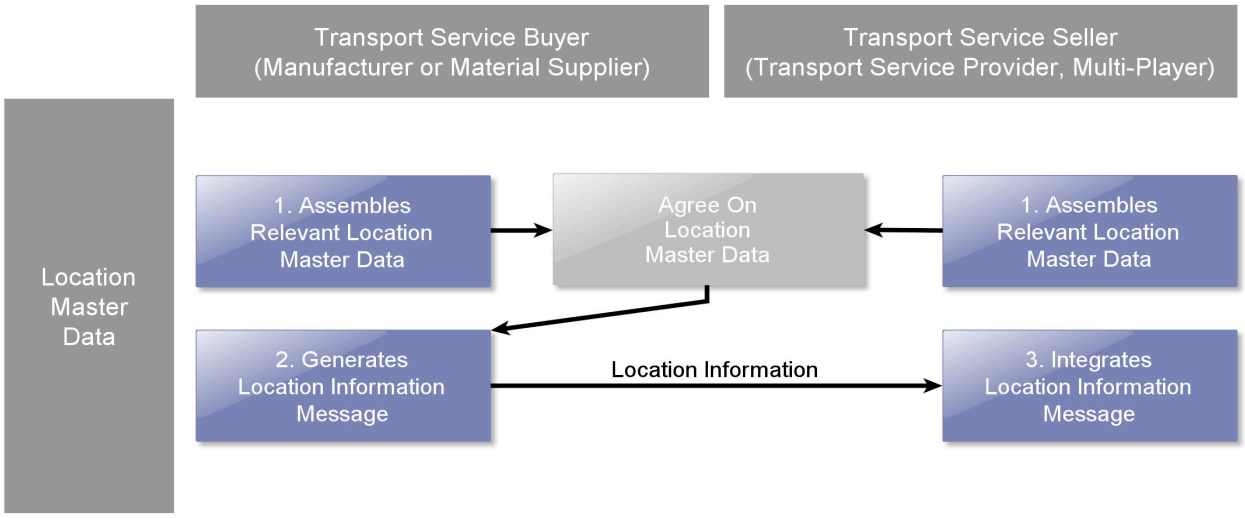
Scope

Master Data Alignment is limited to the exchange of location information. This includes the definition of the location codes and associated details used in the transport execution to ensure that both parties have the same and unambiguous understanding of this basic supply chain information. Maintaining accuracy and distribution of the data, given the changes to the information that can arise, is essential. Therefore, on-going alignment and synchronisation of the location data is a critical element of the whole process.

Description

- Location Master Data
  - Information from the transport service buyer (the manufacturer or material supplier) shared with the transport service seller (the transport service provider).
  - Global Location identification Number (GLN) should be used as a unique ID of the different possible locations (warehouses, distribution centers etc.)
  - Fields could for example include operating hours, compatibility of equipment etc.

Key Process Steps



1.3 Transport Conditions

Scope

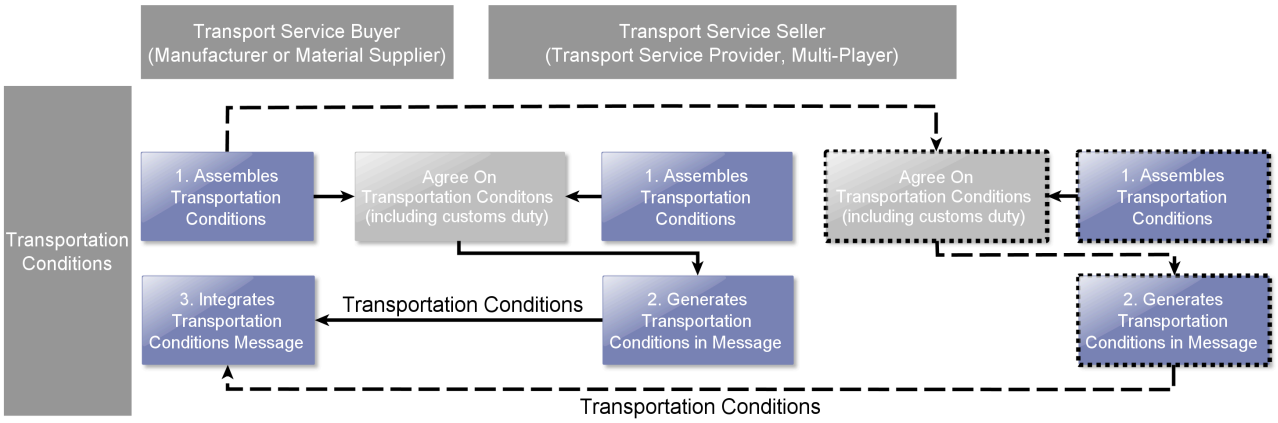
The transport conditions describe the commitment between the transport service buyer and the transport service seller on the execution of the agreed service around transport for a given period and at the stated rate or price.

Transport conditions define the relevant contractual data to be able to invoice for the services rendered. It does not intend to cover the totality of the contractual data.

Description

The transport service buyer negotiates transport service tariffs with the transport service seller. The transport service seller can in turn negotiate transport service tariffs with the actual carrier operating on his behalf. Optionally, the transport service buyer can negotiate directly with selected providers and carriers involved in the network, but the final conditions are agreed with the transport service seller.

Key Process Steps



1.4 Transport Planning

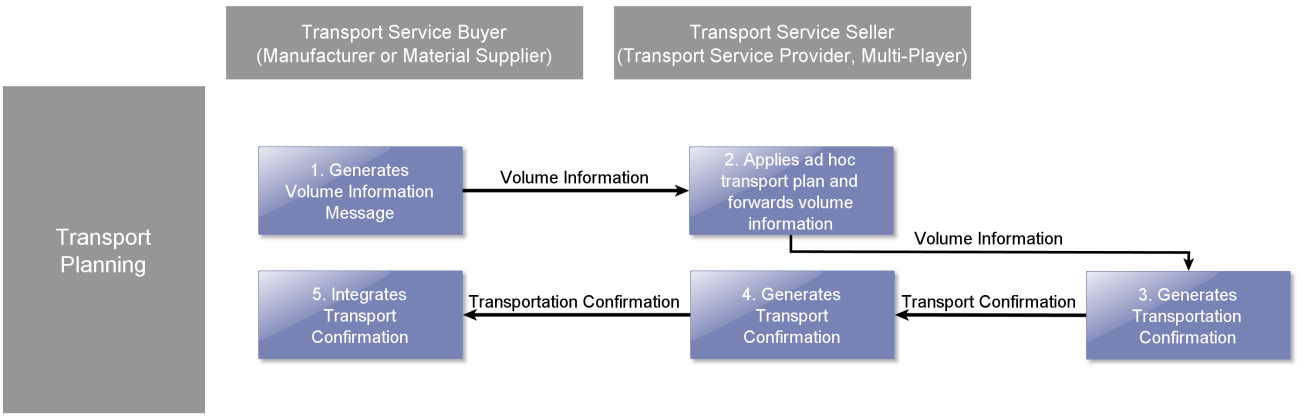
Description

Transport planning focuses on future activities in relation to transport and aims to ensure capacity for the fulfilment of requested services. For transport capacity this applies to transport volumes and timings.

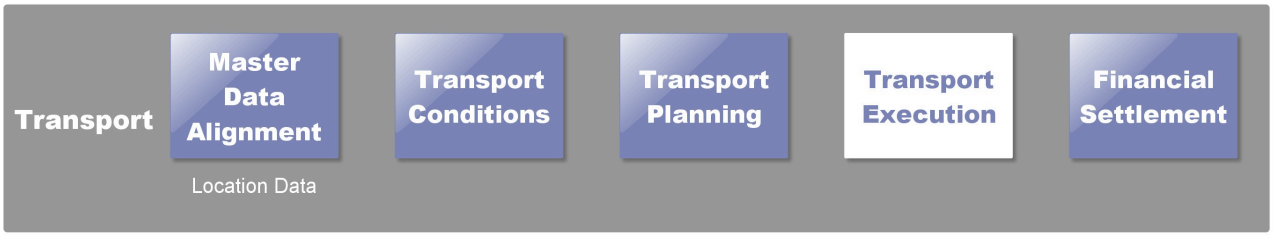
Description

The transport capacity planning is driven by the monthly and or weekly forecasted volumes until the actual demand (consignment or shipment) is released to the transport service provider via a transport instruction in the transport execution stage. Confirmation of the transport requirements as per capacity planning is done by the Transport Service Seller.

Key Process Steps:



1.5 Transport Execution



Scope

Transport execution is the movement and monitoring of goods from one point to another point. A point can be factories, warehouses, depots or customer delivery locations.

Transport Execution includes the communication of Transport Orders to the transport service provider who plans routes and books necessary trucks, slots, containers.
Execution also ensures the passing on of tracking information to the original manufacturer or material supplier. This can be achieved by scanning the SSCC on a GS1 Logistic Label at goods receipt and/or goods despatch and thus enabling the availability of tracking data via EDI.

Description

The return flow of products and materials in the supply chain is also included (e.g. product recalls and reverse logistics for empty pallets or crates).

With respect to transport modes the mode is independent so it can be applied to road, rail, ocean and air. Continental and intercontinental transport modes are covered. Transport monitoring includes the tracking at each network node. Confirmations of loading/unloading, confirmations of services and eventually exceptions, have to be raised. A confirmation of service includes a check and acknowledgement on quantity, quality and timing of each delivery.

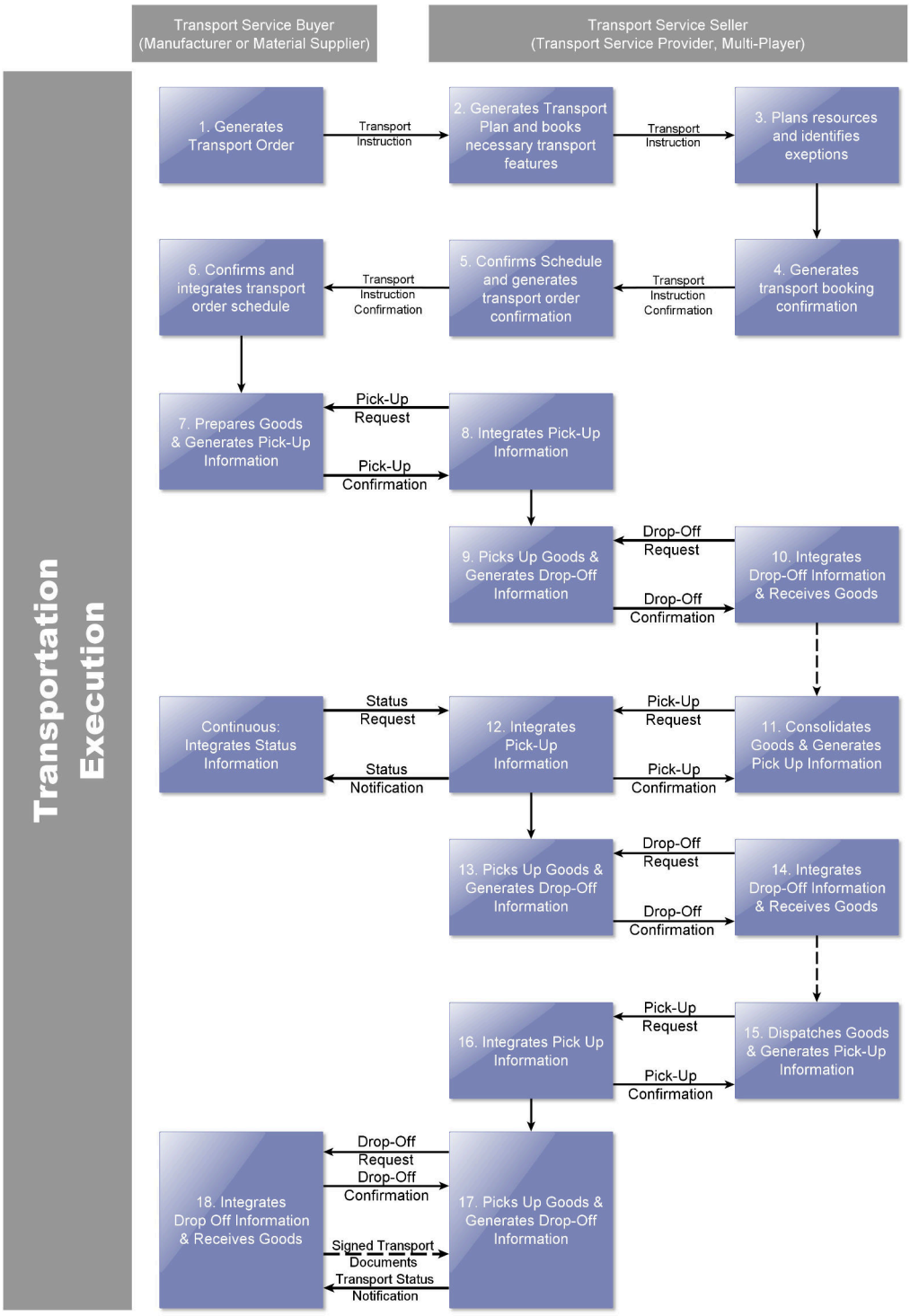
The customs duties are mentioned. They are considered as a separate process from the transport process even though they are a part of it. This is due to the fact that they can cover a variety of different considerations according to the country where they are applied.

Initial information about the collection and delivery of goods may already have been exchanged in the transport instruction. However, the party from which the goods are collected (consignor / pick-up location / ship-from location) or delivered to (consignee / drop-off location / ship-to location) will not in all cases be aware of the transport instruction details or they might have changed.

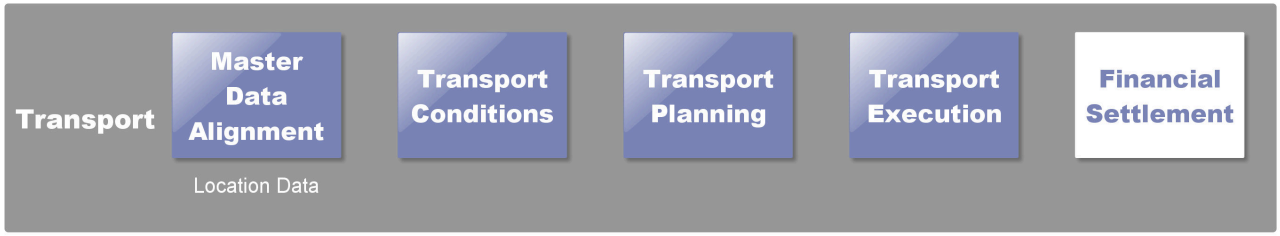
In the pick-up / drop-off request the carrier can specify delays or other relevant status information that might impact the time of collection or the time of delivery. In the pick-up / drop-off confirmation, besides the detailed time and location (dock door), additional handling instructions might be included.

This scenario is beneficial for the time slot management at the pick-up and drop-off location. Planning of time slots (time slot allocation) at the pick-up and drop-off locations (dock door) is often critical because of the limited capacity of these locations.

Key Process Steps:



1.6 Financial Settlement



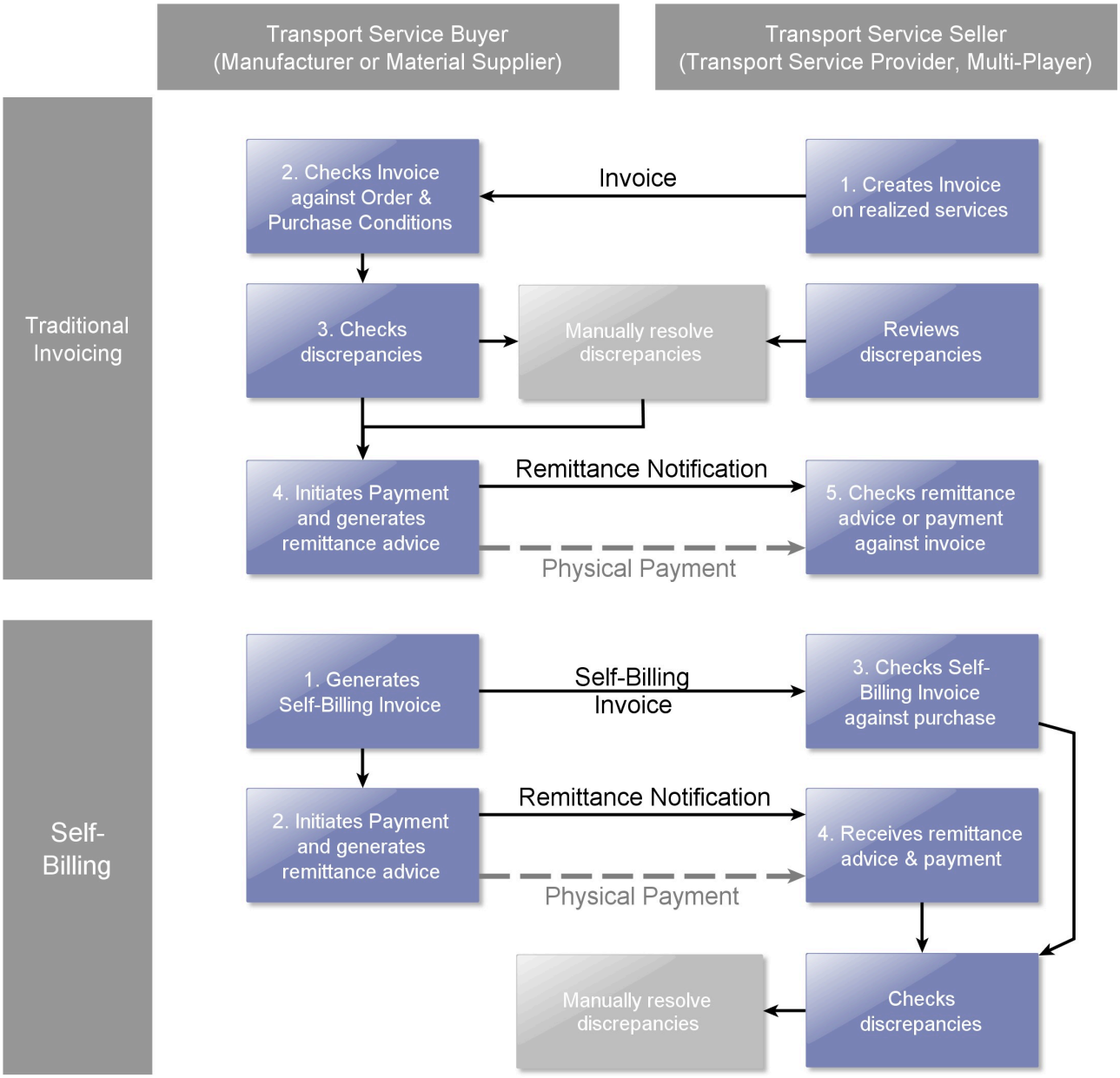
Scope

Financial settlement covers the process from where the services are delivered to the transport service buyer to the confirmation of payment by the transport service seller.

Description

Financial settlement takes place based on the actual volumes / weight of the goods serviced, according to the transport conditions. Financial settlement mainly differs depending on whether the invoicing process is triggered by the transport service seller (traditional invoicing) or by the transport service buyer (self-billing).

Key process steps:



2 Data Interchanges

2.1 Interoperation Agreement

There is no need for data interchanges to support the Interoperation Agreement.

2.2 Master Data Alignment

- **Location Master Data**

  - **Purpose:** The Location Master Data transaction enables the alignment and synchronisation of location information between trading partners. Location Master Data consists of generic data, such as names and addresses of parties and locations, and information specifically required for Transport, such as:
    - time-windows allowed for pick-up and drop-off (these may be different on a single site),
    - constraints regarding vehicles allowed for pick-up / delivery (inner city => vans/small trucks only), specific equipment,
    - indicator for showing the need to book slots for drop-off / pick-up.

    Each set of data can be uniquely identified by a Global Location Number (GLN). In this way data covered in the Location Master Data does not need to be included in other transactions.

  - **Timing:** The transport service buyer will be responsible for maintaining and communicating the location data of trading partners to the Transport Service Seller. The Location Master Data will be aligned each time information changes or new information is added.

  - **Response**: No specific response is foreseen.

2.3 Transport Conditions

➢ Transport Conditions

- **Purpose:** The Transport Conditions transaction is typically used in the case where a general contract has been established between the transport service buyer and transport service seller against which a service will be ordered over a period of time. The aim of the transaction is to provide the contractual conditions of a previously negotiated and accepted contract in order to enable the automatic validation of transport orders and verification of invoices prior to payment.

  The Transport Conditions include various factors that will determine the service tariffs. These may include:

  - GLNs to identify points of origin and of destination. There are many examples where ZIP codes are not precise enough (or simply do not exist)
  - Load Unit type and / or Loading Metres
  - Type of goods, e.g. hazardous, frozen / chilled / ambient
  - Service Level, e.g. expedited, standard, deferred

- **Timing:** Triggered by transport service seller on establishment of the contract

- **Response:** No specific response is required.

Tariffs negotiated cover the cost of transport and associated services for all defined network segments. Rates components may include BAC, THC, etc (sea freight), fuel surcharge etc.

A distinction can be made between domestic and international transport to indicate that, for international transport, information on customs duty has to be exchanged.

Tariffs negotiated between the Transport Service Buyer and the Transport Service Seller cover service tariffs for transport from the Consignor (Pick-up) to the Consignee (Drop-off) locations. These tariffs can potentially integrate tariffs from direct negotiations between the Transport Service Buyer and selected carriers.

2.4 Transport Planning

- **Transport Requirements**

  - **Purpose:** The purpose of this transaction is to define and share transport planning information based on historical and forecasted demand data and, in some business cases, actual planned consignments or shipments. This and any other relevant data can be sent by the Transport Seller in order to plan transport capacity demand for the future. Transport Requirements may include information that will enable the Transport Service Seller to plan:
    - Type of Transport
    - Trade-lane (from and to location indicators)
    - Available transport service sellers
    - Anticipated dates and period

    Timing: The transport service buyer will, on a monthly and / or weekly basis, communicate the planning information.

  - **Response:** The transport service seller should answer the planned transport data confirming if it can or cannot be used for the actual firm transport booking through the Transport Requirements Confirmation.

- **Transport Requirements Confirmation**

  - **Purpose:** To confirm whether the Transport Service Seller has capacity to deliver all or part of the required transport volumes

  - **Timing:** After receipt of the Transport Requirements the transport service seller will calculate whether he can fulfil the requirements and will send the Transport Requirements Confirmation.

  - **Response:** No response is required.

2.5 Transport Execution

- **Transport Instruction**

  - **Purpose**: The main objectives are to communicate and share the arrangement of the transport of goods between all parties involved in the movement of the consignment(s) and shipment(s), as well as providing the information necessary to perform that transport and delivery of the goods. The transaction can cater for one or more consignments and shipments. This is the order for the transport (service).

  - **Timing**: The Transport Instruction will be sent by the transport service buyer to the transport service seller upon transport (service) order creation.

  - **Response:** A Transport Instruction Confirmation can be issued as the response.

- **Transport Instruction Confirmation**

  - **Purpose**: The main objective is to give the confirmation or modification of the arrangement of the transport of goods between all parties.

  - **Timing**: The confirmation will be sent by the transport service seller to the transport service buyer. The transaction will be triggered within the agreed time interval from receipt of the Transport instruction.

  - **Response:** No specific response is foreseen.

- **Pick-Up Request**

  - **Purpose:** Request information for the pick-up of the goods, such as the time window and loading dock.

  - **Timing:** The Pick-Up Request will be sent by the transport service seller to the consignor before the pick-up is to take place, exact timing depends on the agreements.

  - **Response:** Pick-Up Confirmation.

- **Pick-Up Confirmation**

  - **Purpose:** To communicate the pick-up information to the transport service seller.

  - **Timing**: After receipt of the Pick-Up Request the consignor will send the Pick-Up Confirmation to the transport service seller.

  - **Response:** No specific response is foreseen.

- **Transport Status Request**

  - **Purpose:** To request information regarding the status of the consignment or shipment
  - **Timing:** The Transport Status Request will be sent by the transport service buyer to the transport service seller. The transaction can be used at any time. The transport service buyer may authorize other parties to have access to the transport status information, such as the consignor or the consignee.
  - **Response:** The Transport Status Notification is the response to this transaction.

- **Transport Status Notification**

  - **Purpose:** This transaction enables the transmission of status information by a freight forwarder or carrier, to a party requesting information concerning a consignment of goods for which a Transport Instruction was previously sent. Status information is provided in conjunction with any other information relevant to the status reported (e.g. the identification number of the truck transporting the goods).
  - **Timing:** The Transport Status Notification will be sent by the transport service seller to the transport service buyer. The transaction may be sent on a scheduled basis at predetermined times, as a result of a direct enquiry (Transport Status Request), or following a specified event or milestone such as the final delivery. The transport service buyer may authorise other parties to have access to the transport status information, such as the consignor or the consignee.
  - **Response:** Not available.

- **Drop-Off Request**

  - **Purpose:** Request information for the drop-off of the goods, such as the time window and unloading dock. The transaction can also serve as pre-arrival notification to the consignee. The Drop-Off Request should only contain very basic information such as approximate total weight, total volume, shipper, and type of materials that would allow the Drop-Off point to plan when this shipment (goods) should be delivered.
  - **Timing:** The Drop-Off Request will be sent by the transport service seller (carrier) to the consignee before the drop-off is to take place, exact timing depends on the agreements.
  - **Response:** Drop-Off Confirmation.

- **Drop-Off Confirmation**

  - **Purpose:** A transaction to communicate the drop-off information to the Transport Service Seller. The Drop-Off Confirmation should only contain very basic information such as date and time-window, booking reference to quote when delivering, and delivery instructions.

  - **Timing:** After receipt of the Drop-Off Request the consignee will send the Drop-Off Confirmation to the transport service seller (carrier).

  - **Response:** No specific response is foreseen.

- **Signed Transport Documents**

  - **Purpose:** The signed transport documents (also known as POD or Proof of Delivery) serve as proof for the transport service seller that he collected the goods at the consignor and delivered them to the consignee. After the transport has been carried out, the transport service seller (carrier) archives the signed transport documents. The transport service seller may allow the transport service buyer to access the archived transport documents, for example by providing a web link.
  - **Timing:** The transport documents are signed upon collection (by the consignor) and upon delivery (by the consignee), and after that archived by the transport service seller (carrier).

  - **Response:** Not relevant.

- **Final Transport Status Notification**

  - **Purpose:** This transaction allows the transport service seller to send the final status of the delivery to the transport service buyer. Information may include actual date and time of delivery, exceptions such as damages & shortages, and name of the person who signed for receipt.

  - **Timing:** The Final Transport Status Notification will be sent by the transport service seller after the delivery.

  - **Response:** No specific response is foreseen.

2.6 Financial Settlement

- **Transport Statement of Charges**

  - **Purpose:** The purpose is to instruct the other party on the detailed charges as calculated by the transport service buyer In both invoicing options (i.e. normal invoicing or self-billing) this information may be used for reconciliation and / or alignment between the transport service buyer and transport service seller before the final (self-billing) invoice is produced.

  - **Examples of Transport Charges:**
    - Cost per Trade Lane
    - Special truck drivers (ADR / Dangerous Goods)
    - Drop Lot
    - Multiple stops / drop-offs
    - Demurrage
    - Additional equipment
    - Additional manpower for pick-up or drop-off

  - **Timing:** The transport service buyer or transport service seller generates the Statement of Charges monthly and / or weekly depending on the contractual agreement / Interoperation Settings.

  - **Response:** No specific response is foreseen.

- **Transport Invoice**

  - **Purpose:** The purpose is for the transport service seller to generate and send an overview of charges to the transport service buyer for payment. The Invoice can be based on the charges that were detailed and agreed in the Statement of Charges.

  - **Timing:** Generated by the transport service seller monthly and / or weekly depending on the contractual agreement.

  - **Response:** No specific response is foreseen.

- **Self-Billed Transport Invoice**

  - **Purpose:** The purpose is for the transport service buyer to generate and send an overview of charges to the transport service seller for payment by the transport service buyer. The Self-Billed Invoice can be based on the charges that were detailed and agreed in the Statement of Charges.

  - **Timing:** Generated by the transport service buyer monthly and / or weekly depending on the contractual agreement.

- **Response:** No specific response is foreseen.

- **Remittance Notification**

  - **Purpose:** The purpose is for the transport service buyer to inform the transport service seller about the invoices that have been paid.

  - **Timing:** Generated by the transport service buyer after the payment has been made.

  - **Response:** No specific response is foreseen.

3 ANNEX 1:

Master Date: Location Information Sheet Template

Client Transport Template

Destination:							
Address:							
	Monday	Tuesday	Wednesday	Thrusday	Friday	Saturday	Sunday
Service hours [from - to]							
Inventory Location (Address):							
Customer Contact Name:							
Customer Contact Phone:							

		Site	Name	Phone
Supplier Contacts	1			
	2			
	3			

Annulation:	How	[phone,..]
	When	[day of week, ..]
Changes:	How	[phone,..]
	When	[day of week, ..]

Unloading method:	~~Cases~~	*Sides*	*Back*	~~Front~~	~~Sides~~	~~Back~~
Type of truck:						
Fixing:						
Delivery Time Window Tolerance:						

	Starting at:	Duration:	Starting at:	Duration:	Starting at:	Duration:
Transit Times						

Documents	1	
	2	
	more:	
Security Protocol	YES / NO	If YES, signature date:
Returnable Packaging:	[Comment if applicable]	
Other Comments:		

	Version	Date	Editor:	Approved by:
Reviews:				

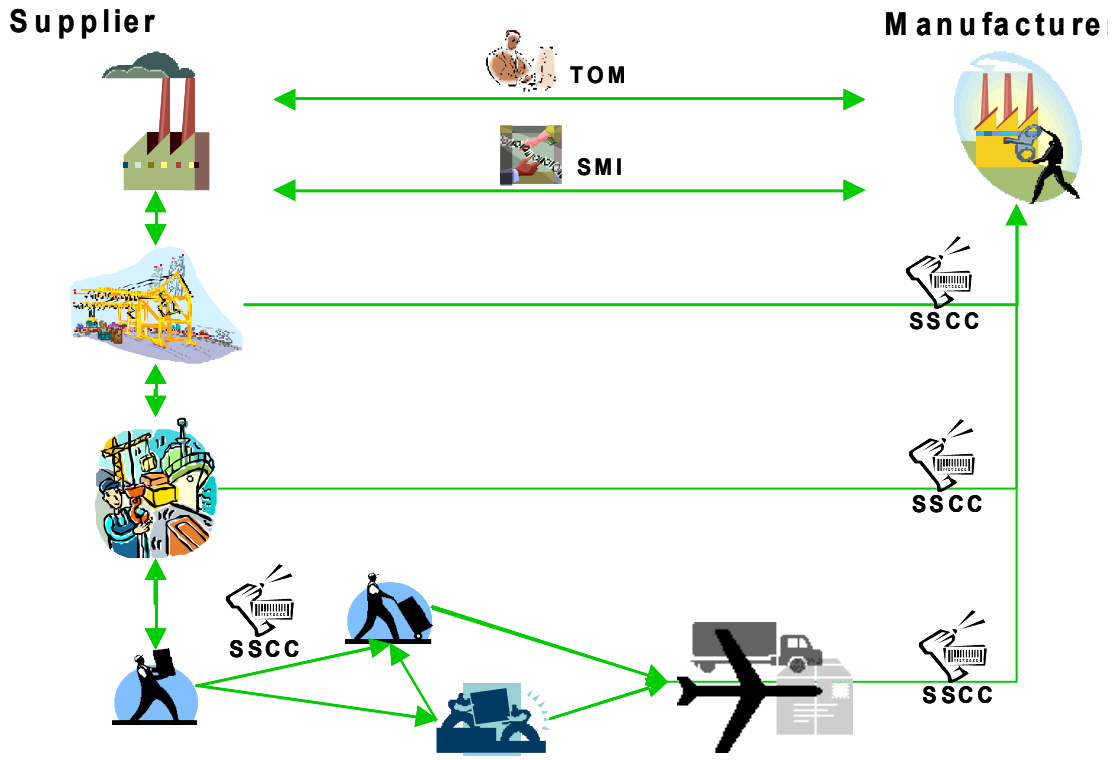
4 ANNEX 2:

➢ GS1 Logistics Label

- Logistic units are items made up for transport and distribution purposes, and pallets are one particular example. Using the GS1 Logistic Label containing the Serial Shipping Container Code (SSCC) allows users to identify logistic units uniquely so that they can be tracked and traced throughout the supply chain. The model only recommends the use of the "product section" of the label (including SSCC). The "carrier" section is not part of the model and will not be applied by the consignor. The LSP may use this section for internal reasons but it would be his responsibility to produce and apply it.

- The carrier section of the label contains information that is generally known at the time of shipment and is typically related to transport. At the time of transport the SSCC is the minimum key information to register from the Logistic Label, and to use it in the further communication, such as the Transport Status Notification.

Applying the SSCC in a transport network with several parties involved.



In the example above the Sender is responsible for transport (as set up in the Integration Agreement). Using the GS1 Logistics Label is recommended and offers recursive tracking/tracing, no matter how complex the transport network and its implied services can become.