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DCSA Information Model 2024.Q1

March 2024

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Version history

Version	Issue	Contributors	Description
1.0	13 February 2020	DCSA	First publication based on the track & trace business requirements
2.0	03 July 2020	DCSA	Second publication, includes the operational vessel schedule domain
3.0	08 December 2020	DCSA	Third publication, includes the electronic bill of lading domain
3.0.1	11 June 2021	DCSA	Addition to the third publication to reflect changes resulting from stream alignment.
3.1	06 July 2021	DCSA	Updated to include JIT port call domain
3.2	12 July 2021	DCSA	Updated to contain additional attribute values for T&T 2.1
3.3	12 October 2021	DCSA	Updated to contain additional attribute values for T&T 2.2
3.4	21 October 2021	DCSA	Updated to contain additional Timestamps for Just-In-Time Port Call 1.1
2022.1 Beta 1	29 March 2022	DCSA	Updated to contain Booking 1.0 and EBL 2.0
2022.1 Beta 2	7 July 2022	DCSA	Added internal IDs for linking (SI, TD and Transport Call), fixed the issuer problem, minor changes
2202.2	15 September 2022	DCSA	Add OVS v3.0 and JIT v 1.2 support
2022.Q4	23 December 2022	DCSA	Add support for T&T v 3.0 Add Support for Active Reefer Settings

Version	Issue	Contributors	Description
2023.Q1		DCSA	Finalize T&T v3.0 Add IoT and Reefer events Minor Active Reefer Setting adjustments Advance Customs Filing System added
2023.Q3		DCSA	Split References into Reference, Customs References and Tax and Legal References Add Dangerous Goods Remove Value Added Services Add Advanced Manifest Filing
2023.Q4		DCSA	Add Commercial Schedules. Update to Booking, eBL, Dangerous Goods. First phase of conversion to OO model.
2024.Q1		DCSA	Incremental update. Changes to Vessel, Consignment Item, Shipping Marks, Seal, eBL Solution Providers.

1 Introduction

1.1 Preface

DCSA envisions a digitally interconnected container shipping industry. Our mission is to be the de facto standards body for the industry, setting the technological foundation for interoperable IT solutions. Together with our member carriers, DCSA creates vendor-neutral, technology-agnostic

standards for IT and non-competitive business practices. By working towards the widespread adoption of these standards, our aim is to move the industry forward in terms of customer experience, efficiency, collaboration, innovation, and respect for the environment.

Please refer to the DCSA website, https://dcsa.org/about/ for more information.

A central objective of DCSA is to strengthen the container shipping industry's ability to send and receive data across all parties in the industry. Furthermore, it aims to enhance inter-carrier cooperation based on shared requirements and to ensure interoperability by using a shared data language. Ideally, this language will be inspired by existing standards and aligned with the process definitions put forth in the DCSA Industry Blueprint. This idea of a shared data language could be compared to the concept of a "ubiquitous language" explored in the seminal book "Domain Driven Design" by Eric Evans.

The standards published by DCSA are vendor neutral. DCSA does not point to the use of specific vendors' technologies or systems but relies on open-source, shared requirements for the industry that can be used by all parties.

This chapter describes the purpose, structure and supporting publications of this document.

1.2 Purpose

The DCSA Information Model has been created to organise and catalogue the information being generated or consumed in connection with the processes described in the DCSA Industry Blueprint. The information model includes a diagrammatic representation of selected data entities and their relationships with one another.

DCSA recognises that there are a variety of standards that exist alongside its efforts. DCSA endeavours to reuse these standards where appropriate within the context of the container shipping industry. Some of these existing standards are more widely adopted than others, such as the UN/CEFACT Multimodal Transport Reference Data Model (MMT RDM). It is the intention of DCSA to constantly evaluate the DCSA Information Model against this and other standards.

1.3 Overview

The DCSA Information Model has been designed to act as a translator between the information requirements identified by the business processes mapped in the DCSA Industry Blueprint and the existing standards for describing reference data relevant to the industry. This helps identify what is already available and where any potential gaps exist that need further investigation. This is depicted in

Figure 1 along with how the DCSA Information Model interacts with the different elements.

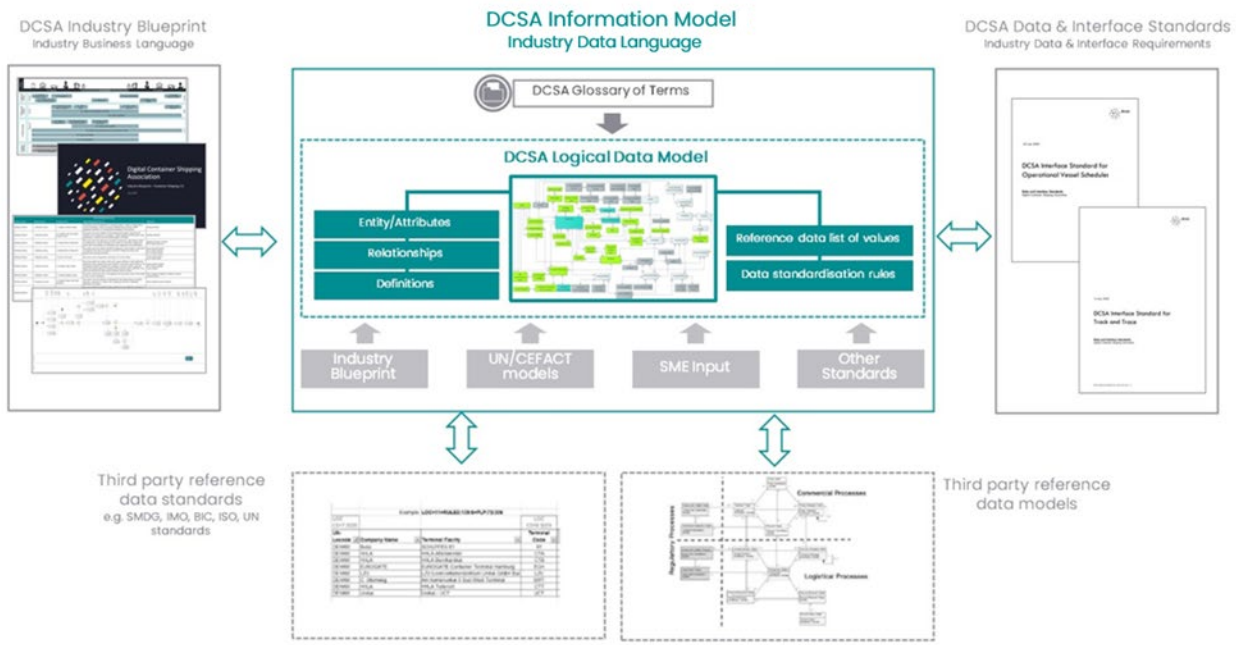


Figure 1: The DCSA Information Model as a translator

1.4 Conformance

All parties in the container shipping industry are encouraged to implement and follow the data requirements outlined and specified in this document. The requirements are linked to the UML version 2.0 diagrams for design requirements as well as the Logical Data Model and data definitions for information requirements, which must be implemented to conform to the agreed standards within the DCSA framework.

1.5 Diagram Conventions

This version of the Information Model is aligned to the first part of a transformation from Entity-Relationship models using "Barker's notation" to Object-Oriented Class models represented using UML 2.5. In this version of the Information Model, only new parts of the model have been transformed to the OO approach. In the next version of this document, there will be a full transition to the OO approach.

1.6 Supporting publications

This document is supported by a range of supplementary DCSA publications, which will be referenced in the relevant sections. The supporting publications are listed in the table below and can be found on the DCSA website https://dcsa.org/

Index	Publication	Descriptions
1	DCSA Web glossary of terms	This document promotes alignment of terms across all DCSA stakeholders in the container shipping industry. The glossary is published on the DCSA website in the context of the DCSA Industry Blueprint.
2	DCSA Industry Blueprint 2023.4	This document provides insights into as-is carrier business processes. The DCSA Industry Blueprint comprises processes related to the movement of equipment from one location to another, processes that are linked to a shipment/booking, processes that are considered critical for industry digitalisation and standardisation efforts, and is limited to processes that are not considered commercially sensitive or of competitive advantage.
3	DCSA Event Naming Convention 2.2, and Event Structure Definitions 2.2	Throughout the years, track & trace solutions have become a commonly seen service in the container shipping industry. However, due to misalignment of terminology and ways of working, each carrier has designed its own events that have been published on their websites. To align this across the industry, this document provides a naming convention that sets the standard for naming as well as understanding customer-facing track & trace events.

Index	Publication	Descriptions
4	DCSA Operational Vessel Schedules Definitions 3.0	This document provides standardised terminology and definitions with respect to communication of operational deep-sea (inter-regional) vessel schedules between Vessel Sharing Agreement (VSA) partners. The purpose is to facilitate standardisation and accuracy in partner communication and hence reduce the pain-points that carriers raised in this area. It is understood that not all VSA's (or carriers) apply *all* processes, but for the sake of completeness, the full process definitions are shared with all members. The purpose is to standardise what and when partners communicate (and to whom) with respect to operational vessel schedules and related exception management. The definitions and time specifications add context to the vessel schedule process maps that have been circulated separately to members.
5	DCSA Interface Standard for Track & Trace 2.2 and respective Reading Guide	The DCSA Interface Standard for Track & Trace 2.2 has been created to standardise the fundamental information provided across the carrier liner domain through track & trace interfaces. The reading guide provides insight into the different concepts and methods utilised in the production of the Track & Trace Interface Standard and suggests ways in which the document can be used as a foundation for future implementations.

Index	Publication	Descriptions
6	DCSA Interface Standard for eBL 3.0-Beta-1 and respective Reading Guide	The DCSA Interface Standard for Shipping Instructions and Electronic Bill of Lading has been created to simplify the exchange of shipment-related information between shipper and carrier (upon booking confirmation) and to support the standardisation of the documentation process. The standard addresses submission of shipping instructions from the shipper to the carrier and issuance of a transport document by the carrier to a shipper. The reading guide provides insight into the container shipping documentation process and specifically addresses the "prepare bill of lading" and "issue bill of lading" processes for specific transport document types (Bill of Lading or Sea Waybill).
7	DCSA Interface Standard for Just In Time Port Call 1.2-Beta-1	The objective of the DCSA Interface Standard for Just-In-Time Port Call is to strengthen the container shipping industry's ability to send and receive operational port call data across the parties in the industry in a digital way.
8	DCSA Interface Standard for OVS 3.0	The objective of the DCSA Interface Standard for Operational Vessel Schedules 3.0 is to simplify the exchange of information related to vessel schedules between vessel operators.

Index	Publication	Descriptions
9	DCSA Interface Standard for the Booking process 2.0-Beta-1	The DCSA Interface Standard for Booking request and Booking confirmation has been created to simplify the exchange of booking-related information between shipper and carrier and to support the standardisation of the documentation process. The standard addresses submission of the booking request from the shipper to the carrier and booking confirmation by the carrier to a shipper. The reading guide provides insight into the container shipping documentation process and specifically addresses the “booking request” and “booking confirmation” processes for transport of general goods.

Table 1: Supporting publications

2 DCSA Information Model 2023.Q4

This chapter describes the terms and data types used in this document.

2.1 Introduction

The DCSA Information Model 2023.Q4 refers to the collection of artefacts and products that document and define the reviewed and agreed data standards that must be followed within the DCSA framework. The adoption of the industry standards in the DCSA Information Model 2023.Q4 will help ensure the ongoing standardisation and optimisation of interoperability and data exchange between the parties in the container shipping industry as well as other stakeholders working within the industry.

As depicted in the diagram below, the DCSA Information Model 2023.Q4 consists of the following artefacts and products:

- Logical data model: A diagrammatic representation of:
  - Data entities and the data attributes that store details about the entities
  - The relationships that exist between data entities
  - Standardised names of data entities and data attributes, for example, equipment versus container; definitions of the entities and attributes are stored as part of the metadata for the model.
- Standardised code lists: These are codes that are used to define attributes that can exist in various possible fixed states, that must be clearly communicated within and between organisations.
- Data standardisation rules: When a predetermined data value cannot be offered, the data standardisation rules can help with the generation of consistent data values.

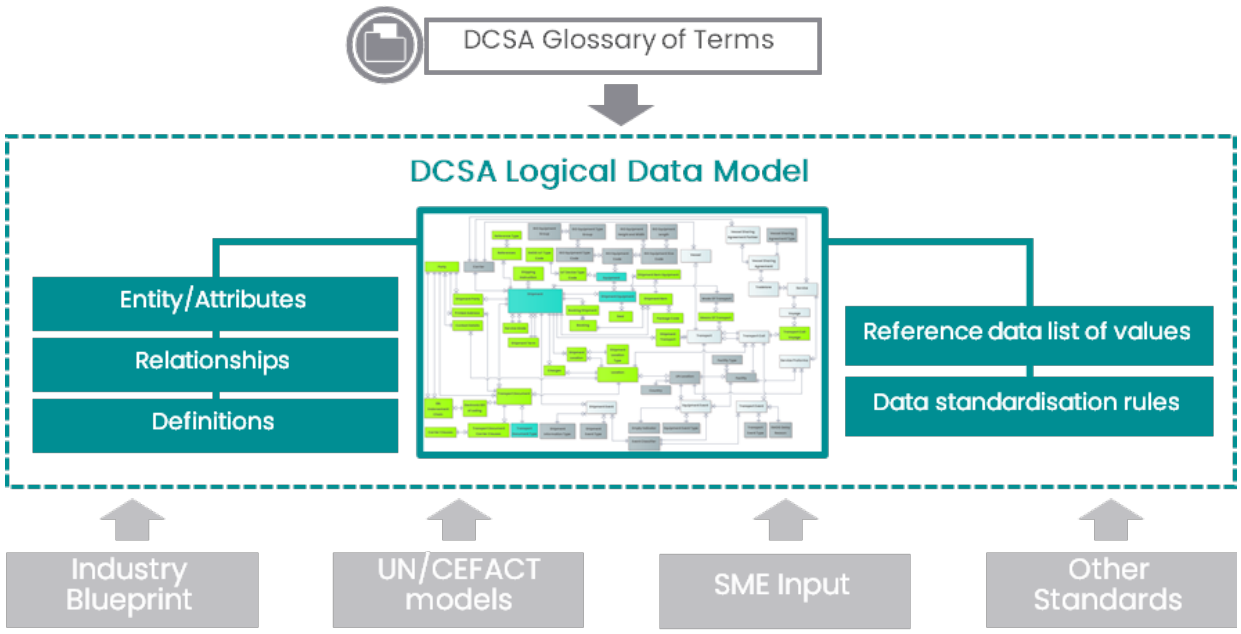


Figure 2: Overview of the contents of the DCSA Information Model

The DCSA Information Model 2023.Q4 has been designed to support a shared understanding of concepts, terms, and rules within the shipping industry. The principles behind the creation of the

model have been to look to the current standards used within the industry and to reuse these standards where appropriate or propose new ones where a usable standard could not be found. The key input for the DCSA Information Model 2023.Q4 includes:

- DCSA Industry Blueprint: Comprises recommended current-state standards for the processes used in container shipping. The terminology used in the Information Model has primarily been aligned with the DCSA Industry Blueprint terminology.
- DCSA Web glossary of terms: Definitions of terms used across DCSA in an industry-specific language.
- UN/CEFACT models: The Multimodal Transport (MMT) Reference Data Model (RDM) has been used as a key resource to help define and standardise entities within the Logical Data Model.
- SME input: Input from the appointed subject matter experts (SMEs) among the DCSA members.
- Other Standards: DCSA regularly checks which other relevant standards are being used and where possible, will re-use proven standards.

The model deals with industry data at logical and conceptual levels rather than applying physical naming conventions, configured in, for example physical databases. Therefore, the DCSA Information Model must be considered as the container shipping industry's reference data model helping users of the model to understand how data is generated/consumed as a result of the execution of industry processes and how these data can be mapped in a logical way.

2.2 Selected data modelling terms defined

The table below provides a definition of selected terms used throughout this document and provides the reader with insight into the meaning of the term and the origin of the definition. Specific terms and definitions that are indispensable for this document may include alternative or reproduced definitions from existing standards, or they may be referenced as a shared understanding within DCSA.

Term	Definition
Data Entity	A class in a data model (e.g. in The Logical Data Model, *Equipment* is a data entity).
Information Model	The information model refers to a collection of artefacts and products that help define the information that is relevant to the container shipping industry.
Logical Data Model	An abstraction of the data architecture that provides structure and clarity but is independent of a physical implementation or any particular persistence technology or network protocol. It provides information about the entities, the relationships between those entities and how they can be grouped together in "bounded contexts".

Term	Definition
Code Lists	Standardisation often requires code lists. These are fixed lists of specific values that certain attributes may hold. Code lists are often used to categorise other data. It is the role of DCSA as a standardisation body to give precise definitions of these codes in order to support consistent semantics.

Table 2: Selected data modelling terms

2.3 The DCSA Information Model data types and formats

For each data attribute that the Logical Data Model points to, a data type has been selected to provide additional details that have already been identified.

This version of the Information Model represents a transitional phase during alignment to the UN/CEFACT Core Components Data Type Catalogue. Some models are presented using these conventions. In future versions of this Information Model, this transition will be completed.

Where the UN/CEFACT Data Types are not used, an overview of the different data types utilised is presented in the table below. When the data type is selected, the reasoning below is applicable throughout this document.

Data type	Usage rule
Text	The Text data type stores strings in a variable-length field. Data can consist of letters, numbers, and symbols. In cases where there is a maximum number of characters allowed, the maximum number of characters allowed will be indicated in brackets, e.g., Text(100) is used when the length of the data field can vary up to a maximum of 100 characters.
Number	The Number data type represents a number, potentially a decimal, i.e., with digits after the decimal point.

Data type	Usage rule
DateTime	A DateTime is only meaningful in relation to a specific location. The DateTime attribute should always be specified as UTC or with a UTC Offset to provide context as to which time zone (location) the DateTime relates to. If no UTC-related offset is given, the time is assumed to be in local time. However, this might result in ambiguity and confusion when used across time zones or even within the same time zone if the region observes daylight saving time (DST). If the time is provided in UTC, append a Z directly after the time. Z (also "Zulu" time zone) is the zone designator for UTC±00:00: 'YYYY-MM-DDThh:mm:ssZ'. Negative UTC offsets describe a time zone west of UTC±00:00, where the time is behind UTC. For example, Quito is five hours behind UTC, so the time zone designator is "-05:00". The DateTime '2019-12-31T12:00:00-05:00' and '2019-12-31T17:00:00Z' describe the same point in time in Quito. Positive UTC offsets describe a time zone east of UTC±00:00, where the time is ahead of UTC. For example, Luanda is one hour ahead of UTC, so the time zone designator is "+01:00". The DateTime '2019-12-31T12:00:00+01:00' and '2019-12-31T11:00:00Z' describe the same point in time in Luanda. The plus sign must be used for a positive or zero UTC offset, and a minus sign for a negative UTC offset. Hence the UTC offset -00:00 is not permitted. For London, the time zone designator would be +00:00 (not -00:00), and +01:00 during daylight saving time. DateTime format without UTC-related offset (local time): 'YYYY-MM-DDThh:mm:ss'. DateTime format with UTC Offset: 'YYYY-MM-DDThh:mm:ss±hh:mm'. DateTime format in UTC: 'YYYY-MM-DDThh:mm:ssZ'.
Boolean	The Boolean data type is used to specify a true or false value.

Table 3: Data type overview

2.3.1 Attribute Naming Conventions

To maintain consistency in the Logical Data Model, certain labels are used repeatedly to make the meaning of these attributes a bit clearer.

The table below shows a selection of the labels that certain types of attributes use consistently.

Format	Format usage rule
Code	(For code lists) A business code used to uniquely identify the state of a particular attribute. These codes may be recognisable by the business community and therefore have a business meaning.
Name	(For code lists) A short description of what the reference data value is; this is the value that will usually be used in reporting.
Description	(For code lists) In cases where an additional explanation may be beneficial, a description may be included.
ID	An identifier used to indicate UUIDs.
Reference	An identifier, that is specifically unique only within the scope of one application provider. This is used to make the model easier to understand and preserve relationships. These are not real-world business keys but are in some cases intended to be referenced by the interface standards.
DateTime	In the current version of the model, the DateTime suffix and data type is used to denote instances where only a date needs to be captured and where both the date and time need to be captured. This is to allow for flexibility given the variances in how data may be stored by different organisations. If only the date is captured, the time will consist of zeros for HH:MM:SS (00:00:00). Note: A UTC-related offset should not be specified because these are only meaningful in combination with a time. The date is assumed to be local in relation to the location the date is referring to.

Table 4: Data attribute naming conventions

3 Logical Data Model

The Logical Data Model details the entities and their relationships with one another. An entity is a class that can have information stored about it, for example, Shipment, Equipment, and Transport. A relationship describes the industry data-related rules between two entities.

In many cases, entity data is generated as unique transactional records, for example, a booking whose data cannot be predetermined in the same way that reference data can. However, it is important for DCSA to point to specific formats or conventions that can be followed to avoid duplicated information (for example, two unique instances of equipment with the same reference number) or incompatible data formats (for example, conflicting date formats such as 2 March 2010 written as 02/03/2010 versus 2010-03-02).

Regarding code lists, a holistic dataset will be described to ensure that the data is accurate and will yield the same results no matter who uses them. Within each subject area in the subsequent sections, the code lists which DCSA recommends will be cited. In cases where a standard already exists, and it has been agreed within DCSA to utilise the standard, it will be referenced; otherwise it will be specified where a new dataset is created.

In general, the Logical Data Model is a work-in-progress model, limited in size by the scope of each release. Therefore, the model will transform and grow over time and, for example, cover more breadth per relevant subject area in subsequent releases.

4 Logical Data Model usage

The DCSA Information Model 2023.Q4 has been designed to act as a translator between the information requirements identified by the business processes mapped in the DCSA Industry Blueprint, and the existing standards for describing reference data relevant to the industry.

The model has been built iteratively, with focus being given to certain parts of the model that are relevant to fulfil track & trace, vessel schedules, booking and electronic bill of lading requirements. Therefore, certain sections of the model will be more advanced than others, although the model has evolved and will continue to evolve over time.

DCSA is in the process of migrating the Information Model from an "entity-relationship" model to an "object-oriented" class model. This transformation will also divide the model into a "shared kernel" and a series of "bounded contexts", following the influential ideas originally proposed by Eric Evans in "Domain Driven Design". This transition will be performed iteratively and pragmatically. As such, this version of the Information Model has new models in the OO style, and models form previous versions in the ER style.

The aim of this section is to highlight the relevant parts of the model that have been developed for specific requirements.

4.1 Track & Trace (T&T)

The entities that are needed to fulfil the requirements to be able to track and trace a shipment are shown in the figure below.

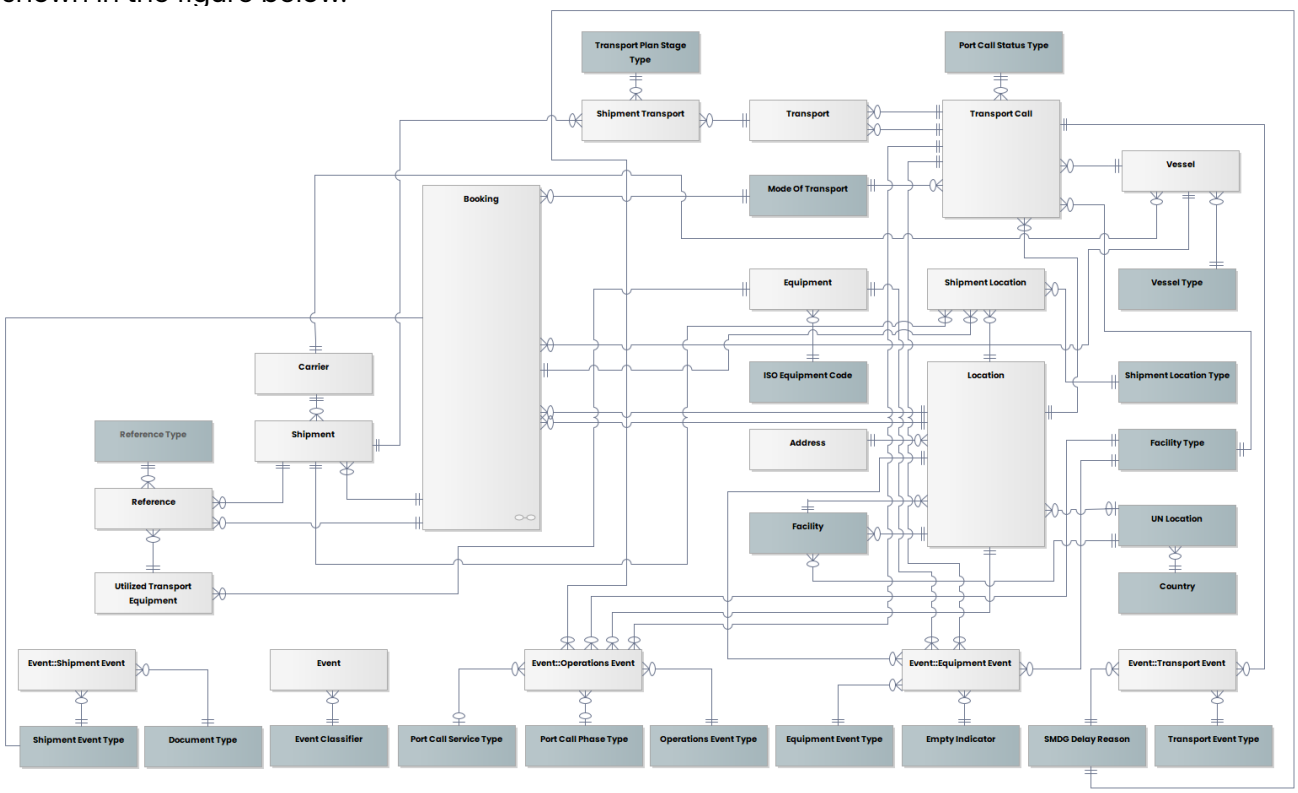


Figure 3: Logical Data Model for track & trace

The objective behind the use case of tracking and tracing a shipment is to identify the equipment and the transportation modes used for moving goods, rather than tracking and tracing the goods themselves or the contents of the equipment used in fulfilling the shipment.

The key entities are:

- Shipment: Uniquely identifies the shipment that needs to be tracked and traced.
- Equipment: Identifies the equipment(s) used to transport the goods belonging to the shipment.
- Transport: Identifies which modes of transport (truck, rail, vessel, or barge) are involved in the shipment.
- The three Event (Transport/Shipment/Equipment) entities: 'Shipment events' describe actions that occurred or have been planned to occur in relation to a booking or transport document, such as the booking confirmation. 'Transport events' describe the movements of the transport instances that are associated with the particular shipment or equipment item. 'Equipment events' describe the movements of an equipment item as part of the freight transportation. The previous sections in this document have outlined these elements.

For tracking and tracing, the primary parties are:

- The sender/receiver (shipper/consignee) of goods wanting to maintain information about the goods being transported. The details of these parties are stored in the Shipment entity.
- The main party contracting the movement of the goods, which, from DCSA's point of view, is the ocean carrier. The Carrier entity stores the details of this party.

4.2 Operational vessel schedules (OVS)

The entities that are needed to fulfil the requirements of sharing operational vessel schedules are shown in the figure below:

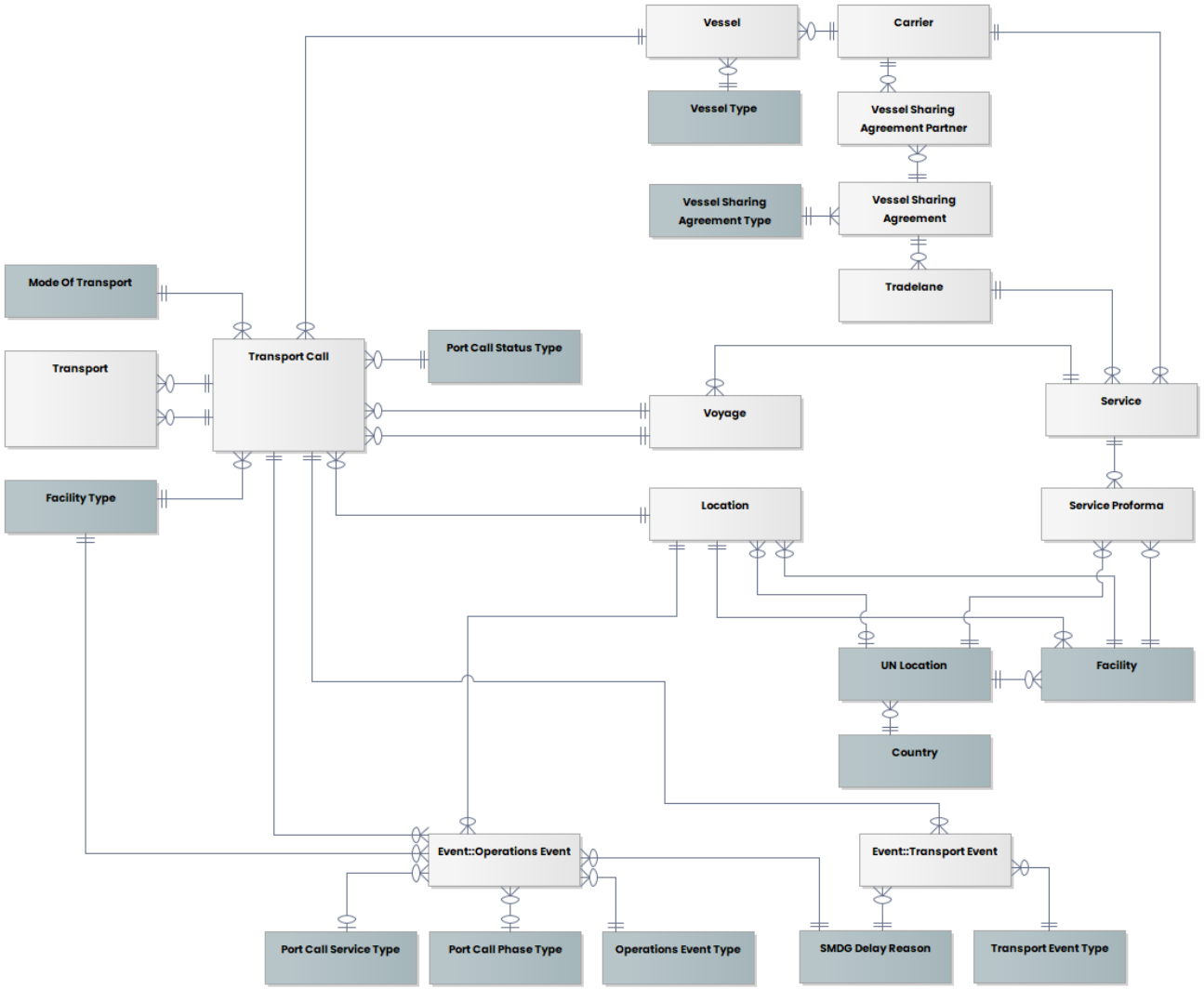


Figure 4: Logical Data Model for operational vessel schedules

In addition to track & trace, the Logical Data Model (LDM) includes a standard of information relevant for operational vessel schedules. The focus is on container liner long-term and coastal schedules,. Although proforma schedules are not covered by the current release, the LDM has modelled the Service and Service Proforma entities for completeness and additional context, with the expectation that these will be further developed in the future. Hence, the Service Proforma entity simply represents the latest version of the proforma, not accounting for historical amendments. Likewise, VSAs have been modelled with minimal details to simply provide the context for how the operational vessel schedules are ultimately related to existing vessel sharing agreements.

The following are currently not in scope:

- Feeder schedules

- Liner schedules that are not part of VSAs

The model for OVS revolves around vessel-related events. It mainly concerns the vessel operator (how the shipment in practice is transported from the origin to the destination). This customer-provider relationship is naturally expressed through products. The transport plans of the products are modelled by the shipment transport entity which describes how the shipment is routed through the liner network.

The OVS requirements heavily focus on the transport (journey) subject areas. Although for the track & trace requirements, the generic transport entities were sufficient, OVS needs additional details which have been modelled as sub-type entities of Vessel and Voyage.

4.3 Commercial Schedules

The classes that are needed to fulfil the requirements to encompass commercial schedules requests are shown in the UML class diagram below.

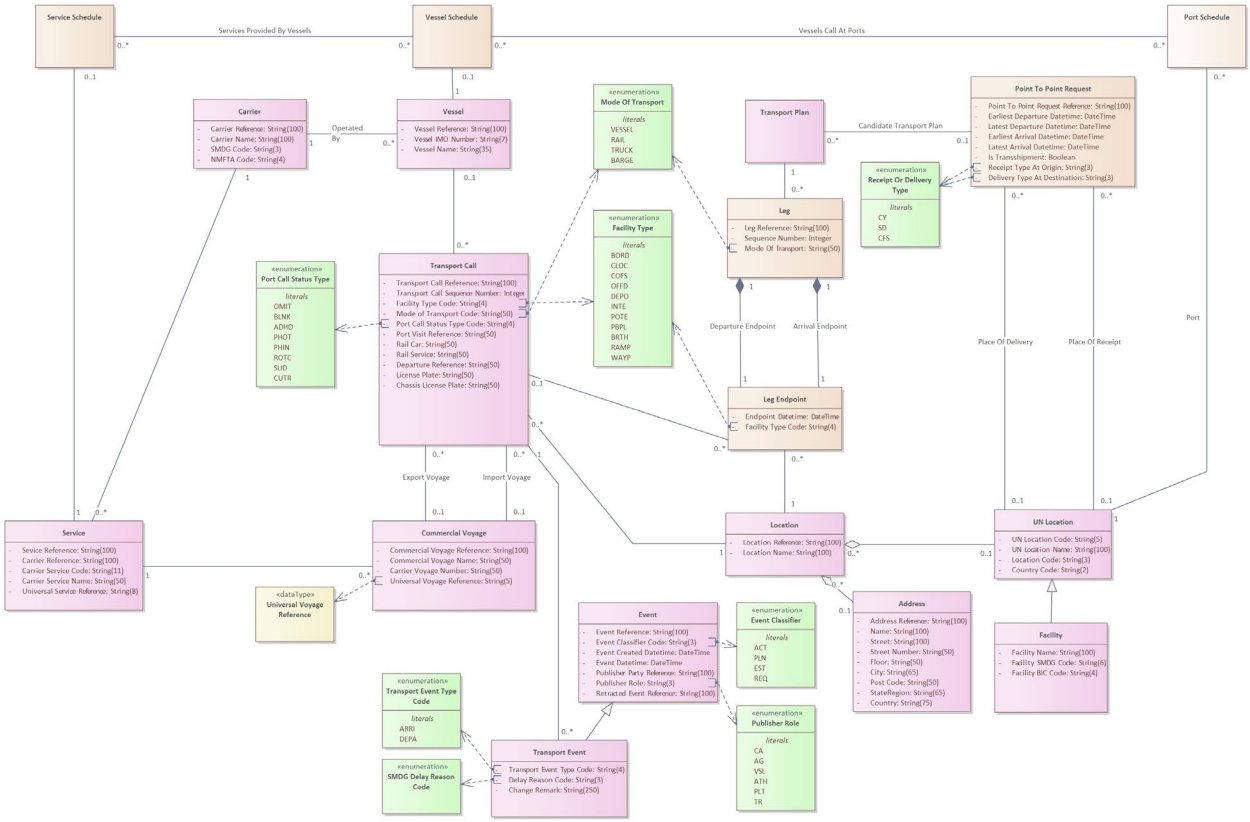


Figure 5: Logical Data Model for Commercial Schedules

The model for Commercial Schedules allows consistent schedule result sets to be delivered based on different kinds of queries. These could be queries based on Services, Ports or Vessels which are essentially different views on the set of "schedules" that an ocean carrier can provide.

Alternatively, queries may be based on a specific point-to-point request for multimodal transport. This type of query is a combination of non-ocean legs and ocean legs, and is more dynamic that the other types of query.

The Information Model is largely based on a subset of the model used for OVS. It links Vessels to Transport Calls, which are linked to Locations and combined to form Commercial Voyages. These Commercial Voyages are recognised as being different from Operational Voyages. Commercial Voyages are always associated with one Service.

In order to support dynamic queries, the concept of a Point To Point Request is introduced. This captures the criteria for a candidate Transport Plan that could match. These Transport Plans consist of multimodal Legs. Legs have an arrival Leg Endpoint and a departure Leg Endpoint.

For ocean Legs, these Leg Endpoints are associated with Transport Calls. This provides the link back to the commercial schedule provided by the ocean carrier.

4.4 Booking and Transport Document

The main classes that are needed to fulfil the requirements to encompass the Booking and Transport Document processes are shown in the UML class diagram below. Note that this is not intended to illustrate all classes, merely those that are most significant. Diagrams later in this document illustrate the full set of classes.

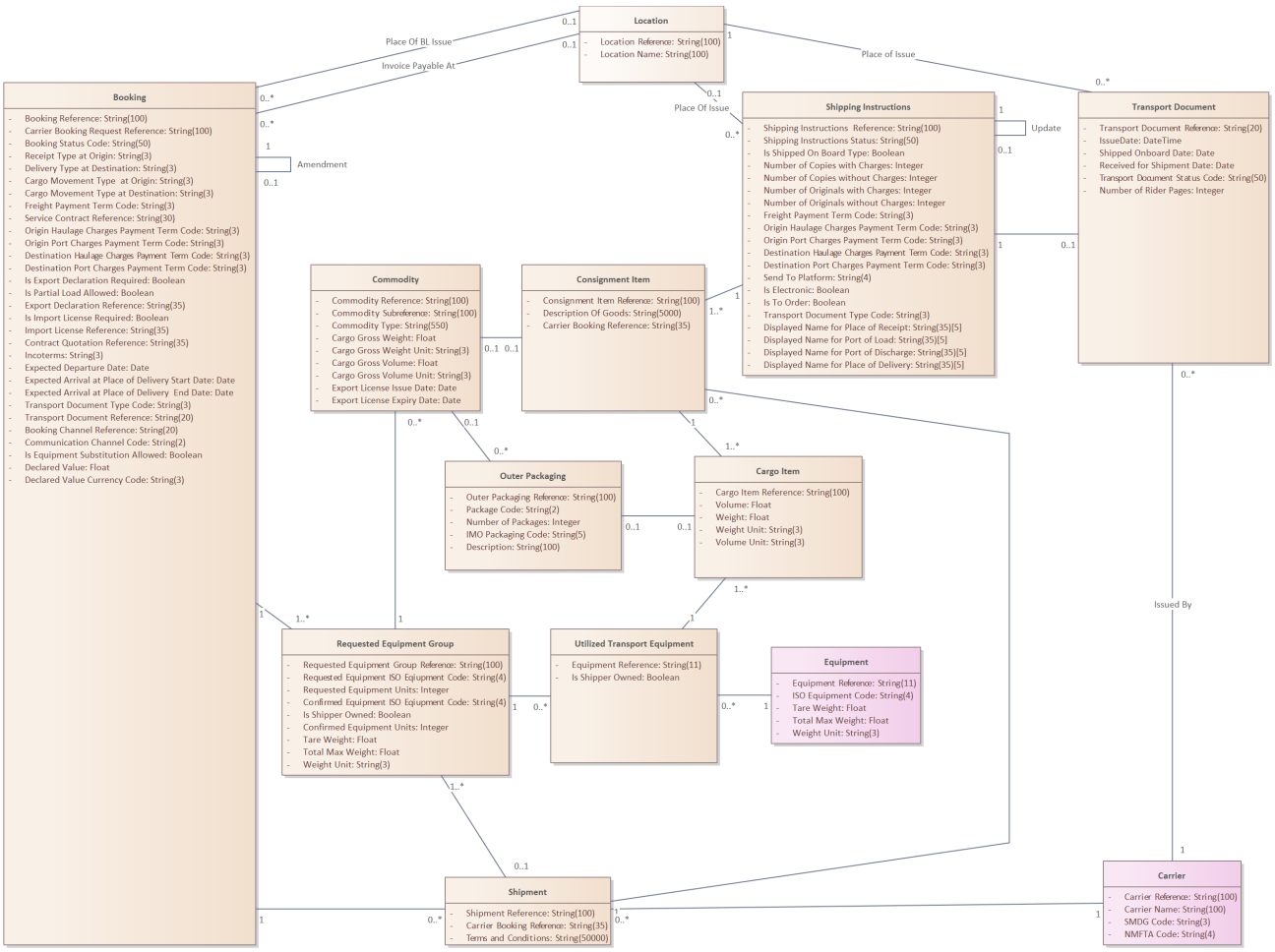


Figure 6: Overview Logical Data Model for Booking and Transport Document

The purpose of this area of the Information Model is to enable the process coverage from booking confirmation to issuance of transport document while capturing all the relevant information details, excluding out-of-gauge, from both an operational and a documentation perspective.

The IM reflects the relationship between booking, shipment, cargo items, shipping instructions and transport document, as well as the physical relationship between the container, vessel, and transport plan.

The underlying structure can be thought of as similar to a layered structure. Each of the main process steps amounts to adding an additional layer:

- At the booking request stage, carried out by the shipper, a Booking is created
- At the booking confirmation stage, carried out by the carrier, a Shipment is added, including its transport plan

- At the shipping instructions stage, carried out by the shipper, the Shipping Instructions layer is added
- At the Transport Document stage, carried out by the carrier, the Transport Document layer is added

Although this layered structure is a useful way to think about Booking and Transport Document, it is important to understand that the relationship between Booking and Transport Document is not always one-to-one.

Furthermore, during early stages of the booking process, ocean carriers often hold incomplete initial booking requests that may not adhere to all constraints and may not be valid requests.

The model also addresses how individual cargo items are stuffed into containers in relation to the shipping instructions and respective transport documents. A many-to-many relation between shipment and transport document is created through cargo items and shipping instructions. The model encompasses the fact that transport documents, i.e. Sea Waybill and Bill of Lading, can be issued both physical and digitally (eBL) as well as negotiable or non-negotiable.

The model aligns with the UN/CEFACT MMT reference data model in terms of defining shipment in relation to a booking as well as shipment in relation to a transport document (consignment in UN/CEFACT terms).

5 Bounded Contexts in the Logical Data Model

The Logical Data Model is split into bounded contexts (sometimes referred to as "subject areas") to provide a more focused overview of each part of the model. Each bounded context is related to a set of identified business processes from the DCSA Industry Blueprint.

Overarching concepts are modelled as a "shared kernel". Code lists are considered to be part of the "shared kernel", available for reuse in different bounded contexts. In the UML diagrms, the classes from the "shared kernel" are shown in a light mauve colour. In this version of the document the "shared kernel" is not detailed further, but it will be described in future versions.

Within each bounded context, an overview of and insight into related code lists are provided. Where existing code lists from other agencies are used, the source will be stated. Otherwise, an alternative source will be specified.

5.1 Booking

Although the Booking and Transport Document processes are coupled, and therefore considered as a single "bounded context", it is possible to describe two different perspectives, one focussed on Booking and the other focussed on Transport Document.

The booking perspective has a primary focus on the booking request and booking confirmation business processes. This includes the core information about the booking, information about the commodities to be shipped, information about the requested equipment, information about dangerous goods.

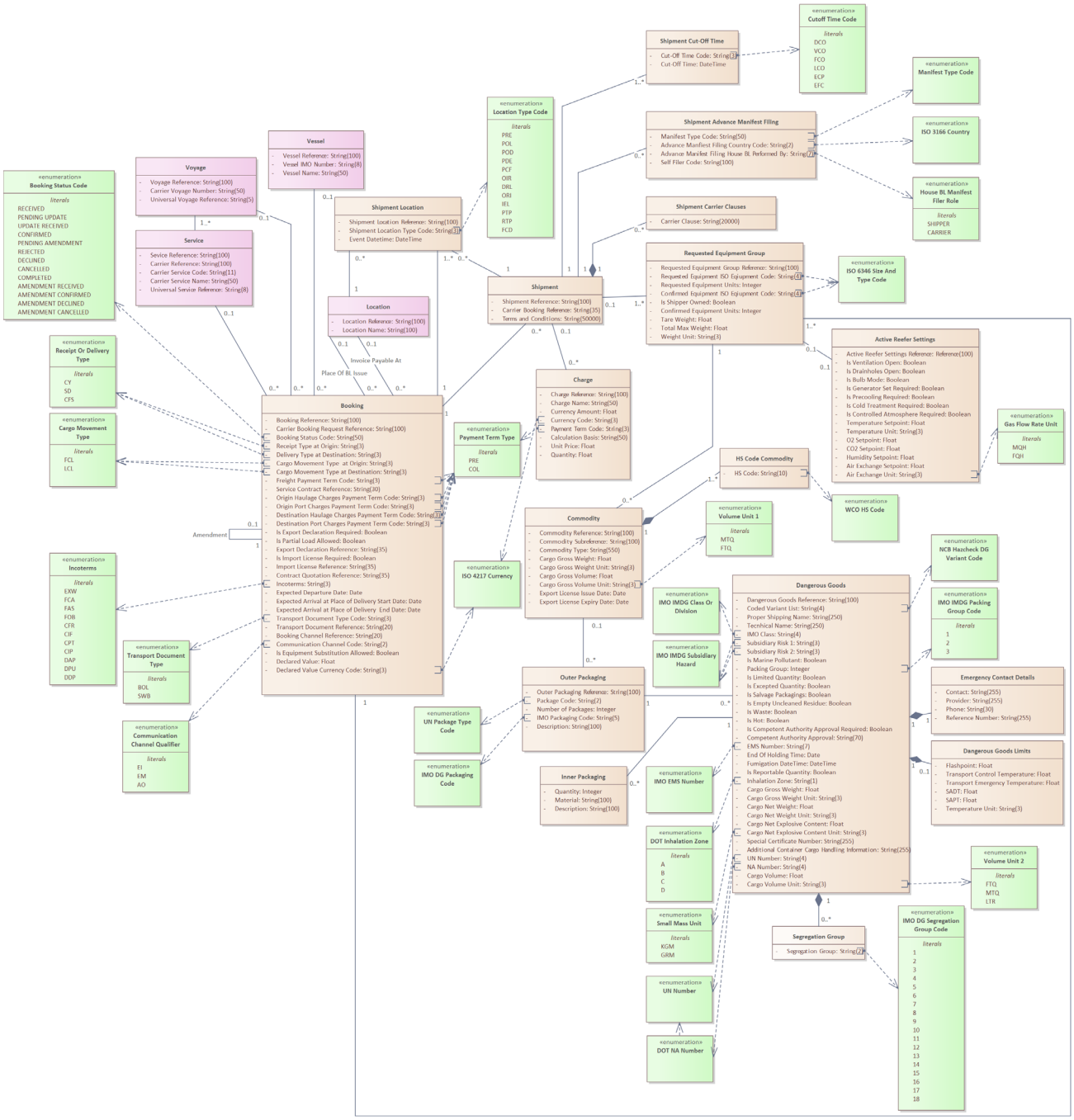


Figure 7: Booking and related entities

The term shipment has been defined in accordance with the DCSA Industry Blueprint and relates directly to the booking confirmation sent by a carrier to a customer. A Shipment is an identifiable collection of one or more Cargo Items (available to be) transported together from the Seller(s) (Original Consignor/ Shipper) to the Buyer(s) (Final/ Ultimate Consignees).

A shipment may form a part or all of a transport document (UN/CEFACT' Consignment) or may be transported in different transport documents. As such, the definition of a shipment aligns with the UN/CEFACT MMT reference data model.

The entities related to booking are defined and detailed in the following tables.

Booking entity: a reservation of space and/or equipment for a vessel/voyage and possibly inland transport with a specific origin/destination/equipment type and commodity.

At certain points in the booking process, an amendment may be held which in another Booking object (forming a recursive association in UML class modelling). From the Logical Information Model perspective, this is considered to be a "deep copy" in order to make it clear what "1" means in the multiplicity of associations with Booking. This does not mean that "deep copies" are expected or required in real implementations – it is an abstraction within the model.

Attribute	Definition	Data type
Booking Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit. This is considered to be an internal attribute not exposed via APIs.	String(100)
Carrier Booking Request Reference	An Identifier provided as a response to a booking request	String(100)
Booking Status Code	The status of the booking in the process.	String(50)
Receipt Type at Origin	Indicates the type of service offered at Origin. Options are defined in the Receipt / Delivery Type entity	String(3)
Delivery Type at Destination	Indicates the type of service offered at Destination. Options are defined in the Receipt / Delivery Type entity	String(3)

Attribute	Definition	Data type
Cargo Movement Type at Origin	Refers to the Cargo Movement Type at the loading of the cargo into the container. Options are defined in the Cargo Movement Type entity	String(3)
Cargo Movement Type at Destination	Refers to the Cargo Movement Type at the unloading of the cargo out of the container. Options are defined in the Cargo Movement Type entity	String(3)
Service Contract Reference	Reference number for agreement between shipper and carrier through which the shipper commits to provide a certain minimum quantity of cargo over a fixed period, and the carrier commits to a certain rate or rate schedule	String(30)
Freight Payment Term Code	An indicator of whether freight and charges for the main transport are prepaid or collect	String(3)
Origin Charges Payment Term Code	An indicator of whether origin charges are prepaid or collect	String(3)
Destination Charges Payment Term Code	An indicator of whether destination charges are prepaid or collect	String(3)

Attribute	Definition	Data type
Is Partial Load Allowed	An indication of whether the shipper agrees to load part of the shipment when not all of the cargo is delivered within the cut-off	Boolean
Is Export Declaration Required	Information provided by the shipper indicating whether an export declaration is required for this particular shipment/commodity/ destination	Boolean
Export Declaration Reference	A reference to a government document permitting designated goods to be shipped out of the country. Reference number assigned by an issuing authority to an Export License. The export license must be valid at time of departure	String(35)
Is Import License Required	Information provided by the shipper indicating whether an import permit or license is required for this particular shipment / commodity / destination	Boolean
Import License Reference	A certificate, issued by countries exercising import controls, that permits importation of the articles stated in the license. Reference number assigned by an issuing authority to an Import License. The import license number must be valid at time of arrival	String(35)

Attribute	Definition	Data type
Contract / Quotation Reference	Information provided by the shipper to identify whether pricing for the shipment has been agreed via a contract or a quotation reference. Mandatory if service contract (owner) is not provided	String(35)
Incoterms	Transport obligations, costs and risks as agreed between buyer and seller	String(3)
Expected Departure Date	The date when the shipment is expected to be loaded on board a vessel as provided by the shipper or its agent	Date
Expected Arrival at Place of Delivery Start Date	The start date (provided as a range together with Expected Arrival Date End) for when the shipment is expected to arrive at Place of Delivery	Date
Expected Arrival at Place of Delivery End Date	The end date (provided as a range together with Expected Arrival Date Start) for when the shipment is expected to arrive at Place of Delivery	Date
Transport Document Type Code	Specifies the type of the associated Transport Document (Bill of Lading or Sea Waybill)	String(3)
Transport Document Reference	The unique identifier of the transport document that the booking concerns	String(20)

Attribute	Definition	Data type
Booking Channel Reference	Identification number provided by the platform/channel used for booking request/confirmation", e.g. Inttra booking reference, or Infor Nexus, other	String(20)
Communication Channel Code	Specifying which communication channel is to be used for this booking, e.g., EM (email), AO (Uniform Resource Location – "API"), EI (EDI)	String(2)
Is Equipment Substitution Allowed	Indicates if an alternate equipment type can be provided by the carrier	Boolean
Declared Value	The value of the cargo that the shipper declares to avoid the carrier's limitation of liability and "Ad Valorem" freight, i.e., freight which is calculated based on the value of the goods declared by the shipper	Float
Declared Value Currency Code	The currency used for the declared value, using the 3-character code defined by ISO 4217	String(3)

Association	Notes	Multiplicity
Vessel		0..1
Voyage		0..1

Attribute	Definition	Data type
Location Place of B/L Issue	Links to the Location to specify where the original transport document (bill of lading) will be issued – this could be the Carrier Office.	0..1
Location Invoice Payable At	Links to the Location where payment will take place by the customer. Usually refers to Basic Ocean Freight alone.	0..1
Party Contact Details	A set of Party Contact Details associated with the Booking	0..*
Document Party		0..*
Requested Equipment Group		1..*
Shipment		0..*
Shipment Location		1..*
Service		0..1
Reference		0..*

Table 5: Booking entity

Shipment entity: an identifiable collection of one or more Cargo Items (available to be) transported together from the Seller(s) (Original Consignor/Shipper), to the Buyer(s) (Final/ Ultimate Consignee).

Attribute	Definition	Data type
Shipment Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)

Attribute	Definition	Data type
Terms and Conditions	Carrier general terms and conditions for this shipment	String(50000)
Carrier Booking Reference		String(35)

Association	Notes	Multiplicity
Booking		1
Carrier	Links to the carrier entity containing the SCAC and/or the SMDG code to specify the responsible carrier	1
Consignment Item		0..*
Document Party		0..*
Requested Equipment Group		1..*
Shipment Carrier Clauses		0..*
Shipment Location		0..*
Shipment Transport		0..*
Shipment Cut-off Time		1..*

Attribute	Definition	Data type
Shipment Advance Manifest Filing		0..*
Reference		0..*
Charge		0..*

Table 6: Shipment entity

Requested Equipment Group entity contains the information about requested versus confirmed number and types of equipment for the shipment.

Attribute	Definition	Data type
Requested Equipment Group Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Requested Equipment ISO Equipment Code	Size and type of the requested Equipment for this shipment	String(4)
Requested Equipment Units	Number of requested equipments.	Integer
Confirmed Equipment ISO Equipment Code	Size and type of the allocated Equipment for this shipment	String(4)
Confirmed Equipment Units	Number of confirmed equipments	Integer
Is Shipper Owned	Indicator if the container(s) is Shipper Owned (SOC)	Boolean

Attribute	Definition	Data type
Tare Weight	When the Requested Equipment Group is shipper owned, the shipper must also provide the tare weight of the Equipment that they will supply.	Float
Total Max Weight	When the Requested Equipment Group is shipper owned, it may be required to also hold information about the maximum weight that the equipment can support.	Float
Weight Unit	When the Requested Equipment Group is shipper owned, the shipper must also provide the weight unit for the tare weight of the Equipment that they will supply.	String(3)
Association	**Notes**	**Multiplicity**
Booking	A unique internal identifier to identify a Booking	1
Shipment	Identifies the associated shipment	0..1
Active Reefer Settings	Identifies a possible Active Reefer Setting for this Equipment Group	0..1
Commodity	Identifies the commodity associated with the Requested Equipment	0..*
Utilised Transport Equipment	Identifies the equipment that is actually used for the request.	0..*

Table 7: Requested Equipment Group entity

Commodity entity contains the type of goods in the booking, each defined by its commodity type, HS code and Cargo Gross Weight.

Attribute	Definition	Data type
Commodity Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Commodity Subreference	A set of unique characters provided by carrier to identify a Commodity. The reference only needs to be unique within a booking	String(100)
Commodity Type	High-level description of goods to be shipped which allows the carrier to confirm acceptance and commercial terms. To be replaced by "description of goods" upon submission of shipping instructions	String(550)
Cargo Gross Weight	The estimated grand total gross weight of the cargo, including packaging items being carried, which can be expressed in imperial or metric terms, as provided by the shipper.	Float
Cargo Gross Weight Unit	The unit of measure of the cargo gross weight; it can be in either Kilograms or Pounds as provided by the shipper	String(3)
Cargo Gross Volume	Total volume of the Commodity	Float
Cargo Gross Volume Unit	The unit of measure, which can be expressed in either imperial or metric terms, as provided by the shipper	String(3)
Export license issue date	CONDITIONAL. Issue date of the export license applicable to the booking. Mandatory to provide in booking request for specific commodities	Date
Export license expiry date	CONDITIONAL. Expiry date of the export license applicable to the booking. Mandatory to provide in booking request for specific commodities.	Date

Association	Notes	Multiplicity

Attribute	Definition	Data type
Consignment Item	The consignment that includes this commodity.	0..1
HS Code Commodity	The HS codes that classify this commodity.	0..*
Outer Packaging	The packaging that contains the commodity.	0..*
Requested Equipment Group	The requested equipment group for this commodity.	1
Reference	References from other parties associated with this commodity.	0..*

Table 8: Commodity entity

Shipment Cut-Off Time entity: an entity containing the shipment cut-off time attributes of the booking.

Attribute	Definition	Data type
Cut-Off Time Code	Code for the cut-off time type.	String(3)
Cut-Off Time	Actual cut-off time	DateTime
Association	**Notes**	**Multiplicity**
Shipment	Identifies the associated shipment	1

Table 9: Shipment Cut-Off Time entity

Shipment Carrier Clauses entity: addresses the carrier clauses for a Shipment, associated via composition.

Attribute	Definition	Data type
Carrier Clause	The text of the actual Carrier Clause	String(20000)
Association	**Definition**	**Multiplicity**
Shipment	The Shipment to which these Carrier Clauses apply.	1

Table 10: Shipment Carrier Clauses entity

HS Code Commodity entity: allows multiple HS Codes to be added to the same Commodity.

Attribute	Definition	Data type
HS Code	The HS Code to be applied to a Commodity or Consignment Item	String(10)
Association	**Definition**	**Multiplicity**
Commodity	The identifier of a commodity	1

Table 11: HS Code Commodity entity

Shipment Advance Manifest Filing entity is a many-to-many relationship between the Shipment and Advance Manifest Filing. This entity allows for multiple Advance Manifest Filings per Shipment

Attribute	Definition	Data type
Manifest Type Code	Identifies the associated Advance Manifest Filing Code	String(50)
Advance Manifest Filing Country Code	Identifies the associated Country for the Advance Manifest Filing Code	String(2)
Advance Manifest Filing House BL Performed By	Indicates whether the shipper (SHIPPER) will perform the Advance Manifest Filing for the House BL directly, or if the carrier (CARRIER) should file it on their behalf	String(7)

Attribute	Definition	Data type
Self Filer Code	Code identifying the party that will submit the Advance Manifest Filing for the House BL	String(100)

Association	Notes	Multiplicity
Shipment	The Shipment pertaining to the Advance Manifest Filing.	1

Table 12: Shipment Advance Manifest Filing entity

Outer Packaging entity specifies information about the packaging. Examples of overpacks are a number of packages stacked on a pallet and secured by strapping, or placed in a protective outer packaging such as a box or crate, to form one unit for more convenient handling and stowage during transport.

Attribute	Definition	Data type
Outer Packaging Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Package Code	A code identifying the outer packaging/overpack as per UN recommendation 21 (https://unece.org/trade/uncefact/cl-recommendations)	String(2)
Number of Packages	Specifies the number of outer packaging(s)/overpack(s)	Integer
IMO Packaging Code	The code of the packaging as per IMO	String(5)
Description	Description of the packaging	String(100)

Association	Notes	Multiplicity
Commodity	The Commodity that is contained in the Outer Packaging.	0..1
Cargo Item	The Cargo Item that is contained in the Outer Packaging.	0..1

Dangerous Goods	The Dangerous Goods that are contained in the Outer Packaging	0..*

Table 13: Outer Packaging entity

Active Reefer Settings entity contains the attributes characterising the reefer for the current shipment as well as static data pertaining to the equipment. One setpoint for Temperature, O_2, CO_2, Humidity and Air Exchange can be applied.

Attribute	Definition	Data type
Active Reefer Settings Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Is Ventilation Open	If true, the ventilation orifice is open. If false, the ventilation orifice is closed	Boolean
Is Drainholes Open	If true, the drain holes are open. If false, the drain holes are closed	Boolean
Is Bulb Mode	Is the special container setting for handling flower bulbs active	Boolean
Is Generator Set Required	Indicator whether reefer container should have a generator set attached at time of release from depot	Boolean
Is Pre Cooling Required	Indicator whether reefer container should be pre-cooled to the temperature setting required at time of release from depot	Boolean
Is Cold Treatment Required	Indicator whether cargo requires cold treatment prior to loading at origin or during transit, but prior to arrival at POD	Boolean
Is Controlled Atmosphere Required	Indicator whether cargo requires controlled atmosphere.	Boolean
Temperature Setpoint	Target value of the temperature for the Reefer based on the cargo requirement	Float

Attribute	Definition	Data type
Temperature Unit	The unit of measure for the temperature which can be expressed in either Celsius or Fahrenheit	String(3)
O_2 Setpoint	The percentage of the controlled atmosphere O2 target value	Float
CO_2 Setpoint	The percentage of the controlled atmosphere CO2 target value	Float
Humidity Setpoint	The percentage of the controlled atmosphere humidity target value	Float
Air Exchange Setpoint	Target value for the air exchange rate which is the rate at which outdoor air replaces indoor air within a Reefer container	Float
Air Exchange Unit	The unit of measure for the Air Exchange which can be expressed in either MQH (Cubic Meters per Hour) or FQH (Cubic Foot per Hour)	String(3)
Association	**Notes**	**Multiplicity**
Requested Equipment Group	The Requested Equipment Group to which these Active Reefer Settings are to be applied.	0..1

Table 14: Active Reefer Setting entity

Dangerous Goods entity contains the attributes characterising Dangerous Goods. The area of Dangerous Goods contains information about dangerous goods cargo. It is possible to specify multiple Dangerous Goods for one Outer Packaging. It is mandatory to specify either a UN Number or an NA Number. The Information Model for Dangerous Goods is based on **IMDG Amendment Version 41-22**.

Attribute	Definition	Data type
Dangerous Goods Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)

Attribute	Definition	Data type
Coded Variant List	Four-character code supplied by NCB Hazcheck Ltd. that assists in removing ambiguities when identifying a variant within a single UN number or NA number that may occur when two companies exchange DG information	String(4)
Proper Shipping Name	The proper shipping name for goods under IMDG Code, or the product name for goods under IBC Code and IGC Code, or the bulk cargo shipping name for goods under IMSBC Code, or the name of oil for goods under Annex I to the MARPOL Convention	String(250)
Technical Name	The recognized chemical or biological name or other name currently used for the referenced dangerous goods	String(250)
IMO Class	The hazard class code of the referenced dangerous goods according to the specified regulation	String(4)
Subsidiary Risk 1	Any risk in addition to the class of the referenced dangerous goods	String(3)
Subsidiary Risk 2	Any risk in addition to the class of the referenced dangerous goods	String(3)
Is Marine Pollutant	Indicates if the goods belong to the classification of marine pollutant	Boolean
Packing Group	The packing group according to the UN Recommendations on the Transport of Dangerous Goods and IMO IMDG Code	Integer
Is Limited Quantity	Indicates if the dangerous goods can be transported as limited quantity in accordance with Chapter 3.4 of the IMO IMDG Code	Boolean
Is Excepted Quantity	Indicates if the dangerous goods can be transported as excepted quantity in accordance with Chapter 3.5 of the IMO IMDG Code	Boolean

Attribute	Definition	Data type
Is Salvage Packagings	Indicates if the cargo has special packaging for the transport, recovery or disposal of damaged, defective, leaking or nonconforming hazardous materials packages, or hazardous materials that have spilled or leaked	Boolean
Is Empty Uncleaned Residue	Indicates if the cargo is residue	Boolean
Is Waste	Indicates if waste is being shipped	Boolean
Is Hot	Indicates if high temperature cargo is being shipped	Boolean
Is Competent Authority Approval Required	Indicates if the cargo requires approval from authorities	Boolean
Competent Authority Approval	Name and reference number of the competent authority providing the approval	String(70)
EMS Number	The emergency schedule identified in the IMO EMS Guide – Emergency Response Procedures for Ships Carrying Dangerous Goods. Comprises 2 values; 1 for spillage and 1 for fire. Possible values spillage: S-A to S-Z. Possible values fire: F-A to F-Z	String(7)
End of Holding Time	Date by when the refrigerated liquid needs to be delivered	Date
Fumigation DateTime	Date & time when the container was fumigated	DateTime
Is Reportable Quantity	Indicates if a container of hazardous material is at the reportable quantity level. If yes, a report to the relevant authority must be made in case of spill	Boolean

Attribute	Definition	Data type
Inhalation Zone	The zone classification of the toxicity of the inhalant. Possible values are A, B, C or D	String(1)
Cargo Gross Weight	Total weight of the referenced dangerous goods per UN Number/NA Number including packaging, but excluding the tare weight of the transport unit. It can be expressed in imperial or metric terms, as provided by the shipper	Float
Cargo Gross Weight Unit	Unit used for the Dangerous Goods Cargo Gross Weight	String(3)
Cargo Net Weight	Total weight of the referenced dangerous goods per UN Number/NA Number, excluding packaging. It can be expressed in imperial or metric terms, as provided by the shipper	Float
Cargo Net Weight Unit	Unit used for the Dangerous Goods Cargo Net Weight	String(3)
Cargo Net Explosive Content	The total weight of the explosive substances, without the packaging, casings, etc	Float
Cargo Net Explosive Content Unit	Unit used for the Cargo Net Explosive Content	String(3)
Cargo Volume	The volume of the referenced dangerous goods. Condition: only applicable to liquids and gas	Float
Cargo Volume Unit	Unit used for the Dangerous Goods Cargo Volume	String(3)
Special Certificate Number	Text field to indicate certificate number & segment for specific stowage requirements	String(255)

Attribute	Definition	Data type
Additional Container Cargo Holding Information	Text field to provide cargo handling information already known at the booking stage	String(255)
UN Number	United Nations Dangerous Goods Identifier (UNDG) assigned by the UN Sub-Committee of Experts on the Transport of Dangerous Goods and shown in the IMO IMDG code	String(4)
NA Number	Four-digit number that is assigned to dangerous, hazardous, and harmful substances by the United States Department of Transportation	String(4)
Cargo Volume	Volume of the Dangerous Goods.	Float
Cargo Volume Unit	The unit of measurement used to specify the volume of the Dangerous Goods.	String(3)

Association	Notes	Multiplicity
Outer Packaging	The Outer Packaging that contains the Dangerous Goods	1
Inner Packaging	The Inner Packaging that contains the Dangerous Goods	0..*
Dangerous Goods Limits	Aggregation to a description of the (temperature) limits for this Dangerous Goods	0..1
Emergency Contact Details	Contact details for the party to be contacted in the event of an emergency regarding this Dangerous Goods.	1
Segregation Group	A set of Segregation Group that are applicable for this Dangerous Goods.	0..*

Table 15: Dangerous Goods entity

Inner Packaging entity specifies information about the inner packaging which is contained inside the outer packaging / overpack for the linked Dangerous Goods. This entity forms part of the Dangerous Goods entity through composition.

Attribute	Definition	Data type
Quantity	Count of inner packaging of the referenced dangerous goods	Integer
Material	The material used for the inner packaging of the referenced dangerous goods	String(100)
Description	Description of the packaging	String(100)
Association	**Notes**	**Multiplicity**
Dangerous Goods	The Dangerous Goods that are contained in this Inner Packaging.	1

Table 16: Inner Packaging entity

Dangerous Goods Limits specifies information about temperature limits for the Dangerous Goods. Temperature units for all fields are defined by the Temperature Unit field. This entity forms part of the Dangerous Goods entity through composition.

Attribute	Definition	Data type
Flashpoint	Lowest temperature at which a chemical can vaporize to form an ignitable mixture in air. Condition: only applicable to specific hazardous goods according to the IMO IMDG Code amendment version 41-22.	Float
Transport Control Temperature	Maximum temperature at which certain substance (such as organic peroxides, self-reactive and related substances) can be safely transported for a prolonged period	Float
Transport Emergency Temperature	Temperature at which emergency procedures shall be implemented	Float
SADT	Lowest temperature in which self-accelerating decomposition may occur in a substance	Float
SAPT	Lowest temperature in which self-accelerating polymerization may occur in a substance	Float

Attribute	Definition	Data type
Temperature Unit	Unit used for the measurement of the temperature expressed in degrees Celsius (CEL) or Fahrenheit (FAH)	String(3)
Association	**Notes**	**Multiplicity**
Dangerous Goods	The Dangerous Goods to which these Dangerous Goods Limits apply.	1

Table 17: Dangerous Goods Limits entity

Emergency Contact Details entity contains contact details of the organization from which detailed information on the dangerous goods cargo can be obtained during an emergency. This entity forms part of the Dangerous Goods entity through composition.

Attribute	Definition	Data type
Contact	Name of the contact person during an emergency	String(255)
Provider	Name of the third-party vendor providing emergency support	String(255)
Phone	Phone number of the contact person during an emergency	String(30)
Reference Number	Contract reference for the emergency support provided by an external third-party vendor	String(255)
Association	**Notes**	**Multiplicity**
Dangerous Goods		1

Table 18: Emergency Contact Details entity

Segregation Group entity specifies information about the IMO segregation groups that are associated with a particular Dangerous Goods entity. This entity forms part of the Dangerous Goods entity through composition.

Attribute	Definition	Data type
Segregation Group	Identifier for a UN Dangerous Goods Segregation Group.	String(2)
Association	**Notes**	**Multiplicity**
Dangerous Goods	The Dangerous Goods to which this Segregation Group applies.	1

Table 19: Segregation Group entity

5.1.1 Booking Code Lists

The figure below shows the code lists applicable to the Booking subject area.

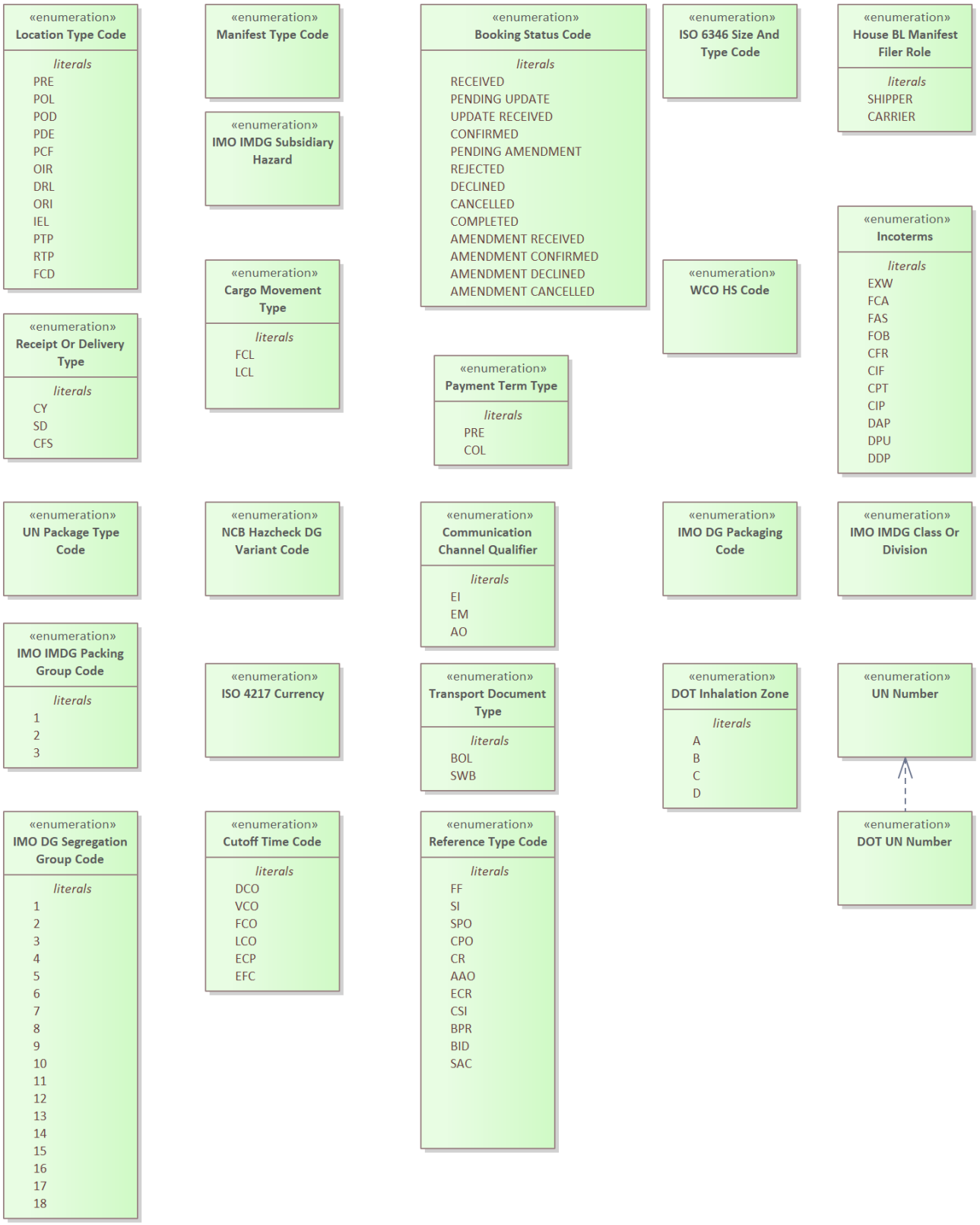


Figure 8: Booking Code Lists

Cut-off Times reference data: Codes for the deadlines involved in the booking process.

This is a list of cut-off times provided by the carrier in the booking confirmation. A cut-off time indicates the latest deadline within which a task must be completed. The confirmed schedule cannot be guaranteed if a cut-off time is missed. Customs brokers may set additional cut-off times to receive the export customs documentation, which is not included in the shipment cut-off times of a carrier booking.

Cut-off Time Code	Cut-Off Time Name	Cut-off Time Description
DCO	Documentation cut-off	Document cut-off time for Shipping Instructions submission.
VCO	VGM cut-off	Cut-off time for Verified Gross Mass (VGM) submission.
FCO	FCL delivery cut-off	Latest deadline for the cargo delivery to the port or terminal in order to make the schedule requested. Typically two days before the expected departure date, but will vary based on the carrier and the port.
LCO	LCL delivery cut-off	Latest deadline for delivering LCL cargo at the container freight station **Condition**: only relevant when the Receipt Type at Origin is CFS
ECP	Empty container pick-up date and time	Time and date for shipper to pick-up empty container(s)
EFC	Earliest full-container delivery date	Earliest date when containers can be delivered at the terminal gate, also called gate-opening

Table 20: Cut-off Times reference data

Receipt / Delivery Types contains the receipt or delivery types defined by DCSA.

Receipt Or Delivery Type Code	Receipt Or Delivery Type Name	Receipt Or Delivery Type Description
CY	Container yard (incl. rail ramp)	Where the carrier takes possession of a fully stuffed container delivered by the customer at the carrier or carrier's appointed supplier's facility, or where a container is released to the customer by the carrier
SD	Store Door	Indicating that the carrier is taking possession of or delivers a fully stuffed container at the customer's appointed premises
CFS	Container Freight Station	Indicating that the carrier has received the cargo and is responsible for stuffing of the cargo within the container, or for stripping the container for import activities.

Table 21: Receipt / Delivery Types reference data

Cargo Movement Type reference data contains the cargo movement types defined by DCSA.

Cargo Movement Type Code	Cargo Movement Type Name	Cargo Movement Type Description
FCL	Full Container Load	The shipper/consignee or its agent or subcontractor is responsible for stuffing or stripping the cargo into or out of the container and bears every responsibility and liability in such respect
LCL	Less than Container Load	The carrier or its agent or subcontractor is responsible for stuffing or stripping the cargo into or out of the container and bears every responsibility and liability in such respect

Table 22: Cargo Movement Type reference data

Transport Document Type reference data contains transport document type codes, names and descriptions.

Transport Document Type Code	Transport Document Type Name	Transport Document Type Description
BOL	Bill of Lading	Contractual document issued to the shipper which confirms the carrier's receipt of the cargo, acknowledging goods being shipped or received for shipment and specifying the terms of delivery (as one of the evidences of the contract of carriage). The Bill of Lading is usually prepared based on shipping instructions, including cargo description, given by the shipper on forms issued by the carrier and is the title to the goods and can be a negotiable document
SWB	Sea Waybill	A separate specific transport document type which is non-negotiable, does not transfer title, but which evidences the contract of carriage and receipt of the goods. It must be issued to a named consignee and can be both in a physical or digital format. Goods can be released at destination without presenting the original sea waybill as proof of ownership

Table 23: Transport Document Type reference data

The transport document type is requested by the shipper at time of Booking or SI submission and must be one of the above types.

Incoterms codes table below contains the Incoterms.

Incoterms Code	Incoterms Name	Incoterms Description (where appropriate)
EXW	Ex-Works	
FCA	Free Carrier	The seller delivers the goods, cleared for export, at a named place (possibly including the seller's own premises)
FAS	Free Alongside Ship	
FOB	Free on Board	Under FOB terms the seller bears all costs and risks up to the point the goods are loaded on board the vessel.
CFR	Cost and Freight	

Incoterms Code	Incoterms Name	Incoterms Description (where appropriate)
CIF	Cost, Insurance and Freight	
CPT	Carriage Paid To	
CIP	Carriage And Insurance Paid To	
DAP	Delivered At Place	
DPU	Delivered At Place Unloaded	
DDP	Delivered Duty Paid	

Table 24: Incoterms reference data

Incoterms codes : The terms defining when the payment should be done.

Payment Term Code	Payment Term Name	Payment Term Description
PRE	PrePaid	Fee paid prior to transportation
COL	Collect	Fee paid upon collection of the goods

Table 25: Payment Terms reference data

Communication Channel Qualifier reference data: table below contains the Communication Channel Qualifier. See 3155 Edifact codelist Communication Channel Identifier. More details can be found here DCSA-EDocumentation/communicationchannelqualifier.csv.

Communication Channel Qualifier Code	Communication Channel Qualifier Name	Communication Channel Qualifier Description
EI	EDI transmission	Number identifying the service and service user

Communication Channel Qualifier Code	Communication Channel Qualifier Name	Communication Channel Qualifier Description
EM	Electronic mail	Exchange of mail by electronic means
AO	API	Uniform Resource Location

Table 26: Communication Channel Qualifier reference data

HS Codes code list is standardised by the World Customs Organisation (WCO). More information can be found here: https://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/hs-nomenclature-2022-edition.aspx

UN Number code list for Dangerous Goods is standardised by UNECE as a series of four-digit codes. More information is available here https://unece.org/transport/dangerous-goods/un-model-regulations-rev-23

DOT UN Number code list for Dangerous Goods is closely related to the UN Number, but maintained by the US Department of Transport (often referred to as the "NA Number" , for "North America"). More information is available here

https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-C/part-172/subpart-B/section-172.101

IMO IMDG Subsidiary Hazard code list is standardised by the International Maritime Organization (IMO) under RESOLUTION MSC.477(102) November 2020, the INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE.

IMO IMDG Class Or Division code list is standardised by the International Maritime Organization (IMO) under RESOLUTION MSC.477(102) November 2020, the INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE.

NCB Hazcheck DG Variant code list is issued by the company NCB Hazcheck Limited.

IMO IMDG Packing Group code list is standardised by the International Maritime Organization (IMO) under RESOLUTION MSC.477(102) November 2020, the INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE. There are three groups known at the time of writing: I (high danger), II (medium danger), III (low danger). These values are mapped to values 1, 2, 3 in the DCSA Information Model.

DOT Inhalation Zone code list is standardised by the US Department of Transport. More information is available from https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-C/part-171

IMO Segregation Group code list is standardised by the International Maritime Organization (IMO) under RESOLUTION MSC.477(102) November 2020, the INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE.

Advance Manifest Filing House B/L Performed By reference data below contains the parties involved in performing the Advance Manifest Filing House B/L.

Advance Manifest Filing House B/L Performed By Code	Advance Manifest Filing House B/L Performed By Name	Advance Manifest Filing House B/L Performed By Description
SHIPPER	Shipper	The Shipper performs the House B/L
CARRIER	Carrier	The carrier performs the House B/L

Table 27: Advance Manifest Filing House B/L Performed By reference data

Examples of Advance Manifest Filing below contains the Advance Manifest Filing. The combination between the Type Code and the Country Code makes the filing unique. More details can be found here: DCSA-EDocumentation/advancemanifestfilings.csv.

Advance Manifest Type Code	Country Code	Advance Manifest Filing Name	Advance Manifest Filing Description
ACI	EG	Advance Cargo Information	The Advanced Cargo Information (ACI) is a customs system mandatory for shipments arriving at Egyptian seaports that requires the pre-registration of cargo information at latest 48 hours before the vessel departure from the Loading port, according to Egyptian Customs law
ACI	CA	Advanced Commercial Information	The Advanced Commercial Information (ACI) is a mandatory Canada Border Services Agency (CBSA) security protocol designed to provide advanced notice and data on the commodities and parties involved in the movement of freight

Advance Manifest Type Code	Country Code	Advance Manifest Filing Name	Advance Manifest Filing Description
ACE	US	Automated Commercial Environment (previously called AMS)	The Automated Commercial Environment (ACE) is an electronic information transmission system operated by U.S. Customs and Border Protection (CBP). Ocean shipments into the U.S. require an ACE filing with detailed information about the cargo as a security measure

Table 28: Examples of Advance Manifest Filing Codes

UN Package Type code list is standardised by the UN. More information can be found here: Recommendation N°21 – Revision 12 Annexes V and VI.

ISO 4217 Currency code list is standardised by the ISO. More information can be found here: ISO 4217.

Booking Status reference data contains possible values for the Booking Status. Booking status is maintained here: DCSA-EDcumentation/bookingstatuses.csv.

Booking Status Code	Booking Status Description
RECEIVED	Indicates that the booking has been received by the carrier
PENDING UPDATE	Indicates that the carrier requested a booking update from the shipper which is not received yet
UPDATE RECEIVED	An update has been received and is awaiting to be processed
CONFIRMED	Booking has been Confirmed
PENDING AMENDMENT	An amendment is required to the Booking
REJECTED	Booking discontinued by carrier before it has been Confirmed
DECLINED	Booking discontinued by carrier after it has been Confirmed

Booking Status Code	Booking Status Description
CANCELLED	Booking discontinued by consumer
COMPLETED	The Transport Document this Booking is connected to has been Surrendered for Delivery
AMENDMENT RECEIVED	An amendment has been received and is awaiting to be processed.
AMENDMENT CONFIRMED	Amendment is confirmed
AMENDMENT DECLINED	Amendment discontinued by provider
AMENDMENT CANCELLED	Amendment discontinued by consumer

Table 29: Booking Status reference data

5.2 Transport Document

Although the Booking and Transport Document processes are coupled, and therefore considered as a single "bounded context", it is possible to describe two different perspectives, one focussed on Booking and the other focussed on Transport Document

The Transport Document perspective has two central entities: Shipping Instructions and Transport Document. These entities are shown in the figure below, alongside related entities. Some of these entities have already been described in the section above from the Booking perspective.

The Shipping Instructions includes cargo items, specified by volume or weight, packages, etc. The information given by the shipper through the Shipping Instructions is the information required to create and update a transport document.

A transport document is a contractual document issued to the shipper which confirms the carrier's receipt of the cargo, acknowledging goods being shipped or received for shipment and specifying the terms of delivery (as one piece of evidence of the contract of carriage). The Transport Document is prepared based on shipping instructions, including cargo description, given by the shipper on forms issued by the carrier and is the title to the goods and can be a negotiable document. It relates directly to the concept of a consignment as published in the UN/CEFACT MMT reference data model.

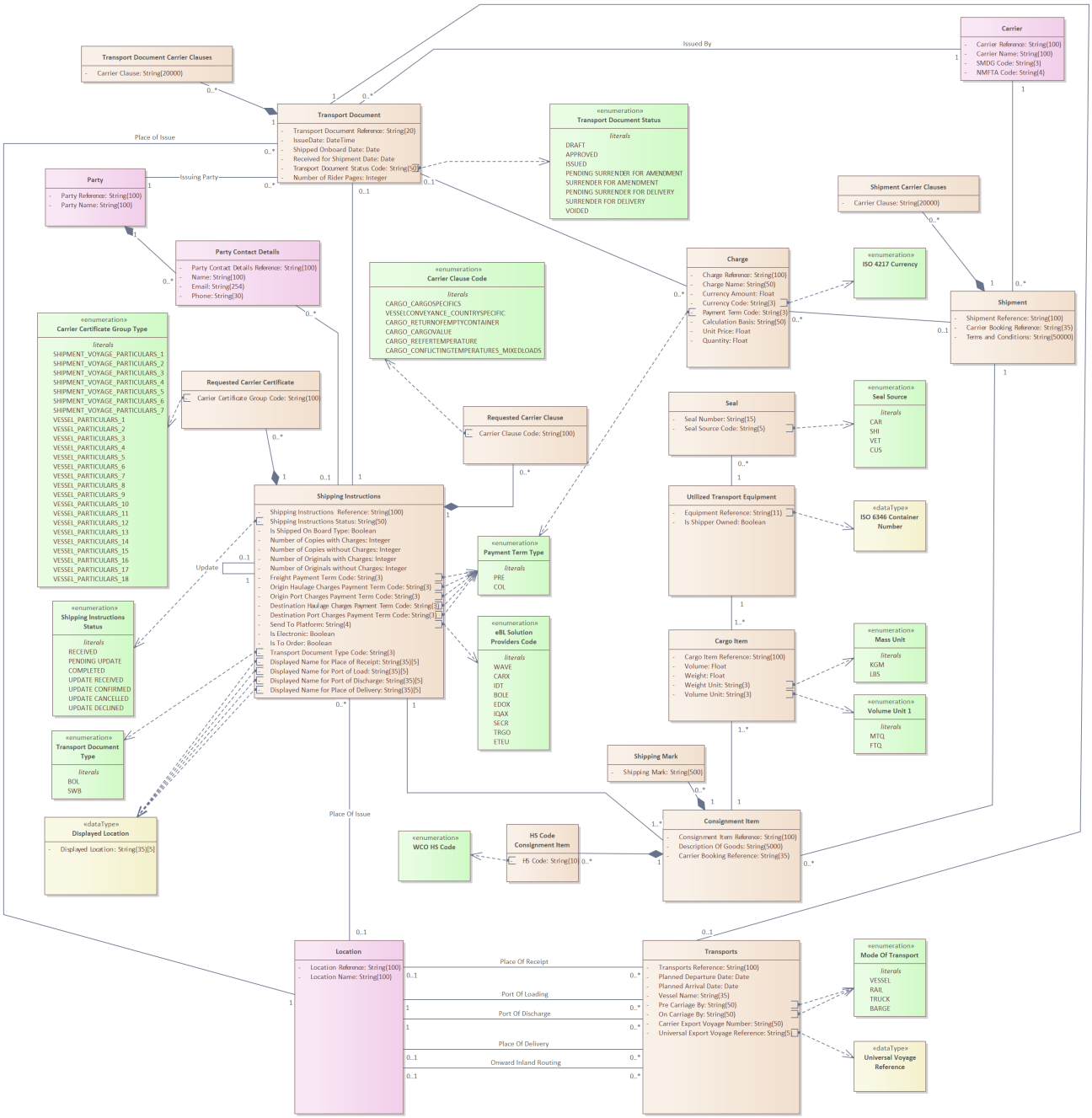


Figure 9: Transport Document and related entities

The entities related to Transport Document are defined and detailed in the following tables.

Transport Document entity relates to the type and attributes of the contract of carriage.

Attribute	Definition	Data type
Transport Document Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit. In this case a unique reference allocated by the shipping line to the transport document and the main number used to identify the Transport Document both externally and internally.	String(20)
Transport Document Status Code	The current status of the Transport Document.	String(50)
IssueDate	Date when the Transport Document was issued	Date
Shipped Onboard Date	Date when the last container that is linked to the Transport Document is physically loaded onboard the vessel indicated on the Transport Document	Date
Received for Shipment Date	Date when the last container linked to the Transport Document is physically in the terminal (customers cleared against the intended vessel)	Date
Number of Rider Pages	The number of additional pages required to contain the goods description on a Transport Document. Only applicable for physical Transport Documents	Integer

Association	Notes	Multiplicity
Carrier	Links to the carrier entity containing the SCAC and/or the SMDG code to specify the issuing carrier.	1
Party Issuing Party	A link to the Party issuing the Transport Document. The Issuing Party can be an Agent, Carrier or anything represented by a Party.	1
Shipping Instructions	Identifies the associated shipping instructions	1
Location Place of Issue	Links to the Location to specify where the original transport document (bill of lading) will be or has been issued	1
Transport Document Carrier Clauses	Carrier contract clauses that are associated with the Transport Document.	0..*

Charge	Charges that are associated with the Transport Document.	0..*
Transports	Links to information about the transport plan.	0..1

Table 30: Transport Document entity

Shipping Instructions entity: The shipping instructions includes volume or weight, cargo items, shipping dates, origin, destination, and other special instructions. The information given by the shipper through the shipping instructions is the information required to create a Transport Document.

At certain points in the booking process, an update may be held which is a related Shipping Instructions object (a recursive association from a modelling perspective). From the Logical Information Model perspective, this is considered to be a "deep copy" in order to make it clear what "1" means in the multiplicity of associations with Shipping Instructions. This does not mean that "deep copies" are expected or required in real implementations – it is an abstraction of the model.

Attribute	Definition	Data type
Shipping Instructions Reference	The identifier for a shipping instructions provided by the carrier. The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Shipping Instructions Status	Indicates the current state of this Shipping Instructions object.	String(50)
Is Shipped Onboard Type	Specifies whether the Transport document type is a received for shipment or shipped onboard	Boolean
Number of Copies With Charges	The requested number of copies of the Transport Document with charges to be issued by the carrier. Only applicable for physical documents	Integer
Number of Copies Without Charges	The requested number of copies of the Transport Document without charges to be issued by the carrier. Only applicable for physical documents	Integer

Attribute	Definition	Data type
Number of Originals With Charges	Number of originals of the bill of lading that have been requested by the customer with charges. Only applicable for physical documents	Integer
Number of Originals Without Charges	Number of originals of the bill of lading that have been requested by the customer without charges. Only applicable for physical documents	Integer
Freight Payment Term Code	An indicator of whether freight and ancillary fees for the main transport are prepaid (PRE) or collect (COL). When prepaid the charges are the responsibility of the shipper or the Invoice payer on behalf of the shipper (if provided). When collect, the charges are the responsibility of the consignee or the Invoice payer on behalf of the consignee (if provided).	String(3)
Origin Charges Payment Term Code	An indicator of whether origin charges are prepaid (PRE) or collect (COL). When prepaid, the charges are the responsibility of the shipper or the Invoice payer on behalf of the shipper (if provided). When collect, the charges are the responsibility of the consignee or the Invoice payer on behalf of the consignee (if provided). Examples of origin charges are customs clearance fees, documentation fees, container packing and loading charges levied at the port of origin to cover the costs of preparing the cargo for shipment. They include the cost of inland transportation to the port, when applicable.	String(3)
Destination Charges Payment Term Code	An indicator of whether destination charges are prepaid (PRE) or collect (COL). When prepaid, the charges are the responsibility of the shipper or the Invoice payer on behalf of the shipper (if provided). When collect, the charges are the responsibility of the consignee or the Invoice payer on behalf of the consignee (if provided). Examples of destination charges are customs clearance fees, documentation fees, terminal handling fees at the destination port and the costs of inland transportation from the port to the final delivery location, when applicable.	String(3)

Attribute	Definition	Data type
Is Electronic	An indicator of whether the transport document is electronically transferred	Boolean
Send To Platform	An identifier for the eBL solution provider platform to send the eBL to.	String(4)
Is to Order	Indicates whether the B/L is issued 'to order' or not. If TRUE, the B/L is considered negotiable and an Endorsee party can be defined as a Document Partys. If no Endorsee is defined, the B/L is blank endorsed. If FALSE, the B/L is considered non-negotiable (also referred to as 'straight'). Is to Order must be FALSE if Transport Document Type Code = SWB (Sea Waybill).	Boolean
Transport Document Type Code	Specifies the type of the associated Transport Document (Bill of Lading or Sea Waybill)	String(3)
Displayed Name for Place of Receipt	A Displayed Name to be used in order to specify how the Place of Receipt should be displayed on the transport document to match the name and/or address provided on the letter of credit	String(35)[5]
Displayed Name for Port of Load	A Displayed Name to be used in order to specify how the Port of Load should be displayed on the transport document to match the name and/or address provided on the letter of credit	String(35)[5]
Displayed Name for Port of Discharge	A Displayed Name to be used in order to specify how the Port of Discharge should be displayed on the transport document to match the name and/or address provided on the letter of credit	String(35)[5]
Displayed Name for Place of Delivery	A Displayed Name to be used in order to specify how the Place of Delivery should be displayed on the transport document to match the name and/or address provided on the letter of credit	String(35)[5]

Attribute	Definition	Data type
Association	**Notes**	**Multiplicity**
Location Place of Issue	Links to the Location to specify where the original transport document (bill of lading) will be issued	0..1
Consignment Item	A set of Consignment Item to be shipped using this Transport Document.	1..*
Transport Document	The Transport Document created based on this Shipping Instructions.	0..1
Party Contact Details		0..*
Document Party	A transitive association to a Party associated with this document, where the Party has a specified function (role).	1..*
Requested Carrier Clause	The carrier clauses that are specified by the Shipping Instructions.	0..*
Requested Carrier Certificate	The carrier certificates that are specified by the Shipping Instructions.	0..*
Reference	A set of Reference indicating identifiers held by various external parties to identify this Shipping Instructions.	0..*

Attribute	Definition	Data type
Customs Reference	A set of Customs Reference indicating identifiers held by various customs authorities to identify this Shipping Instructions.	0..*

Table 31: Shipping Instructions entity

Requested Carrier Clause entity specifies the clauses that can be requested by the Shipper. This entity is part of Shipping Instructions and related by composition to indicate a multiplicity of 0..*.

Attribute	Definition	Data type
Carrier Clause Code	Code of the Clause	String(100)
Association	**Notes**	**Multiplicity**
Shipping Instructions		1

Table 32: Requested Carrier Clause entity

Requested Carrier Certificate entity specifies the certificates that can be requested by the Shipper. This entity is part of Shipping Instructions and related by composition to indicate a multiplicity of 0..*.

Attribute	Definition	Data type
Carrier Certificate Group Code	Code of the Certificate Group	String(100)
Association	**Notes**	**Multiplicity**
Shipping Instructions		1

Table 33: Requested Carrier Certificate entity

Transport Document Carrier Clauses entity addresses the carrier clauses for a Transport Document**,** associated via composition.

Attribute	Definition	Data type
Carrier Clause	The text of the actual Carrier Clause	String(20000)
Association	**Notes**	**Multiplicity**
Transport Document	The Transport Document to which these Carrier Clauses apply.	1

Table 34: Transport Document Carrier Clauses entity

Charge entity addresses the monetary value of freight and other service charges for a transport document.

Attribute	Definition	Data type
Charge Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Charge Name	Name of the charge applied	String(50)
Currency Amount	The monetary value of all freight and other service charges for a transport document, with a maximum of 2-digit decimals	Float
Currency code	The currency for the charge, using a 3-character code (ISO 4217)	String(3)
Payment Term Code	An indicator of whether a charge is prepaid (PRE) or collect (COL). When prepaid, the charge is the responsibility of the shipper or the Invoice payer on behalf of the shipper (if provided). When collect, the charge is the responsibility of the consignee or the Invoice payer on behalf of the consignee (if provided).	String(3)
Calculation Basis	The code specifying the measure unit used for the corresponding unit price for this cost, such as per day, per ton, per square metre	String(50)

Attribute	Definition	Data type
Unit Price	The unit price of this charge item in the currency of the charge	Float
Quantity	The amount of unit for this charge item	Float
Association	**Description**	**Multiplicity**
Transport Document	The transport document that the charge concerns	0..1
Shipment	The shipment that the charge concerns	0..1

Table 35: Charge entity

Utilized Transport Equipment entity specifies the container assigned to a shipment.

Attribute	Definition	Data type
Equipment Reference	Identifies the assigned equipment (container) to the shipment. This is the ISO 6346 Container Number or an identifier that follows the same format and has the same semantics (it uniquely and globally identifies a physical Equipment).	String(11)
Is Shipper Owned	Indicator if the container is Shipper Owned (SOC)	Boolean
Association	**Notes**	**Multiplicity**
Requested Equipment Group	Links this Utilized Transport Equipment with the Requested Equipment Group	1
Equipment	Links to a specific Equipment object with additional attributes pertaining to the Equipment.	1

Attribute	Definition	Data type
Seal	Seals affixed to this Utilized Transport Equipment	0..*
Reference	A set of Reference indicating identifiers held by various external parties to identify this Utilized Transport Equipment.	0..*
Customs Reference	A set of Customs Reference indicating identifiers held by various customs authorities to identify this Utilized Transport Equipment.	0..*
Cargo Item	The Cargo Item stuffed in this Utilized Transport Equipment	1..*

Table 36: Utilized Transport Equipment entity

Consignment Item entity addresses the possibility to split Cargo Items across multiple containers. All Cargo Items linked to the same Consignment Item link to the same Booking.

Attribute	Definition	Data type
Consignment Item Reference	Identifies the consignment item	String(100)
Description of Goods	The cargo description are details which accurately and properly describe the cargo being shipped in the container(s) as provided by the shipper	String(5000)
Carrier Booking Reference	A reference that an external party can use to identifier the Booking associated with this Consignment Item.	String(100)
Association	**Notes**	**Multiplicity**
Shipment	Identifies the associated Shipment	1
Shipping Instructions	The identifier for a shipping instructions provided by the carrier for system purposes	1

Attribute	Definition	Data type
Commodity	The identifier used to link the Consignment Item to the Commodity	0..1
Reference	A set of Reference indicating identifiers held by various external parties to identify this Consignment Item.	0..*
Customs Reference	A set of Customs Reference indicating identifiers held by various customs authorities to identify this Consignment Item.	0..*
Shipping Mark	A set of Shipping Marks placed on the Cargo Items within this Consignment Item to facilitate their handling and identification during transport. It is a constraint that all Shipping Marks for Cargo Items in one Consignment Item must be identical.	0..*
Cargo Item	The set of Cargo Item that together constitute this Consignment Item.	1..*
HS Code Consignment Item	A set of HS Code that classify the goods within this Consignment Item	0..*

Table 37: Consignment Item entity

Transports entity provides core information about the transport plan associated with the Transport Document.

Attribute	Definition	Data type
Transports References	Identifies this Transports object.	String(100)
Planned Departure Date	The date on which the transport plan will start.	Date
Planned Arrival Date	The date on which the transport plan will end.	Date

Attribute	Definition	Data type
Vessel Name	The name of the Vessel onto which the cargo will be loaded.	String(35)
Pre Carriage By	The mode of transport for pre carriance.	String(50)
On Carriage By	The model of transport for onward carriage	String(50)
Carrier Export Voyage Number	The carrier-specific identifier of the export voyage.	String(50)
Universal Export Voyage References	A universal reference identifying the voyage commonly when a vessel sharing agreement is in place.	String(5)
Association	**Notes**	**Multiplicity**
Transport Document	Identifies the associated Transport Document	1
Location Place Of Receipt	The Place of Receipt location specified as: the location where the cargo is handed over by the shipper, or his agent, to the shipping line. This indicates the point at which the shipping line takes on responsibility for carriage of the container.	0..1
Location Port of Loading	The Port of Loading location specified as: the location where the cargo is loaded onto a first sea-going vessel for water transportation.	1
Location Port of Discharge	The Port of Discharge location specified as: the location where the cargo is discharged from the last sea-going vessel.	1
Location Place of Delivery	The Place of Delivery location specified as: the location where the cargo is handed over to the consignee, or his agent, by the shipping line and where responsibility of the shipping line ceases.	0..1

Attribute	Definition	Data type
Location Onward Inland Routing	The Onward Inland Routing location specified as the end location of the inland movement that takes place after the container(s) being delivered to the port of discharge/place of delivery for account and risk of merchant (merchant haulage).	0..1

Table 38: Transports entity

HS Code Consignment entity multiple HS Codes to be added to the same Consignment Item.

Attribute	Definition	Data type
HS Code	The HS Code to be applied to a Commodity or Consignment Item	String(10)
Association	**Definition**	**Multiplicity**
Consignment Item	The identifier of a consignment Item	1

Table 39: HS Code Consignment Item entity

Cargo Item entity addresses the cargo items to be stuffed into a container for a shipment. A cargo item cannot be split across containers.

Attribute	Definition	Data type
Cargo Item Reference	Identifies the cargo item to be stuffed	String(100)
Weight	The total weight of the Cargo Item including packaging items being carried in the container. Excludes the tare weight of the container.	Float
Volume	Calculated by multiplying the width, height, and length of the packed Cargo Item.	Float
Weight Unit	The unit of measure which can be expressed in imperial or metric terms as provided by the shipper	String(3)

Attribute	Definition	Data type
Volume Unit	The unit of measure which can be expressed in either imperial or metric terms as provided by the shipper	String(3)
Association	**Notes**	**Multiplicity**
Consignment Item	Identifies the consignment item	1
Utilized Transport Equipment	The identifier of the assignment of a container to a shipment	1
Customs Reference	A set of Customs Reference indicating identifiers held by various customs authorities to identify this Cargo Item.	0..*
Outer Packaging	The Outer Packaging into which the Cargo Item has (or will) be placed.	0..1

Table 40: Cargo Item entity

Shipping Marks entity identifies the specific details of shipping marks placed on a Cargo Item. It is a constraint that all Cargo Items in a Consignment Item must have the same Shipping Mark. Therefore Shipping Mark is associated with Consignment Item via composition.

Attribute	Definition	Data type
Shipping Mark	The identifying details of a package or the actual markings that appear on the package(s). This information is provided by the shipper	String(500)
Association	**Notes**	**Multiplicity**
Consignment Item	Shipping Mark is associated with Consignment Item as composition.	1

Table 41: Shipping Marks entity

Seal entity addresses the seal-related information associated with the Utilized Transport Equipment. A seal is put on a Utilized Transport Equipment once it is loaded. This seal is meant to stay on until the Utilized Transport Equipment reaches its Place of Delivery.

Attribute	Definition	Data type
Seal Number	Identifies a seal affixed to the container	String(15)
Seal Source Code	The source of the seal, namely who has affixed the seal. This attribute links to the Seal Source ID defined in the Seal Source reference data entity	String(5)
Association	**Notes**	**Multiplicity**
Utilized Transport Equipment	Identifies the Utilized Transport Equipment associated with the seal	1

Table 42: Seal entity

5.2.1 Transport Document code lists

The figure below shows the code lists related to Transport Documents.

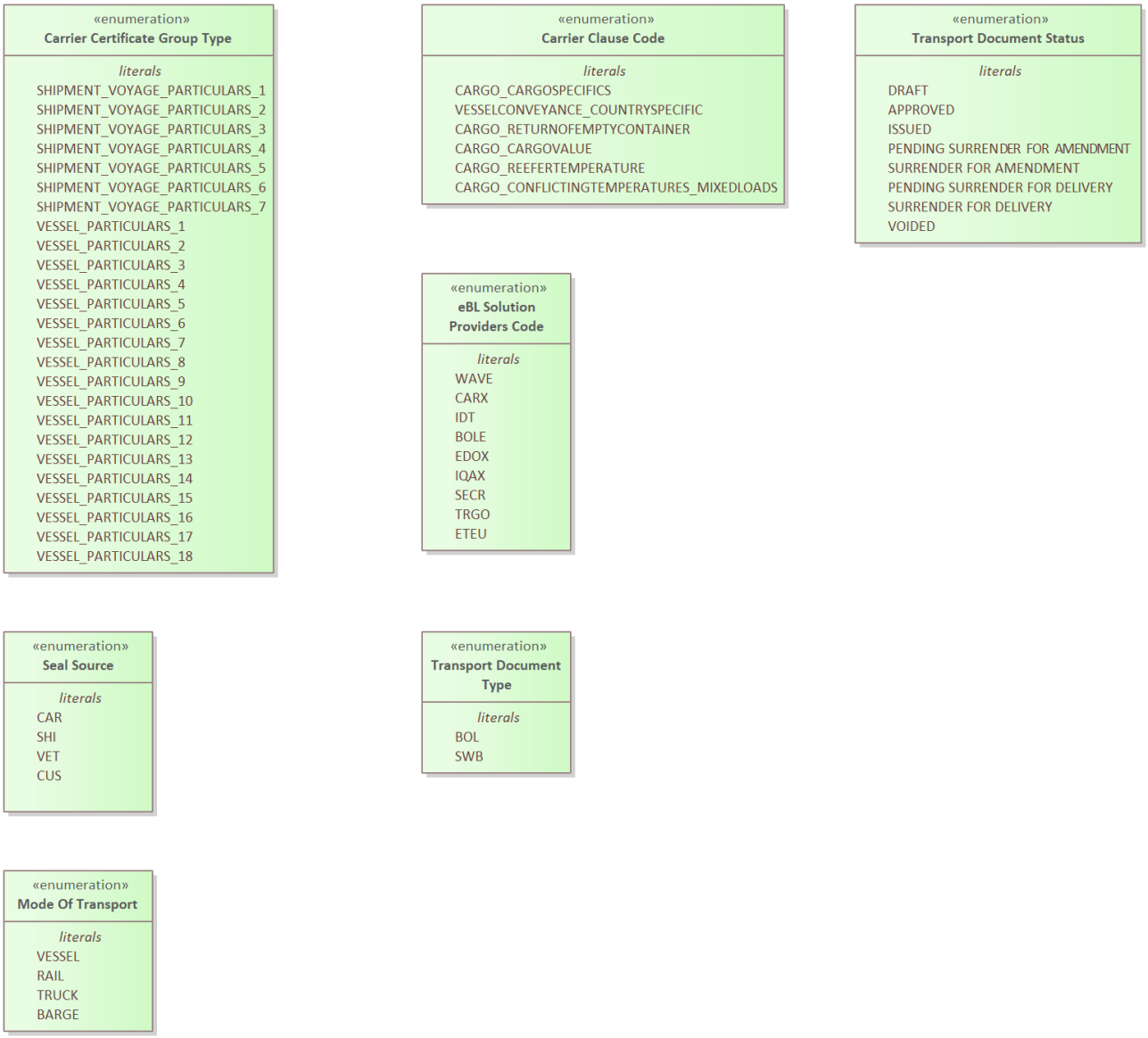


Figure 10: Transport Document reference data entities

Document Status reference data contains possible values for the Document Status. Document status is maintained here: DCSA-EDocumentation/eblstatuses.csv.

Document Status Code	Document Status Description
DRAFT	Indicates that a Draft Transport Document is being returned to the shipper for approval after changes or amendments have been processed by the carrier (accepted or rejected)
APPROVED	Indicates that a Draft Transport Document is approved by the shipper
ISSUED	Indicates that a Transport Document is issued by the carrier
PENDING SURRENDER FOR AMENDMENT	Indicates that the shipper/consignee has requested to surrender the Transport Document for amendments
PENDING SURRENDER FOR DELIVERY	Indicates that the consignee has requested to surrender the Transport Document for delivery
SURRENDER FOR AMENDMENT	Indicates that the Transport Document is surrendered for amendments
SURRENDER FOR DELIVERY	Indicates that the Transport Document is surrendered for delivery
VOIDED	Indicates that the Transport Document is voided

Table 43: Document Status reference data

Carrier Clause Type reference data contains possible types of Carrier Clause requested as part of the Shipping Insutrctions. More details can be found here: DCSA-EDocumentation/carrierclauses.csv.

Carrier Clause Code	Carrier Clause Name	Carrier Clause Description
CARGO_CARGOSPECIFICS	Cargo/Cargo specifics	

Carrier Clause Code	Carrier Clause Name	Carrier Clause Description
VESSELCONVEYANCE_COUNTRYSPECIFIC	Vessel conveyance/Country Specific	
CARGO_RETURNOFEMPTYCONTAINER	Cargo/Return of Empty Container	
CARGO_CARGOVALUE	Cargo/Cargo value	
CARGO_REEFERTEMPERATURE	Cargo/Reefer temperature	
CARGO_CONFLICTINGTEMPERATURES_MIXEDLOADS	Cargo/Conflicting temperatures / Mixed loads	

Table 44: Carrier Clause Type reference data

Examples Carrier Certificate Group Type reference data contains possible values for the Certificate Groups. More details can be found here: DCSA-EDocumentation/carriercertificates.csv.

Carrier Certificate Group Code	Carrier Certificate Group Name	Carrier Certificate Group Description
SHIPMENT_VOYAGE_PARTICULARS_1	Shipment-Voyage Particulars 1	
SHIPMENT_VOYAGE_PARTICULARS_2	Shipment-Voyage Particulars 2	
	...	
SHIPMENT_VOYAGE_PARTICULARS_7	Shipment-Voyage Particulars 7	
VESSEL_PARTICULARS_1	Vessel Particulars 1	

Carrier Certificate Group Code	Carrier Certificate Group Name	Carrier Certificate Group Description
VESSEL_PARTICULARS_2	Vessel Particulars 2	
	...	
VESSEL_PARTICULARS_18	Vessel Particulars 18	

Table 45: Examples Carrier Certificate Group Type reference data

Seal Source code list identifies the party who has affixed the seal. The code list contains seal sources defined by DCSA.

Seal Source Code	Seal Source Description
CAR	Carrier
SHI	Shipper
VET	Veterinary
CUS	Customs

Table 46: Seal Source reference data

eBL Solution Providers code lists contains eBL solution provders identified by DCSA.

eBL Solution Provider Code	Organisation
WAVE	Wave
CARX	CargoX
IDT	ICE Digital Trade
BOLE	Bolero

eBL Solution Provider Code	Organisation
EDOX	EdoxOnline
IQAX	IQAX
SECR	Secro
TRGO	TradeGo
ETEU	eTEU

Table 47: eBL Solution Providers reference data

5.3 Party and References

Some of the core entities of this bounded context are associated with Reference, Customs Reference and Party. These associations typically allow related entities managed by other organisations to be associated with the entities that form part of the DCSA Information Model.

In addition, the core entities are associated with Parties in a variety of roles. A party refers to a company or legal entity represented on the Transport Document as a party to a shipment.

These associations are illustrated in the UML class diagrams below.

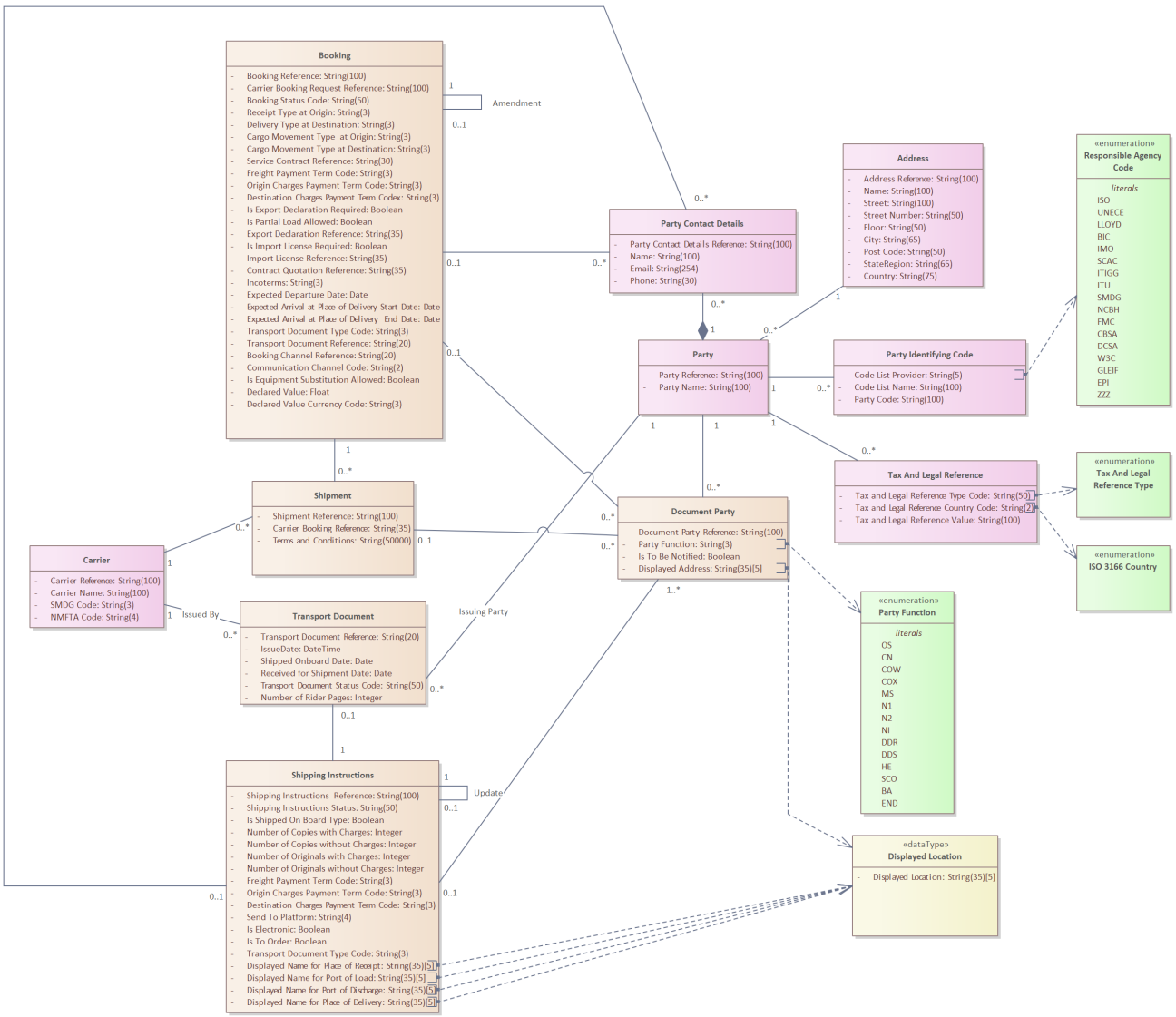


Figure 11: Parties and Related Entities

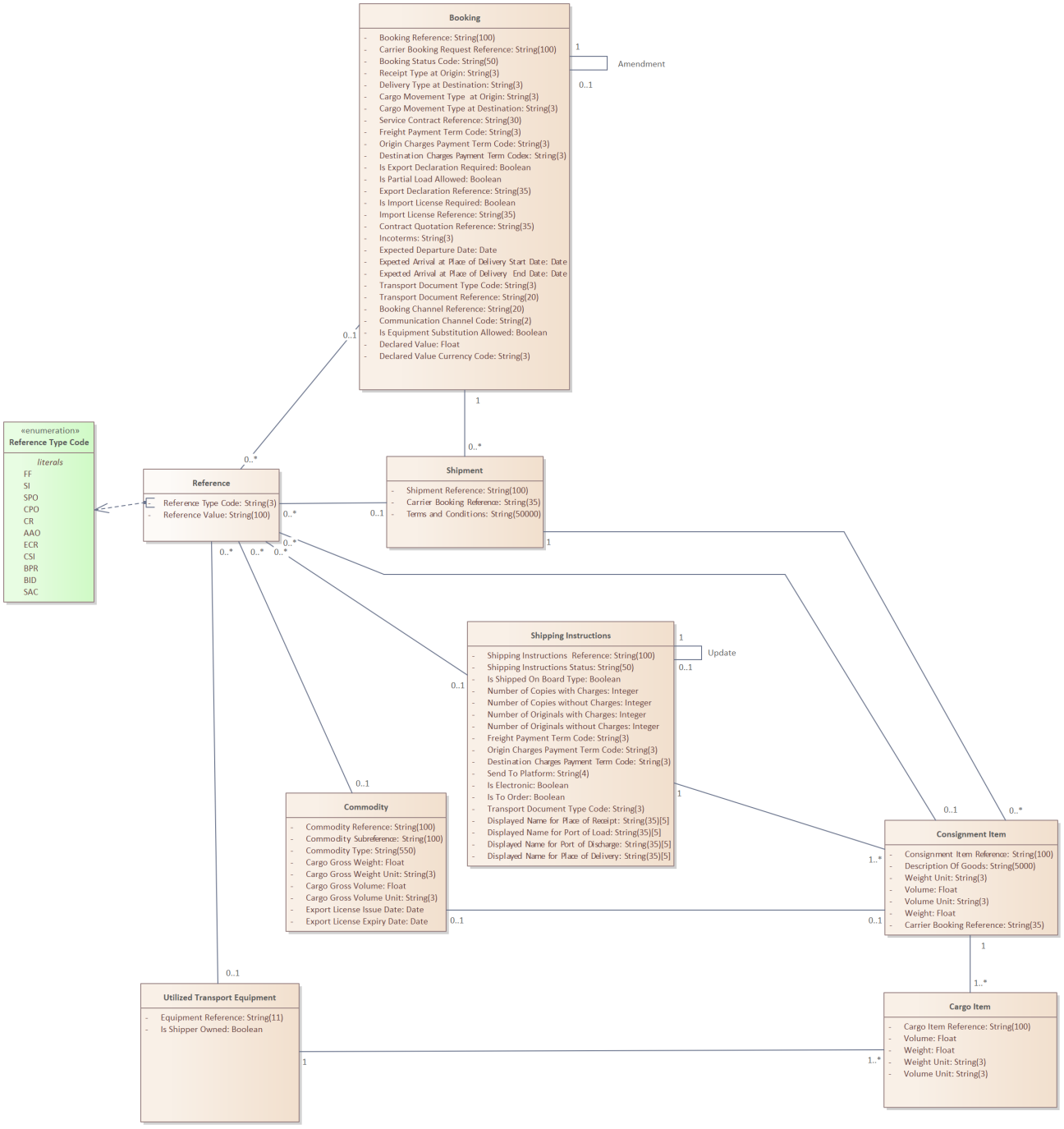


Figure 12: References

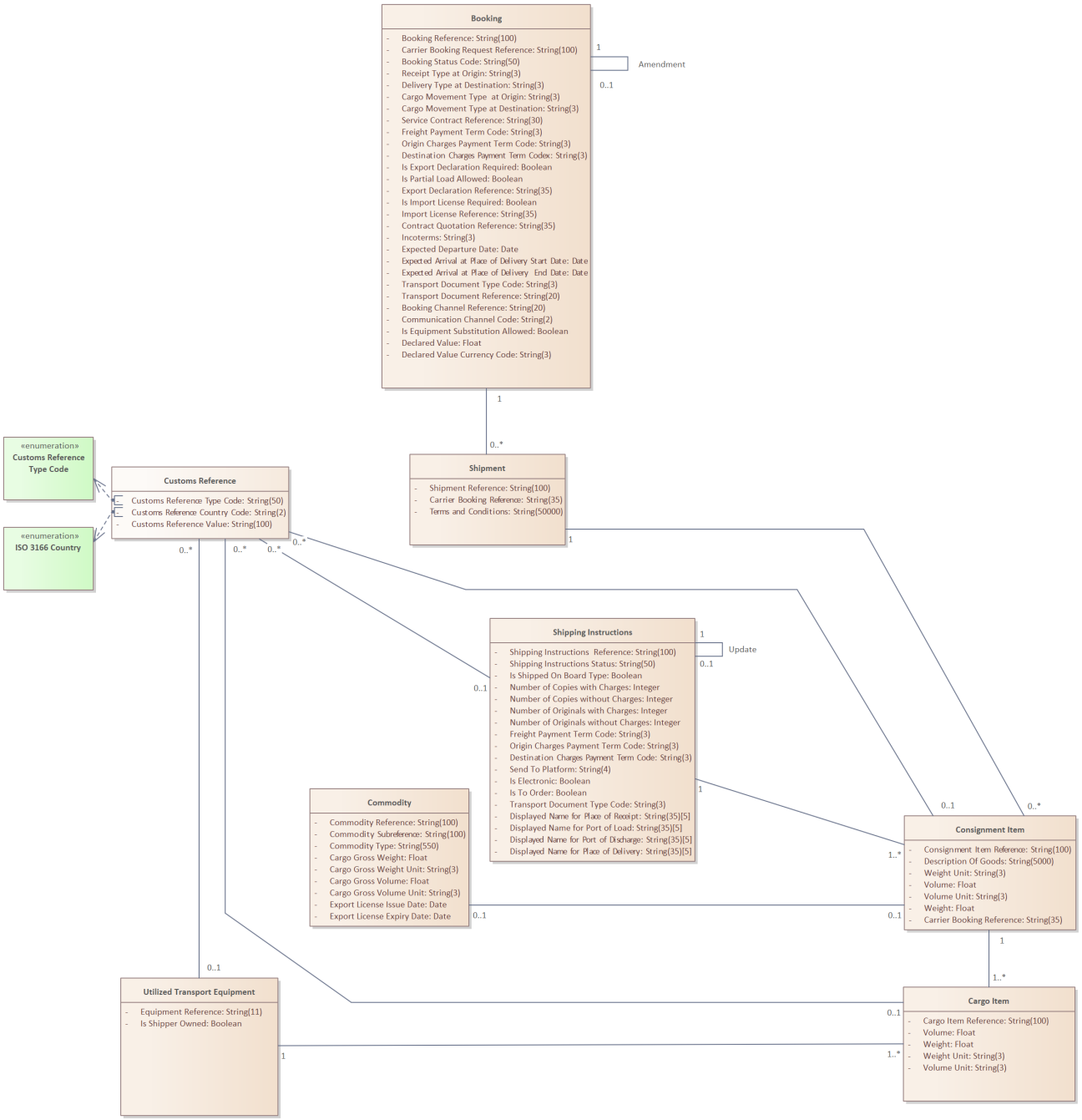


Figure 13: Customs References

The entities are defined and detailed in the following tables.

Party entity refers to a company or a legal entity.

Attribute	Definition	Data type
Party Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Party Name	Name of the party	String(100)
Association	**Description**	**Multiplicity**
Address	The address of the Party	1
Party Identifying Code		0..*
Tax and Legal Reference		0..*
Document Party	Association to a set of documents where this party has a specified function (role).	0..*
Transport Document Issuing Party	Association with Transport Document where this Party is the issuer.	0..*
Party Contact Details	Association by composition, provides information about means to contact the Party.	0..*

Table 48: Party entity

Party Identifying Code entity provides the list of codes identifying the party.

Attribute	Definition	Data type
Code List Provider	DCSA codes for code list providers	String(5)

Attribute	Definition	Data type
Code List Name	The name of the list, provided by the responsible agency. This is for informational / debugging purposes only.	String(100)
Party Code	Code to identify the party as provided by the agency	String(100)
Association	**Description**	**Multiplicity**
Party	The associated party	1

Table 49: Party Identifying Code entity

References entity represents references provided to external parties such as the shipper or freight forwarder at the time of booking or at the time of providing shipping instructions. Carriers share it back when providing track & trace event updates, some are also printed on the B/L. Customers can use these references to track shipments in their internal systems.

Attribute	Definition	Data type
Reference Type Code	The reference type codes defined by DCSA	String(3)
Reference Value	The actual value of the reference	String(100)
Association	**Notes**	**Multiplicity**
Shipment	The associated Shipment for the reference	0..1
Shipping Instructions	The associated Shipping Instructions for the reference	0..1
Booking	The associated Booking for the reference	0..1

Attribute	Definition	Data type
Consignment Item	The associated Consignment Item for the reference	0..1
Utilized Transport Equipment	The associated Utilized Transport Equipment for the reference	0..1
Commodity	The associated Utilized Commodity for the reference	0..1

Table 50: Reference entity

Customs References entity represents references customs references provided by the shipper or freight forwarder at the time of providing Shipping Instructions. Carriers share it back when providing track & trace event updates, some are also printed on the B/L. Customers can use these references to track shipments in their internal systems.

Attribute	Definition	Data type
Customs Reference Type Code	Identifies the associated Customs Reference Type	String(50)
Customs Reference Country Code	The two-letter ISO 3166 country code that the Customs Reference belongs to, e.g. BE for Belgium	String(2)
Customs Reference Value	The actual value of the customs reference	String(100)

Association	Description	Multiplicity
Shipment	The associated Shipment for the Customs Reference	0..1
Shipping Instructions	The associated Shipping Instructions for the Customs Reference	0..1
Consignment Item	The associated Consignment Item for the Customs Reference	0..1

Attribute	Definition	Data type
Utilized Transport Equipment	The associated Utilized Transport Equipment for the Customs Reference	0..1
Cargo Item	The associated Cargo Item for the Customs Reference	0..1

Table 51: Customs Reference entity

Document Party entity stores the parties involved in the transport document.

Attribute	Definition	Data type
Document Party Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Party Function	Specifies the role function (role) of the party in the context of the given Shipping Instructions	String(3)
Is To Be Notified	Used to decide whether the party will be notified of the arrival of the cargo	Boolean
Displayed Address	A Displayed Address to be used if B/L needs to be switched to paper	String(35)[5]

Association	Description	Multiplicity
Shipping Instructions	The associated shipping instructions for the Document Party. There cannot be an association with both Shipping Instructions and Shipment.	0..1
Party	Links to a party related to the Document Party	1
Shipment	Links to a shipment. There cannot be an association with both Shipping Instructions and Shipment.	0..1

Attribute	Definition	Data type
Booking	Links to a Booking	0..1

Table 52: Document Party entity

Party Contact Details entity: the contact details of the person to contact in relation to changes, notifications etc.

Attribute	Definition	Data type
Party Contact Details Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Name	Name of the contact	String(100)
Email	Email of the contact	String(254)
Phone	Phone number of the contact	String(30)
Association	**Description**	**Multiplicity**
Party	Link, via composition, to the Party for which this object specifies the contact details.	1
Booking	Links to a Booking	0..1
Shipping Instructions	Links to a Shipping Instructions for which this object identifies the “primary” contact details.	0..1

Table 53: Party Contact Details entity

Carrier entity an organisation or government undertaking the transport of goods. The term includes both carriers for hire or reward (also known as common or contract carriers in some countries) and carriers on own account (known as private carriers in some countries).

Attribute	Definition	Data type
Carrier Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Carrier Name	The name of the carrier	String(100)
SMDG Code	The Liner code provided by SMDG for the Carrier	String(3)
NMFTA Code	The Standard Carrier Alpha Code (SCAC) provided by NMFTA for the carrier	String(4)
Association	**Notes**	**Multiplicity**
Service	Service provided by this Carrier	0..*
Shipment	Shipment transported by this Carrier	0..*
Transport Document Issued By	Transport Document issued by this Carrier	0..*
Vessel Operated By	Vessel that is operated by this Carrier	0..*

Table 54: Carrier entity

Tax and Legal Reference entity specifies Tax and Legal references associated with a Party. A party can have multiple Tax and Legal references.

Attribute	Definition	Data type
Tax and Legal Reference Type Code	Identifies the associated Tax and Legal Reference Type	String(50)
Tax and Legal Reference Country Code	The two-letter ISO 3166 country code that this Reference Type belongs to, e.g. BE for Belgium	String(2)

Attribute	Definition	Data type
Tax and Legal Reference Value	The actual value of the tax and legal reference	String(100)
Association	**Description**	**Multiplicity**
Party	Identifies the Party to whom this reference is linked	1

Table 55: Tax and Legal Reference entity

5.3.1 Party and References Code Lists

The figure below shows the code lists related to Party, Reference.

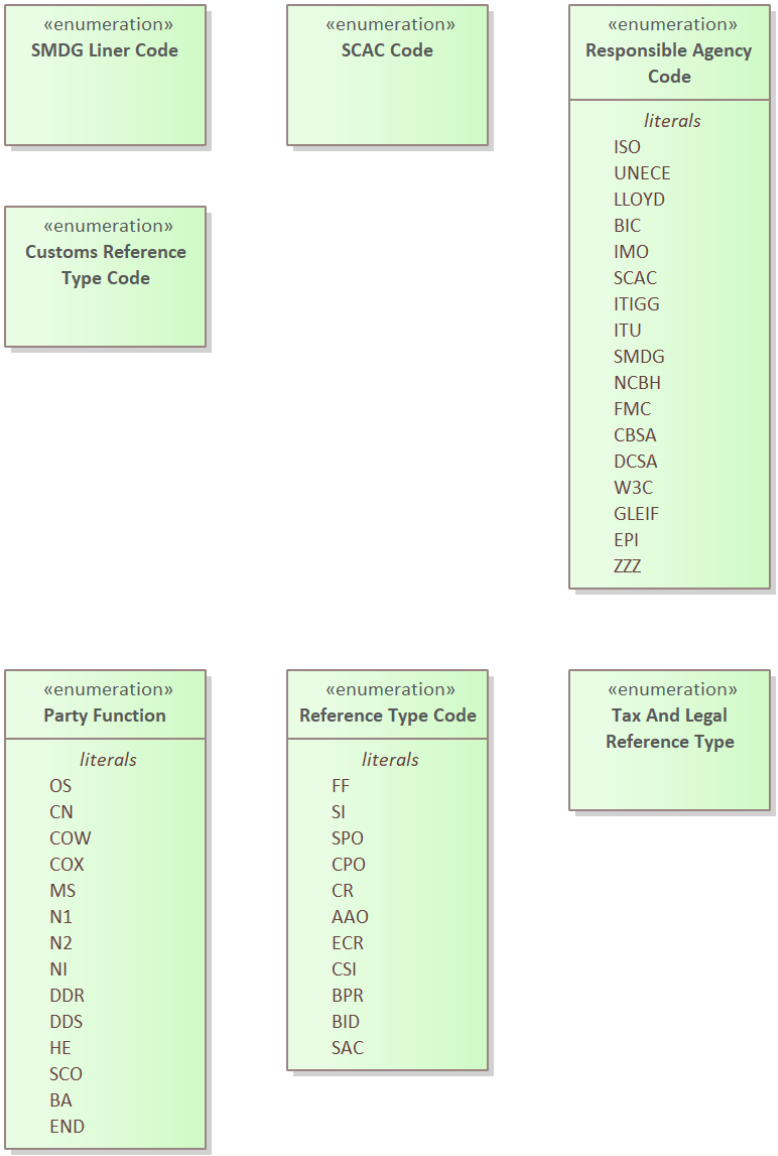


Figure 14: Party reference data entities

Reference type code list: contains the types of Reference defined by DCSA. These references are assigned to indicate the role of the party that the Reference pertains to.

Reference Type Code	Reference Type Name	Reference Type Description
FF	Freight Forwarder's Reference	Reference assigned by the freight forwarder
SI	Shipper's Reference	Reference assigned by the shipper

Reference Type Code	Reference Type Name	Reference Type Description
SPO	Shippers Purchase Order Reference	The PO reference assigned by the Shipper.
CPO	Consignees Purchase Order Reference	The PO reference assigned by the Consignee.
CR	Customer's Reference	Reference assigned to the shipment by the customer
AAO	Consignee's Reference	Reference assigned by the consignee
ECR	Empty container release reference	Unique identifier to enable release of the container from a carrier-nominated depot
CSI	Customer shipment ID	Unique Shipment ID for the booking in the Shipper or Forwarder system. Used to identify the booking along with the Booking party
BPR	Booking party reference number	A unique identifier provided by a booking party in the booking request
BID	Booking Request ID	The associated booking request ID provided by the shipper
SAC	Shipping Agency Code	

Table 56: Reference Type reference data

Customs reference type code list: contains examples of Customs reference types defined by DCSA. More details can be found here: DCSA-EDocumentation/customsreferencetypes.csv.

Customs Reference Type Code	Customs Reference Type Country Code	Customs Reference Type Name	Customs Reference Type Description
DUE	BR	Declaração Única de Exportação	Type of declaration field : DU-E / format : YYBRSSSSSSSSS (from the Portuguese, "Declaração Única de Exportação", ex : 22BR000652483)
AES	US	Automated Export System	The system used by persons or entities exporting goods from the United States, Puerto Rico, or the U.S. Virgin Islands to electronically declare their international exports, known as Electronic Export Information (EEI), to the Census Bureau to help compile export and trade statistics.
ACID	EG	Advance Cargo Information Declaration	A 19-digit number issued by the Egyptian customs portal nafeza.gov.eg uniquely identifying a shipment under the Egypt ACI system.

Table 57: Examples of Customs Reference Type reference data

Party Function reference data contains the DCSA party functions relevant to container shipping. These codes have a large intersection with the UN/EDIFACT Party Functions code list (https://service.unece.org/trade/untdid/d00a/tred/tred3035.htm) More details can be found here: DCSA-EDocumentation/partyfunctioncodes.csv.

Party Function Code	Party Function Name	Party Function Description
OS	Original shipper	The original supplier of the goods
CN	Consignee	Party to which goods are consigned
COW	Invoice payer on behalf of the consignor (shipper)	Invoice payer is a third party acting on behalf of the consignor (shipper)

Party Function Code	Party Function Name	Party Function Description
COX	Invoice payer on behalf of the consignee	Invoice payer is a third party acting on behalf of the consignee
MS	Document/message issuer/sender	Issuer of a document and/or sender of a message
N1	First Notify Party	The first party which is to be notified
N2	Second Notify Party	The second party which is to be notified
NI	Other Notify Party	Other party which is to be notified
DDR	Consignor's freight forwarder	Identification of freight forwarder giving services to the consignor (shipper)
DDS	Consignee's freight forwarder	Identification of freight forwarder giving services to the consignee
HE	Carrier booking office (transportation office)	The carrier office responsible for processing the booking
SCO (Defined by DCSA)	Service contract owner	The party signing the service contract with the carrier
BA	Booking Agent	Party acting as a booking office for transport and forwarding services
END	Endorsee Party	Party to whom the title to the goods is transferred by means of endorsement
SPC	VGM Responsible Party	Party responsible for the declaration of the verified gross mass of a packed container under SOLAS

Party Function Code	Party Function Name	Party Function Description
CA	Carrier	Carrier means any person, organization or government undertaking the transport of goods by any means of transport. The term includes both carriers for hire or reward (known as common or contract carriers in some countries) and carriers on own account (known as private carriers in some countries)
AG	Carrier local agent	
VSL	Vessel	A floating, sea going structure (mother vessels and feeder vessels) with either an internal or external mode of propulsion designed for the transport of cargo and/or passengers. Ocean vessels are uniquely identified by an IMO number consisting of 7 digits, or alternatively by their AIS signal with an MMSI number
ATH	Port Authorities	
PLT	Pilot	The activity of conducting a vessel within restricted waters
TWG	Towage Service Provider	The party offering the towage services
LSH	Lashing Service Provider	The party offering the lashing services
BUK	Bunkering Service Provider	The party offering the bunkering services.
TR	Terminal	A facility for loading, moving or discharging containers. Terminals can be both inland terminals for trucks and rail or port terminals are accessed by vessels, and these can contain multiple berths

Party Function Code	Party Function Name	Party Function Description
MOR	Mooring Service Provider	The party offering the mooring services
SLU	Sludge Service Provider	The party offering the Sludge services
SVP	Other Service Provider	Any other service not covered
VSP	Visibility Service Provider	VSPs provide commercial customers and consumers with real-time insights into their orders and shipments. VSP obtain data through integration (for example, API or EDI) with carrier systems, direct feeds from telematics

Table 58: Party Function reference data

Code List Responsible Agency reference data contains examples of Code List Responsible Agency; it is a code list to identify agencies which themselves are the sources of other code lists.

DCSA Responsible Agency Code	UN/CEFACT Code List Responsible Agency Code	Code List Responsible Agency Name	Code List Responsible Agency Description
BIC	20	BIC (Bureau International des Containeurs)	The container industry's international organisation responsible for the issuance of some important container-related codes
SCAC	182	US, Standard Carrier Alpha Code (Motor)	Organisation maintaining the SCAC lists and transportation operating in North America
SMDG	306	SMDG (Ship Message Design Group)	User Group for Shipping Lines and Container Terminals

DCSA Responsible Agency Code	UN/CEFACT Code List Responsible Agency Code	Code List Responsible Agency Name	Code List Responsible Agency Description
CBSA	N/A	CBSA	Canada Border Services Agency
FMC	163	FMC	Federal Maritime Commission
W3C	N/A	World Wide Web Consortium	Decentralized identifiers (DIDs) are a new type of identifier that enables verifiable, decentralized digital identity. This agency responsible for this standard is W3C. Can be used to identify parties that are part of the endorsement chain
GLEIF	N/A	Global Legal Entity Identifier Foundation	GLEIF is the agency responsible for the Legal Entity Identifier (LEI). An identifying number of an Individual or entity used for tax purposes
EPI	N/A	EBL Platform Identifier	The identifier assigned by the platform to the party
ISO	5	International Organization for Standardization	
UN/ECE	6	United Nations - Economic Commission for Europe	
LLOYD	11	Lloyd's register of shipping	

DCSA Responsible Agency Code	UN/CEFACT Code List Responsible Agency Code	Code List Responsible Agency Name	Code List Responsible Agency Description
IMO	N/A	International Maritime Organization	
ITIGG	N/A	International Transport Implementation Guidelines Group	
ITU	N/A	International Telecommunication Union	
NCBH	N/A	NCB Hazcheck Limited	
DCSA	N/A	Digital Container Shipping Association	
ZZZ	ZZZ	Mutually defined	A code assigned within a code list to be used on an interim basis and as defined among trading partners until a precise code can be assigned to the code list

Table 59: Code List Responsible Agency reference data

Tax and Legal Reference type code list: contains examples of Tax and Legal reference types defined by DCSA.

Tax and Legal Reference Type Code	Tax and Legal Reference Country Code	Tax and Legal Reference Type Name
RUC	PE	Registro Único de Contribuyente
ICE	MA	Identifiant Commun des Entreprises
ABN	AU	Australia Business Number

Table 60: Examples of Tax and Legal Reference Type reference data

5.4 Equipment

The subject area of Equipment contains 2 entities: Equipment, ISO Equipment Code. These entities are shown in Figure 15.

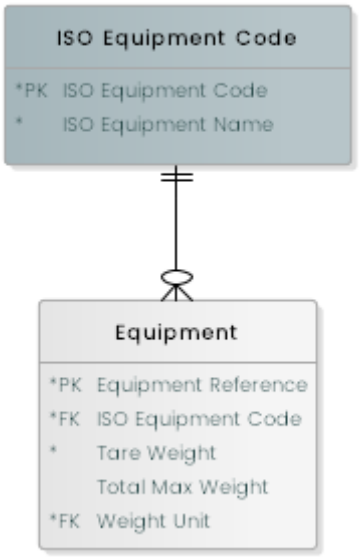


Figure 15: Equipment subject area

The equipment subject area is modelled to ensure that a specific equipment can be identified and detailed appropriately in terms of type and size in accordance with ISO 6346:1995 Freight containers – Coding, identification and marking and amendment 3 (2012) to ISO 6346:1995. Whenever ISO 6346:1995 is mentioned as a reference in this document, it denotes all instances of equipment that can be used to fulfil a shipment. Each piece of equipment can be categorised according to its type and size, and this information is contained in a hierarchy of reference tables based on ISO 6346. The ISO Equipment Code entity brings together reference data regarding equipment size and type. The entities within the Equipment subject area are defined and detailed in the following tables.

Equipment entity identifies equipment used for storing cargo in/on during transport. The equipment size/type is defined by the ISO 6346 code. The most common equipment size/type is 20'/40'/45' Dry Freight Container, but several different versions exist.

Attribute	Definition	Data type
Equipment Reference	The unique identifier for the equipment, which should follow the BIC ISO Container Identification Number where possible. According to ISO 6346, a container identification code consists of a 4-letter prefix and a 7-digit number (composed of a 3-letter owner code, a category identifier, a serial number, and a check-digit). If a container does not comply with ISO 6346, it is suggested to follow Recommendation #2: "Container with non-ISO identification" from SMDG	Text(11)
ISO Equipment Code	Unique code for the different equipment size/type used for transporting commodities. The code is a concatenation of ISO Equipment Size Code and ISO Equipment Type Code A and follows the ISO 6346 standard	Text(4)
Tare Weight	The weight of an empty container (gross container weight).	Number
Total Max Weight	Sum of weight of the empty container plus allowed weight of the loaded cargo	Number
Weight Unit	The unit of measure; it can be in either Kilograms or Pounds as provided by the shipper	Text(3)

Table 61: Equipment entity

ISO Equipment Code entity contains the ISO Equipment Code which identifies equipment based on different sizes, types, and purposes, for example, 20-foot reefer container, and follows the ISO 6346 standard. **ISO Equipment Code, examples** contains reference data for this table.

Attributes	Definitions	Data type
ISO Equipment Code	Unique code for the different equipment size/type used for transporting commodities. The code is a concatenation of ISO Equipment Size Code and ISO Equipment Type Code A and follows the ISO 6346 standard	Text(4)
ISO Equipment Name	Textual description for the equipment, follows the ISO 6346 standard	Text(35)

Table 62: ISO Equipment Code entity

5.4.1 Equipment reference data

The figure below shows the reference data entity in the Equipment area.

Figure 16: Equipment reference data entity

ISO Equipment Code, examples contains examples of ISO 6346 equipment codes.[1] This list is a small part of the full list of ISO 6346 equipment codes and names. There are more than 15,000 unique equipment code combinations (not including ISO equipment type code B). This data populates ISO Equipment Code entity

ISO Equipment Code	ISO Equipment Name
10G0	10ft General purpose container Without ventilation Opening(s) at one end or both ends
25R2	20ft Thermal container Self-powered refrigerated/heated Mechanically refrigerated
45P7	40ft Platform (container) Platform-based container for named cargo Car carrier

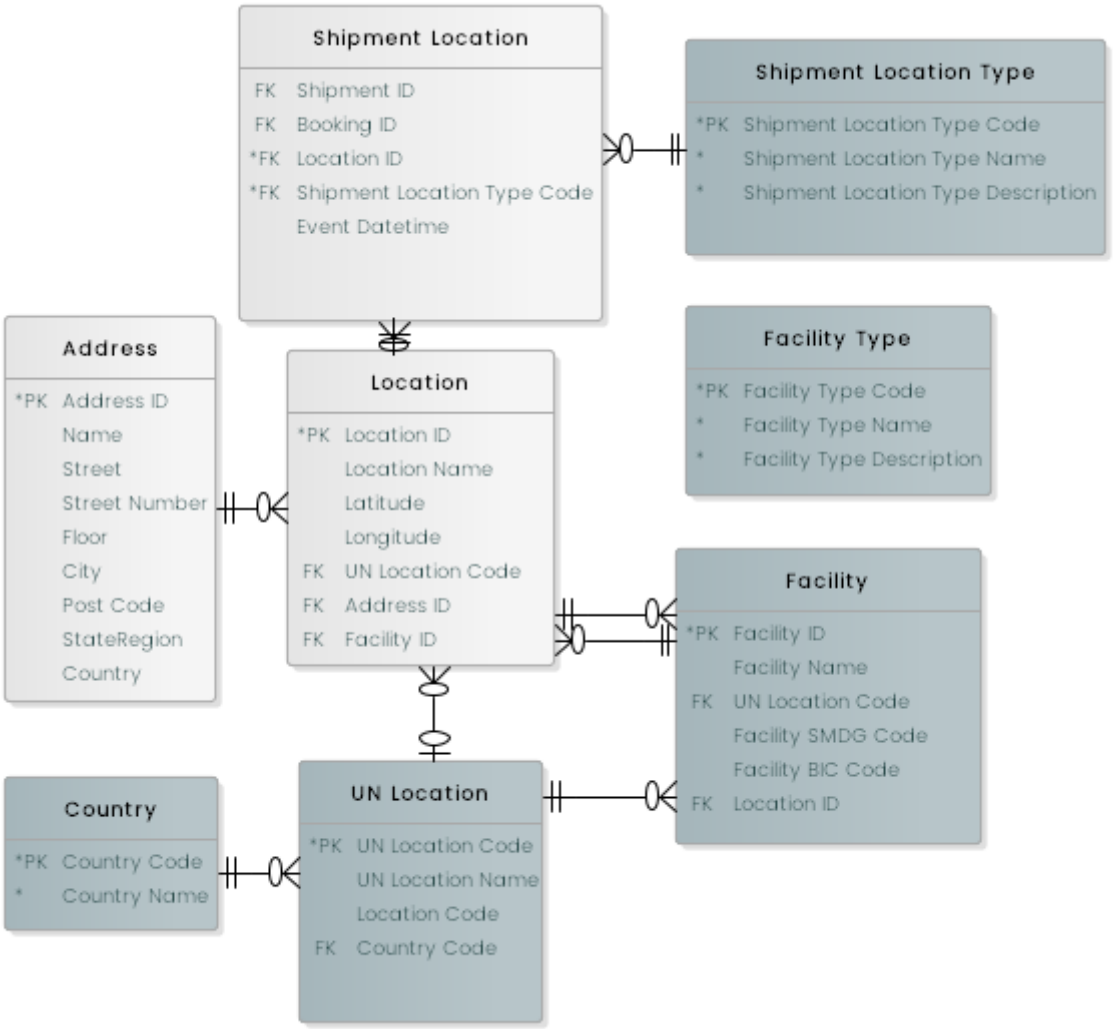
Table 63: ISO Equipment Code, examples

[1] NEN Standards Products & Services has granted DCSA the permission to use the ISO 6346 equipment code examples in this publication.

5.5 Location

The subject area of Location relates to a physical location and/or "UN/LOCODE" ("United Nations Code for Trade and Transport Locations") from where the shipment is received and to where it is finally delivered. It contains the following entities: Location, Shipment Location, Shipment Location Type, UN Location, Country, Facility and Facility Type. These entities are shown in Figure 17.

Location, as identified within the UN Location Code entity, is at a more granular level than the one identified within the Country entity (the Country Code). The location identifier within the Facility



entity (the Facility Code) is at an even more granular level than the location provided by the UN Location Code. To make it possible to track the location of an event, the Facility entity is also linked to each of the Event entities for Equipment and Transport. These entities are described in the Events subject area.

Figure 17: Location subject area

The entities within the Location subject area are defined and detailed in the following tables.

Location entity: generally used to capture location-related data, also for locations without UN Location Codes.

Attribute	Definition	Data type
Location ID	The identifier for a location	UUID
Location name	The name of the location	Text(100)
Address ID	The identifier for the physical address of the location	UUID
Latitude	Geographic coordinate that specifies the north–south position of a point on the Earth's surface	Text(10)
Longitude	Geographic coordinate that specifies the east–west position of a point on the Earth's surface	Text(11)
UN Location Code	The UN Location code specifying where the place is located	Text(5)
Facility ID	Links to the facility object containing the BIC and/or the SMDG code to specify the involved facility	UUID

Table 64: Location entity

Shipment Location entity maps the relationship between Shipment and Location, e.g., the place of receipt and the places of delivery for a specific shipment.

Attribute	Definition	Data type
Shipment ID	The identifier for a shipment	UUID
Booking ID	A unique internal identifier to identify a Booking	UUID
Location ID	The identifier for a location	UUID
Shipment Location Type Code	Links to the Location Type Code defined by DCSA	Text(3)

Attribute	Definition	Data type
Event DateTime	Optional datetime indicating when the event at the location takes place	DateTime

Table 65: Shipment Location entity

Shipment Location Type entity contains the Shipment Location Type defined by DCSA, e.g., the Place of Receipt and Place of Delivery. **Shipment Location Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Shipment Location Type Code	DCSA defined code for shipment locations	Text(3)
Shipment Location Type Name	The name of the shipment location code	Text(50)
Shipment Location Type Description	Description of the shipment location type code	Text(250)

Table 66: Shipment Location Type entity

Country entity: Country names are as defined by ISO 3166-1 alpha-2. This standard defines codes for the names of countries, dependent territories, and special areas of geographical interest. **Country, example** contains reference data for this table.

Attribute	Definition	Data type
Country Code	The two-letter ISO 3166 country code. E.g. BE for Belgium	Text(2)
Country Name	The full name for the country as defined by ISO 3166-1	Text(75)

Table 67: Country entity

UN Location entity: UN Location is a location as defined by UNECE and commonly known as "UN/LOCODE" ("United Nations Code for Trade and Transport Locations"). The UN Location identifies a location in the sense of a city/town/village, being the smaller administrative area existing as defined by the competent national authority in each country. **UN Location, example** contains reference data for this table.

A list of all UN location codes can be found in the unece.org/.../unlocode-code-list-country-and-territory

Attribute	Definition	Data type
UN Location Code	The UN Location Code identifies a location in the sense of a city/town/village, being the smaller administrative area existing as defined by the competent national authority in each country. A complete UN Location Code is a combination of a two-character country code and a three-character city/town/area Location Code, e.g. BEANR is known as the city of Antwerp (ANR), which is located in Belgium (BE)	Text(5)
UN Location Name	The name of the location as defined by the UNECE	Text(100)
Location Code	Location Code identifies a location in the sense of a city/town/village, being the smaller administrative area existing as defined by the competent national authority in each country. Location Code is a three-character code, e.g., ANR for Antwerp	Text(3)
Country Code	The country that the UN Location belongs to	Text(2)

Table 68: UN Location entity

Facility entity contains the Facility which is a location entity at a sub-level to UN Location Code and provides the locational context for the event, which is being reported on, as defined by DCSA.

Attribute	Definition	Data type
Facility ID	Identifier for facility	UUID
Facility Name	The name of the facility	Text(100)
Facility BIC Code	The code used for identifying the specific facility according to the BIC code list. The BIC code should always be used in combination with the UN Location Code	Text(4)
Facility SMDG Code	The code used for identifying the specific facility according to the SMDG code list. The SMDG code should always be used in combination with the UN Location Code	Text(6)

Attribute	Definition	Data type
UN Location Code	The UN Location code specifying where the Facility is located	Text(5)
Location ID	The Identifier for the location for this facility entity	UUID

Table 69: Facility entity

Facility Type entity contains the Facility Type which provides the locational context for the event being reported on. The facility types are defined as unique areas where equipment and/or a transport type can be located for a specified period as defined by DCSA. **Facility Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Facility Type Code	Four-character code to identify the specific type of facility	Text(4)
Facility Type Name	The name of the facility type	Text(100)
Facility Type Description	The description of the facility type	Text(250)

Table 70: Facility Type entity

Address entity stores address information.

Attribute	Definition	Data type
Address ID	Unique identifier of the address entity	UUID
Name	Name used for the address	Text(100)
Street	The name of the street of the party's address	Text(100)
Street number	The number of the street of the party's address	Text(50)
Floor	The floor of the party's street number	Text(50)

Attribute	Definition	Data type
Post code	The postal code of the party's address	Text(10)
City	The city name of the party's address	Text(65)
StateRegion	The state/region of the party's address	Text(65)
Country	The country of the address	Text(75)

Table 71: Address entity

5.5.1 Location reference data

The figure below shows the reference data entities in the Location subject area.

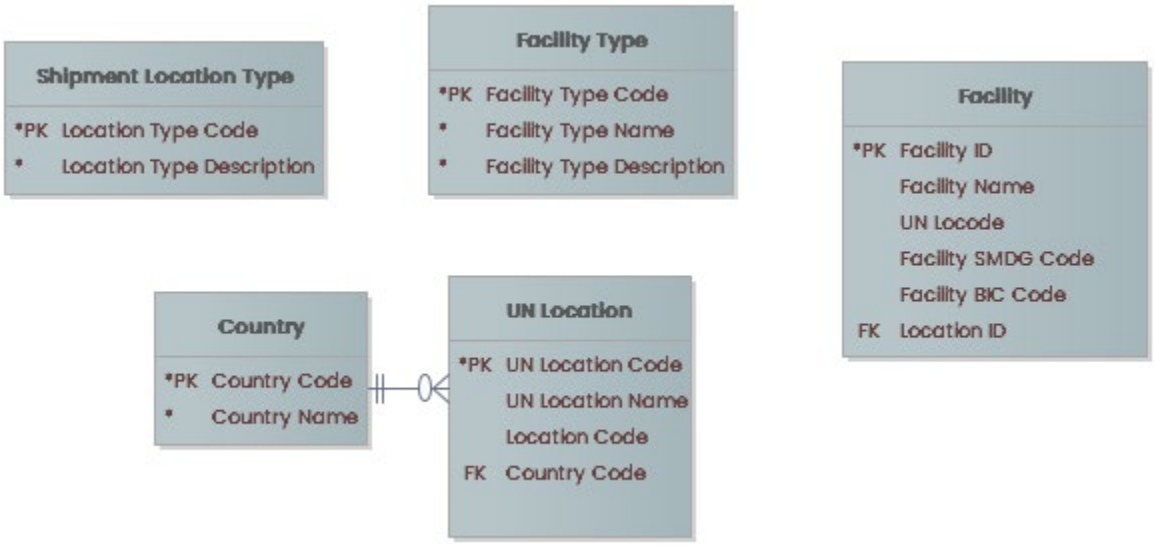


Figure 18: Location reference data entities

Country, example contains examples of country names and codes as published by ISO. The full country list (ISO 3166-1) can be obtained via the ISO Online Browsing Platform (OBP).[2] This data populates **Country entity.**

[2] https://www.iso.org/obp/ui/#search.

Country Code	Country Name
AL	Albania
BR	Brazil
HR	Croatia
DK	Denmark
SV	El Salvador

Table 72: Country, example

The first two characters of the UN Location Code are the ISO 3166-1 alpha-2 Country Code, which are followed by a three-character code representing a city/town area location within the country. An area containing several functions (port, train station, airport, etc.) should still only have one UN Location Code assigned.

UN Location, example contains examples of location names and codes as provided by the UN/ECE linked to the Country Code. Combining the Country Code and the Location Code constitutes the UN Location Code. This data populates **UN Location entity**.

UN Location Code	Country Code	Location Code	UN Location Name
ALMIL	AL	MIL	Milot
BRAGS	BR	AGS	Alagoinhas
HRVUK	HR	VUK	Vukovar
DKAAR	DK	AAR	Aarhus
SVSMG	SV	SMG	San Miguel

Table 73: UN Location, example

Facility, example contains examples of facility codes and their appertaining attributes.

Facility ID	Facility Name	Facility BIC code	Facility SMDG code
f278d62c-7b42-4f57-8a3d-3d932f989887	KHALIFA PORT CONTAINER TERMINAL		ADT
208190d5-36d3-4e5e-9f94-f781a323bdf4	DP WORLD BRISBANE FISHERMAN ISLANDS		DPBNE
04959e1f-4b2e-4e03-9950-8d86473c3c75	GATEWAY TERMINALS INDIA (GTI)		GTICI
1abf6a05-e62b-4a03-8633-e2beb05d1858	Remain GMBH	RMAA	
09adae4e-7289-42e3-bd03-07ebebeb4f6b	Pentalver Transport Ltd	PTVA	

Table 74: Facility, example

Facility Type reference data contains the Facility Type which provides the locational context for the event being reported on. The facility types are defined as unique areas where equipment and/or a transport type can be located for a specified period as defined by DCSA. More details can be found here: DCSA-Information-Model/facilitytypes.csv. This data populates **Facility Type entity**.

Facility Type Code	Facility Type Name	Facility Type Description
BORD	Border	Border between two countries where people, transports or goods can cross. This may or may not include a customs checkpoint
CLOC	Customer location	The premises of the customer, which can be either the shipper or the consignee
COFS	Container freight station	A facility where LCL (Less Than Container Load) shipments are consolidated or dispersed, cargo is stuffed into containers prior to shipment, or cargo is stripped from containers prior to release to the consignee

Facility Type Code	Facility Type Name	Facility Type Description
OFFD	Off dock storage	An interim storage facility where empty or full containers are stored in transit
DEPO	Depot	A designated area where empty equipment is stored between use
INTE	Inland terminal	A facility where containers are loaded, moved, or discharged. The inland terminal can be serviced by trucks, rail, and barges (at river terminals)
POTE	Port terminal	A facility located adjacent to a waterway where containers are loaded, moved, or discharged onto/from sea-going vessels and barges
PBPL	Pilot boarding place	The place where a pilot boards the vessel upon arrival at the port boundaries
BRTH	Berth	The place where a vessel is moored in a port terminal
RAMP	Ramp	An inland container terminal (storing both full and empty containers) connected directly to a rail ramp where containers are loaded/discharged to/from a train
ANCH	Anchorage Location	The location in which vessels anchor or may anchor.
WAYP	Waypoint	An intermediate point or place during transit of shipment

Table 75: Facility Type reference data

Shipment Location Type reference data contains the Shipment Location Type defined by DCSA. More details can be found here: DCSA-EDocumentation/shipmentlocationtypes.csv. This data populates **Shipment Location Type entity**.

Shipment Location Type Code	Shipment Location Type Name	Shipment Location Type Description
PRE	Place of Receipt	The location where the cargo is handed over by the shipper, or his agent, to the shipping line. This indicates the point at which the shipping line takes on responsibility for carriage of the container
POL	Port of Loading	The location where the cargo is loaded onto a first sea-going vessel for water transportation
POD	Port of Discharge	The location where the cargo is discharged from the last sea-going vessel
PDE	Place of Delivery	The location where the cargo is handed over to the consignee, or his agent, by the shipping line and where responsibility of the shipping line ceases
PCF	Pre-carriage From	The start location of the inland movement that takes place prior to the container(s) being delivered to the place of receipt/port of loading for account and risk of merchant (merchant haulage)
OIR	Onward In-land Routing	The end location of the inland movement that takes place after the container(s) are delivered to the Port of Discharge or Place of Delivery for account and risk of merchant (merchant haulage).

Shipment Location Type Code	Shipment Location Type Name	Shipment Location Type Description
DRL	Depot release location	The location of the depot from which the empty container for the transport is released
ORI	Origin of goods	The country in which the goods have been produced or manufactured, identified according to criteria laid down for the application of the Customs tariff or quantitative restrictions, or any measure related to trade
IEL	Container intermediate export stop off location	The location in which the loaded container goes through export formalities
PTP	Prohibited transshipment port	Place/location where a transhipment from a means of transport to another means of transport is not authorised
RTP	Requested transshipment port	Place where goods are to be or have been transferred from one means of transport to another during the course of one transport operation
FCD	Full container drop-off location	The location where the loaded container is delivered

Table 76: Shipment Location Type reference data

5.6 Transport

The subject area of Transport describes a movement of a shipment from origin to destination and contains nine entities: Transport, Vessel, Mode of Transport, Shipment Transport, Transport Call, Voyage, Transport Call Voyage, Commercial Voyage and Commercial Voyage Transport Call. These entities are shown in Figure 19. The Transport subject area is modelled around the key entity of Transport Call for storing specific instances of transport and a subtype (Vessel), which captures vessel-specific details. The Transport Call entity is linked to The Mode of Transport. The Mode of Transport entity describes the possible modes of transport. The DCSA Transport Type

attribute has been added to the Mode of Transport reference data entity to provide shipping industry-specific terminology rather than more generic terms defined by the UN/CEFACT.

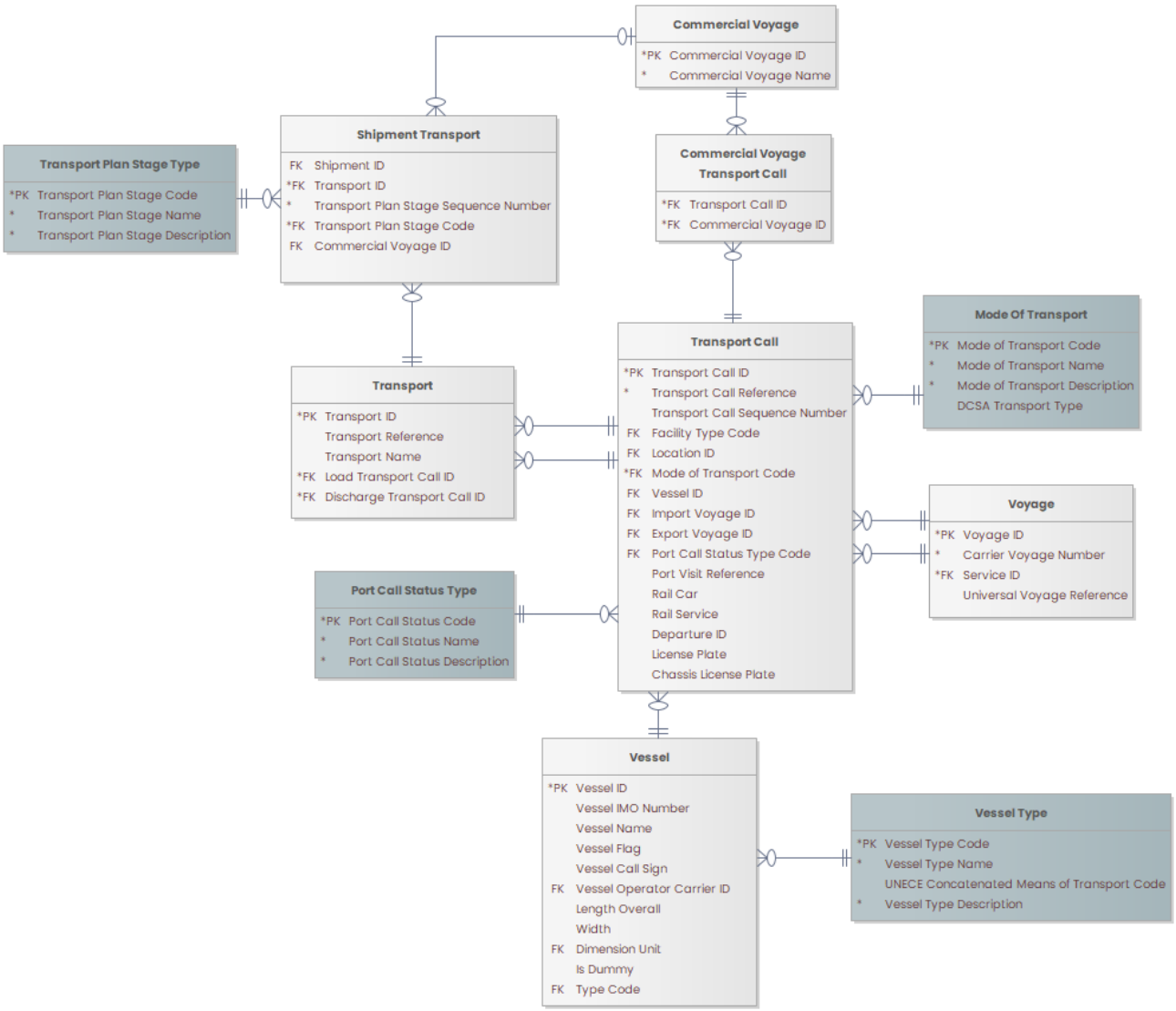


Figure 19: Transport subject area

The entities within the Transport subject area are defined and detailed in the following tables.

Mode of Transport entity addresses the code specifying the transport mode for the logistic transport movement, following the UN/CEFACT Recommendation 19 - Codes for Modes of Transport mapped to the transport types as defined in the DCSA Web glossary of terms. **Mode of Transport reference data** contains reference data for this table.

Attribute	Definition	Data type
Mode of Transport Code	The code specifying the mode (e.g. transport by rail) for the transport. The code follows UN/CEFACT Recommendation 19 - Codes for Modes of Transport.	Text(3)
Mode of Transport Name	The name of the mode of transport.	Text(100)
Mode of Transport Description	The description of the mode of transport as detailed by UN/CEFACT Recommendation 19 - Codes for Modes of Transport.	Text(250)
DCSA Transport Type	The DCSA-defined types of transport as used in events mapped to the Mode of Transport Code.	Text(50)

Table 77: Mode of Transport entity

Transport entity used to convey goods or other objects from place to place, during logistics cargo movements.

Attribute	Definition	Data type
Transport ID	The unique identifier for the transport.	UUID
Transport Reference	The reference for the transport, e.g., when the mode of transport is a vessel, the Transport Reference will be the vessel IMO number.	Text(50)
Transport Name	The name of the transport instance, e.g. for a vessel, this is the vessel name.	Text(100)
Load Transport Call ID	Identifies the departure transport call of the shipment.	UUID
Discharge Transport Call ID	Identifies the arrival transport call of the shipment.	UUID

Table 78: Transport entity

Vessel entity describes a floating, sea going structure designed for the transport of cargo and/or passengers. Ocean vessels are uniquely identified by an IMO number consisting of 7 digits, or alternatively by their AIS signal with an MMSI number. There is currently an IMO proposal to extend the number to 8 digits, which is the reason for the length specified here.

Attribute	Definition	Data type
Vessel ID	Unique identifier for the vessel	UUID
Vessel IMO Number	The unique reference for a registered Vessel. The reference is the International Maritime Organisation (IMO) number, also sometimes known as the Lloyd's register code, which does not change during the lifetime of the vessel	Text(8)
Vessel Name	The name of the Vessel given by the Vessel Operator and registered with IMO	Text(50)
Vessel Flag	The flag of the nation whose laws the vessel is registered under. This is the ISO 3166 two-letter country code	Text(2)
Vessel Call Sign	A unique alphanumeric identity that belongs to the vessel and is assigned by the International Telecommunication Union (ITU). It consists of a three-letter alphanumeric prefix that indicates nationality, followed by one to four characters to identify the individual vessel. For instance, vessels registered under Denmark are assigned the prefix ranges 5PA-5QZ, OUA-OZZ, and XPA-XPZ. The Call Sign changes whenever a vessel changes its flag	Text(10)
Vessel Operator Carrier ID	Links to the carrier entity containing the SCAC and/or the SMDG code to specify the operating carrier	UUID
Is Dummy	Indicates that the Vessel is a dummy Vessel. A dummy Vessel means that no physical vessel is assigned, the vessel can be used as a placeholder	Boolean
Vessel Type Code	The code specifying the Vessel type	Text(4)

Attribute	Definition	Data type
Length Overall	The length overall (LOA) of the Vessel. If length is defined using feet (FOT) then the numbers after a decimal should be considered as a fraction of a foot – **not** as a number of inches. E.g. 120.5 feet means 120 and a half foot (which would be 120'6")	Number
Width	The width of the Vessel. If width is defined using feet (FOT) then the numbers after a decimal should be considered as a fraction of a foot – **not** as a number of inches E.g. 120.5 feet means 120 and a half foot (which would be 120'6")	Number
Dimension Unit	The unit of measure for the width and length overall which can be expressed in either meters or feet	Text(3)

Table 79: Vessel entity

Shipment Transport entity connects Shipment and Transport, allowing the Vessel ID and Voyage ID to be published on a Transport Document. The sequence number is used to identify the next transport, which will uniquely identify the export voyage.

Attribute	Definition	Data type
Shipment ID	Identifies the shipment	UUID
Transport ID	Links the associated transport to the shipment	UUID
Commercial Voyage ID	The identifier of the Commercial Voyage	UUID
Transport Plan Stage Code	Code qualifying a specific stage of transport e.g. pre-carriage, main carriage transport or on-carriage transport	Text(3)
Transport plan Stage Sequence Number	Sequence number of the transport plan stage	Number

Table 80: Shipment Transport entity

Transport Call entity provides a list of all the locations involved in a transport journey.

Attribute	Definition	Data type
Transport Call ID	The unique identifier for a Transport Call	UUID
Transport Call Reference	A reference provided by the carrier for a Transport Call. When the Mode of Transport is vessel, and the facility type is port/terminal then the transport call reference means terminal call reference	Text(100)
Transport Call Sequence Number	Transport operator's key that uniquely identifies each individual call. This key is essential to distinguish between two separate calls at the same location within one voyage	Number
Facility Type Code	Code that identifies the type of facility	Text(4)
Location ID	The associated location ID defined in the Location entity	UUID
Mode of Transport Code	The code specifying the mode of transport	Text(3)
Vessel ID	Unique identifier for the vessel	UUID
Import Voyage ID	An identifier for the import (inbound) voyage to the region	UUID
Export Voyage ID	An identifier for the export (outbound) voyage to the region	UUID
Port Call Status Type Code	A code to communicate any change / exception to a published schedule. An example of this could be OMIT, PHOT, etc	Text(4)
Port Visit Reference	The unique port call reference provided by port authorities. Usually composed of UnLocode and a number. Port Visit Reference is used to group one or more Terminal visits to the same Port	Text(50)

Attribute	Definition	Data type
Rail Car Name	A railcar is a type of railway vehicle that is designed to transport freight or passengers on a railway track. They are also known as rail vehicles, railcars, or rolling stock. Railcars can be powered by an on-board locomotive or they can be pulled by a separate locomotive	Text(50)
Rail Service Reference	A rail service reference is a unique identifier assigned to a specific rail service or train	Text(50)
Departure ID	A departure ID (also known as a departure reference number) is a unique identifying number or code that is assigned to a specific departure of a rail	Text(100)
License Plate Number	A license plate is a tag that is attached to a vehicle and displays a unique number or code assigned to the vehicle. The format, design, and issuing authority for license plates vary by country, state, and province	Text(15)
Chassis License Plate Number	A chassis number is a unique identifying number or code assigned to the chassis of a vehicle. It may also be referred to as a "vehicle identification number" (VIN) or "frame number	Text(15)

Table 81: Transport Call entity

Port Call Status Type entity contains the Port Call Status type codes. Port Call status type codes are used to communicate any change/exception to a published schedule. This can be an OMIT (Omit), PHOT (Phase Out), etc. **Port Call Status reference data** contains reference data for this table.

Attribute	Definition	Data type
Port Call Status Type Code	Code of the Port Call Status Type	Text(4)
Port Call Status Type Name	Name of the Port Call Status Type	Text(30)

Attribute	Definition	Data type
Port Call Status Type Description	Description of the Port Call Status Type	Text(250)

Table 82: Port Call Status Type entity

Voyage entity describes the part of a service roundtrip that typically changes at the geographical "end-point" of a vessel rotation. As such, that specific port call can have two voyage numbers: one for the discharge of final shipments on the "current" voyage, and one that identifies the commencement of loading shipments (for allocation purposes). One rotation will typically have 2 voyages, one on each haul.

Attribute	Definition	Data type
Voyage ID	The identifier of the Voyage	UUID
Carrier Voyage Number	The carrier-specific identifier of the Voyage	Text(50)
Universal Voyage Reference	The universally agreed voyage reference agreed by VSA partners, as per DCSA standard. The voyage consists of 2 digits followed by 2 alpha numeric characters followed by a direction: N, S, E, W or R.	Text(5)
Service ID	Identifies the Service this Voyage is linked to	UUID

Table 83: Voyage entity

Commercial Voyage entity defines the service and the voyage from a commercial perspective and is required to accommodate having the correct voyage number on the booking confirmation and transport document.

Attribute	Definition	Data type
Commercial Voyage ID	The identifier of the Commercial Voyage	UUID
Commercial Voyage Name	Identifies the commercial voyage as shown on the booking and the transport document	Text

Table 84: Commercial Voyage entity

Commercial Voyage Transport Call entity expresses that each commercial voyage contains multiple transport calls.

Attribute	Definition	Data type
Transport call ID	Identifies the transport call that relates to the voyage	UUID
Commercial Voyage ID	The identifier of the Commercial Voyage	UUID

Table 85: Commercial Voyage Transport Call entity

Transport Plan Stage Type entity qualifies a specific stage of transport. **Transport Plan Stage Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Transport Plan Stage Code	Code of the plan stage type	Text(3)
Transport Plan Stage Name	Name of the plan stage type	Text(100)
Transport Plan Stage Description	Description of the plan stage type	Text(250)

Table 86: Transport Plan Stage Type Entity

Vessel Type entity qualifies a specific vessel type. UNECE codes are maintained for linkage .

Attribute	Definition	Data type
Vessel Type Code	Code of the vessel type	Text(4)
Vessel Type Name	Name of the vessel type	Text(100)
UNECE Concatenated Means of Transport Code	The concatenated UNECE code used for linking the vessel type to the UNECE definition	Text(4)
Vessel Type Description	Description of the vessel type	Text(100)

Table 87: Vessel Type Entity

5.6.1 Transport reference data

Figure 20 below shows the reference data entities in the Transport subject area.

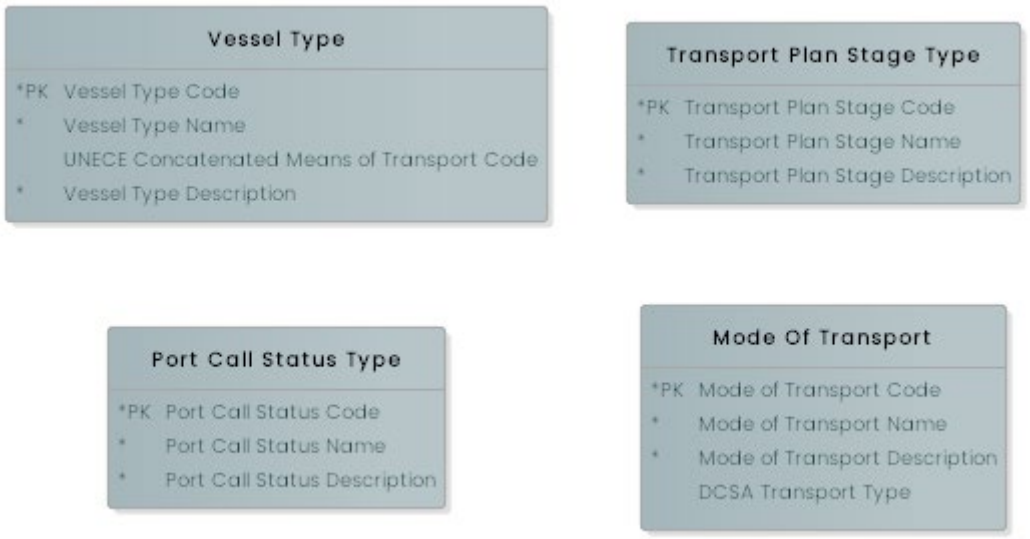


Figure 20: Transport reference data entities

Mode of Transport reference data contains the overview of mode of transport codes and names as published by the UN/CEFACT. 3 In the below overview, these are linked to the DCSA-defined transport types. More details can be found here: DCSA-EDocumentation/modeoftransportcodes.csv. This data populates **Mode of Transport entity.**

Mode of Transport Code	Mode of Transport Name	Mode of Transport Description	DCSA Transport Type
0	Transport mode not specified	Transport mode has not been specified	
1	Maritime transport	Transport of goods and/or persons is by sea	Vessel
2	Rail transport	Transport of goods and/or persons is by rail	Rail
3	Road transport	Transport of goods and/or persons is by road	Truck

[3] https://www.unece.org/fileadmin/DAM/cefact/recommendations/rec19/rec19_ecetrd138.pdf

Mode of Transport Code	Mode of Transport Name	Mode of Transport Description	DCSA Transport Type
4	Air transport	Transport of goods and/or persons is by air	
5	Mail	Method to convey goods is by mail	
6	Multimodal transport	Method to convey goods and/or persons is by multimodal transport	
7	Fixed Transport installation	Transport of item is via a fixed transport installation	
8	Inland water Transport	Transport of goods and/or persons is by inland water	Barge
9	Transport mode not applicable	The mode of transport in not applicable	

Table 88: Mode of Transport reference data

Transport Plan Stage Type reference data qualifies a specific stage of transport. This data populates **Transport Plan Stage Type Entity.**

Transport Plan Stage Code	Transport Plan Stage Name	Transport Plan Stage Description
PRC	Pre-Carriage	Pre-carriage: Transport leg occurring prior to the main transport leg
MNC	Main Carriage Transport	The main transport leg(s), happening on one or more main vessels.
ONC	On-Carriage Transport	The transport leg occurring after the main leg to the Place of Delivery

Table 89: Transport Plan Stage Type reference data

Vessel Type reference data qualifies a specific Vessel Type. The list is a subset of UNECE "Codes for Types of Means of Transport". More details can be found here: DCSA-Information-Model/vesseltypecodes.csv. This data populates **Vessel Type Entity.**

Vessel Type Code	Vessel Type Name	UNECE concatenated Means of Transport Code	Vessel Type Description
GECA	General Cargo	50	Vessel designed to carry general cargo
CONT	Container	511	Vessel designed to carry containers only
RORO	RoRo	512	Vessel with ramp designed to carry roll-on/roll-off cargo
CARC	Car carrier	513	Vessel designed to carry automotive vehicles
PASS	Passenger	59	Vessel designed to carry more than 12 passengers
FERY	Ferry	592	Vessel designed to ply regularly between two or more ports
BULK	Bulk	52	Vessel designed to carry bulk cargo
TANK	Tanker	53	Vessel solely equipped with tanks to carry cargo
LPGT	Liquefied gas tanker	54	Tanker designed to carry liquefied gas
ASSI	Assistance	60	Vessel designed to give assistance such as tug
PLOT	Pilot boat	711	Vessel designed to convey pilots to/from ships

Table 90: Vessel Type reference data

Vessel Type reference data qualifies a specific Port Call status. Values in this table is a subset of the SMDG values for SMDG Port Call Activity Code List. The codes are used when a change/exception to a published schedule occurs. More details can be found here: DCSA-Information-Model/portcallstatuscodes.csv. This data populates **Port Call Status Type entity.**

Port Call Status Type Code	Port Call Status Type Name	Port Call Status Type Description
OMIT	Omit	When a ship does not call at a port included in the Long Term Schedule that was planned at the start of the voyage.
BLNK	Blank	When an already announced voyage is cancelled. In this case the voyage number is retained and planned port calls are blanked.
ADHO	Ad Hoc	An additional port call made on a specific voyage that was not originally included in the Long Term Schedule.
PHOT	Phase Out	When a vessel moves out of a service at a given port from the latest issued schedule with vessel partners.
PHIN	Phase In	When a vessel moves into a service at a given port from the lates issues schedule with vessel partners.
ROTC	Rotation Change	When the sequence of port calls is changed compared to the proforma.
SLID	Sliding	When a vessel takes another position than planned in a service (i.e. due to relevant delay) resulting in one or more voyages to be cancelled or blanked.

Table 91: Port Call Status reference data

5.7 Events

The subject area of Events contains eleven entities. Shipment Event, Equipment Event, Transport Event and Operations Events are the four main entities. The other seven entities are related to the associated reference data: Event Classifier, Shipment Event Type, Document Type, Empty Indicator, Equipment Event Type, Transport Event Type and SMDG Delay Reason. These entities are shown in Figure 21.

The model design relating to the Equipment, Transport and Shipment Events is based on the Event Structure work that has been published by DCSA. Please refer to the DCSA Event Naming Convention and Event Structure Definitions to obtain more information about the definitions, syntax, parameters, and values for the events.

An event occurs in relation to the central entities of Shipment (for example, Shipment Release Message Issued), Transport (for example, Actual Vessel Departure from Port Terminal), and Equipment (for example, Actual Gate in of Laden Equipment at Port Terminal). These events have been documented by the DCSA Event Naming Convention and Event Structure Definitions supported with DCSA reference data. The Shipment, Transport, Equipment and Operations events have been modelled separately to keep the logical association of what the specific event relates to. For example:

- All types of events relating to shipment are captured in the Shipment Event Type.
- All types of events relating to transport are captured in the Transport Event Type.
- All types of events relating to equipment are captured in the Equipment Event Type.
- All types of events relating to vessel operations are captured in the Operations Event Type.
- All types of events relating to reefer measurements are captured in the Reefer Event Type.
- All types of events relating to IoT devices are captured in the IoT Event Type.

Each of the above event types can be further related to the estimated, planned, actual or requested state captured in the Event Classifier entity, and each Event also has specific entities that only relate to those types of events. For example, Equipment Event is related to the Empty Indicator.

Figure 21: Events subject area

The entities within the Events subject area are defined and detailed in the following tables.

Event entity is the base entity for all events. The attributes here are shared among all events.

Attribute	Definition	Data type
Event ID	A unique identifier for the event captured	Text (100)
Event Classifier Code	Code for the event classifier (PLN, ACT, EST or REQ). Allowed values depend on the Event	Text(3)
Event Created Datetime	The date and time when the event entry was created	DateTime
Event Datetime	The local date and time when the event occurred or will occur	DateTime
Retracted Event ID	Reference to an Event that is to be retracted	Text (100)
Publisher Party ID	The publisher (source) of the event (pointing to a party entity)	UUID
Publisher Role	The party function code of the publisher	Text(3)

Table 92: Event entity

Event Classifier entity denotes whether the event is planned, estimated or actual, requested. **Event Classifier reference data** contains reference data for this table.

Attribute	Definition	Data type
Event Classifier Code	Code for the event classifier (PLN, ACT, EST or REQ)	Text (3)
Event Classifier Name	Name of the classifier	Text(30)
Event Classifier Description	The description of the event classifier	Text(250)

Table 93: Event Classifier entity

Empty Indicator entity addresses the status of the equipment, specifically whether it is empty or laden. These are the two values that are currently tracked. **Empty Indicator reference data** contains reference data for this table.

Attribute	Definition	Data type
Empty Indicator Code	Code to denote whether the equipment is empty or laden. The values are EMPTY or LADEN	Text (5)

Table 94: Empty Indicator entity

Document Type entity identifies the specific information type that a shipment event relates to. **Document Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Document Type Code	The code to identify the type of information that is related to the shipment	Text (3)
Document Type Name	The name of the event that is related to the type of information related to the shipment, e.g., Booking, Arrival Notice or Transportation document	Text(100)
Document Type Description	The description of the event that is related to the type of information related to the shipment, e.g., Booking, Arrival Notice or Transportation document	Text(300)

Table 95: Document Type entity

Shipment Event Type entity describes the types of events that can relate to a shipment, e.g., a booking confirmed. **Shipment Event Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Shipment Event Type Code	The code to identify the event type that is related to the shipment	Text (4)
Shipment Event Type Name	The description of the event type that is related to the shipment, e.g., a booking confirmed	Text(30)
Shipment Event Type Description	The description of each event type	Text(350)

Table 96: Shipment Event Type entity

Equipment Event Type entity describes the types of events that can relate to an equipment, e.g., an equipment loaded onto a vessel. **Equipment Event Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Equipment Event Type Code	The code to identify the event type that is related to the equipment	Text (4)
Equipment Event Type Name	The name of the event type that is related to the equipment, e.g. loaded	Text(35)
Equipment Event Type Description	The description of the event type that is related to the equipment	Text(300)

Table 97: Equipment Event Type entity

Transport Event Type entity describes the types of events that can relate to a transport, e.g., a vessel departed. **Transport Event Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Transport Event Type Code	The code to identify the type of event that is related to the transport	Text (4)
Transport Event Type Name	The name of the event type for the Transport Event Code, e.g. a vessel departed	Text(30)
Transport Event Type Description	The description of the event type	Text(250)

Table 98: Transport Event Type entity

Operations Event Type entity describes the types of events that can relate to an operation, e.g., arrival of the means of transport. **Operations Event Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Operations Event Type Code	The code to identify the event type that is related to the operation	Text (4)
Operations Event Type Name	The name of the event type that is related to the operation	Text(30)
Operations Event Type Description	The description of the event type that is related to the operation	Text(250)

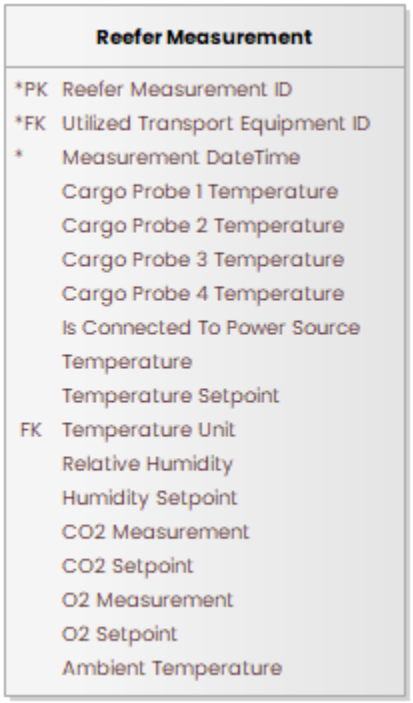
Table 99: Operations Event Type entity

Reefer Event Type entity describes the types of events that can relate to reefer, e.g., a measurement or an adjustment. **Reefer Event Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Reefer Event Type Code	The code to identify the event type that is related to the reefer	Text (4)
Reefer Event Type Name	The name of the event type that is related to the reefer	Text(30)
Reefer Event Type Description	The description of the event type that is related to the reefer	Text(250)

Table 100: Reefer Event Type entity

Reefer Measurement entity describes a measurement of a set of reefer sensors. Reefer events are based on Reefer Measurements, which are described by the Reefer Measurement entity.



captures all measurements for reefer equipment. Both the setpoint for the equipment and the measured values are stored here along with a link to the equipment and a timestamp.

Attribute	Definition	Data type
Reefer Measurement ID	Unique identifier for the Reefer Measurement	UUID
Utilized Transport Equipment ID	Link to the Utilized Transport Equipment	UUID
Measurement DateTime	Timestamp for the values stored	Date Time
Cargo Probe 1 Temperature	Temperature measured value by Cargo Probe 1	Number
Cargo Probe 2 Temperature	Temperature measured value by Cargo Probe 2	Number
Cargo Probe 3 Temperature	Temperature measured value by Cargo Probe 3	Number
Cargo Probe 4 Temperature	Temperature measured value by Cargo Probe 4	Number
Is Connected to Power Source	Is the reefer equipment connected to a power source	Boolean
Temperature Setpoint	Temperature setpoint on reefer equipment	Number
Temperature	Temperature measured value	Number
Relative Humidity	Relative humidity value measured	Number
Humidity Setpoint	Humidity setpoint on reefer equipment	Number
CO_2 Measurement	CO_2 measured value	Number
CO_2 Setpoint	CO_2 setpoint on reefer equipment	Number

Attribute	Definition	Data type
O_2 Measurement	O_2 measured value	Number
O_2 Setpoint	O_2 setpoint on reefer equipment	Number
Ambient Temperature	The measured value of the ambient temperature of the Reefer	Number

Table 101: Reefer Measurement entity

IoT Event Type entity describes the types of events that can relate to IoT, e.g., something is detected. **IoT Event Type reference data** contains reference data for this table.

Attribute	Definition	Data type
IoT Event Type Code	The code to identify the event type that is related to the IoT	Text (4)
IoT Event Type Name	The name of the event type that is related to the IoT	Text(30)
IoT Event Type Description	The description of the event type that is related to the IoT	Text(250)

Table 102: IoT Event Type entity

IoT Device Event entity describes an event that occurs due to changes on an IoT device. The IoT Event extends the **Event entity**. IoT Events always use Event Classifier Code ACT (Actual).

Attribute	Definition	Data type
IoT Device Event Type Code	The code to identify the Device that is related to the IoT.	Text (4)
IoT Device Event Type Name	The name of the Device that is related to the IoT.	Text(30)
IoT Device Event Type Description	The description of the Device that is related to the IoT.	Text(250)

Table 103: IoT Device Event entity

Port Call Service Type entity describes the service provided to the vessel during the port call. **Port Call Service Type reference data** contains reference data for this table.

Attribute	Definition	Data type
Port Call Service Type Code	The code to identify the service provided to the vessel during the port call.	Text (4)
Port Call Service Type Name	The name to identify the service provided to the vessel during the port call.	Text(30)
Port Call Service Type Description	The description to identify the service provided to the vessel during the port call.	Text(250)

Table 104: Port Call Service Type entity

Shipment Event entity describes an event that happens to a shipment. The Shipment Event extends the **Event entity**. Shipment Events always use Event Classifier Code ACT (Actual).

Attribute	Definition	Data type
Shipment Event Type Code	The code to identify the event that is related to the shipment	Text(4)
Document Type Code	The code to identify the type of information that is related to the shipment	Text(3)
Document ID	Reference to the document concerned by the event	Text(50)
Reason	Text field as part of the request message, describing the reasons for requesting the update, including their 'category' (e.g., mandatory, missing information, clauses, etc.)	Text(5000)

Table 105: Shipment Event entity

Equipment Event entity describes an event that happens to an equipment, e.g., a container loaded onto a vessel at the port terminal. The Equipment Event extends the **Event entity**.

Attribute	Definition	Data type
Equipment Event Type Code	The code to identify an equipment-related event type	Text(4)
Is Transshipment Move	Indicates whether the event is originated in relation to an ocean transshipment or inter-terminal move. This attribute can be combined with one of the following equipmentEventTypeCodes: LOAD, DISC, GTIN, GTOT, PICK and DROP	Boolean
Equipment Reference	Reference that uniquely identifies the equipment involved in the event	Text(11)
Empty Indicator Code	Code to denote whether the equipment is empty or laden	Text(5)
Transport Call ID	Specifies the transport call involved in the event	UUID
Event Location ID	The location where the event takes place	UUID
Facility Type Code	Code that identifies the type of facility for the Event Location	Text(4)

Table 106: Equipment Event entity

Transport Event entity describes an event that happens to a transport instance, e.g., a vessel departed. The Transport Event extends the **Event entity.**

Attribute	Definition	Data type
Transport Event Type Code	The code to identify the type of event that is related to transport	Text(4)
Delay Reason Code	Code for the delay reason as provided by SMDG	Text(3)
Change Remark	Free text description of the reason for the change in schedule	Text(250)
Transport Call ID	Specifies the transport call involved in the event	UUID

Table 107: Transport Event entity

Operations Event entity describes an event that happens to a vessel during a port call. The Operations Event entity extends the **Event entity.**

Attribute	Definition	Data type
Operations Event Type Code	The code to identify the event that is related to the operations event	Text(4)
Transport Call ID	Specifies the transport call during which the event takes place	UUID
Port Call Service Type Code	The code to identify the type of service provided during the port call	Text(4)
Event Location ID	The location where the event takes place	UUID
Facility Type Code	The type of facility where the event takes place	Text(4)
Delay Reason Code	Delay reasons as provided by SMDG	Text(3)
Vessel Position ID	The location entity containing the location of the vessel when the message is sent, expressed in latitude and longitude as per ISO 6709	UUID
Vessel Draft	The actual draft of the vessel in meters or feet	Number
Vessel Draft Unit	The unit of measure for the Draft which can be expressed in either meters or feet	Text(3)
Miles to Destination Port	Remaining distance reported by the vessel to the next destination port in nautical miles	Number
Remark	Free text to provide additional information on the context	Text(500)

Attribute	Definition	Data type
Port Call Phase Type Code	The general direction of the vessel for which information applies	Text(4)

Table 108: Operations Event entity

Reefer Event entity describes an event that occurs due to changes on a Reefer Container. The Reefer Event extends the **Event entity**. Reefer Events always use Event Classifier Code ACT (Actual).

Attribute	Definition	Data type
Reefer Event Type Code	The code to identify the type of event that is related to reefer	Text(4)
Reefer Measurement ID	Reference to the measurement entity	UUID
Geolocation	A geolocation pointing to where the event occurred	POINT

Table 109: Reefer Event entity

IoT Event entity describes an event that occurs due to changes on an IoT device. The IoT Event extends the **Event entity**. IoT Events always use Event Classifier Code ACT (Actual).

Attribute	Definition	Data type
IoT Event Type Code	The code to identify the type of event that is related to IoT	Text(4)
IoT Device Event Code	A field for describing what the IoT event is related to	Text (3)
Geolocation	A geolocation pointing to where the event occurred	POINT

Table 110: IoT Event entity

SMDG Delay Reason entity: delay reasons as provided by SMDG, see the Code list DELAY on https://smdg.org/documents/smdg-code-lists/delay-reason-and-port-call-activity/ for a complete list of codes. **Delay Reason Codes, examples** populate this table.

Attribute	Definition	Data type
Delay Reason Code	Code for the delay reason as provided by SMDG	Text(3)
Delay Reason Name	Name of the delay reason as provided by SMDG	Text(100)
Delay Reason Description	The description of the delay reason as provided by SMDG	Text(250)

Table 111: SMDG Delay Reason entity

Port Call Phase Type entity describes an indicator that shows a vessel's status within the four main phases of a port call. **Port Call Phase Type reference data** populates this table.

Attribute	Definition	Data type
Port Call Phase Type Code	Code for the delay reason as provided by SMDG	Text(4)
Port Call Phase Type Name	Name of the delay reason as provided by SMDG	Text(30)
Port Call Phase Type Description	The description of the delay reason as provided by SMDG	Text(250)

Table 112: Port Call Phase Type entity

5.7.1 Events reference data

The figure below shows the reference data entities in the Events subject area.

Figure 22: Events reference data entities

Event Classifier reference data contains the code and name for the event classifiers as defined by DCSA. More details can be found here: [DCSA-Information-Model/eventclassifiercodes.csv](). This data populates **Event Classifier entity.**

Event Classifier Code	Event Classifier Name	Event Classifier Description
EST	Estimated	A classifier for an event that will happen in continuation of currently ongoing process
ACT	Actual	A classifier for an event that has happened
PLN	Planned	A classifier for an event that has been planned to occur in the future
REQ	Requested	A classifier for an event that has been requested to occur in the future

Table 113: Event Classifier reference data

Delay Reason Codes, examples contains the different Delay Reason codes and the description of them as defined by SMDG[4]. Currently the delay reason codes only cover codes relating to delay of schedules and Terminals not working. As new codes are needed (could be for inland, barges, etc) they will be added. This data populates **SMDG Delay Reason entity.**

Delay Reason Code	Delay Reason Name
1 – Ship Related	
ACC	Accident involving personnel
DEV	Deviation to avoid bad weather
STW	Stowage adjustment
2 – Shore related	
AIP	Accident involving personnel
ANA	Authorities not available

[4] The full list is available at https://smdg.org/documents/smdg-code-lists/delay-reason-and-port-call-activity/

Delay Reason Code	Delay Reason Name
BUN	Bunkering delays
CGS	Arr OFF Proforma - Berth congestion
PRD	Low Productivity
QUA	Quarantine Inspection
YRD	Yard congestion
OTS	Others – Shore related
3 – Cargo related	
CAE	Cargo - Awaiting Exports
CIN	Cargo inspection by Authorities
DIN	Deficient or inadequate information

Table 114: Delay Reason Codes, examples

Empty Indicator reference data contains the Empty Indicator code and name defined by DCSA. More details can be found here: DCSA-Information-Model/emptyindicatorcodes.csv. This data populates **Empty Indicator entity.**

Empty Indicator Code
EMPTY
LADEN

Table 115: Empty Indicator reference data

Equipment Event Type reference data contains the Equipment Event Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/equipmenteventtypecodes.csv. This data populates **Equipment Event Type entity.**

Equipment Event Type Code	Equipment Event Type Name	Equipment Event Type Description
LOAD	Loaded	The action of lifting cargo or a container on board the transportation. Load is complete once the cargo or container has been lifted on board the mode of transport and secured
DISC	Discharged	The action of lifting cargo or containers off a transport. Discharge is the opposite of load
GTIN	Gated in	The action taken when a container is introduced into a controlled area like a port or inland terminal. Gate in has been completed once the operator of the area is legally in possession of the container
GTOT	Gated out	The action taken when a container is removed from a controlled area like a port or inland terminal. Gate-out has been completed once the possession of the container has been transferred from the operator of the terminal to the entity that is picking up the container
STUF	Stuffed	The process of loading the cargo inro a container or in/onto another piece of equipment
STRP	Stripped	The act of unloading cargo from containers or equipment
PICK	Pick-up	The action of collecting the container at customer location
AVPU	Available for Pick-up	Identifies that shipment/container is ready to be picked up/collected at a facility
DROP	Drop-off	The action of delivering the container at customer location
AVDO	Available for Drop-off	Identifies that shipment/container is ready to be dropped off/ delivered at a facility
INSP	Inspected	An indicator that the Seal on the equipment has been inspected

Equipment Event Type Code	Equipment Event Type Name	Equipment Event Type Description
RMVD	Removed	An indicator that a Seal has been removed from the equipment for inspection
RSEA	Resealed	An indicator that the equipment has been re-sealed after inspection
CUSS	Customs Selected for Scan	Identifies that Customs has selected the equipment for scanning
CUSI	Customs Selected for Inspection	Identifies that that Customs has selected the equipment for inspection
CUSR	Customs Released	Identifies that Customs has released the equipment for either export from or import into the country
CROS	Crossed	Event that indicates that the equipment has passed a certain facility type during its transit

Table 116: Equipment Event Type reference data

Transport Event Type reference data contains the Transport Event Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/transporteventtypecodes.csv. This data populates **Transport Event Type entity.**

Transport Event Type Code	Transport Event Type Name	Transport Event Type Description
ARRI	Arrived	Arrival is the event which occurs, when a transport reaches its final or intermediate destination, and the transport is ready for load/discharge operations to begin at the specified location. Depending on the mode of transport arrival will have different definitions: • Vessel: A vessel has arrived once the vessel is berthed at the port terminal. • Rail: A rail transport has arrived once the transport is stationary at the intended platform or rail head. • Truck: A truck has arrived once the truck is stationary in front of the loading dock or other loading facility.
DEPA	Departed	Departure is the event which occurs when a transport leaves a place of operations. Depending on the mode of transport departure will have different definitions: • Vessel: Departure has been completed once the last mooring has been released. • Rail: Departure has been completed once the rail transport is no longer stationary in front of the platform or rail head. • Truck: Departure has been completed once the truck is no longer stationary in front of the loading dock or loading facility.

Table 117: Transport Event Type reference data

Shipment Event Type reference data contains the Shipment Event Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/shipmenteventtypecodes.csv. This data populates **Shipment Event Type entity**.

Shipment Event Type Code	Shipment Event Type Name	Shipment Event Type Description
RECE	Received	Indicates that a document has been received by the carrier or shipper
DRFT	Drafted	Indicates that a document is in draft mode being updated by either the shipper or the carrier

Shipment Event Type Code	Shipment Event Type Name	Shipment Event Type Description
PENA	Pending Approval	Indicates that a document has been submitted by the carrier and is now awaiting approval by the shipper
PENU	Pending Update	Indicates that the carrier requested an update from the shipper which is not received yet
PENC	Pending Confirmation	Indicates that a document has been submitted by the shipper and is now awaiting confirmation by the carrier
CONF	Confirmed	Identifies that the booking request is confirmed by the carrier to the shipper, i.e., booking confirmation completed
REJE	Rejected	Indicates that a document has been rejected by the carrier
APPR	Approved	Indicates that a document has been approved by the shipper
ISSU	Issued	Indicates that a document has been issued by the carrier
SURR	Surrendered	Indicates that a document has been surrendered by the customer to the carrier
SUBM	Submitted	Indicates that a document has been submitted by the customer to the carrier
VOID	Void	Cancellation of an original transport document
REQS	Requested	A status indicator that can be used with a number of identifiers to denote that a certain activity, service or document has been requested by the carrier, customer or authorities. This status remains constant until the requested activity is “Completed”

Shipment Event Type Code	Shipment Event Type Name	Shipment Event Type Description
CMPL	Completed	A status indicator that can be used with a number of activity identifiers to denote that a certain activity, service or document has been completed
HOLD	On Hold	A status indicator that can be used with a number of activity identifiers to denote that a container or shipment has been placed on hold, i.e., can't progress in the process.
RELS	Released	A status indicator that can be used with a number of activity identifiers to denote that a container or shipment has been released, i.e., allowed to move from depot or terminal by authorities or service provider
CANC	Cancelled	A status indicator to be used when the booking is cancelled by the Shipper or the Carrier

Table 118: Shipment Event Type reference data

Operations Event Type reference data contains the Operations Event Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/operationseventtypecodes.csv. This data populates **Operations Event Type entity**.

Operations Event Type Code	Operations Event Type Name	Operations Event Type Description
ARRI	Arrived	Event occurring when the means of transport has arrived or is planned/estimated to have arrived
DEPA	Departed	Event occurring when the means of transport has departed or is planned/estimated to have departed
STRT	Started	Event occurring when the operation has started or is planned/estimated to be started
CMPL	Completed	Event occurring when the operation has completed or is planned/estimated to be completed

Operations Event Type Code	Operations Event Type Name	Operations Event Type Description
CANC	Cancelled	Event occurring when the operation has been cancelled
OMIT	Omitted	Event occurring when a planned transport call has been omitted

Table 119: Operations Event Type reference data

Reefer Event Type reference data contains the Reefer Event Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/reefereventtypecodes.csv. This data populates **Reefer Event entity.**

Reefer Event Type Code	Reefer Event Type Name	Reefer Event Type Description
MEAS	Measured	Event occurring when a new measurement has occurred in a Reefer Container
ADJU	Adjusted	Event occurring when the setpoint values for a Reefer container have been changed

Table 120: Reefer Event Type reference data

IoT Event Type reference data contains the IoT Event Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/ioteventtypecodes.csv. This data populates **IoT Event entity**.

IoT Event Type Code	IoT Event Type Name	IoT Event Type Description
DETC	Detected	Event indicating that something has been detected

Table 121: IoT Event Type reference data

IoT Device Event Type reference data contains the IoT Device Event Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/iotdeviceeventtypecodes.csv. This data populates **IoT Device Event entity**.

IoT Device Event Type Code	IoT Device Event Type Name	IoT Device Event Type Description
DRO	Door Opened	Value for indicating that the Door has been opened

Table 122: IoT Device Event Type reference data

Port Call Phase Type reference data contains the Port Call Phase Type codes defined by DCSA. More details can be found here: DCSA-Information-Model/portcallphasetype.csv. This data populates **Port Call Phase Type entity.**

Port Call Phase Type Code	Port Call Phase Type Name	Port Call Phase Type Description
INBD	Inbound	Ship's physical movement from approach to (anchor) berth
ALGS	Alongside	Time from First Line Secured till Last Line Released
SHIF	Shifting	Ship's physical movement from (anchor) berth to (anchor) berth
OUTB	Outbound	Ship's physical movement from (anchor) berth to its next destination

Table 123: Port Call Phase Type reference data

Document Type reference data contains the Document Type code and name defined by DCSA. More details can be found here: DCSA-Information-Model/documenttypecodes.csv. This data populates **Document Type entity**.

Document Type Code	Document Type Name	Document Type Description
CBR	Carrier Booking Request	Reference to the Booking Request – this would be the Carrier Booking Request Reference

Document Type Code	Document Type Name	Document Type Description
BKG	Booking	Reference to the Booking – this would be the Carrier Booking Reference
SHI	Shipping Instructions	Reference to the Shipping Instructions– this would be the Shipping InstructionsReference
VGM	Verified Gross Mass	Reference to the Verified Gross Mass – this "Identifier" has not yet been defined
DEI	Delivery Instructions	Reference to the Delivery Instructions – this would be the Delivery Instruction Reference
DEO	Delivery Order	Reference to the Delivery Order – this would be the Delivery Order Reference
TRO	Transport Order	Reference to the Transport Order – this would be the Transport Order Reference
CRO	Container Release Order	Reference to the Container Release Order – this would be the Container Release Order Reference
TRD	Transport Document	Reference to the Transport Document – this would be the Transport Document Reference
ARN	Arrival Notice	Reference to the Arrival Notice – this would be the Arrival Notice Reference
CAS	Cargo Survey	Reference to the Cargo Survey - this "Identifier" has not yet been defined
CUC	Customs Clearance	Reference to the Customs Clearance - this "Identifier" has not yet been defined
DGD	Dangerous Good Declaration	Reference to the Dangerous Goods - this "Identifier" has not yet been defined

Document Type Code	Document Type Name	Document Type Description
OOG	Out Of Gauge	Reference to the Out of Gauge - this "Identifier" has not yet been defined
CQU	Contract Quotation	Reference to the Contract Quotation - this "Identifier" has not yet been defined
INV	Invoice	Reference to the Invoice - this "Identifier" has not yet been defined
HCE	Health Certificate	Reference to the Health Certificate - this "Identifier" has not yet been defined
PCE	Phytosanitary Certificate	Reference to the Phytosanitary Certificate - this "Identifier" has not yet been defined
VCE	Veterinary Certificate	Reference to the Veterinary Certificate - this "Identifier" has not yet been defined
FCE	Fumigation Certificate	Reference to the Fumigation Certificate - this "Identifier" has not yet been defined
ICE	Inspection Certificate	Reference to the Inspection Certificate - this "Identifier" has not yet been defined
CEA	Certificate of Analysis	Reference to the Certificate of Analysis - this "Identifier" has not yet been defined
CEO	Certificate of Origin	Reference to the Certificate of Origin - this "Identifier" has not yet been defined

Table 124: Document Type reference data

Port Call Service Type reference data contains the Port Call Service Type codes defined by DCSA. More details can be found here: DCSA-Information-Model/portcallservicetypecodes.csv. This data populates **Port Call Service Type entity.**

Port Call Service Type Code	Port Call Service Type Name	Port Call Service Type Description
PILO	Pilotage	The activity of conducting a vessel within restricted waters. Also, the fee for the services of a pilot
MOOR	Mooring	The activity of securing a vessel, craft or boat, or other floating objects by ropes and/or chains to the shore, or to anchors. This service is usually provided by linesmen
CRGO	Cargo Operations	The activity of discharging, shifting, loading and lashing containers (both full and empty) as well as other cargo from/to a vessel during port stay
TOWG	Towage	The activity of one vessel (boat/tug) assisting another vessel with manoeuvres within the port area
BUNK	Bunkering	The transfer of liquid or gaseous fuel from land-based or floating facilities into a ship's permanent tanks
LASH	Lashing	All activities encompassing securing the containers and other arrangements onboard to prevent them from moving around on the vessel at sea.
SAFE	Safety	A safety timestamp indicates the acknowledgement of a participant that the vessel is ready for a responsibility handover from carrier to terminal and otherwise
FAST	Fast	FAST is all fast (last line secured)
GWAY	Gangway	GWAY is gangway down and secure (authorized personnel can board the vessel)

Port Call Service Type Code	Port Call Service Type Name	Port Call Service Type Description
ANCO	Anchorage ops	The activity of letting go or heaving in the anchor
SLUG	Sludge	The activity of removing waste from a vessel to shore during port stay
SHPW	Shore power	The transfer of electricity from shore to power the vessel
LCRO	Loading cargo operations	The activity of loading containers (both full and empty) from the vessel etc
DCRO	Discharge cargo operations	The activity of discharging containers (both full and empty) from the vessel etc
VRDY	Vessel ready	The confirmation that the vessel is ready either to sail or to start cargo operations

Table 125: Port Call Service Type reference data

5.8 Vessel Sharing Agreement (VSA)

Vessel sharing agreement is used as an umbrella term to cover the different agreement types that carriers can have in place. The subject area of a VSA contains four entities: Vessel Sharing Agreement, Vessel Sharing Agreement Partner, Vessel Sharing Agreement Type and Tradelane. These entities are shown in Figure 23.

The Vessel Sharing Agreement subject area and its entities will allow for the identification of the partners in a vessel sharing agreement, and which Tradelane the agreement relates to. The Vessel Sharing Agreement Type entity defines the different types of agreements, and the Vessel Sharing Agreement is used to outline the specific agreement. The Vessel Sharing Agreement Partner entity identifies the partners in the agreement. The Tradelane entity indicates which directional trade the agreement relates to and is linked to the Service entity (described in the Service subject area) to specify which services are covered in the Tradelane.

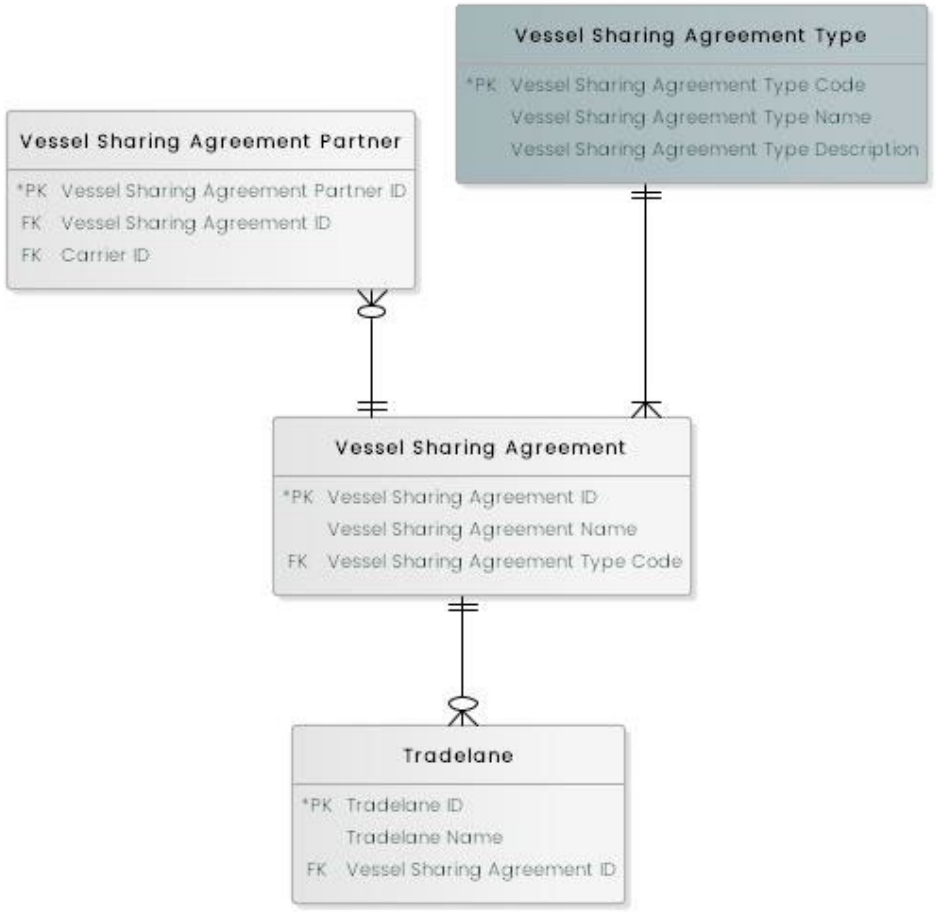


Figure 23: VSA subject area

The entities within the VSA subject area are defined and detailed in the following tables.

Vessel Sharing Agreement entity describes an agreement between two or more shipping lines to share vessel capacity on specific trades to increase asset utilisation.

Attribute	Definition	Data type
Vessel Sharing Agreement ID	The identifier for the agreement.	UUID
Vessel Sharing Agreement Name	The name of the vessel sharing agreement.	Text(50)
Vessel Sharing Agreement Type Code	The code to identify the specific type of vessel sharing agreement.	Text(3)

Table 126: Vessel Sharing Agreement entity

Vessel Sharing Agreement Type entity identifies a specific type of vessel sharing agreement. **Vessel Sharing Agreement Type reference data** contains data for this table.

Attribute	Definition	Data type
Vessel Sharing Agreement Type Code	The code to identify the specific type of vessel sharing agreement.	Text(3)
Vessel Sharing Agreement Type Name	The name of the specific type of vessel sharing agreement.	Text(50)
Vessel Sharing Agreement Type Description	A description for a specific type of VSA, as detailed by DCSA.	Text(250)

Table 127: Vessel Sharing Agreement Type entity

Vessel Sharing Agreement Partner entity identifies a participant in a vessel sharing agreement.

Attribute	Definition	Data type
Vessel Sharing Agreement Partner ID	The unique identifier for the VSA and its partners. The uniqueness of each row is based on the Carrier ID and Vessel Sharing Agreement ID.	UUID
Carrier ID	Identifies the carrier involved in the VSA.	UUID
Vessel Sharing Agreement ID	Identifies the VSA.	UUID

Table 128: Vessel Sharing Agreement Partner entity

Tradelane entity describes an East/West or North/South directional trade indicator identifying the geographic area being covered by a specific carrier or service. A Tradelane can have many Services (E.g. Transpacific East-bound).

Attribute	Definition	Data type
Tradelane ID	The unique identifier for the Tradelane.	Text(8)
Tradelane Name	The name of the Tradelane.	Text(150)
Vessel Sharing Agreement ID	The identifier for the vessel sharing agreement.	UUID

Table 129: Tradelane entity

5.8.1 VSA reference data

The figure below shows the reference data entity in the VSA subject area. This entity indicates which type of agreement the partners are involved in.

Figure 24: VSA reference data entities

Vessel Sharing Agreement Type reference data contains the Vessel Sharing Agreement Type Code, Name and Descriptions. More details can be found here: DCSA-Information-Model/vesselsharingagreementtypes.csv. This data populates **Vessel Sharing Agreement Type entity.**

Vessel Sharing Agreement Type Code	Vessel Sharing Agreement Type Name	Vessel Sharing Agreement Type Description
VSA	Vessel Sharing Agreement	An agreement between two or more carriers agreeing to share vessel capacity in specific trades using a specified number of vessels.
SCA	Slot Charter Agreement	An agreement between two carriers to sell or exchange a specific number of TEU slots in one or more trades.

Table 130: Vessel Sharing Agreement Type reference data

5.9 Service

Services are the central constituents of each carrier's network. They are typically operated on a weekly schedule. The Service Proforma entity has been modelled on a reduced scope and only allows one version (the latest) to be stored at any point in time, with a limited number of details captured.

The subject area of Service contains two entities: Service and Service Proforma. These entities are shown in Figure 25.

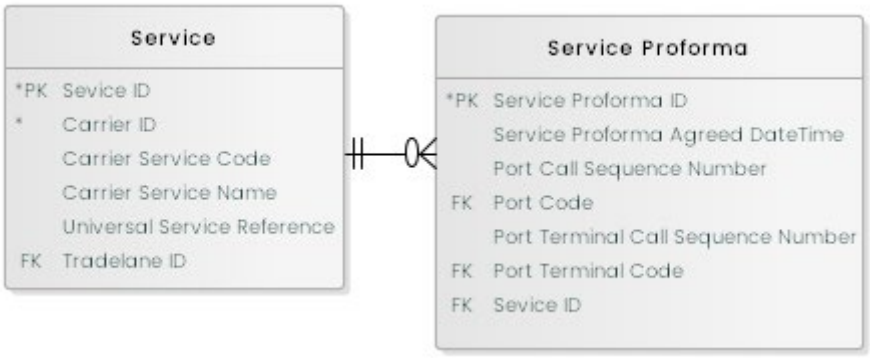


Figure 25: Service subject area

The entities within the Service subject area are defined and detailed in the following tables.

Service entity contains the attributes identifying a given service.

Attribute	Definition	Data type
Service ID	The unique identifier of the Service.	UUID
Carrier ID	Unique internal identifier for the carrier.	UUID
Carrier Service Code	The code for the service. This is unique for each carrier.	Text(11)
Universal Service Reference	The universally agreed service reference to use. This reference is unique across all carriers.	Text(8)
Carrier Service Name	The name of the service as provided by the carrier operating the vessel.	Text(50)
Tradelane ID	The Tradelane that the service is based upon.	Text(8)

Table 131: Service entity

Service Proforma entity identifies the Proforma that the VSA Partners have agreed to, i.e., the actual port rotation that is carried out by the vessel.

Attribute	Definition	Data type
Service Proforma ID	The unique identifier for a Service Proforma.	UUID
Service Proforma Agreed DateTime	The date when all vessel sharing agreement partners have agreed to the new Proforma.	DateTime
Port Call Sequence Number	The port number in the sequence of ports that are or will be called on a voyage, as defined in the proforma prior to the voyage. This is useful for identifying a unique call, when calls are made to the same port more than once.	Number
Port Code	Identifies the port being called as a UN Location code.	Text(5)
Port Terminal Call Sequence Number	The Port Terminal number in the sequence of port terminals that are or will be called on a specific port call (as identified by the Port Call Sequence Number). This is useful to identify a unique port terminal call when calls are made to the same terminal more than once.	Number
Port Terminal Code	Identifies the port terminal being called as an SMDG port terminal code.	Text(11)
Service ID	The identifier of the Service.	UUID

Table 132: Service Proforma entity

5.10 Commercial Schedules

Commercial Schedules is a standardisation area concerned with carrier scheduling from the perspective of shippers, freight forwarders and BCOs. This is in contrast to "Operational Vessel Schedules", which is concerned primarily with vessel sharing agreements.

The entities specific to the Commercial Schedule subject area are defined and detailed in the following tables.

Commercial Voyage entity has the same attributes as a Voyage, but the semantics are different and it includes additional attributes.

Attribute	Definition	Data type
Commercial Voyage Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Commercial Voyage Name	The descriptive name used for the voyage, as communicated to shippers, freight forwarders, BCOs.	String(50)
Carrier Voyage Number	The identifier of the Voyage. The identifier is vessel operator specific.	String(50)
Universal Voyage Reference	The short, unique identifier for the Voyage that can be correlated between partners in a vessel sharing agreement.	String(5)
Association	**Notes**	**Multiplicty**
Service	The service that this Commercial Voyage is part of.	1
Transport Call Export Voyage	The Transport Call associated with the Commercial Voyage for export.	0..*
Transport Call Import Voyage	The Transport Call associated with the Commercial Voyage for import.	0..*
Transports	A summary of a transport plan associated with a Shipment.	0..*

Table 133: Commercial Voyage entity

Point To Point Request entity describes a request for service from a shipper expressing an interest in carrier services. This is in fact a request for a set of candidate transport plans.

Attribute	Definition	Data type
Point To Point Request Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)
Earliest Departure Datetime	The earliest possible DateTime for departure, with >= semantics.	DateTime

Attribute	Definition	Data type
Latest Departure Datetime	The latest possible DateTime for departure, with <= semantics.	DateTime
Earliest Arrival Datetime	The earliest possible DateTime for arrival, with >= semantics.	DateTime
Latest Arrival Datetime	The latest possible DateTime for arrival, with <= semantics.	DateTime
Is Transshipment	Indicator as to whether transshipment is acceptable.	Boolean
Receipt Type At Origin	A code indicating the receipt type.	String(3)
Delivery Type At Destination	A code indicating the receipt type.	String(3)
Association	**Definition**	**Multiplicty**
UN Location	Place Of Delivery The endpoint at which the Leg will be delivered.	0..1
UN Location	Place Of Reciept The endpoint at which the Leg will be received.	0..1
Transport Plan	A set of possible Transport Plan that could meet the criteria of the Point To Point Request.	0..*

Table 134: Point To Point Request entity

Leg entity describes the legs in a candidate Transport Plan corresponding to an enquiry for service.

Attribute	Definition	Data type
Leg Reference	The unique identifier for an object of this class, in the scope of a single enterprise / organisational unit.	String(100)

Attribute	Definition	Data type
Sequence Number	A value that can be used to order a set of Leg into correct temporal order in which they will occur.	Integer
Mode Of Transport	A code indicating the Mode Of Transport for this particular Leg.	String(50)
Association	**Definition**	**Multiplicty**
Leg Endpoint	Arrival Endpoint The endpoint at which the Leg will arrive.	1
Leg Endpoint	Departure Endpoint The endpoint from which the Leg will depart.	1
Transport Plan	A set of Leg objects are associated with a Transport Plan that corresponds to a possible plan to meet the request.	1

Table 135: Leg entity

Leg Endpoint entity describes one of the two Leg Endpoints that are part of a Leg through composition.

Attribute	Definition	Data type
Endpoint Datetime	The expected DateTime when this Leg Endpoint will occur.	DateTime
Facility Type Code	An indication of the type of Facility at which this Leg Endpoint will occur.	Integer
Association	**Definition**	**Multiplicty**
Leg	Arrival Endpoint The endpoint at which the Leg will arrive.	1
Leg	Departure Endpoint The endpoint from which the Leg will depart.	1

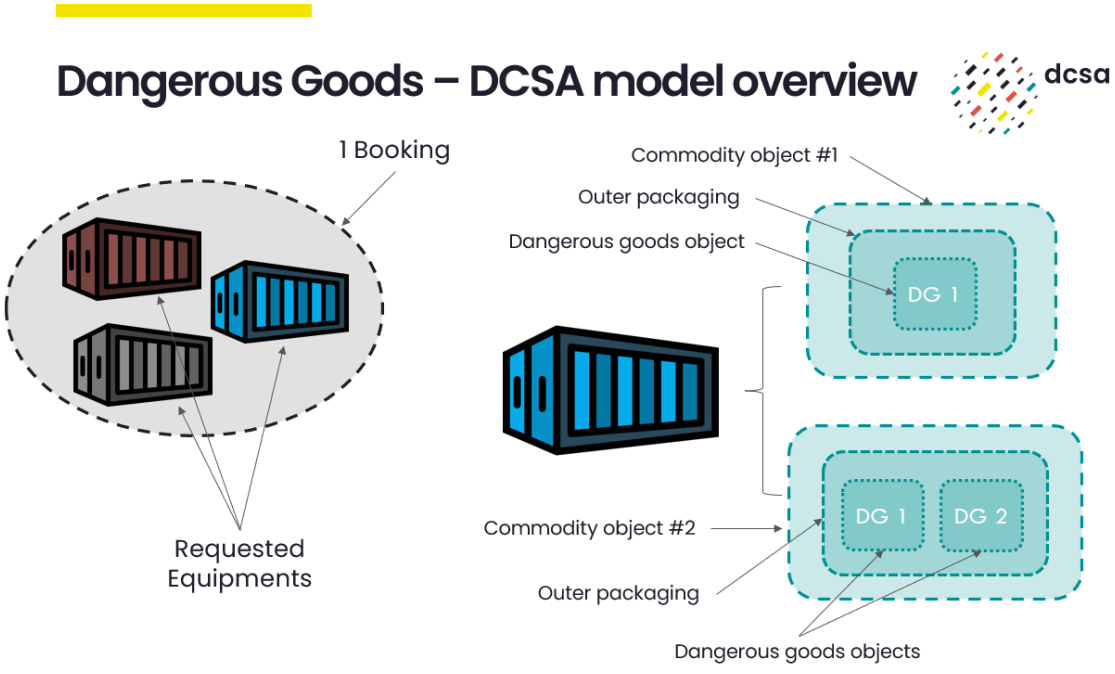
Attribute	Definition	Data type
Transport Call	An optional association with a Transport Call to provide a link to the Vessel and Carrier, where this is appropriate.	0..1
Location	The Location at which this Leg Endpoint will take place.	1

Table 136: Leg Endpoint entity

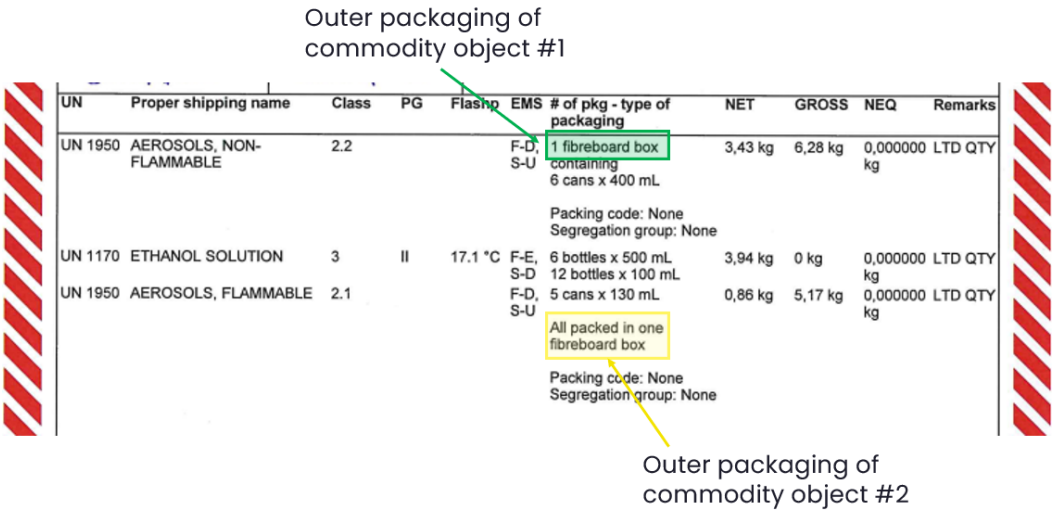
6 Appendix

6.1 Dangerous Goods DCSA model overview

A visual representation of the DCSA Booking standard 2.0 Beta 1 model structure is included below, illustrating how Dangerous Goods are built into the model using real life examples.



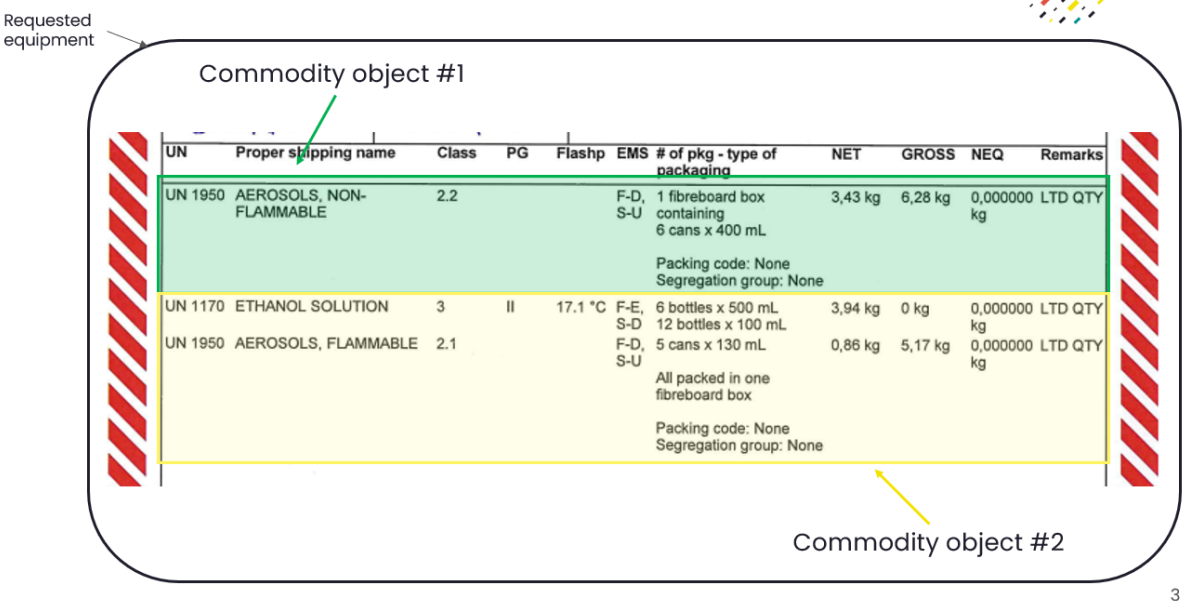
Example 1: DCSA model including DG



UN	Proper shipping name	Class	PG	Flashp	EMS	# of pkg - type of packaging	NET	GROSS	NEQ	Remarks
UN 1950	AEROSOLS, NON-FLAMMABLE	2.2			F-D, S-U	1 fibreboard box containing 6 cans x 400 mL Packing code: None Segregation group: None	3,43 kg	6,28 kg	0,000000 kg	LTD QTY
UN 1170	ETHANOL SOLUTION	3	II	17.1 °C	F-E, S-D	6 bottles x 500 mL 12 bottles x 100 mL	3,94 kg	0 kg	0,000000 kg	LTD QTY
UN 1950	AEROSOLS, FLAMMABLE	2.1			F-D, S-U	5 cans x 130 mL All packed in one fibreboard box Packing code: None Segregation group: None	0,86 kg	5,17 kg	0,000000 kg	LTD QTY

4

Example 1: DCSA model including DG



UN	Proper shipping name	Class	PG	Flashp	EMS	# of pkg - type of packaging	NET	GROSS	NEQ	Remarks
UN 1950	AEROSOLS, NON-FLAMMABLE	2.2			F-D, S-U	1 fibreboard box containing 6 cans x 400 mL Packing code: None Segregation group: None	3,43 kg	6,28 kg	0,000000 kg	LTD QTY
UN 1170	ETHANOL SOLUTION	3	II	17.1 °C	F-E, S-D	6 bottles x 500 mL 12 bottles x 100 mL	3,94 kg	0 kg	0,000000 kg	LTD QTY
UN 1950	AEROSOLS, FLAMMABLE	2.1			F-D, S-U	5 cans x 130 mL All packed in one fibreboard box Packing code: None Segregation group: None	0,86 kg	5,17 kg	0,000000 kg	LTD QTY

3

Example 1: DCSA model including DG

1 Dangerous goods object in 1 outer packaging of commodity object #1

UN	Proper shipping name	Class	PG	Flashp	EMS	# of pkg - type of packaging	NET	GROSS	NEQ	Remarks
UN 1950	AEROSOLS, NON-FLAMMABLE	2.2			F-D, S-U	1 fibreboard box containing 6 cans x 400 mL Packing code: None Segregation group: None	3,43 kg	6,28 kg	0,000000 kg	LTD QTY
UN 1170	ETHANOL SOLUTION	3	II	17.1 °C	F-E, S-D	6 bottles x 500 mL 12 bottles x 100 mL	3,94 kg	0 kg	0,000000 kg	LTD QTY
UN 1950	AEROSOLS, FLAMMABLE	2.1			F-D, S-U	5 cans x 130 mL All packed in one fibreboard box Packing code: None Segregation group: None	0,86 kg	5,17 kg	0,000000 kg	LTD QTY

2 Dangerous goods objects in 1 outer packaging of commodity object #2

5

Example 1: DCSA model including DG

Inner packagings inside the DG object belonging to outer packaging in commodity object #1

UN	Proper shipping name	Class	PG	Flashp	EMS	# of pkg - type of packaging	NET	GROSS	NEQ	Remarks
UN 1950	AEROSOLS, NON-FLAMMABLE	2.2			F-D, S-U	1 fibreboard box containing 6 cans x 400 mL Packing code: None Segregation group: None	3,43 kg	6,28 kg	0,000000 kg	LTD QTY
UN 1170	ETHANOL SOLUTION	3	II	17.1 °C	F-E, S-D	6 bottles x 500 mL 12 bottles x 100 mL	3,94 kg	0 kg	0,000000 kg	LTD QTY
UN 1950	AEROSOLS, FLAMMABLE	2.1			F-D, S-U	5 cans x 130 mL All packed in one fibreboard box Packing code: None Segregation group: None	0,86 kg	5,17 kg	0,000000 kg	LTD QTY

Inner packagings inside the DG objects belonging to outer packaging in commodity object #2

6

Example 1: DCSA model including DG

Zooming in on Commodity object #1

Defined at commodity level

Commodity type	Cargo gross weight	Number of packages	Outer packaging description
Aerosols	6,28 kg	1	fibreboard box

Dangerous goods specifications

Defined at outer packaging level

	UN Number	Proper shipping name	IMO class	Packing group	Flashpoint	EMS	Inner packaging quantity	Inner packaging description	Dangerous goods net weight	Dangerous goods gross weight	Is Limited Quantity
DG object #1	1950	Aerosols, non flammable	2.2			F-D, S-U	6	cans 400 ml	3,43 kg	6,28 kg	TRUE

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Example 1: DCSA model including DG

Zooming in on Commodity object #2

Defined at commodity level

Commodity type	Cargo gross weight	Number of packages	Outer packaging description
Aerosols and ethanol	5,17 kg	1	fibreboard box

Dangerous goods specifications

Defined at outer packaging level

	UN Number	Proper shipping name	IMO class	Packing group	Flashpoint	EMS	Inner packaging quantity	Inner packaging description	Dangerous goods net weight	Dangerous goods gross weight	Is Limited Quantity
DG object #1	1170	Ethanol solution	3	2	17.1 C	F-E, S-D	6 12	bottles 500 ml bottles 100 ml	3,94 kg	0 kg	TRUE
DG object #2	1950	Aerosols, flammable	2.1			F-D, S-U	5	cans 130 ml	0,86 kg	5,17 kg	TRUE

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Example 2: DCSA model including DG and Non-DG commodities

DG and non-DG cargo can be defined as part of the same commodity object, **if they share the same outer packaging.**

Example
Alcoholic beverages packed in the same cardboard boxes:

- Whisky and Vodka (DG) 5.000 kg
- Wine (non-DG) 7.000 kg
- = Total 12.000 kg

Defined at commodity level

Commodity type	Cargo gross weight	Number of packages	Outer packaging description
Alcoholic beverages	12,000 kg	100	cardboard boxes

Dangerous goods specifications

Defined at outer packaging level

UN Number	Proper shipping name	IMO class	Packing group	Inner packaging quantity	Inner packaging description	Dangerous goods net weight	Dangerous goods gross weight
3065	Alcoholic beverages (Whisky)	3	2	180 200	bottles 750 ml bottles 500 ml	2900 kg	3000 kg
3065	Alcoholic beverages (Vodka)	3	3	150	bottles 1 lt	1800 kg	2000 kg

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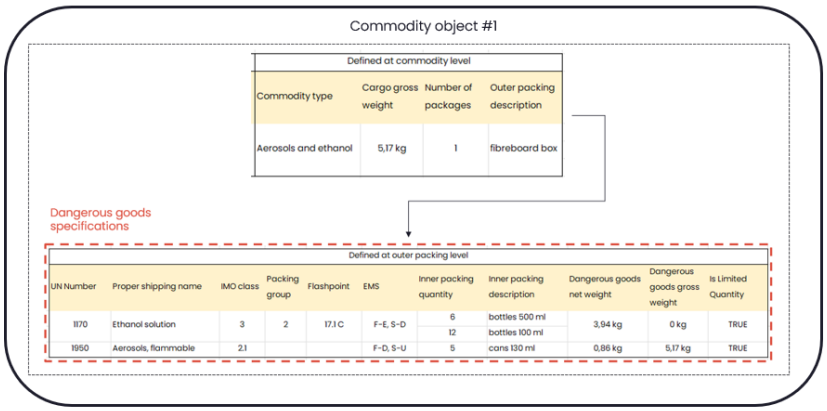
Example 3: Multiple DG commodities in one container (same outer packaging)

If multiple DG commodities are stuffed in one container, multiple DG objects must be created (one for each DG commodity). If the DG cargo shares the same outer packaging, it can be defined as part of same commodity object.



Example:
Aerosols and ethanol packed in the same container and sharing the same outer packagings.

Model structure:
2 DG objects (UN1170 and UN 1950) are defined inside 1 commodity object (Aerosols and ethanol), specified inside the same requested equipment object (e.g. 1 x 40HC).

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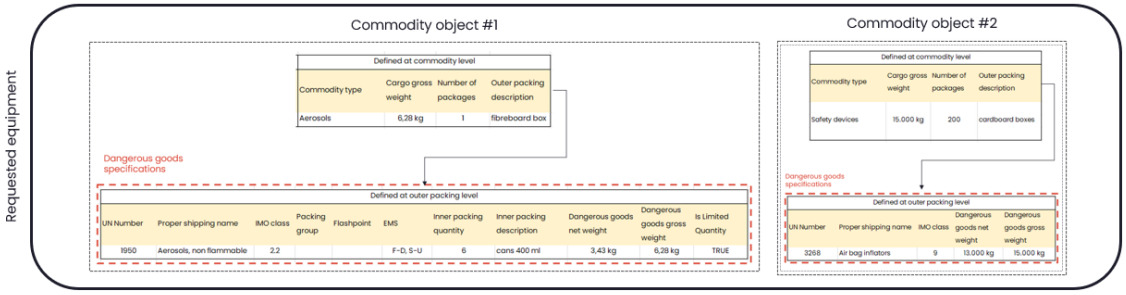
Example 4: Multiple DG commodities in one container (different outer packaging)

If multiple DG commodities are stuffed in one container, multiple DG objects must be created (one for each DG commodity). If the DG cargo is packed in different outer packaging types, multiple commodity objects must be defined (one for each outer packaging type).



Example:
Aerosols and safety devices packed in the same container, but in different outer packagings types.

Model structure:
2 DG objects (UN1950 and UN 3268) are defined in 2 separate commodity objects (Aerosols; Safety devices), specified inside the same requested equipment object (e.g. 1 x 40HC).

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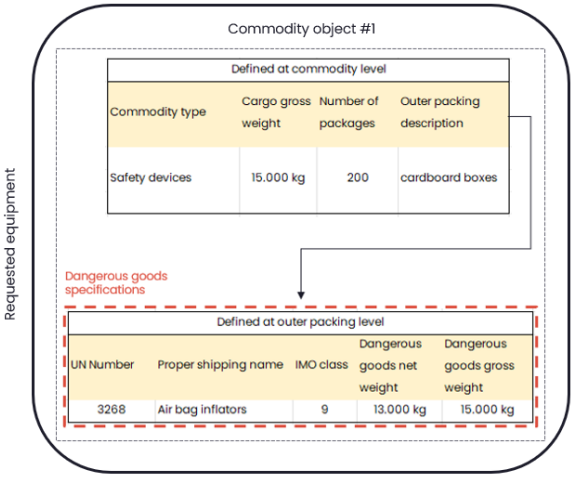
Example 5: One DG commodity in multiple containers

If the same DG commodity is split across multiple containers, 1 commodity object defining the DG specifications can be created inside the same requested equipment object. The requested equipment unit will specify how many containers are stuffed with the same DG commodity.



Example: 45.000 kg of airbags spread across 3 containers.

Model structure:
1 DG object defined in 1 commodity object, specified inside the same requested equipment object (e.g. 3 x 40HC).

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6.2 Links

Bureau International des Containers et du Transport Intermodal (BIC) – Container Identification Number (2019):
https://www.bic-code.org/bic-facility-codes/

https://www.bic-code.org/identification-number

International Organisation for Standardisation (ISO) 6346:1995 – Freight containers -- Coding, identification and marking:
https://www.iso.org/standard/20453.html

International Maritime Organisation (IMO) – Identification number schemes (2019):
http://www.imo.org/en/OurWork/MSAS/Pages/IMO-identification-number-scheme.aspx

International Telecommunication Union (ITU) – Table of International Call Sign Series (Appendix 42 to the RR):
https://www.itu.int/en/ITU-R/terrestrial/fmd/Pages/call_sign_series.aspx

ISO 6346:1995 – Freight containers — Coding, identification and marking — Amendment 3:2012:
https://www.iso.org/standard/59778.html

National Motor Freight Traffic Association (NMFTA) - Standard Carrier Alpha Codes (SCAC) 2019:
http://www.nmfta.org/pages/scac

Republic of the Marshall Islands - Vessel Registration and Mortgage Recording Procedures (MI-100, 2018):
https://www.register-iri.com/wp-content/uploads/MI-100.pdf

Ship-planning Message Development Group (SMDG) – Terminal Code List, Liner Code List, Delay Reason Codes, and SMDG Recommendations:
http://www.smdg.org/smdg-master-codes-lists/
http://www.smdg.org/documents/smdg-recommendations/

SMDG Liner Code:
https://smdg.org/documents/smdg-code-lists/smdg-liner-codes/

SMDG Terminal Code:
https://smdg.org/documents/smdg-code-lists/smdg-terminal-code-list/ (official website)
https://github.com/smdg-org/Terminal-Code-List/blob/master/SMDG%20Terminal%20Code%20List.csv

United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) Recommendation no. 19 (2000, first version):
https://www.unece.org/fileadmin/DAM/cefact/recommendations/rec19/rec19_ecetrd138.pdf

UN/CEFACT – UNLOCODE (2019):
https://www.unece.org/cefact/locode/service/location.html

UN/Trade Data Element Directory (TDED) (2005):
https://www.unece.org/fileadmin/DAM/trade/untdid/UNTDED2005.pdf

UN/CEFACT Core Component Library (CCL) (2019):
https://www.unece.org/cefact/codesfortrade/unccl/ccl_index.html

UN/Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT):
https://www.unece.org/cefact/edifact/welcome.html
and (accessed 2019)
https://www.unece.org/tradewelcome/un-centre-for-trade-facilitation-and-e-business-uncefact/outputs/standards/unedifact/tradeedifactrules/part-4-edifact-rules-for-electronic-data-interchange-for-administration-commerce-and-transport/part-4-unedifact-rules-chapter-22-syntax-rules.html

UN/CEFACT BUY/SHIP/PAY Reference Data Model (BSP RDM) (version 1, 2019)
https://www.unece.org/fileadmin/DAM/cefact/brs/BuyShipPay_BRS_v1.0.pdf

UN/CEFACT Multi-Modal Transport Reference Data Model (MMT RDM) (v1.0, 2018)
https://www.unece.org/cefact/brs/brs_index.html