

27 January 2020

Interface Standard for Track and Trace 1.0

Data and Interface Standards
Digital Container Shipping Association

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Preface

The vision of the Digital Container Shipping Association (DCSA) is to shape the digital future of container shipping by being the industry's collective voice, working towards alignment and standardization, setting the frameworks for effective and universally adoptable solutions, exploring possibilities of innovation, and moving the industry forward through standards for IT and non-competitive business practices. The DCSA aims at paving the way for interoperability in the container shipping industry through digital transformation and standardization. It is the DCSA's mission to represent, lead and serve the container shipping industry for safer, more secure and more efficient operations of container shipping companies.

The DCSA has five key objectives:



Figure 1. The DCSA's key objectives

The objective of the DCSA's Data and Interface Standard project workstream is to strengthen the container shipping industry's ability to send and receive data across industry participants. Furthermore, it aims at enhancing intercarrier cooperation based on shared requirements, and ensuring interoperability by using a shared data language, preferably inspired by existing standards and aligned with the industry process definitions in the DCSA Industry Blueprint.

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

This document

This document is the first publication of the Interface Standard for Track and Trace from the DCSA. The aim of the DCSA Interface Standard for Track and Trace 1.0 is to ensure that all members and partners in the container shipping industry can base their interfaces on a common understanding of the data and processes of the industry to enable consistency, simplicity, and timeliness in the solutions for tracking and tracing across the industry, supporting interoperability in container shipping.

This document is supported by a range of supplementary publications by the DCSA, which will be referenced in the relevant sections. The supporting publications are:

- **DCSA Industry Blueprint 1.0**
Provides insights on as-is carrier processes. The DCSA Industry Blueprint comprises processes related to the movement of a container/equipment from one location to another, processes that are linked to a shipment/booking, processes that are considered critical for industry digitization and standardization efforts, and finally processes that are not considered commercially sensitive or of competitive advantage.
- **DCSA Information Model 1.0**
The DCSA Information Model 1.0 organizes and catalogs the information being generated or consumed in connection with the processes described in the DCSA Industry Blueprint 1.0. The Information Model 1.0 is also a collective term that describes all the products that model the data needed to meet the interface requirements. Further, the DCSA Information Model 1.0 also includes a diagrammatic representation of entities and their interrelationships.
- **DCSA Glossary of Terms 1.1**
This publication promotes alignment between terms across all DCSA stakeholders in the container shipping industry. The first version of the glossary was published on the DCSA website in the summer of 2019, in the context of the Industry Blueprint.
- **Reading Guides for the DCSA Information Model 1.0, and on the DCSA Interface Standard for Track and Trace 1.0**
The two reading guides for the DCSA Information Model 1.0 and the DCSA Interface Standard for Track and Trace 1.0, respectively, should help set the context around the DCSA initiatives. The guides provide insight into the different concepts and methods utilized in the production of the documents, and they suggest ways the documents can be used as a foundation for future implementations.
- **DCSA Event Naming Convention 1.0, and Event Structure Definitions 1.0**
Throughout the years, track and 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 the carriers' websites. To align this across the industry, the DCSA has developed a naming convention that sets the standards for naming as well as understanding customer-facing track and trace events.

Document ID

The following table contains the introductory information regarding the project workstream.

Name	Description
Project name	Data and Interface Standards
Project workstream	Interface Standard for Track and Trace
Project number	1

Table 1. Document ID

Referenced documents

- DCSA Industry Blueprint 1.0
- DCSA Glossary of Terms 1.1
- DCSA Information Model 1.0
- DCSA Information Model 1.0 Reading Guide
- DCSA Interface Standard for Track and Trace 1.0 Reading Guide
- DCSA Event Naming Convention 1.0
- DCSA Event Structure Definitions 1.0

The above-mentioned documents can be found on the [DCSA.org website](https://www.dcsa.org).

1 Introduction

1.1 Objective

The objective of the DCSA Interface Standard for Track and Trace 1.0 is to standardize the fundamental information provided across the carrier liner domain through track and trace interfaces. Focus is to ensure agreement within the industry on the shared requirements and standards that the industry must follow to streamline inter-operational functionality and data sharing across parties within the industry. This agreement should be further supported by use-cases or designated subject areas.

This agreement on standardization is made to ensure that the interfaces, including the functionality and the data provided via the interfaces, are and will be defined and designed in the same way so that the end-user experience remains consistent across all industry partners using these standards. This means that it should not matter whether an interface is built using EDI messages, interactive UIs, APIs, manual data exchanges or any other interface technology. The interface elements must remain consistent regardless of the technology adopted.

1.2 Overview

In defining a technology-agnostic interface standard, the interface describes all exchanges of information between any two parties. 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 main party contracting the movement of the goods, which, from the DCSA’s point of view, is the ocean carrier.

Many other parties may be involved in the movement of goods, such as haulers, freight forwarders, railways, feeder operators and barge operators, though the DCSA considers the ocean carrier to be the main party acting as the provider of track and trace information to the parties interested in that information.

The DCSA Interface Standard for Track and Trace 1.0 is meant to describe a standard for the exchange of information in the form of an input and an output. Figure 2 shows how this interface interplays with the different technology elements.

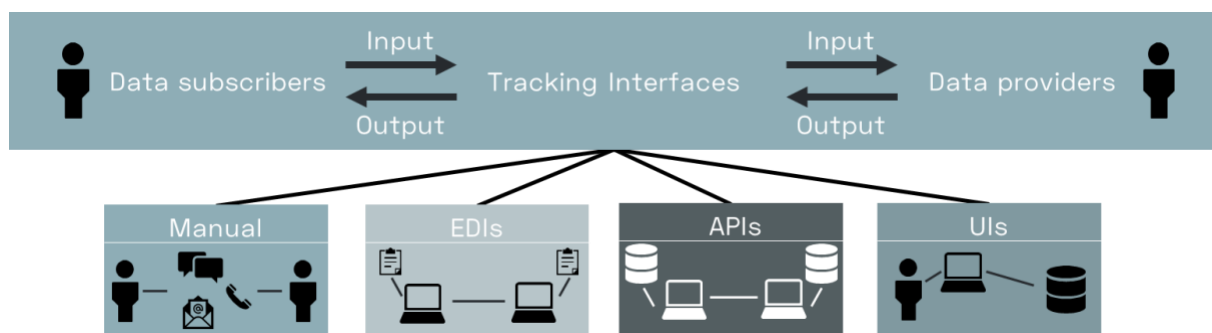


Figure 2. Interface illustration of input and output

To define the DCSA Interface Standard for Track and Trace 1.0, the DCSA is inspired by the Unified Modeling Language (UML) methodology.

1.3 Conformance

All parties in the container shipping industry are encouraged to implement and follow the data and interface 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 DCSA Logical Data Model and data definitions for information requirements, which must be implemented in order to conform to the agreed standards within the DCSA framework.

1.4 Normative references

The documents listed below constitute the normative references for publication 1.0 of the DCSA Interface Standard for Track and Trace:

- DCSA Industry Blueprint
- DCSA Glossary of Terms
- DCSA Information Model
- DCSA Information Model Reading Guide
- DCSA Interface Standard for Track and Trace Reading Guide
- DCSA Event Naming Convention
- DCSA Event Structure Definitions

2 Requirements

2.1 User stories

The user stories in the table below illustrate potential ways of using the interface within the context of tracking and tracing of shipment. Please note that the below-mentioned user stories relate to the use-case definition in the next section. User stories that address the wider container shipping universe and its players are out of scope for this publication. The user stories described here are examples and they do not constitute a comprehensive list.

ID	As a [persona]	I [want to]	[so that]
1	As a carrier	I want to share information about certain track and trace shipment events with other parties in a unified manner	so that we avoid miscommunication and time-consuming data cleansing efforts.
2	As a shipper	I want to receive information about the last known location and time of a shipment	so that I know if the shipment is on track and so I can carry out operational activities in an optimized manner.
3	As a shipper	I want to see what the upcoming events are and when they are expected to be completed	so that I can plan better.
4	As a shipper	I want to use just the container ID to look up tracking information for a container that is allocated to a shipment	so that I can learn about the latest known position even without having knowledge of the bill of lading or the booking reference.

Table 2. Examples of user stories

2.2 Use-case definition

The DCSA Interface Standard for Track and Trace 1.0 pertains to the single use-case of tracking and tracing of shipment. This use-case describes all functionality and actions in the context of tracking and tracing of shipment via an exemplified interaction between the different actors in the use-case. The use-case in scope is described below and is supported by a use-case diagram displaying the interactions between the different actors involved.

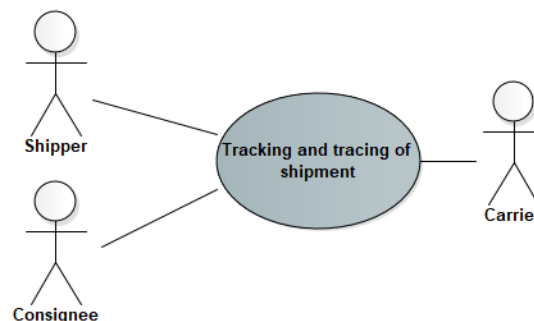


Figure 3. Use-case diagram for tracking and tracing of shipment interface

Name of use-case	Tracking and tracing of shipment		
Created by	DCSA	Last updated by	DCSA P1
Date Created	11 November 2019	Last revision date	19 December 2019
Description	Provide shipment track and trace information in the form of events		
Actors	Shipper, Consignee, Carrier		
Preconditions	<ul style="list-style-type: none"> • Shipper has made a booking request • Carrier has confirmed shipper's booking request • Shipper/consignee has the booking reference, bill of lading number or equipment reference from carrier 		
Postconditions	None		
Flow	<ol style="list-style-type: none"> 1. Shipper/consignee requests track and trace details with a booking reference/ bill of lading number. 2. Carrier prepares a response containing all events for the shipment 3. Shipper/consignee gets response from the carrier 		
Alternative flows	<ol style="list-style-type: none"> 1a. Shipper/consignee requests track and trace details with equipment reference. <ul style="list-style-type: none"> ○ Carrier prepares a response containing all events for the active shipment that the equipment is allocated to. Furthermore, these events are specific to the equipment in question ○ Shipper/consignee gets response from the carrier 		
Exceptions	<ol style="list-style-type: none"> 1a. Carrier identifies that the booking reference/ bill of lading number/ equipment reference is invalid or does not exist <ul style="list-style-type: none"> ○ Shipper/consignee gets a response with an output error suggesting that the booking reference/ bill of lading number/ equipment reference is invalid 		

Table 3. Use-case definition

2.3 Activity diagram

The purpose of the activity diagram is to capture dynamic behavior in the system to demonstrate a message flow. The activity flow that is provided by the interface for tracking and tracing of shipment is described in Figure 4. The activity begins when a user requests track and trace details in relation to a shipment. The request contains input, which is validated against the active shipments available to the interface: an active shipment is a shipment that has an active relevant identifier. An active shipment in this sense refers to the latest shipment which can comprise both future or completed shipments.

The interface's activity flow can follow two paths: the main success path or the exception path. The main success path is followed if the input ID corresponds to that of an active shipment. If that is not the case, the exception path is followed. The main success path results in the application returning track and trace information related to the input ID. The exception path results in an error message.

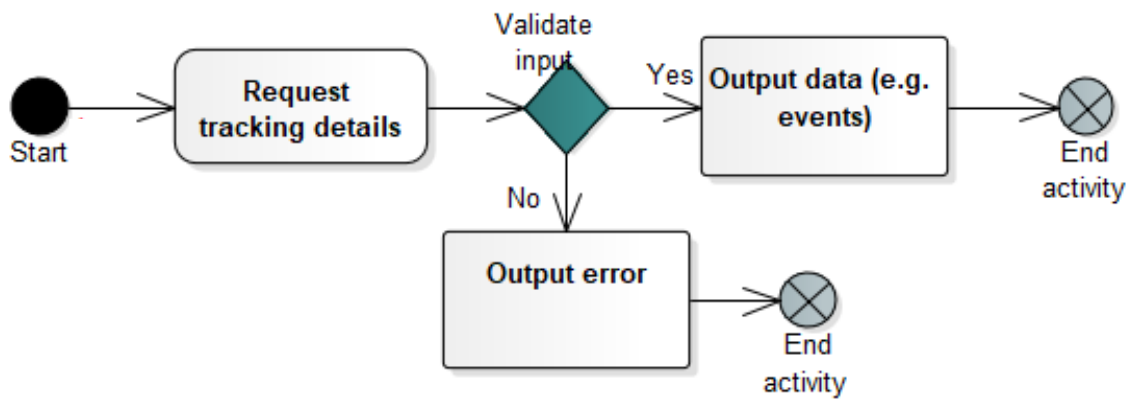


Figure 4. Activity diagram for tracking and tracing of shipment interface

Error messages should be implemented based on an underlying technology standard. For instance, HTTP error codes should be used in case implementation is in the form of REST APIs. They are defined in [RFC2616](#). Similarly, for EDI-based implementations, error codes should follow an existing standard, i.e., [UN/EDIFACT](#).

3 Interface input

Booking reference, bill of lading number or equipment reference individually are identifiers that link to a shipment per carrier. At least one of these identifiers must be provided to constitute a valid request.

When equipment reference is used, the output only consists of events that correspond to an active shipment to which the equipment has been allocated. Additionally, only events connected to the equipment are to be returned. Furthermore, it must be highlighted that certain security considerations must be given in relation to the implementation and usage of the interface. When the interface allows tracking and tracing (active) of shipment by means of the equipment reference alone – and not in conjunction with either a booking reference or bill of lading number – the risk of unintended usage occurs. Carriers are recommended to ensure that only diligently defined information, respectively events, are returned to the requester in this case. Carriers are encouraged to take care of access management and specific roles in this respect and it remains an individual carrier decision how to handle this security aspect. For detailed descriptions of the properties, please refer to the DCSA Information Model 1.0.

Input Name	Type	Description	Example
Booking Reference	String	OPTIONAL. The identifier for a shipment, which is issued by and unique within each of the carriers.	Booking reference: "CAX698840"
Bill of Lading Number	String	OPTIONAL. Bill of lading number is an identifier that links to a shipment. Bill of Lading is the legal document issued to the customer, which confirms the carrier's receipt of the cargo from the customer acknowledging goods being shipped and specifying the terms of delivery.	Bill of lading number: "855230418"
Equipment Reference	String	OPTIONAL. The unique identifier for the equipment, which should follow the BIC ISO Container Identification Number where possible. If a container is not yet assigned to a shipment, the interface cannot return any information when an equipment reference is given as input. If a container is assigned to an (active) shipment, the interface returns information on the active shipment.	"CARX4812090"

Table 4. Interface input list

4 Interface output

The interface output is built around the events that occur for a shipment. This means that every shipment contains multiple events. An event can be categorized as a shipment, transport or an equipment event. An event can be linked to both a transport and an equipment at the same time: this has been listed as a separate transport equipment event to provide clarity.

The list of events supported by this standard is specified in “Table 13. A list of track and trace events”.

The sections below describe the different entities that facilitate the tracking and tracing of a shipment. The information presented here is one way to organize all information to be produced by this interface. The entities themselves and how they are organized in relation to each other can be mapped directly to an implementation, but there are potentially multiple different ways in which the entities can be organized in an implementation. A class diagram is also presented below to display how the different entities relate to each other.

4.1 Class diagram

The class diagram presented below provides an overview of all entities described in the previous sections and how they work together to support the functionality around the tracking and tracing of shipment. Following the DCSA Information Model 1.0, these interface standards assume a limited scope for the first publication with a one-to-one relationship between shipment and bill of lading.

Even though this class diagram can be directly translated to an implementation, it should ideally be used as a reference. The actual implementation should be carried out using an arrangement that best supports the underlying technology and methodology used.

In the description of entities and the class diagram, the choice has been made to distinguish between events that correspond to only a shipment, a transport or an equipment, in addition to events that correspond to both a transport and an equipment. This is because it should be possible to classify an event in either one of those four categories. Making this classification is important when thinking of the implementation, where abstraction of data and functionality is a key concept. At the same time, this classification also helps in translating the requirements in an optimal manner into an actual implementation, for instance, in the form of an API. Please look at Table 13. A list of track and trace events for further clarification on how the different event entities represent the events in scope for this publication.

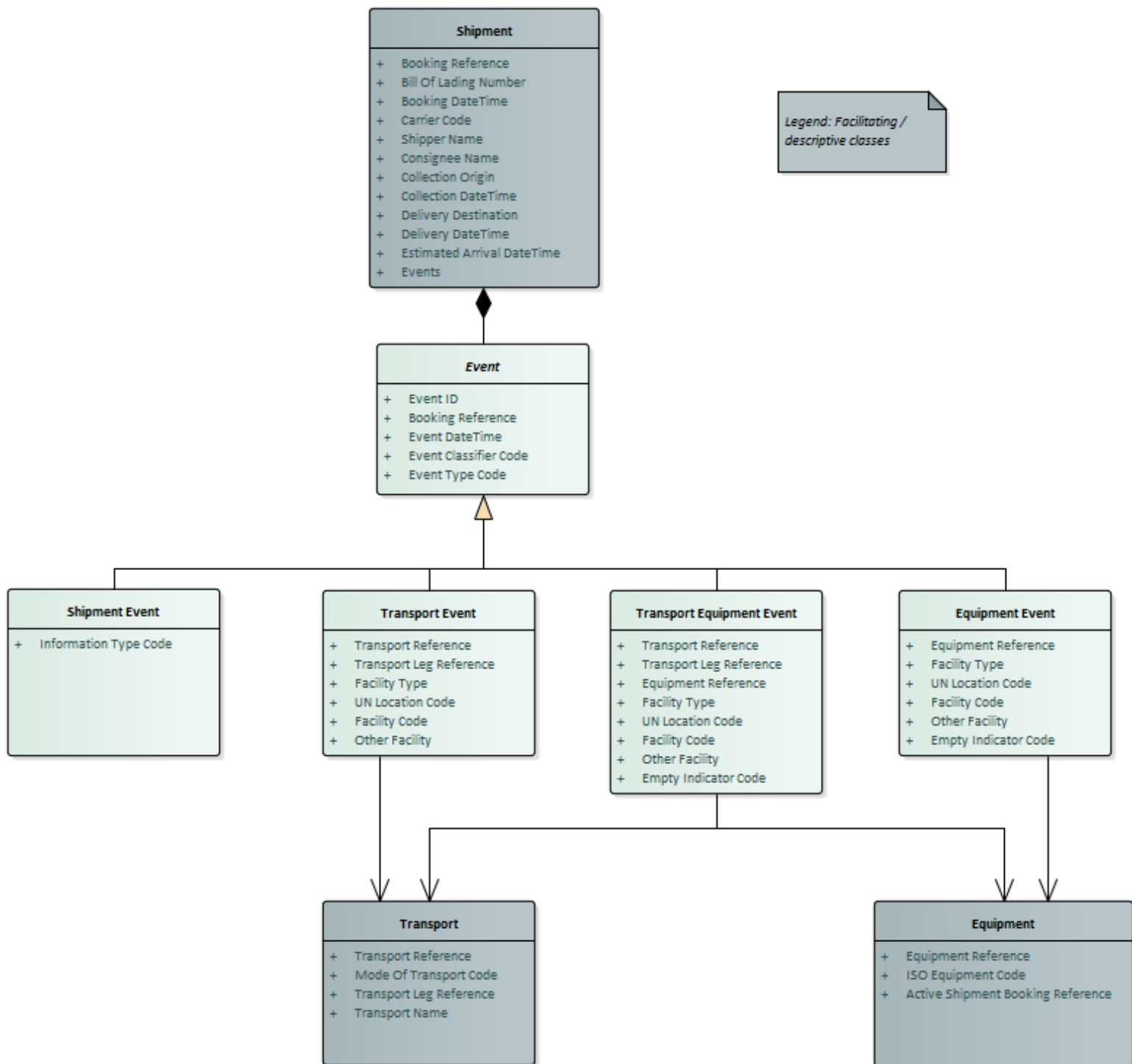


Figure 5. Class diagram for tracking and tracing of shipment interface

4.2 Shipment

The shipment entity is a reference entity in the context of tracking and tracing of shipment. For detailed descriptions of the properties, please refer to the DCSA Information Model 1.0.

Property Name	Type	Description	Example
Booking Reference	String	REQUIRED. The identifier for a shipment, which is issued by and unique within each of the carriers.	"ABC709951"
Bill of Lading Number	String	OPTIONAL. Bill of lading number is an identifier that links to a shipment. Bill of lading is the legal document issued to the customer which confirms the carrier's receipt of the cargo from the customer acknowledging goods being shipped and specifying the terms of delivery.	"ABCD421911263977"
Booking DateTime	DateTime	REQUIRED. The local date and time of the booking request in ISO 8601 format.	"2019-10-30T07:41:00+08:30"
Carrier Code	String	REQUIRED. A unique carrier identifier, currently sourced from either the National Motor Freight Traffic Association (NMFTA) SCAC list or the Shipplanning Message Development Group (SMDG) Master Liner Codes list.	"NMFTA-CARX"
Shipper Name	String	OPTIONAL. The name of the shipper, who requested the booking.	"Computer Corp."
Consignee Name	String	OPTIONAL. The name of the consignee.	"Computer Corp."
Collection Origin	String	REQUIRED. The location through which the shipment originates. It can be defined as a UN Location Code value or an address. The customer (shipper) needs to place a booking in order to ship the cargo (commodity) from an origin to destination.	"USNYC"
Collection DateTime	DateTime	REQUIRED. The local date and time in ISO 8601 format that the shipment items need to be collected from the origin.	"2019-11-12T07:41:00+08:30"
Delivery Destination	String	REQUIRED. The location to which the shipment is destined. It can be defined as a UN Location Code value or an address. The customer (shipper) needs to place a booking in order to ship the cargo (commodity) from an origin to destination.	"NLAMS"
Delivery DateTime	DateTime	OPTIONAL. The local date (and when possible time) in ISO 8601 format that the shipment items need to be delivered to the destination.	"2019-11-24T07:41:00+08:30"
Estimated Arrival DateTime	DateTime	OPTIONAL. Calculated estimated local date and time in ISO 8601 format for a shipment based on estimated and planned events for that same shipment at final port of discharge.	"2019-11-12T07:41:00+08:30"

Property Name	Type	Description	Example
Events	List	REQUIRED. List of events.	List of events for shipment journey

Table 5. Shipment entity properties

4.3 Transport

The transport entity is a reference entity that describes a transport in the context of tracking and tracing of shipment. For vessels, the transport entity essentially represents a transport leg, where the transport reference and transport leg reference together identify the entity. For other types of transports, if the references are not available, then a dummy value can be used. An event can contain a reference to the transport entity if it belongs to the appropriate event category. For detailed descriptions of the properties, please refer to the DCSA Information Model 1.0.

Property Name	Type	Description	Example
Transport Reference	String	REQUIRED. The reference for the transport, e.g. when the mode of transport is a vessel, the transport reference will be the vessel IMO number.	"9648714"
Transport Leg Reference	String	REQUIRED. The transport leg reference will be specific per mode of transport: - Vessel: Voyage number as specified by the vessel operator - Truck: Not yet specified - Rail: Not yet specified - Barge: Not yet specified.	"025E"
Mode of Transport Code	String	REQUIRED. The code specifying the mode (e.g. transport by rail) for the transport.	"1"
Transport Name	String	OPTIONAL. The name of the particular transport instance, e.g. for a vessel this is the vessel name.	"CARX VESSEL"

Table 6. Transport entity properties

4.4 Equipment

The equipment entity is a reference entity that describes an equipment in the context of tracking and tracing of shipment. An event can contain a reference to the equipment entity if it belongs to the appropriate event category. For detailed descriptions of the properties, please refer to the DCSA Information Model 1.0.

Property Name	Type	Description	Example
Equipment Reference	String	REQUIRED. The unique identifier for the equipment, which should follow the BIC ISO Container Identification Number where possible.	"CARX2785 124"
ISO Equipment Code	String	REQUIRED. Unique code for the different equipment size/type used for transporting commodities.	"10G0"

Property Name	Type	Description	Example
Active Shipment Booking Reference	String	OPTIONAL. Shipment booking reference of the active shipment that the equipment is currently allocated to.	"ABC709951"

Table 7. Equipment entity properties

4.5 Event

The event entity is described as a generalization of all the specific event categories. An event always takes place in relation to a shipment and can additionally be linked to a transport or an equipment.

Property Name	Type	Description	Example
Event ID	String	REQUIRED. The unique identifier for the Equipment Event ID/Transport Event ID/Shipment Event ID.	"1"
Booking Reference	String	REQUIRED. The identifier for a shipment, which is issued by and unique within each of the carriers.	"ABC709951"
Event DateTime	DateTime	REQUIRED. The local date and time, where the event took place, in ISO 8601 format.	"2019-11-12T07:41:00+08:30"
Event Classifier Code	String	REQUIRED. Code for the event classifier, either PLN, ACT or EST.	"ACT"
Event Type Code	String	REQUIRED. Unique identifier for Event Type Code.	"ARRI"

Table 8. Event entity properties

4.6 Shipment event

The shipment event entity is a specialization of the event entity to support specification of data that only applies to a shipment event.

Property Name	Type	Description	Example
Shipment Information Type Code	String	REQUIRED. The code to identify the type of information that is related to the shipment.	"SRM"

Table 9. Shipment event entity properties

4.7 Transport event

The transport event entity is a specialization of the event entity to support specification of data that only applies to a transport event. For detailed descriptions of the properties, please refer to the DCSA Information Model 1.0.

Property Name	Type	Description	Example
Transport Reference	String	REQUIRED. The reference for the transport, e.g. when the mode of transport is a vessel, the transport reference will be the vessel IMO number.	"9648714"
Transport Leg Reference	String	REQUIRED. The transport leg reference will be specific per mode of transport: - Vessel: Voyage number as specified by the vessel operator - Truck: Not yet specified - Rail: Not yet specified - Barge: Not yet specified.	"025E"
Facility Type Code	String	REQUIRED. Four-character code to identify the specific type of facility.	"POTE"
UN Location Code	String	REQUIRED. The UN Location Code identifies a location in the sense of a city/a town/a village, being the smaller administrative area existing as defined by the competent national authority in each country.	"USNYC"
Facility Code	String	REQUIRED. The code used for identifying the specific facility.	"USNYCGTC"
Other Facility	String	OPTIONAL. An alternative way to capture the facility, when no standardized DCSA facility code can be found.	"Depot location or address"

Table 10. Transport event entity properties

4.8 Equipment event

The equipment event entity is a specialization of the event entity to support specification of data that only applies to an equipment event. For detailed descriptions of the properties, please refer to the DCSA Information Model 1.0.

Property Name	Type	Description	Example
Equipment Reference	String	OPTIONAL. The unique identifier for the equipment.	"CARX2785124"
Facility Type Code	String	REQUIRED. Four-character code to identify the specific type of facility.	"POTE"
UN Location Code	String	REQUIRED. The UN Location Code identifies a location in the sense of a city/a town/a village, being the smaller administrative area existing as defined by the competent national authority in each country.	"USNYC"
Facility Code	String	REQUIRED. The code used for identifying the specific facility.	"USNYCGTC"
Other Facility	String	OPTIONAL. An alternative way to capture the facility, when no standardized DCSA facility code can be found.	"Depot location or address"

Property Name	Type	Description	Example
Empty Indicator Code	String	REQUIRED. Code to denote whether the equipment is empty or laden.	"Empty"

Table 11. Equipment event entity properties

4.9 Transport equipment event

The transport equipment event entity is a specialization of the event entity to support specification of data that applies to both transport and equipment events.

Property Name	Type	Description	Example
Transport Reference	String	REQUIRED. The reference for the transport, e.g. when the mode of transport is a vessel, the transport reference will be the vessel IMO number.	"9648714"
Transport Leg Reference	String	REQUIRED. The transport leg reference will be specific per mode of transport: - Vessel: Voyage number as specified by the vessel operator - Truck: Not yet specified - Rail: Not yet specified - Barge: Not yet specified.	"025E"
Equipment Reference	String	OPTIONAL. The unique identifier for the equipment, which should follow the BIC ISO Container Identification Number where possible.	"CARX2785124"
Facility Type Code	String	REQUIRED. Four-character code to identify the specific type of facility.	"POTE"
UN Location Code	String	REQUIRED. The UN Location Code identifies a location in the sense of a city/a town/a village, being the smaller administrative area existing as defined by the competent national authority in each country.	"USNYC"
Facility Code	String	REQUIRED. The code used for identifying the specific facility.	"USNYCGTC"
Other Facility	String	OPTIONAL. An alternative way to capture the facility, when no standardized DCSA facility code can be found.	"Depot location or address"
Empty Indicator Code	String	REQUIRED. Code to denote whether the equipment is empty or laden.	"Empty"

Table 12. Transport equipment event entity properties

4.10 A list of track and trace events:

The following table lists the track and trace events standardized in the DCSA Event Naming Convention 1.0 and Event Structure Definitions 1.0. It further outlines how the output data attributes defined in this section together constitute the different events. Furthermore, all events listed here can be used either as planned, estimated or actual events depending on the situation. This classification is defined through the attribute “Event Classifier Code”. It should be stated here that the interface can also be applied to any future additions or amendments to the current selection of standardized events.

Event	Description	Entity	Event Type Code	Empty Indicator Code	Transport Type Code	Facility Type Code	Shipment Information Type
Gate out of empty equipment from depot	The point in time where the empty equipment is picked up from the depot. Depending on incoterms, there might be a change of possession from the carrier to the shipper.	Equipment Event	GTOT (Gate Out)	EMPTY		DEPO (Depot)	
Gate in of empty equipment at customer location	The point in time where the empty equipment arrives at the customer location (stuffing site). Depending on incoterms, there might be a change of possession from the carrier/depot to the shipper.	Equipment Event	GTIN (Gate In)	EMPTY		CULO (Customer Location)	
Gate in of laden equipment at port terminal	The point in time where the laden equipment passes through the gate at the port terminal. At this point, possession of the equipment will be transferred to the terminal operator.	Equipment Event	GTIN (Gate In)	LADEN		POTE (Port Terminal)	
Load of laden equipment to vessel at port terminal	The point in time where the laden equipment is loaded onto the vessel. At this point, possession of the equipment will be transferred from the terminal operator to the carrier.	Transport Equipment Event	LOAD	LADEN	VESSEL	POTE (Port Terminal)	
Vessel departure from port terminal	The point in time where the vessel leaves the berthing slot at the port terminal. Some use the term <i>last line released</i> .	Transport Event	DEPA (Departure)		VESSEL	POTE (Port Terminal)	
Vessel arrival at port terminal	The point in time once the vessel has berthed at the port terminal. Some use the term <i>first line secured</i> .	Transport Event	ARRI (Arrival)		VESSEL	POTE (Port Terminal)	
Discharge of laden equipment from vessel at port terminal	The point in time where the laden equipment is discharged from the vessel to the quay. At this point, possession of the equipment will be transferred from the carrier to the port terminal.	Transport Equipment Event	DISC (Discharge)	LADEN	VESSEL	POTE (Port Terminal)	

¹ Note: All relevant parties in the container shipping industry should aim at having the event data configured and available in their interfaces. However, this does not necessarily mean that the relevant parties in the industry are always able to deliver all data values, as the parties can also rely on other third parties to deliver data. Therefore, it remains an individual carrier decision which events to provide.

Event	Description	Entity	Event Type Code	Empty Indicator Code	Transport Type Code	Facility Type Code	Shipment Information Type
Shipment release message issued	The document sent to the consignee and/or notify party informing, that the shipment can now be released from its current location and transferred to the consignee on gate-out.	Shipment Event	ISSU (Issued)				SRM (Shipment Release Message)
Gate out of laden equipment from port terminal	The point in time where the laden equipment passes through the gate at the port terminal. At this point, possession of the equipment will be transferred from the port terminal to the customer/hauler.	Equipment Event	GTOT (Gate Out)	LADEN		POTE (Port Terminal)	
Truck arrival at customer location	The point in time where the truck arrives at the customer location (stripping location). Depending on incoterms, there might be a transfer of possession.	Transport Event	ARRI (Arrival)		TRUCK	CULO (Customer Location)	
Gate in of empty equipment at depot	The point in time where the possession of the empty equipment is transferred back to the carrier.	Equipment Event	GTIN (Gate In)	EMPTY		DEPO (Depot)	
Load of laden equipment to barge at port terminal	The point in time where the equipment is loaded onto a barge. This is a conditional milestone that will only occur if barge transportation is needed.	Transport Equipment Event	LOAD	LADEN	BARGE	POTE (Port Terminal)	
Discharge of laden equipment from barge at port terminal	The point in time where the equipment is discharged from a barge. This is a conditional milestone that will only occur if barge transportation is needed.	Transport Equipment Event	DISC (Discharge)	LADEN	BARGE	POTE (Port Terminal)	
Load of laden equipment to rail at port terminal	The point in time where the equipment is loaded on a railcar. This is a conditional milestone that will only occur if rail transportation is needed.	Transport Equipment Event	LOAD	LADEN	RAIL	POTE (Port Terminal)	
Discharge of laden equipment from rail at port terminal	The point in time where the equipment is discharged from a railcar. This is a conditional milestone that will only occur if rail transportation is needed.	Transport Equipment Event	DISC (Discharge)	LADEN	RAIL	POTE (Port Terminal)	
Load of laden equipment to truck at port terminal	The point in time where the equipment is loaded on truck. This is a conditional milestone that will only occur if truck transportation is needed.	Transport Equipment Event	LOAD	LADEN	TRUCK	POTE (Port Terminal)	
Discharge of laden equipment from truck at port terminal	The point in time where the equipment is discharged from truck. This is a conditional milestone that will only occur if truck transportation is needed.	Transport Equipment Event	DISC (Discharge)	LADEN	TRUCK	POTE (Port Terminal)	

Event	Description	Entity	Event Type Code	Empty Indicator Code	Transport Type Code	Facility Type Code	Shipment Information Type
Truck departure from port terminal	The point in time where the truck leaves the port terminal.	Transport Event	DEPA (Departure)		TRUCK	POTE (Port Terminal)	
Truck arrival at port terminal	The point in time where the truck arrives at the port terminal.	Transport Event	ARRI (Arrival)		TRUCK	POTE (Port Terminal)	
Barge departure from port terminal	The point in time where the barge leaves the docking area at the port terminal.	Transport Event	DEPA (Departure)		BARGE	POTE (Port Terminal)	
Barge arrival at port terminal	The point in time where the barge arrives at the port terminal.	Transport Event	ARRI (Arrival)		BARGE	POTE (Port Terminal)	
Rail departure from port terminal	The point in time where the rail leaves the loading facility at the port terminal.	Transport Event	DEPA (Departure)		RAIL	POTE (Port Terminal)	
Rail arrival at port terminal	The point in time where the rail arrives at the port terminal.	Transport Event	ARRI (Arrival)		RAIL	POTE (Port Terminal)	

Table 13. A list of track and trace events

5 Conclusion

The DCSA Interface Standard for Track and Trace 1.0 defined in this document is meant to serve as the foundation for all interfaces implemented, henceforth by the shipping industry in relation to the tracking and tracing of a shipment. It is a cooperative effort that has been backed and supported by invaluable input from many of the major shipping carriers around the world.

This document also intends to facilitate discussions around the exchange of track and trace data between the different counterparts involved in a shipment and should lead to better accountability and traceability of activities in relation to the shipment of goods.

Furthermore, this document brings into focus the data and the content of the DCSA Interface Standard for Track and Trace 1.0. This suggests that the document should not be used as a strict guideline for how the different elements should be named; that is not part of the scope for this document but will be a focus area for future separate deliveries in the form of an OpenAPI/Swagger definition or an UN/EDIFACT mapping.

Users of other technologies are required to adopt the standards in other channels, for example, the data delivered through EDI interfaces, manual interfaces, and GUI-based interfaces.

Please refer to the supplementary respective Reading Guide for a deeper insight into what the next steps could be, and how the DCSA Interface Standard for Track and Trace 1.0 can lead to an actual implementation.