



Digital Container Shipping Association

DCSA Interface Standard for Track and Trace 1.2 Reading Guide

06 May 2020

Purpose of this Reading Guide

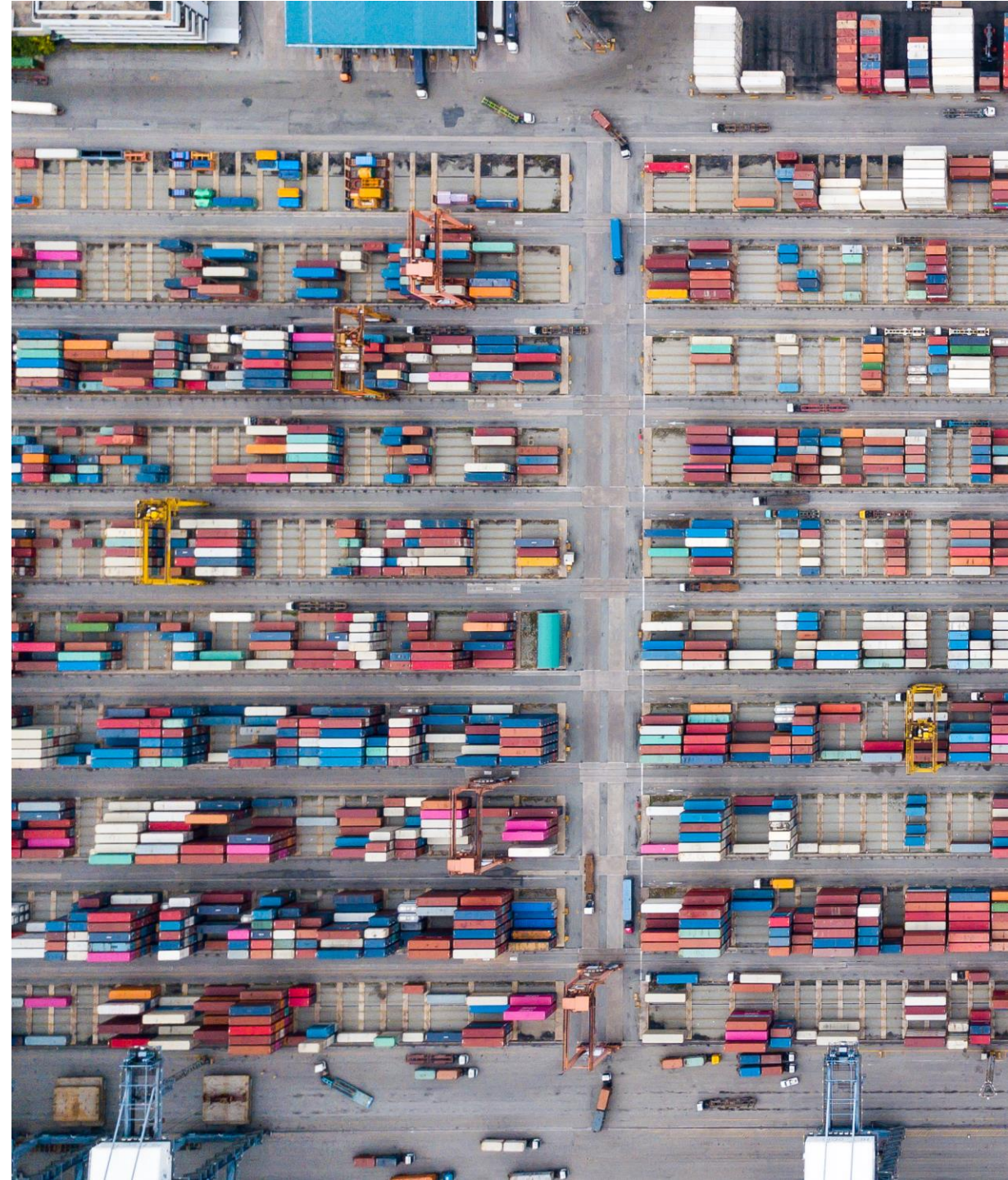
This reading guide should allow readers of the Interface Standard for Track and Trace of the Digital Container Shipping Association (DCSA) to understand what the context of the DCSA Interface Standard for Track and Trace 1.2 is, what you can expect from it, and what you can achieve with it.

1. What is the context of the DCSA Interface Standard for Track and Trace 1.2?

2. What can you expect from the DCSA Interface Standard for Track and Trace 1.2?

3. What can you achieve with the DCSA Interface Standard for Track and Trace 1.2?

What is the context of the DCSA Interface Standard for Track and Trace 1.2?



Digital Container Shipping Association (DCSA)

The DCSA Interface Standard for Track and Trace is a project which contributes to DCSA's overall vision.

VISION

The vision of the DCSA is to pave the way for interoperability in the container shipping industry through digitization and standardization. It is the DCSA's mission to represent, lead and serve the container shipping industry for safer, more secure and efficient operations of container shipping companies. The projects on DCSA Interface Standard for Track and Trace in particular aim at increasing the level of common standards and at designing a common language for processes, events, and messages.

MEMBERS

The DCSA has the following members: CMA-CGM, Evergreen, Hapag-Lloyd, HMM, Maersk, MSC, ONE, Yang Ming and ZIM.



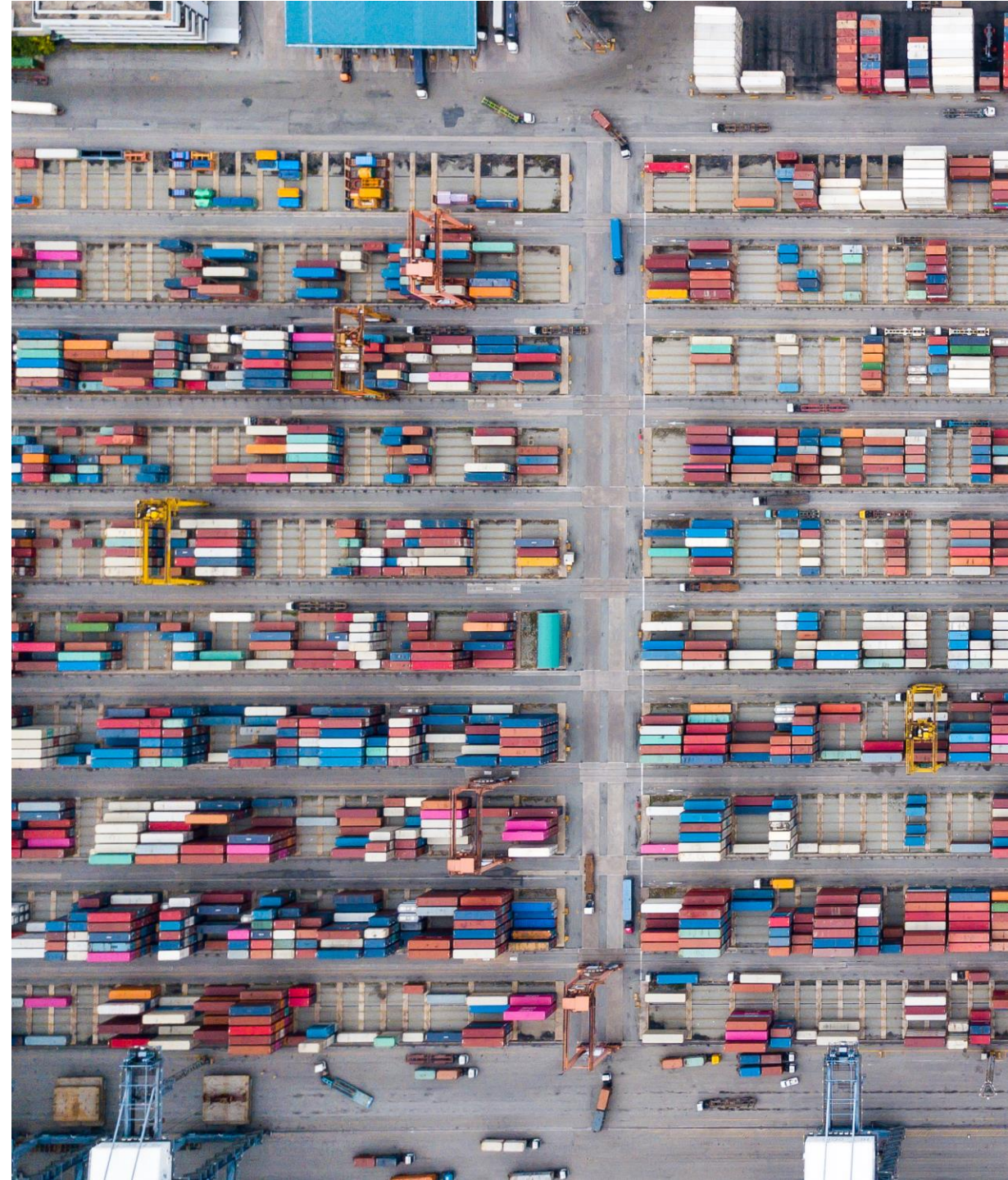
Purpose of the DCSA Interface Standard for Track and Trace 1.2

A technology-agnostic interface standard was developed to set the stage for future facilitation of standardization and digitization throughout the industry.



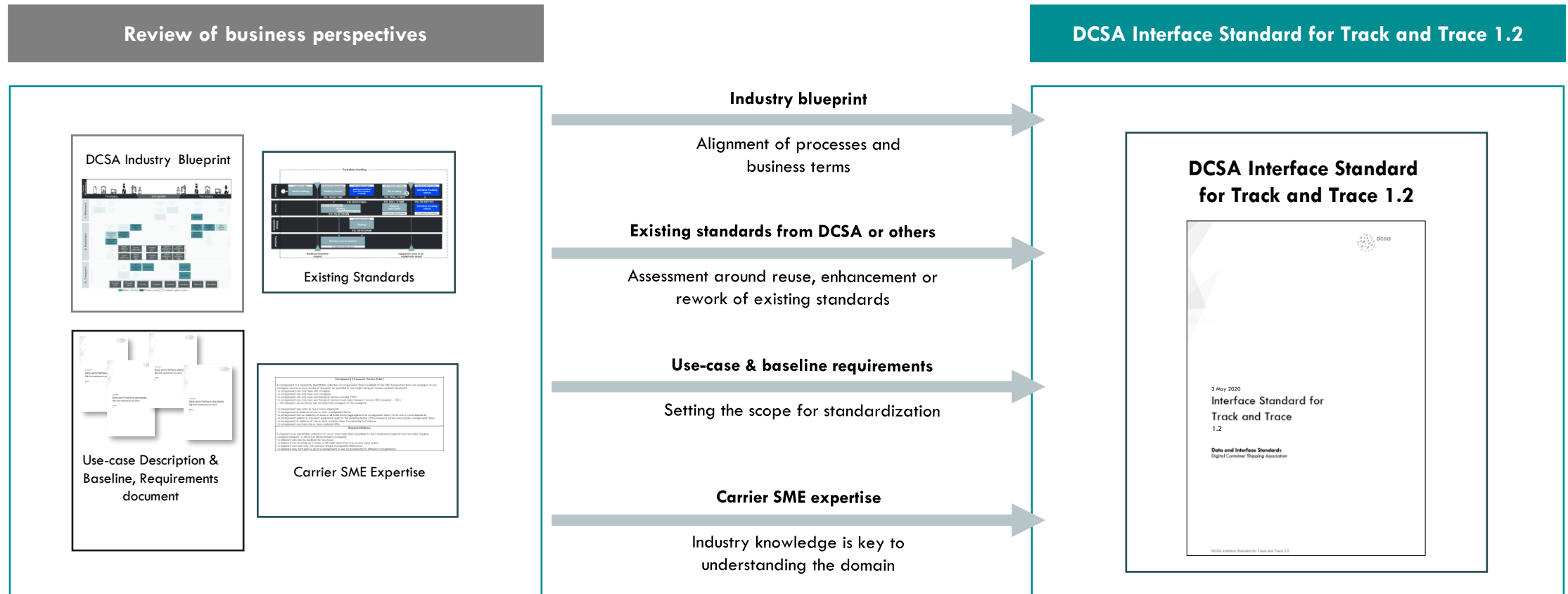
1. Standards support a **common view across the industry** in relation to processes, events and messages, facilitating industry standardization and digitization efforts. They are about the definition and alignment of terms, entities and attributes and are designed to support a common shared understanding of concepts, terms and rules of the business.
2. Additionally, clearly defined DCSA Interface Standard for Track and Trace 1.2 adds to **the foundation on which future DCSA standards will be defined and developed** such as the project tracks of IoT, blockchain or cybersecurity. It can serve as a baseline for industry players to initiate the required steps towards the next level of container shipping. Per se, it is a publication that is subject to regular updates.

What can you expect from the DSCA Interface Standard for Track and Trace 1.2?



Approach to the DCSA Interface Standard for Track and Trace 1.2

Any published standard will be made publicly available on the website of the DCSA. During the development of standards, it will likewise be possible for interested parties to obtain selected materials and to learn about upcoming standard publication(s) via the website DCSA.org.

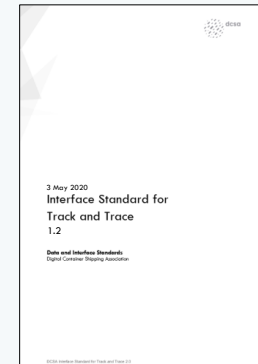


Scope of the DCSA Interface Standard for Track and Trace 1.2

The DCSA Interface Standard for Track and Trace 1.2 is complemented by this Reading Guide, the DCSA Information Model 1.0, the DCSA Glossary of Terms 1.1, OpenAPI definitions and the document on the DCSA Event Naming Convention 1.0 and DCSA Event Structure Definitions 1.0 are provided.

DCSA Interface Standard for Track and Trace 1.2

The objective of the DCSA Interface Standard for Track and Trace 1.2 is to standardize the fundamental information provided across the industry through track and trace interfaces. Following the DCSA Information Model 1.0, the DCSA Interface Standard for Track and Trace 1.2 assumes a limited scope with a one-to-one relationship between shipment and bill of lading. The DCSA Interface Standard for Track and Trace 1.2 covers both a pull model and a push model of interfaces.



DCSA Interface Standard for Track and Trace 1.2 Reading Guide

This document is an updated reading guide before starting to use and implement the DCSA Interface Standard for Track and Trace 1.2 - both push and pull models. As such, this document has been created to facilitate proper use and understanding of it as well as its limitations.

DCSA Information Model 1.0

The DCSA Information Model 1.0 provides a holistic overview of the standardizations of information defined in the DCSA Industry Blueprint 1.0. The DCSA Information Model 1.0 assumes a limited scope with a one-to-one relationship between shipment and bill of lading.

DCSA Glossary of Terms 1.1

The glossary is used to support the reader with definitions and explanations of the business terms used in the documents. The primary function of the glossary is to make sure that all readers are interpreting the terms in the same way.

OpenAPI definitions

OpenAPI definitions following the DCSA Information Model 1.0 and in particular the DCSA Interface Standard for Track and Trace 1.2 will be published on DCSA.org and DCSA SwaggerHub. GitHub enriches the documentation with a guide on versioning, too.

DCSA Event Naming Convention 1.0 and Event Structure Definitions 1.0

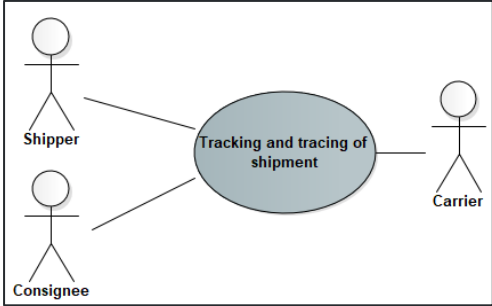
To align terminology across the industry, the DCSA has developed a naming convention, which sets the standard for naming as well as understanding of customer facing track & trace events.

Included in DCSA Interface Standard for Track and Trace 1.2

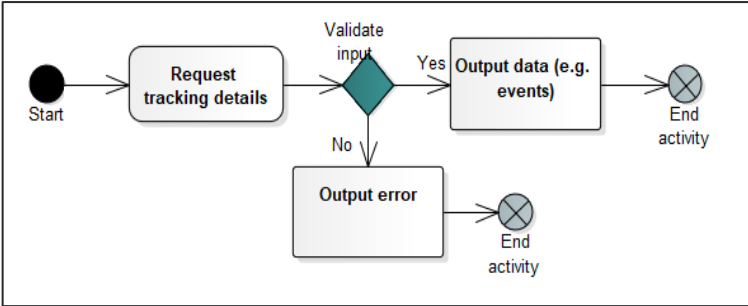
DCSA Interface Standard for Track and Trace 1.2 consists of the push model and the pull model of interfaces. The Interface Standard provides standardized key UML diagrams and lists of inputs and outputs as the examples depicted below. The symbols used are explained in the appendices of this reading guide.

Pull Model

Use-case diagram



Activity diagram

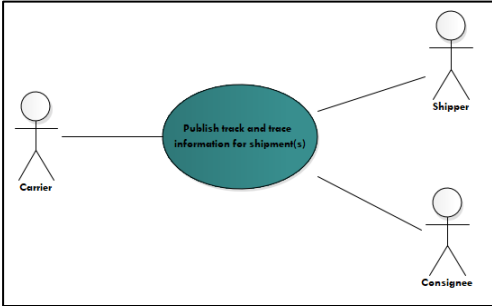


List of inputs and outputs

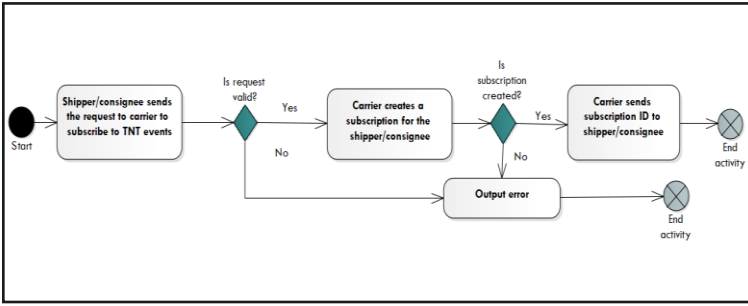
Input Name	Description
Booking Reference	OPTIONAL. The identifier for a shipment, which is issued by and unique within each of the carriers-
...	...

Push Model

Use-case diagram



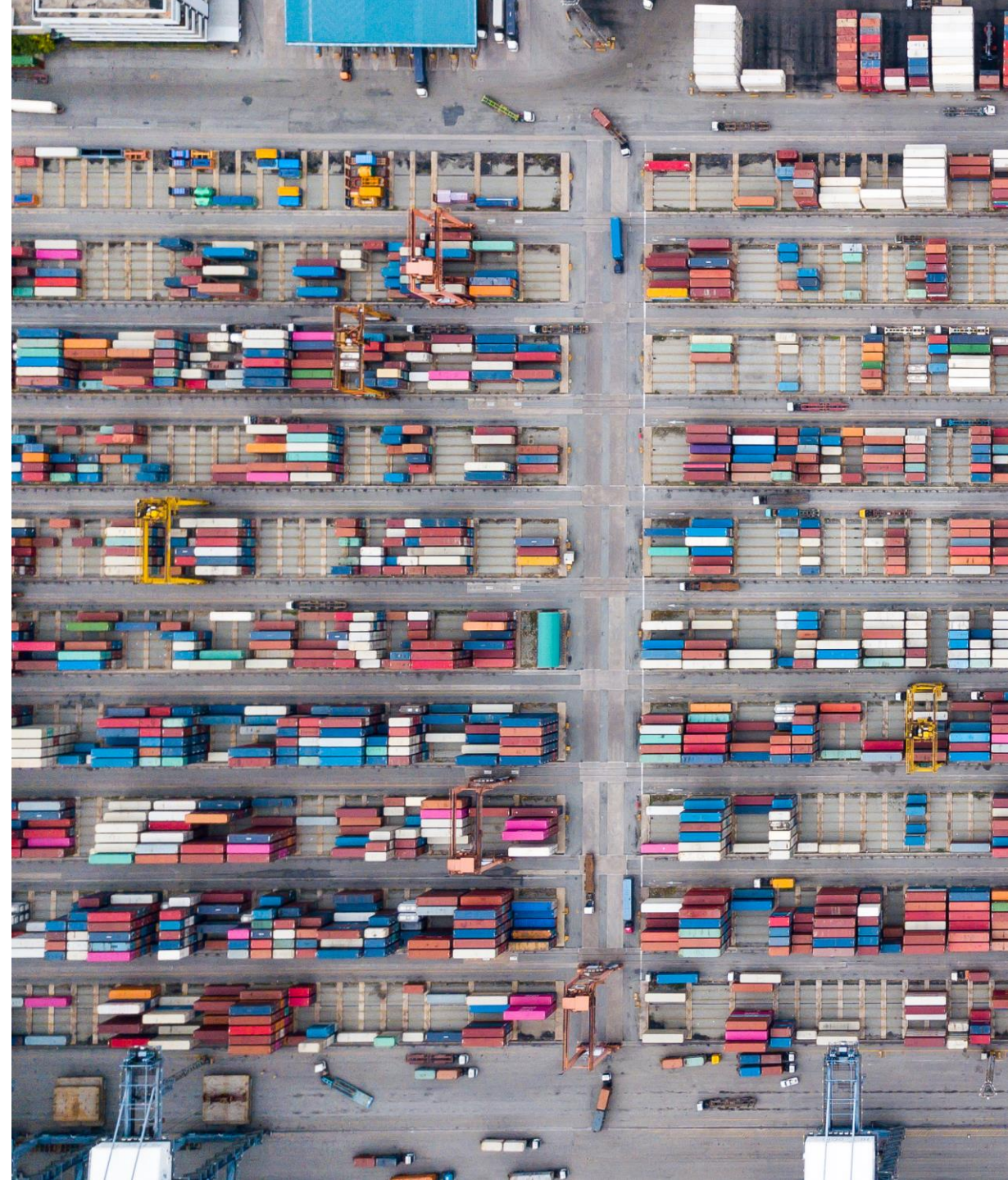
Activity diagram



List of inputs and outputs

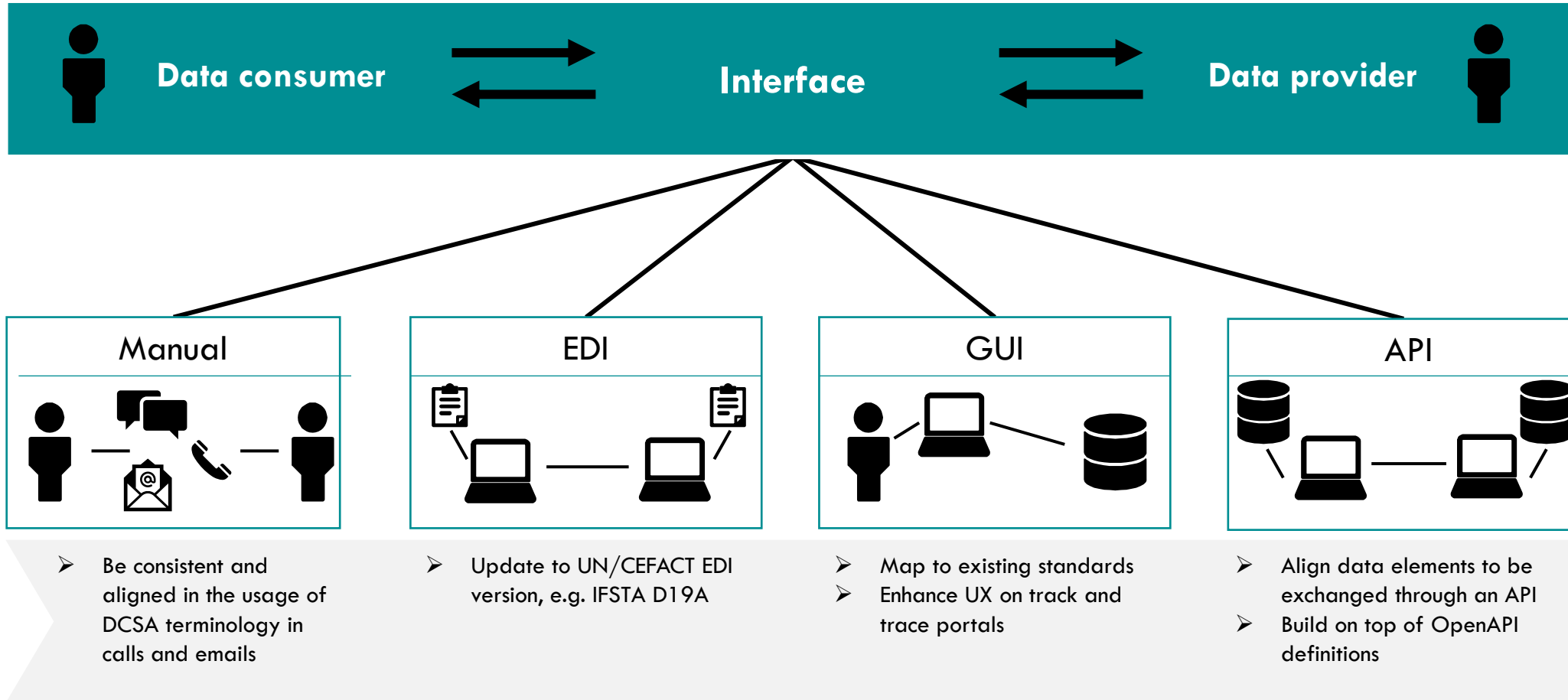
Output Name	Description
Shipment Information Type Code	REQUIRED. The code to identify the type of information that is related to the shipment.
.....

What can you achieve with the DCSA Interface Standard for Track and Trace 1.2?



What can you achieve with DCSA Interface Standard for Track and Trace 1.2

The DCSA Interface Standard for Track and Trace 1.2 aims at standardizing the communication between data consumer and data provider and it is agnostic towards the messaging media.



What to know more about DCSA Interface Standard for Track and Trace 1.2

1

Open APIs

Endpoints definitions for the DCSA Interface Standard for Track and Trace are published on [DCSA SwaggerHub](#) and then available to the general audience and developers in particular for usage and comments.

Release 1.0

2

Versioning

DCSA's OpenAPI definitions on SwaggerHub are being versioned in accordance with the [semantic versioning scheme](#). There are many ways a version can be represented in an API implementation. The API provider compliant with the DCSA specifications is welcome to support multiple methods of representing versions. However, every provider should at least support URI based versioning. More details on [DCSA GitHub](#).

Release 1.0

3

Error handling

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](#). More information can be found [here](#) on DCSA SwaggerHub.

Release 1.1

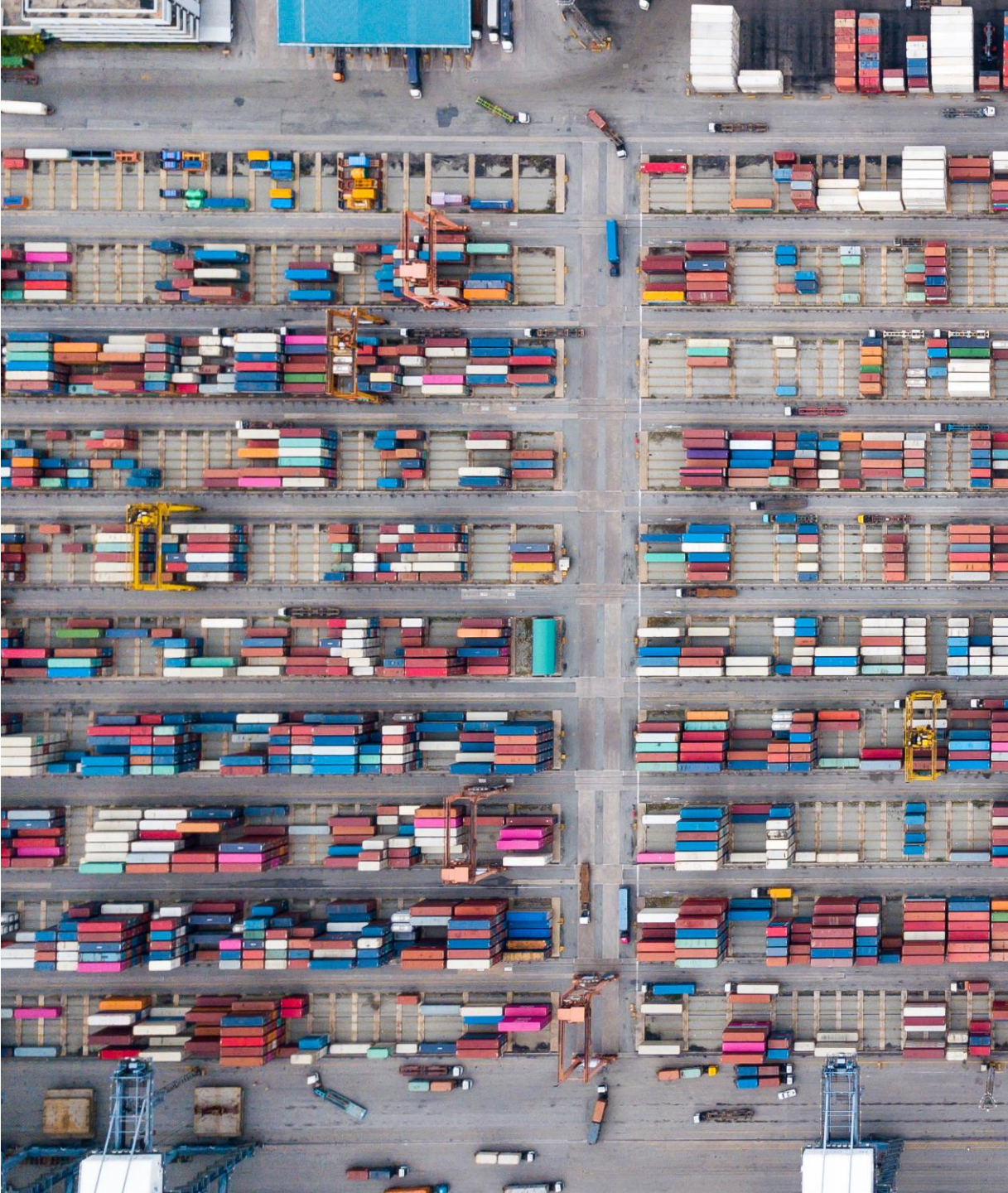
4

Subscription

Endpoint definitions for a publish/subscribe usage model for the DCSA Interface Standard for Track and Trace 1.2 will be published on [DCSA SwaggerHub](#) and then available to the general audience and developers in particular for usage and comments. These definitions are intended to complement the on-demand retrieval usage model introduced in Release 1.0

Release 1.2

Feedback



Contribute

The DCSA Interface Standard for Track and Trace will continue to be expanded with ever more data elements as we standardize the inter-operational aspects of the container shipping industry. This will be done based on the ongoing collaboration with the industry.

Creation process

The DCSA Interface Standard for Track and Trace has been made in collaboration with some of the worlds largest shipping companies. The collection and consolidation of interface documentation was done by the DSCA. The DCSA Interface Standard for Track and Trace aims at creating a representation of processes across all carriers.

Suggested improvements

The DCSA Interface Standard for Track and Trace will be a constantly evolving entity, which will change as processes and best practise across the industry change.

For this reason, the DCSA is always interested in feedback, which can increase the quality of published work and drive standardization and digitization going forward.

If you have any feedback or inputs, go to our webpage under “Contact”.



www.dcsa.org



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Thomas Bagge

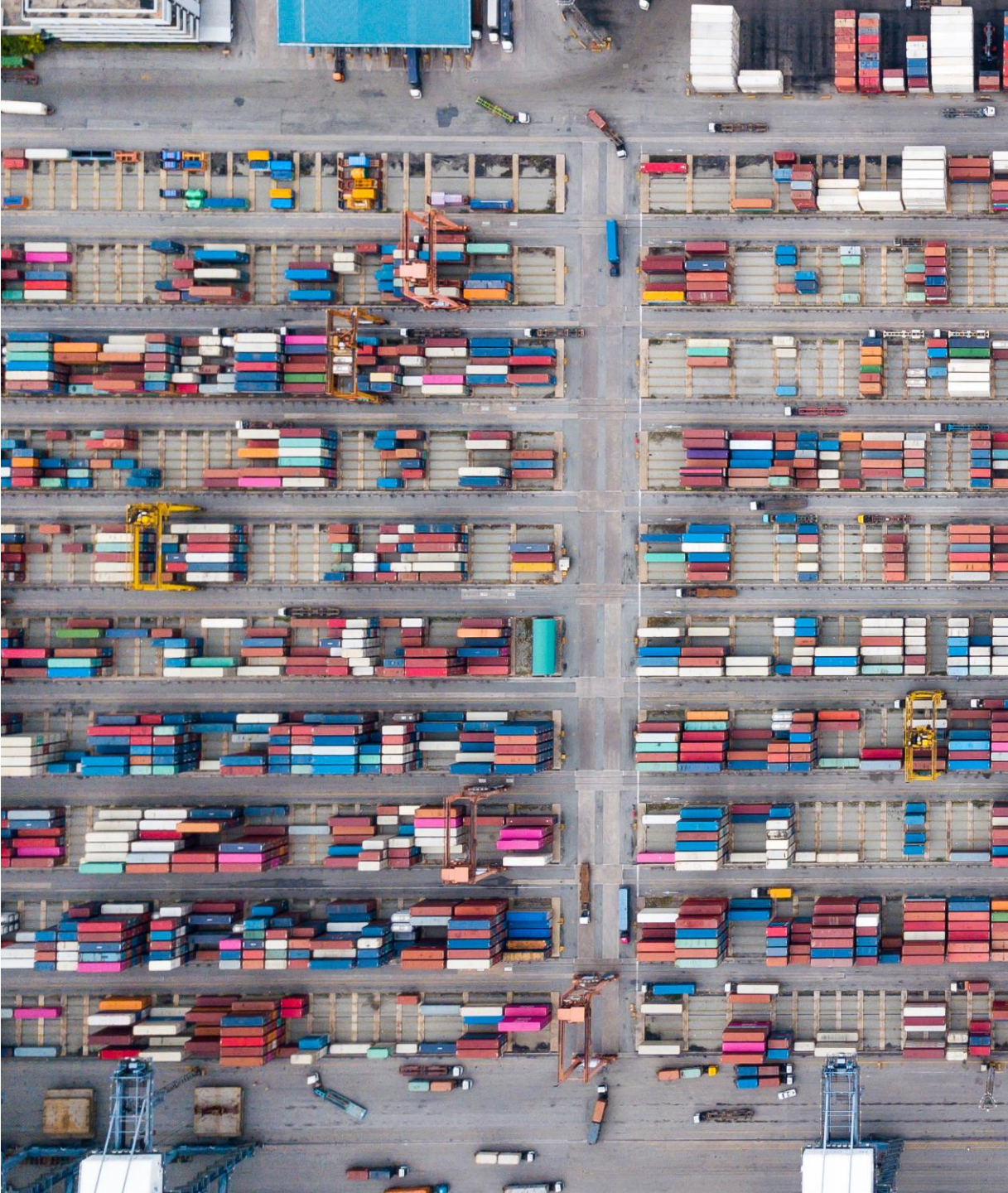
CEO, DCSA



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COO, DCSA

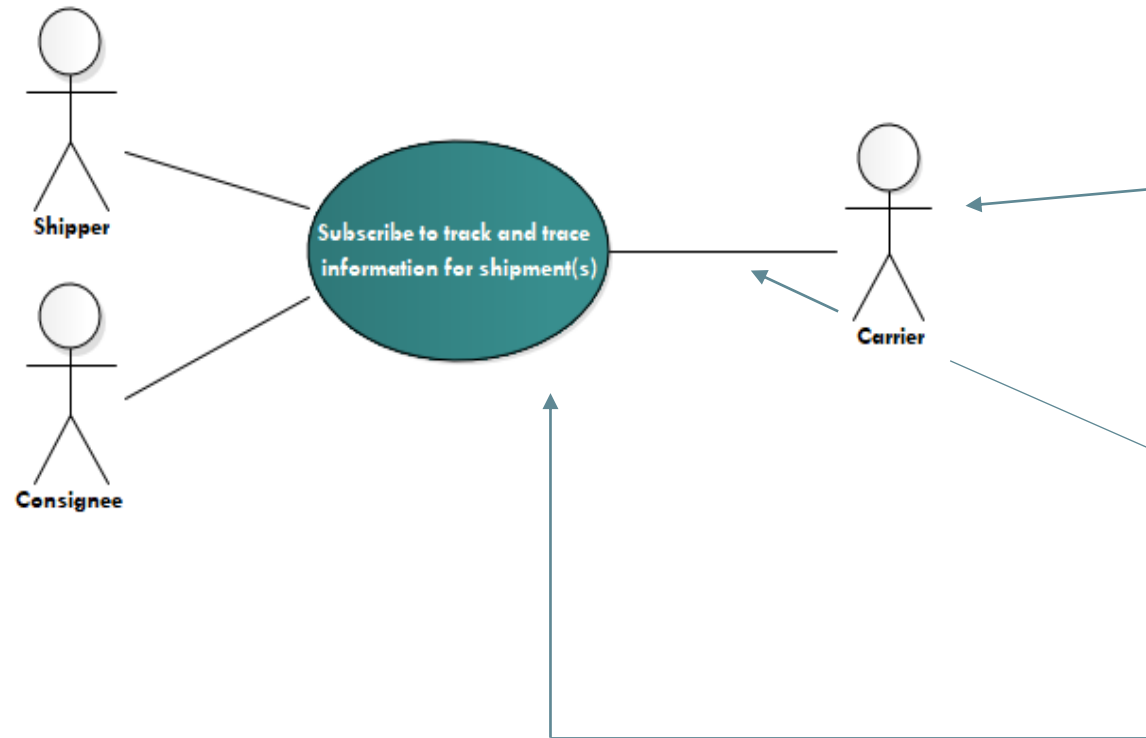
Appendix



Appendix

Legend on the DCSA Interface Standard for Track and Trace 1.2

Use-case diagram



Actor

An actor is a user of the system. A user can refer to many entities, such as a human being but also a machine or another (sub-) system. In our example, the actors represent the stakeholders.

Association

An association is used to indicate a relationship between two elements.

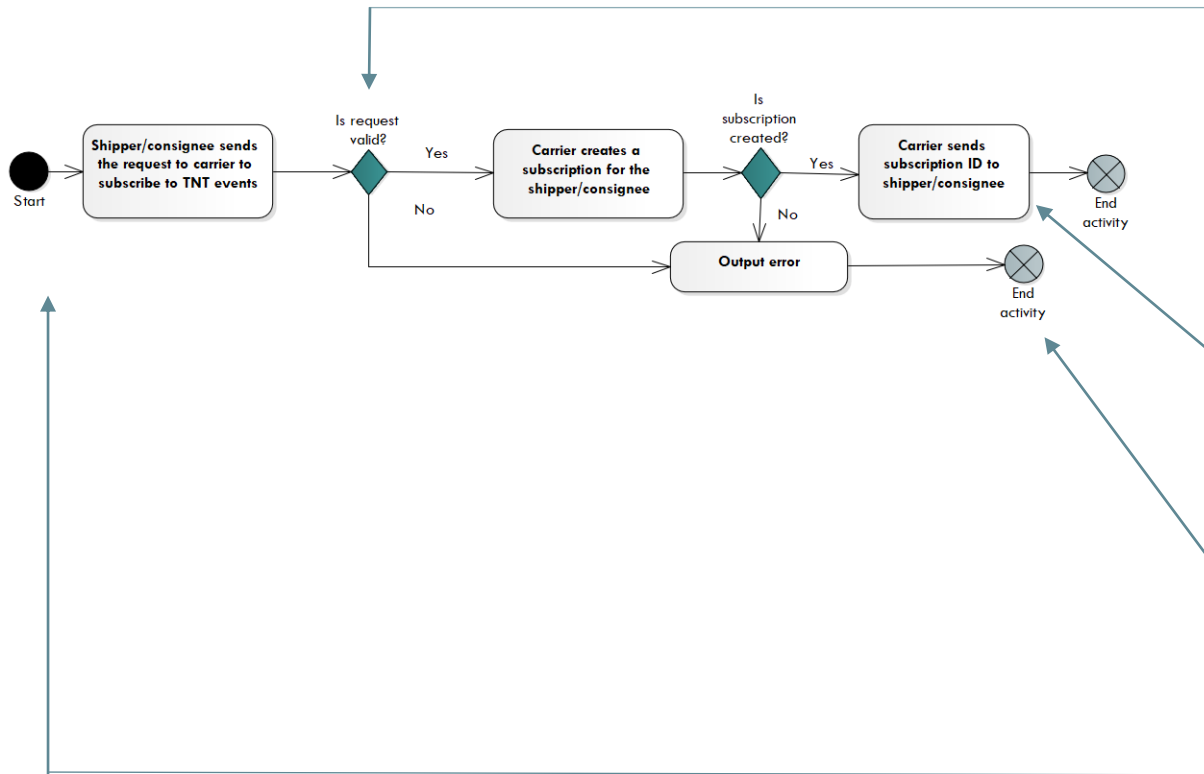
Use-case

A use-case is an element in UML modeling used to describe how a user of a system interacts with the system to perform a task. In our example the use-case is amongst shippers or consignees that “subscribe to track and trace information for shipment(s)” at carriers.

Appendix

Legend on the DCSA Interface Standard for Track and Trace 1.2

Activity diagram



Decision

Decision element is used to highlight a condition: if a condition holds true, then processing continues one way. The decision element is marked in green color in this example.

Activity

An Activity reflects the data flow of a process and specifies a sequence of behavior. An activity is shown as a round-cornered rectangle enclosing all the actions, control flows and other elements that make up the activity.

Flow final

The flow final node is depicted as a circle with a cross inside. The flow final node denotes the end of a single control flow.

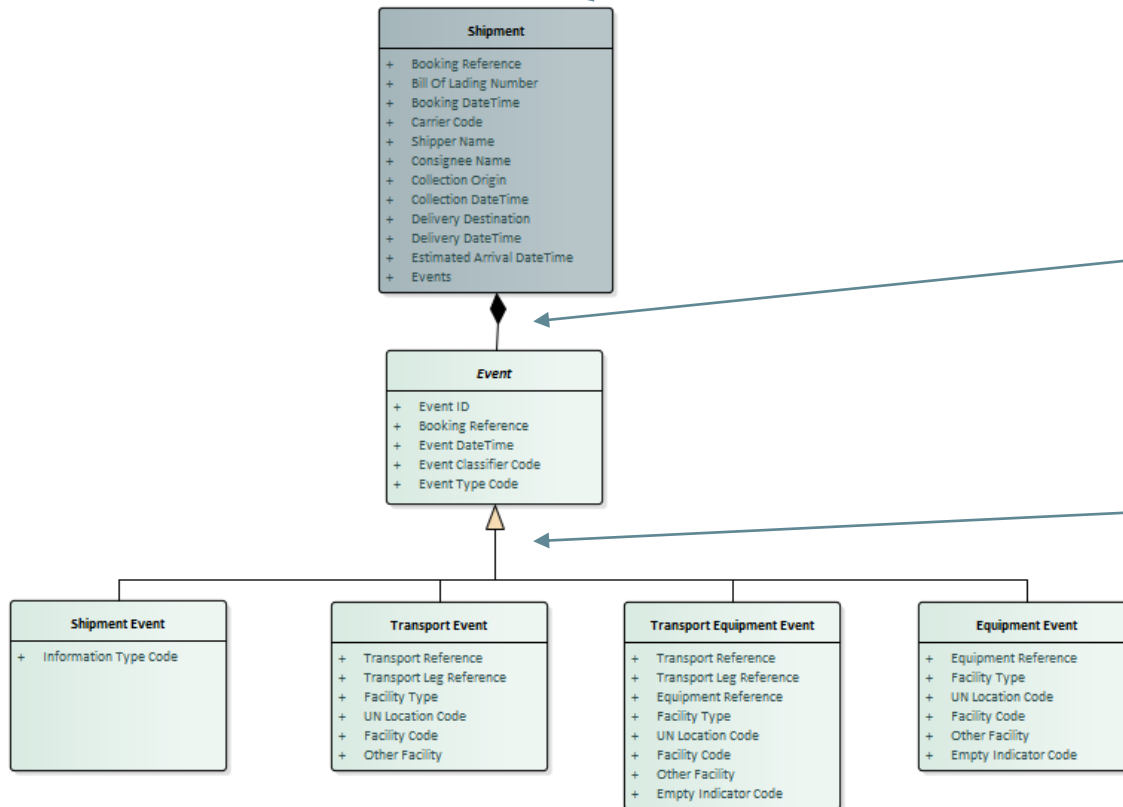
Initial

An initial or start node is depicted by a large black spot.

Appendix

Legend on the DCSA Interface Standard for Track and Trace 1.2

Class diagram



Class

A class is an element in order to define the attributes and behaviors that an object could generate. Classes are represented by rectangles depicting the class' name and – if applicable - the name of the operations and attributes.

Association

Association describes a relationship between two classes. It is denoted by a straight line where an arrow represents the direction in which the information is being used.

Composition

Composition is a special form of association where one class object owns the other class object and where the child object cannot exist on its own. It is denoted by a filled diamond-shaped arrowhead pointing towards the target or parent class.

Generalization

A generalization indicates inheritance. They are drawn from the specific classifier to a general classifier. This means that the source inherits the characteristics of the target.

Aggregation

Aggregation is a subset of association and indicates that the child can exist independently of the parent. It is denoted by a hollow diamond-shaped arrowhead pointing towards the target or parent class.



THANK YOU

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