



# Digital Container Shipping Association (DCSA)

DCSA Interface Standard for Track and  
Trace 2.1- Reading Guide

August, 2021

# Purpose of this Reading Guide



This Reading Guide should allow readers of the Digital Container Shipping Association (DCSA) Interface Standard for Track and Trace to understand what the context of the DCSA Interface Standard for Track and Trace 2.1 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 2.1?

**2** What can you expect from the DCSA Interface Standard for Track and Trace 2.1?

**3** What can you achieve with the DCSA Interface Standard for Track and Trace 2.1?



# What is the context of the DCSA Interface Standard for Track and Trace 2.1?



# Digital Container Shipping Association (DCSA)



The DCSA Industry Blueprint 3.0 is one of the main initiatives and publications of the DCSA.

## VISION

The vision of DCSA (Digital Container Shipping Association) is to shape the digital future of container shipping by being the industry's collective voice. Together with our members, DCSA works towards alignment and standardisation of IT and non-competitive business practices. Our aim is to move the industry forward by setting frameworks for effective and universally adoptable standards and exploring possibilities for innovation. We are vendor neutral and technology agnostic to enable widespread adoption of DCSA standards.

## MEMBERS

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

## DCSA Members



# Purpose of the DCSA Interface standards for Track & Trace



A technology-agnostic interface standard was developed to set the stage for future facilitation of standardization and digitization throughout the industry with a special focus on Track & Trace.

## PURPOSE

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, a clearly defined DCSA Interface Standard for the Track & Trace 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.

# Track & Trace standards with API definitions to expedite adoption



Giving cargo owners shipment visibility across multiple carriers

## Improve customer experience

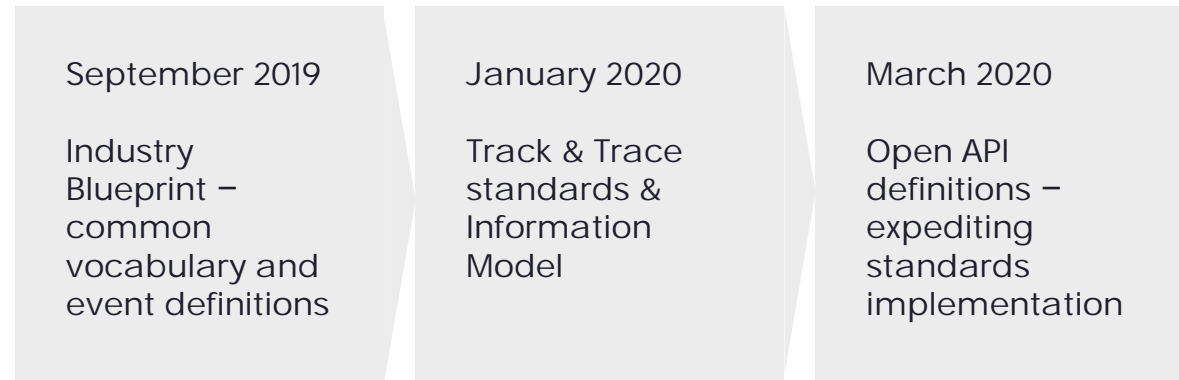
Shippers: shipment visibility across carriers – better planning, optimised handling

## Simplify cross-industry collaboration

Carriers: unified info sharing with other parties – accurate, efficient, on any platform

## Enable digital innovations

Ecosystem: leverage standards to create capabilities that are universally deployable



Examples of compliant solutions





# What can you expect from the DSCA Interface Standard for Track and Trace 2.1?

# Approach to the DCSA Interface Standard for Track and Trace 2.1



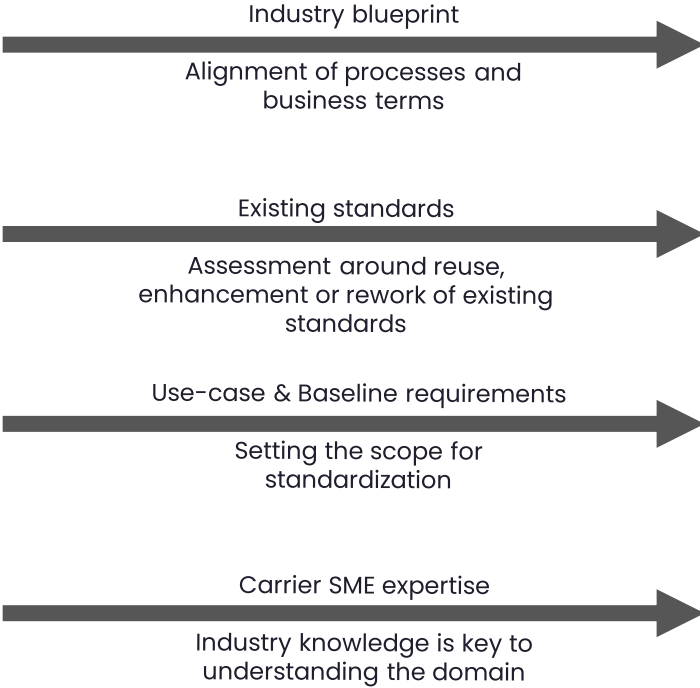
Any published standard will be made publicly available on the website of the DCSA. During the development of standards, it will likewise be possible for interested parties to obtain selected materials and to learn about upcoming standard publication(s) via the website DCSA.org

## Review of business perspectives

The diagram shows four components of the review process:

- DCSA Industry Blueprint**: A diagram showing a hierarchy of business processes.
- Existing Standards**: A screenshot of a software interface with various data fields and buttons.
- Use-case Description & Baseline, Requirements document**: A diagram showing a flow of information between different entities.
- Carrier SME Expertise**: A screenshot of a document with text and a table.

## DCSA Interface Standard for Track and Trace 2.1



The cover page of the standard includes:

- DCSA logo
- DCSA Interface Standard for Track and Trace**
- Version 2.1**
- June 29, 2021
- Purpose**: This document provides the DCSA interface standard for Track & Trace as applied in container shipping to ensure that all members and partners in the container shipping industry can base their interfaces on a common understanding.



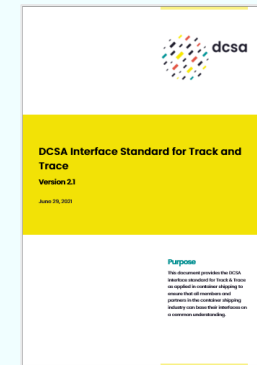
# Scope of the DCSA Interface Standard for Track and Trace 2.1



The DCSA Interface Standard for Track and Trace 2.1 is complemented by this Reading Guide, the DCSA Information Model 3.2, the [DCSA Web Glossary of Terms](#), OpenAPI definitions and the document on the DCSA Event Naming Convention 2.1 and DCSA Event Structure Definitions 2.1 are provided.

## DCSA Interface Standard for Track and Trace 2.1

This document provides the DCSA interface standard for Track & Trace as applied in container shipping to ensure that all members and partners in the container shipping industry can base their interfaces on a common understanding.



## DCSA Interface Standard for Track and Trace 2.1 Reading Guide

This document is a reading guide, which is recommended to read before starting to use the DCSA Interface Standard for Track and Trace 2.1. This has been created to facilitate proper use and understanding of the Interface Standard for Track and Trace as well as its limitations.

## DCSA Information Model 3.2

The DCSA Information Model 1.0 provides a holistic overview of the information standardizations defined in the DCSA Industry Blueprint 3.0.

## DCSA Web Glossary of Terms

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.

<https://knowledge.dcsa.org/s/glossary>

## OpenAPI definitions

OpenAPI definitions following the DCSA Information Model 3.2 and in particular the DCSA Interface Standard for Track and Trace 2.1 will be published on DCSA.org and DCSA-org SwaggerHub.

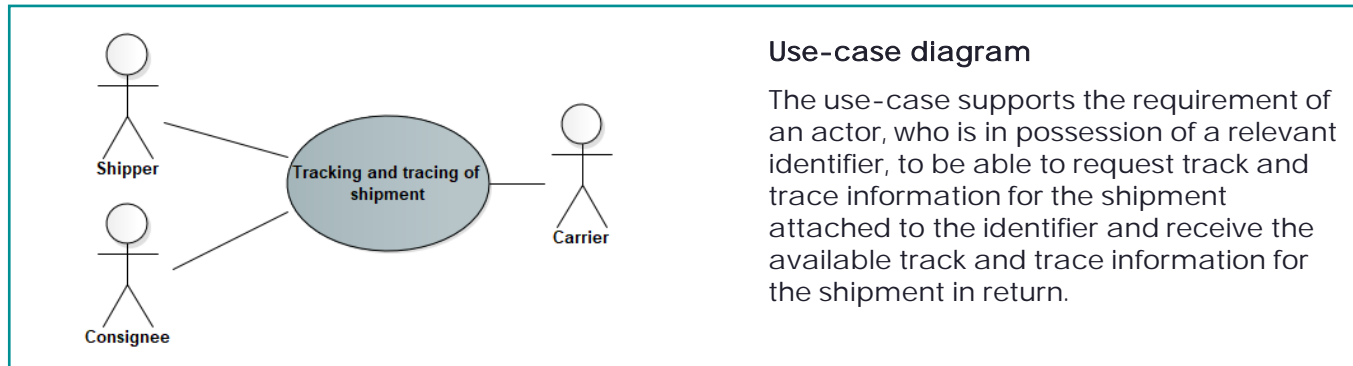
## DCSA Event Naming Convention 2.1 and Event Structure Definitions 2.1

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.

# Elements of the Interface for Track and Trace 2.1

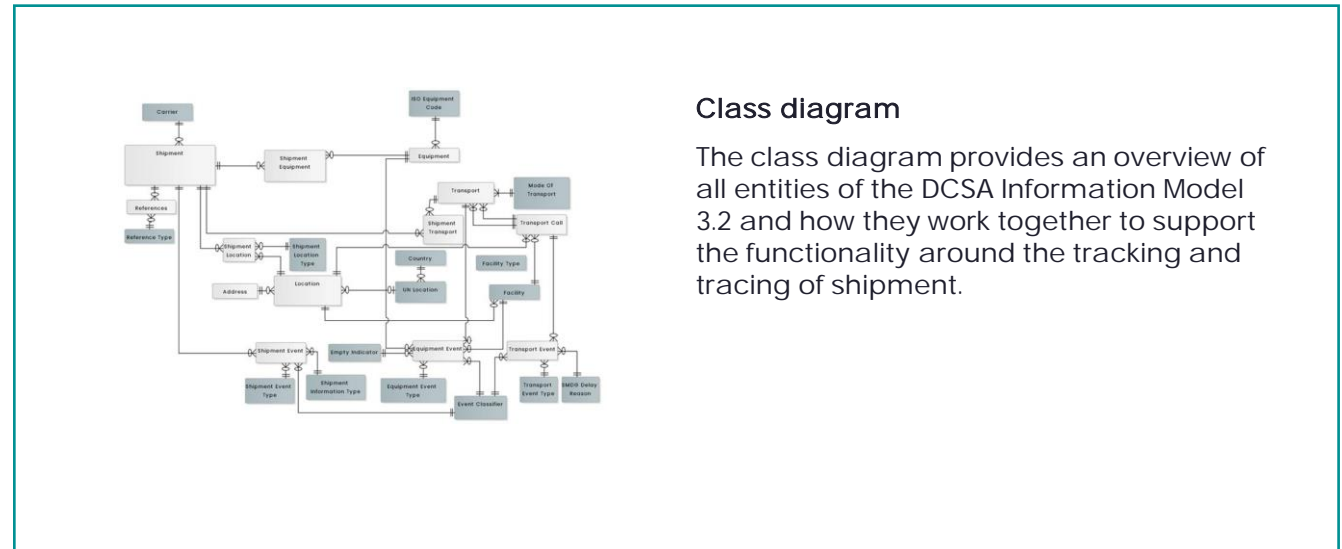
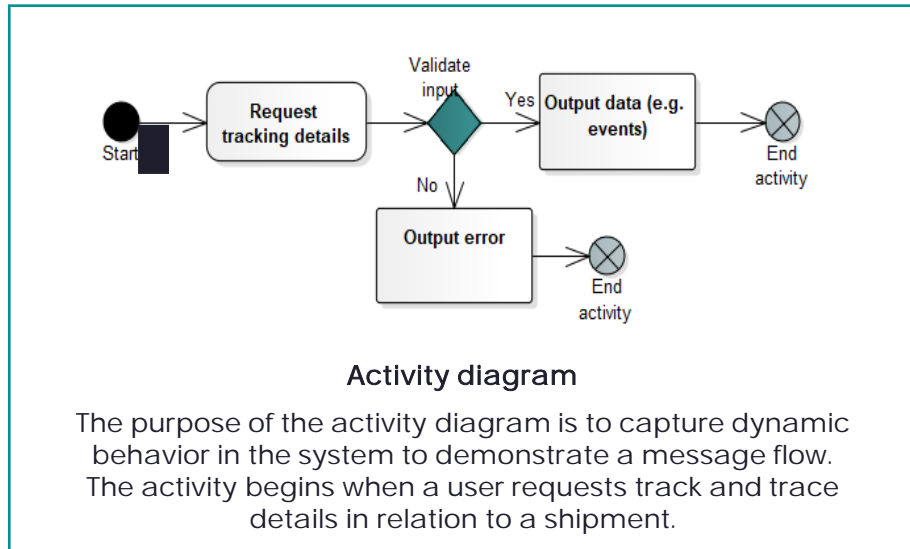


The DCSA Interface Standard for Track and Trace 2.1 document provides standardized key UML diagrams and lists of inputs and outputs as depicted below.



**List of inputs and outputs**

Booking reference, bill of lading number or equipment reference individually are identifiers that link to a shipment. At least one of these identifiers must be provided to constitute a valid request. The interface output is built around the events that occur for a shipment. This means that every shipment contains multiple events.

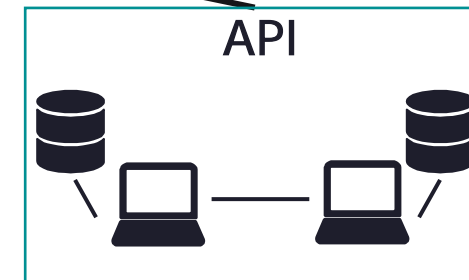
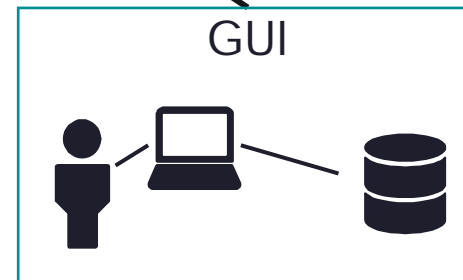
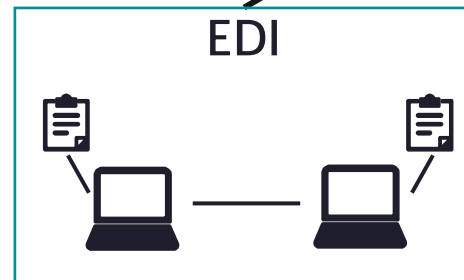
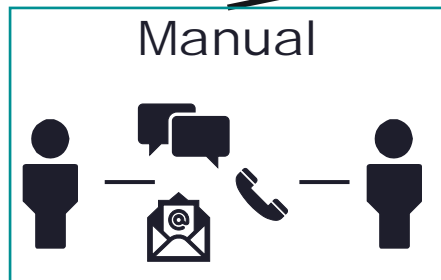




# What can you achieve with the DCSA Interface Standard for Track and Trace 2.1?



# What to achieve with DCSA Interface Standard for Track and Trace 2.1



- Be consistent and aligned in the usage of DCSA terminology in calls and emails

- Update to latest UN/CEFACT EDI version, e.g. IFSTA D19A

- Mapping to existing standards
- Enhance UX on track and trace portals

- Align data elements to be exchanged through an API
- Build on top of OpenAPI definitions

# More details about the DCSA Interface Standard for Track & Trace



1

## DCSA SwaggerHub

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

2

## Versioning

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DCSA 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](#).

3

## Error handling

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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/CEFACT and EDIFACT. More information can be found [here](#) on DCSA SwaggerHub.



# Feedback



# Contribution



The DCSA Industry Blueprint will be expanded with more data elements as DCSA continues to standardise the inter-operational aspects of the container shipping industry. This will be done based on our ongoing collaboration with industry stakeholders.

## Creation process

The DCSA Industry Blueprint has been created in collaboration with some of the world's largest shipping companies. The collection and consolidation of data documentation was carried out by the DCSA. The DCSA Industry Blueprint aims to create a representation of industry data references, data descriptions and data relationships.


## Suggested improvements

The DCSA Industry Blueprint is an evolving document, which will change as processes and best practise across the industry change.

For this reason, DCSA is always interested in feedback that can improve the quality of published work and drive standardisation and digitalisation going forward.

If you have any feedback or input, please click 'Contact' on our web site.

 [www.dcsa.org](http://www.dcsa.org)

 [Follow us on LinkedIn](#)

 [info@dcsa.org](mailto:info@dcsa.org)

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# Appendix



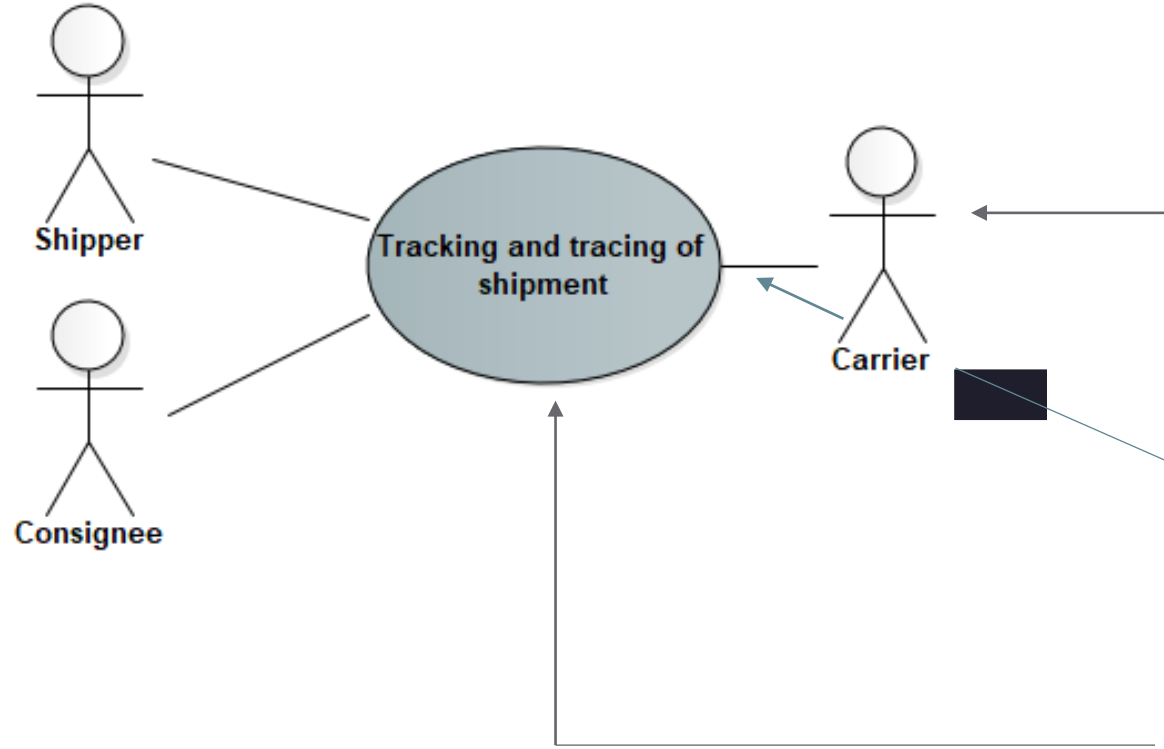


# Appendix I



Legend on the DCSA Interface Standard for Track and Trace 2.1

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

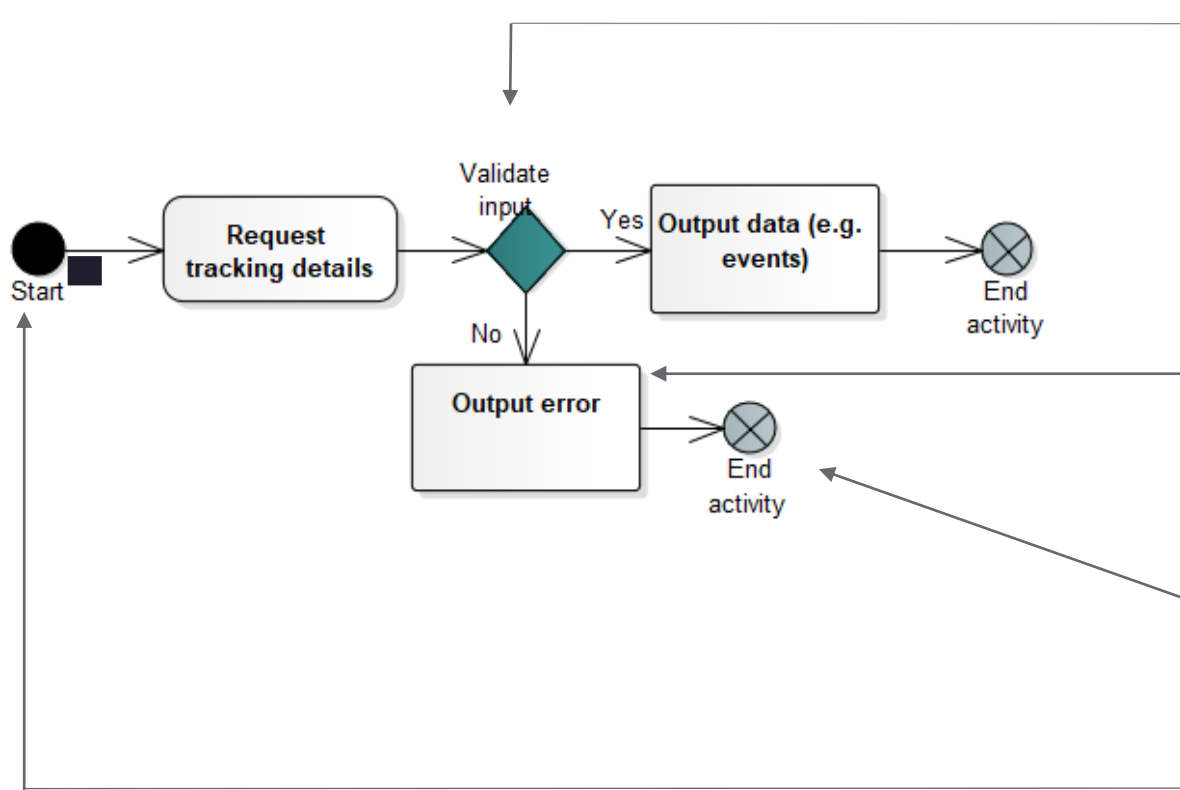
A use-case is an element in UML modeling used to describe how a user of a system interacts with the system to perform a task. In our example the use-case is "tracking and tracing of shipment".

# Appendix I



Legend on the DCSA Interface Standard for Track and Trace 2.1

Activity diagram



## Decision

Decision element is used to highlight a condition: if a condition holds true, then processing continues one way. It 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.



Thank you

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