



# Industry Blueprint – Container Shipping 2022.1 Reading guide

**Digital Container Shipping Association  
(DCSA)**

March, 2022

# Digital Container Shipping Association (DCSA)



The DCSA Industry Blueprint 2022.1 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 standardization 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



# Context of the Industry Blueprint 2022.1

## 1. Purpose and scope

# Industry Blueprint – Container Shipping 2022.1

Selected carrier processes have been mapped to facilitate standardisation and digitalisation of the industry.



## PURPOSE

1. Standards support a **common view across the industry** in relation to processes, milestones, events and messages, facilitating industry standardisation and digitalisation efforts.
2. Additionally, a clearly defined process standard is **the foundation against which future DCSA standards will be defined and mapped** (e.g. Data and Interfaces).

## SCOPE

1. Processes of the Industry Blueprint are completed by the ocean carriers
2. Processes related to the movement of a container/equipment from one location to another as well as related to sharing operational vessel schedules with partners and operational service providers as well as related to eDocumentation
3. Processes which are considered critical for industry standardisation and preparation for digitalisation
4. Processes which are not considered commercially sensitive or of competitive advantage



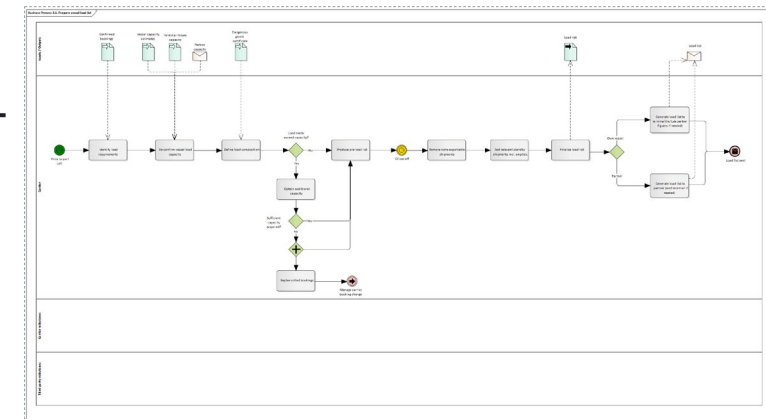
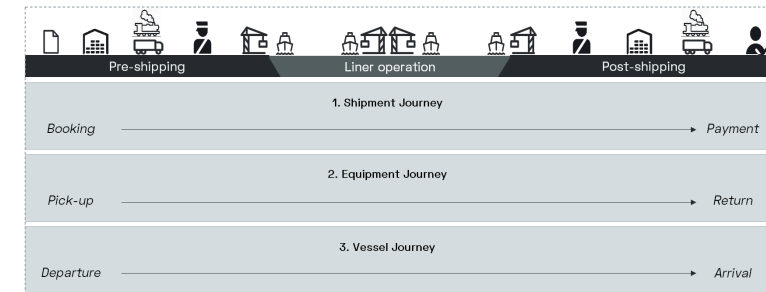
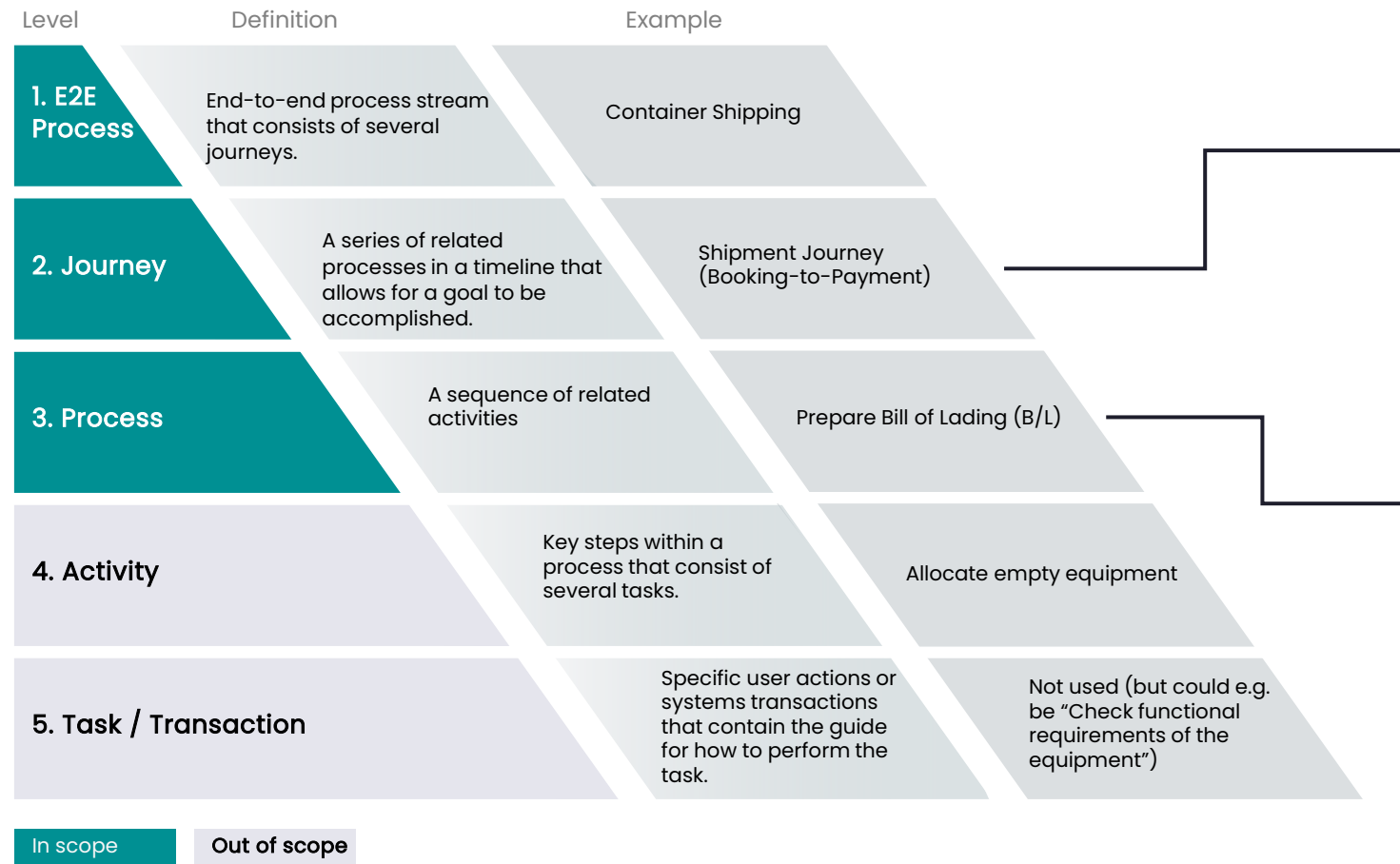
# Structure of the Industry Blueprint

1. A multi-layered Industry Blueprint
2. The journey-based structure

# A Multi-layered Industry Blueprint



The Industry Blueprint – Container Shipping 2022.1 is designed as a multi-level model, where users can expand each element to achieve a higher level of detail and granularity. The following process terms (L1, L2, L3) are necessary to understand how the Industry Blueprint process maps have been designed.



# The Journey-based structure



Consensus has been reached on the overall structure and key design principles for the Industry Blueprint – Container Shipping 2022.1

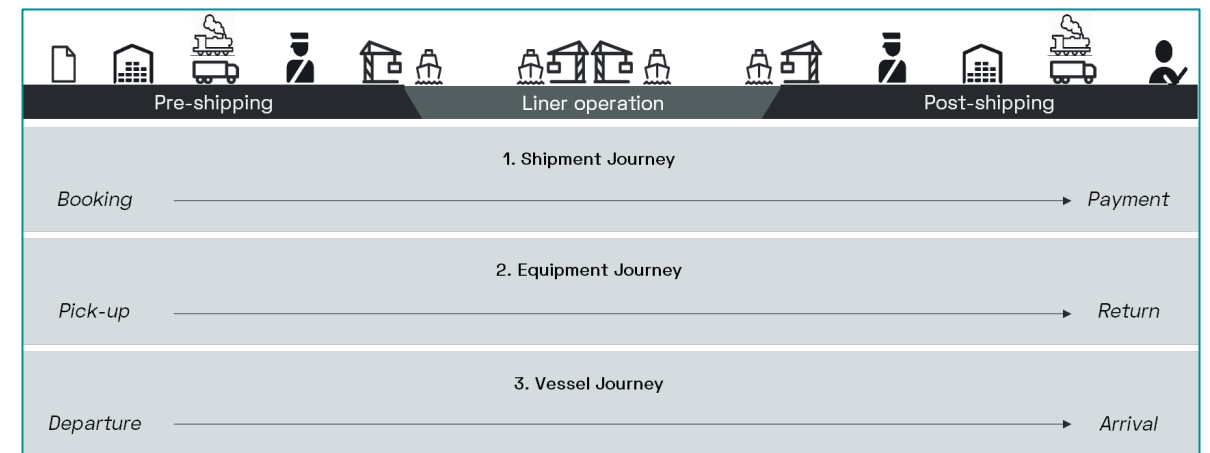
## The journey-based structure

The DCSA Industry Blueprint utilises a “journey-based” structure.

Each journey has a specific thematic focus and different drivers, but they all follow the same general timeline in parallel.

The three journeys are:


- Shipment journey (Order to Payment);
- Equipment journey (Pick-up to Return);
- Vessel journey (Departure to Arrival [incl. one port call]).



# Level 1: Process description of the journey types



Definitions for Shipment Journey, Equipment Journey and Vessel Journey are included for the Carrier Booking-to-Container Return end-to-end process.

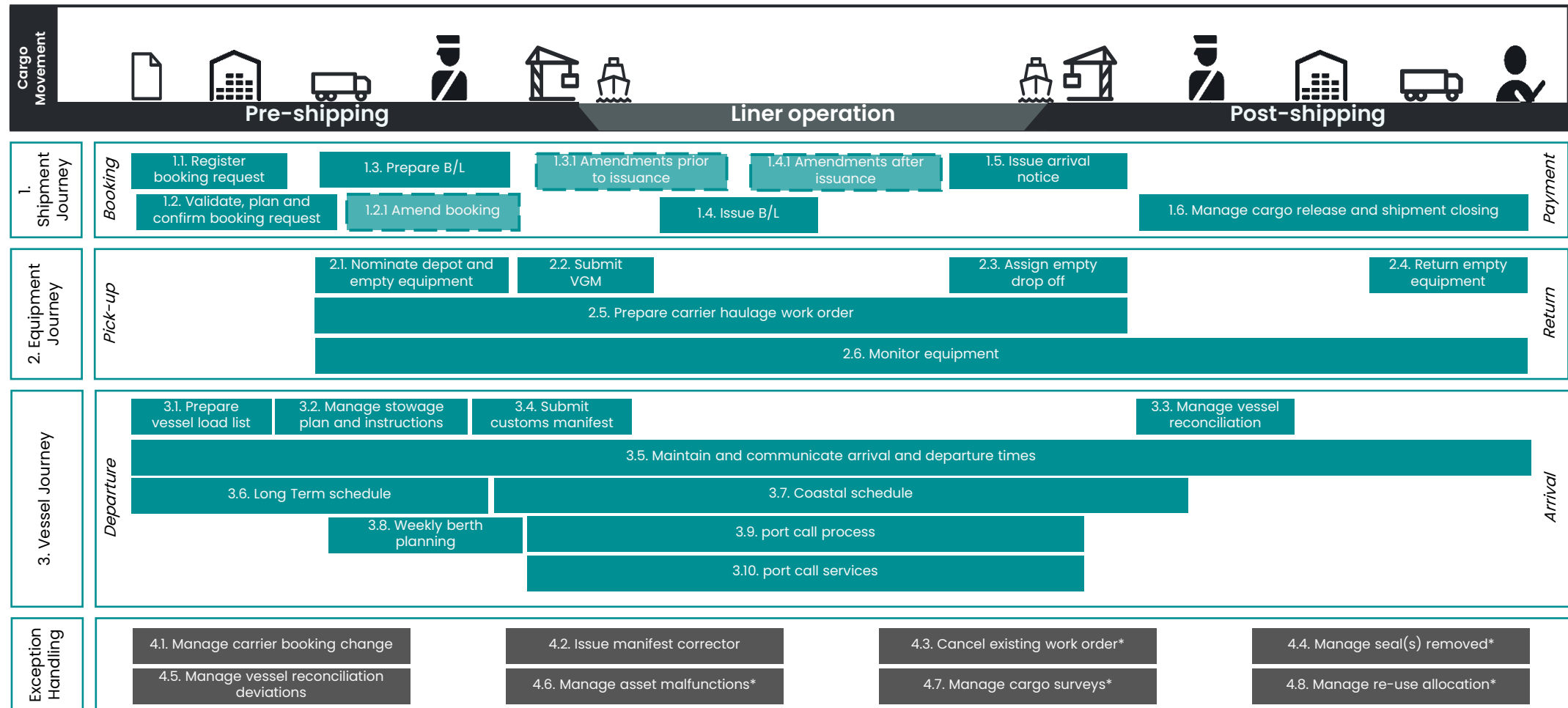
Cargo Movement														
		Pre-shipping				Liner operation				Post-shipping				
1. Shipment Journey	Booking	Booking-to-Payment covers all activities and documentation processes related to a customer's order <ul style="list-style-type: none"><li>• Customer-driven processes (and/or triggered by the customer)</li><li>• Process executed in relation to an agreement made between the customer and the carrier, which is later invoiced and settled</li></ul>												Payment
2. Equipment Journey	Pick-up	Pick-up-to-Return covers all activities and documentation processes directly related to containers and/or physical container movements <ul style="list-style-type: none"><li>• Equipment-driven processes</li><li>• Carrier-driven processes</li></ul>												Return
3. Vessel Journey	Departure	Departure-to-Arrival covers all activities and documentation processes related to one vessel AND the relevant port calls in relation to the transport of one shipment <ul style="list-style-type: none"><li>• Activities required to execute a port call successfully</li><li>• Preparation of vessel arrival and follow-up post vessel departure</li><li>• "During sea passage" is excluded from the scope of Industry Blueprint 2022.1</li></ul>												Arrival



# Level 2: overview of activity maps



Level 1 (Carrier Booking-to-Container Return), Level 2 journeys (Booking-to-Payment, Pick-up-to-Return and Departure-to-Arrival) and Level 3 processes documented within the Industry Blueprint – Container Shipping 2022.1 are listed below.



\* These processes have not been mapped on level 3 in the Industry Blueprint 3.0

Core process

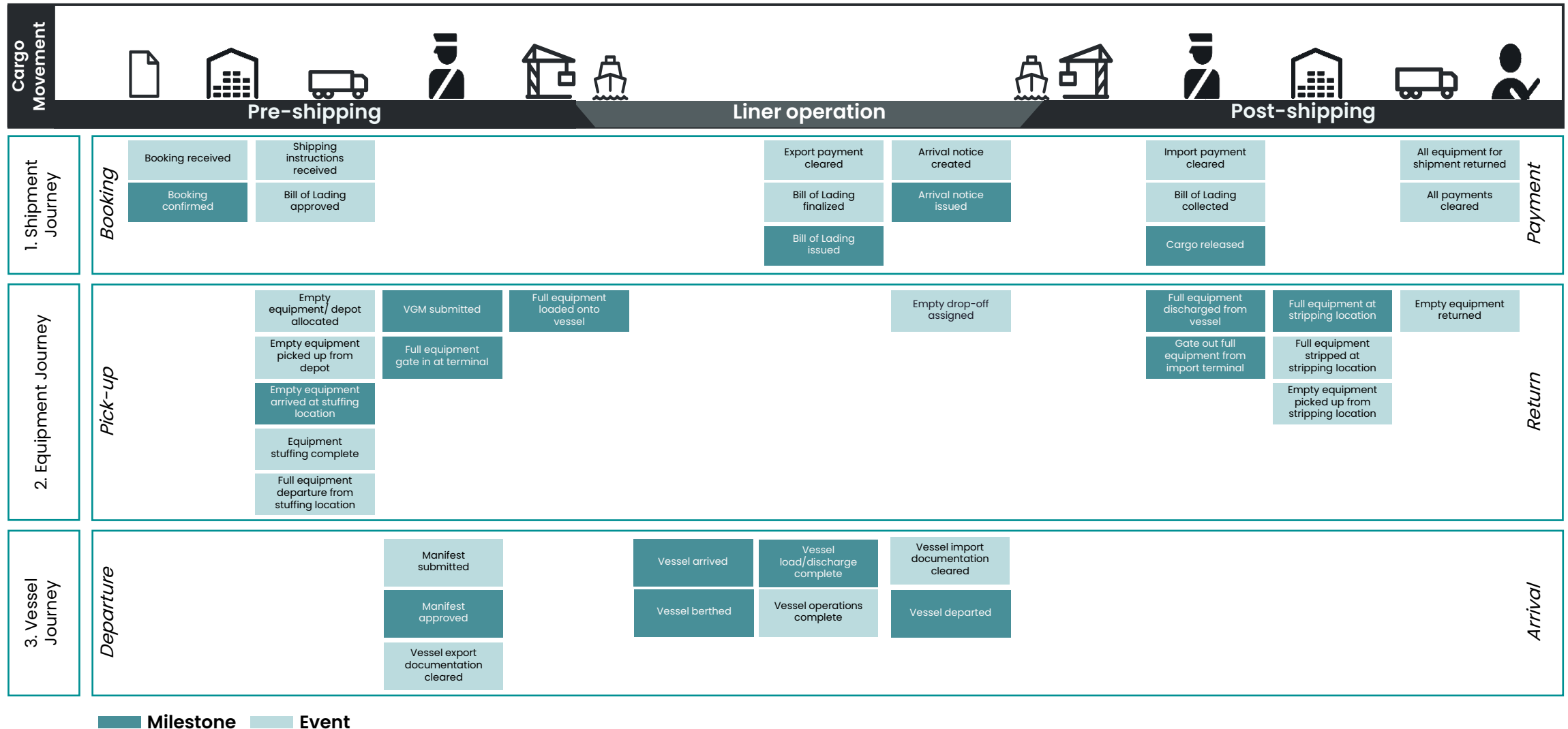


Exception process (Not aligned with the "Cargo movement" diagram)



Optional process

# Milestone and events per journey



■ Milestone ■ Event

# Legend of the Industry Blueprint

1. Map example
2. Symbols and meaning

# Map example



The Industry Blueprint – Container Shipping 2022.1 is a multi-layered end-to-end process description. Each map, regardless of aggregation level provides an overview of a specific process including activities, decisions and physical milestones.

## Start Event

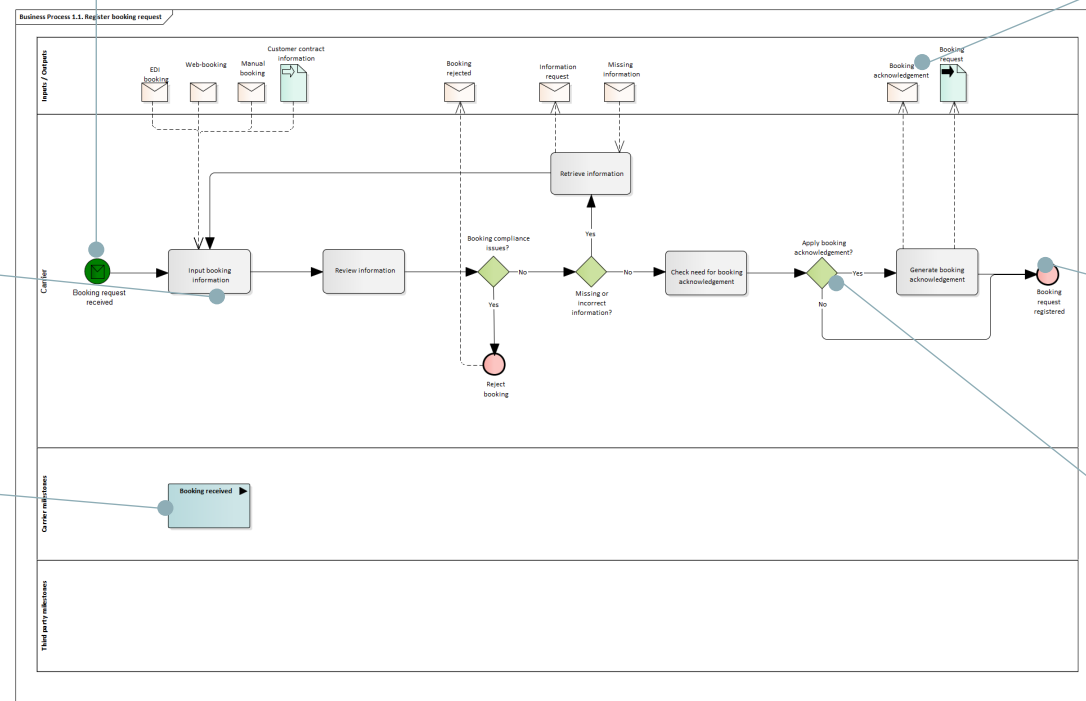
Each map is started using a Start Event. These are often specific events/occurrences that trigger the subsequent tasks. A Start Event can also be a link from a previous process.

## Activities

The primary driver of processes are Activities. Activities are actions performed by people or systems.

## Milestones

Milestones are contained in the bottom swim lanes. The milestones have been indicated to reflect timing in relation to the above process. These are divided into milestones controlled by the carrier, and those controlled by another third party.



## Messages and Data Objects

Messages and Data Objects are contained in the top swim lane. These all relate to an activity, which is the trigger or recipient of the information/question.

## End Events

The End Event illustrates the primary outcome or state obtained through the process. This can also be a link to another process.





## Gateway

When the sequence flow hits a gateway, a decision is made about the future sequence of the flow. One or more routes may be taken depending on the type of gateway.

# Symbols and meaning



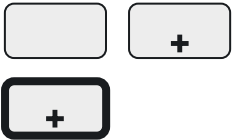



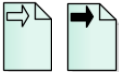

The elements used in the Industry Blueprint – Container Shipping 2022.1 have been taken from standard Business Process Model Notation (BPMN), but with some minor alterations to allow for the specific needs of DCSA.

Symbol	Meaning	Description
	<b>Start Event</b>	<p>The Start Event is the start of a process. Three Start Events are used in the DCSA Industry Blueprint 3.0.</p> <p><b>Timer:</b> Used to indicate that a process is triggered based on specific timing or relative to the occurrence of a specific event.</p> <p><b>Message:</b> Used to indicate that a process is triggered by the reception of a message (e.g. a booking, a document or file).</p> <p><b>Other trigger:</b> Used when the process is triggered by something other than the two previous events, or when the trigger is undefined or non-standardized.</p>
	<b>Intermediate Event</b>	<p>The intermediate event signifies an occurrence that takes place outside the process. This is often used to indicate that something specific is happening between two activities. This outside event/occurrence needs to be concluded before the process can flow to the next activity.</p> <p><b>Timer:</b> Intermediate event that has a specific timeline as a condition (e.g. documents to be send 48 hours prior to arrival).</p> <p><b>Condition:</b> Intermediate event that is a condition for the flow to proceed (e.g. all containers must be in carrier's possession to issue the transport document).</p>
	<b>End Event</b>	<p>The End Event indicates the final state or primary outcome of a process.</p> <p><b>Message:</b> Used to indicate that the final outcome of a process is a message sent.</p> <p><b>Error:</b> Used to indicate that the process outcome is to handle the process error outside of the defined process flow.</p> <p><b>Other outcome:</b> Used when the process is concluded with an outcome other than the two previous events, or when the result is undefined or non-standardized.</p>
	<b>Linked Event</b>	<p>The Linked Event is used to indicate links between two or more processes. They are used to start or end a process that triggers, or is triggered, by another process. A Linked Event can either be a catch(start) or a throw(end). Catch and throw are drawn with a hollow and solid arrow respectively.</p>

# Symbols and meaning



The elements used in the Industry Blueprint – Container Shipping 2022.1 have been taken from standard Business Process Model Notation (BPMN), but with some minor alterations to allow for the specific needs of DCSA.

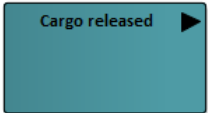
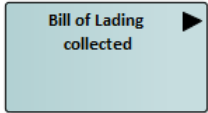
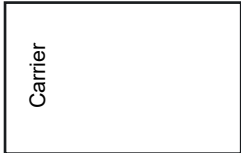
Symbol	Meaning	Description
	<b>Activity</b>	Activity is a generic term for the work performed. If the Activity has been further disaggregated, a "+" symbol at the bottom of the rounded rectangle will appear. This means that a process exists for the specific Activity. If the rounded rectangle has a thin edge, it is a global process, meaning it is a process that originates somewhere else in the process landscape.
	<b>Gateway</b>	A gateway is used to control the divergence of sequence flows in a process. It will determine the branching of paths in a process. Three types of Gateways are used in the DCSA Industry Blueprint. <b>Exclusive Gateway</b> (empty square): This is applied as an either/or statement. It is used when only one of the alternative outcomes can occur in each instance of the process. <b>Inclusive Gateway</b> (square with a circle): This is applied as an and/or statement. It means that several outcomes can occur for a single instance of the process based on the judgement of the reader. <b>Parallel Gateway</b> (square with a cross): This is used when more than one outcome happens simultaneously. All incoming flows will have to complete all outgoing alternatives.
	<b>Sequence Flow</b>	A Flow is used to show the sequence in which activities are performed in a process.
	<b>Data Flow</b>	A Data Flow is used to illustrate to or from an activity. The information can either be in the form of data or messages.
	<b>Data Object</b>	Data Objects in the DCSA Industry Blueprint are defined as data or information that is used or produced by a certain activity. The data associated with Data Objects is considered to be internal, meaning that it is produced and owned by the carrier. Data Objects can appear as either catch (inputs) or throw (outputs) events. Catch and throw are drawn with a hollow and solid arrow respectively.
	<b>Message</b>	A Message is used to depict the transmission of information from one party to another. The DCSA Industry Blueprint defines Messages as an illustration of external communication. This means communication between a carrier and a third party.



# Symbols and meaning



The elements used in the Industry Blueprint – Container Shipping 2022.1 have been taken from standard Business Process Model Notation (BPMN), but with some minor alterations to allow for the specific needs of DCSA.

Symbol	Meaning	Description
	<b>Milestone</b>	<p>Milestone icons have been included in the Industry Blueprint 3.1 to indicate the completion or status change of a significant occurrence. Milestones are defined as:</p> <p><i>"A significant occurrence or change of status affecting the process flow of physical or immaterial equipment or documents."</i></p>
	<b>Events</b>	<p>Event icons have been included in the Industry Blueprint 3.1 to indicate the completion or status change of less significant occurrences. Events are defined as:</p> <p><i>"An occurrence in the process, which is a lower ranking contributor to a milestone"</i></p>
	<b>Swim lane</b>	<p>Swim lanes in the DCSA Industry Blueprint are used to group information belonging to specific categories. In DCSA publications, eight different swim lanes are used:</p> <p><b>Inputs/Outputs:</b> Used to group information elements (messages and data objects) that flow in and out of the process.</p> <p><b>Carrier:</b> Used to group process activities carried out by the carrier.</p> <p><b>Customer/Shipper:</b> Used to group process activities carried out by the customer/shipper</p> <p><b>Terminal:</b> Used to group process activities carried out by the terminal</p> <p><b>Customs:</b> Used to group process activities carried out by the customs</p> <p><b>Carrier milestones:</b> Used to group milestones/events that have been generated by or are in the carrier's realm of control.</p> <p><b>Conditional carrier milestones:</b> Used to group milestones that are not mandatory for the process but have been generated by or are in the carrier's realm of control.</p> <p><b>Third party milestones:</b> Used to group milestones that are outside the carrier's realm of control yet potentially relevant for tracking or other purposes.</p>

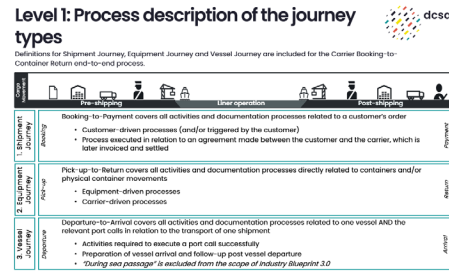
# Supporting documents and feedback

1. Industry Blueprint documents
2. Contribution

# Industry Blueprint 2022.1 documents



The Industry Blueprint 2022.1 consists of a series of process maps; however, several documents have been created to support the use and value of the maps. These documents are supporting elements, which can further increase understanding and insights gained from the process maps.



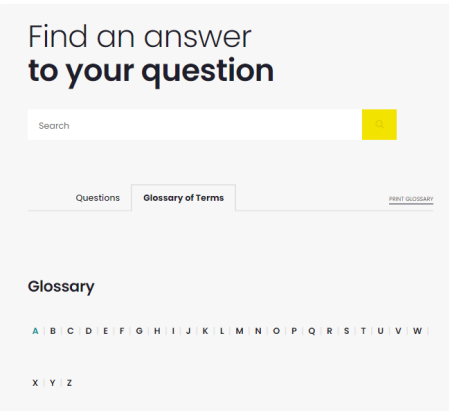
## Industry Blueprint – Container Shipping 2022.1 – Process Maps

The process maps are the backbone of the Industry Blueprint 2022.1. The multi-layered model allows the reader to drill down into each process to increase the level of detail.

Process Level 1	Process Level 2	Process Level 3	Industry Blueprint Processes	Information
booking-to-return	1. Shipment Journey	1.1 Register booking request	The process covers the registration of a booking request, a check for missing and/or incorrect information, a check for booking compliance issues and the possible subsequent transmission of booking	booking received
booking-to-return	1. Shipment Journey	1.2 Validate, plan and confirm booking request	The process covers the validation of the booking request against constraints and resolution of any related errors if necessary. Further planning, including special cargo requirements, is executed and the	booking confirmed
booking-to-return	1. Shipment Journey	1.3 Prepare Bill of Lading (BL)	The process covers the preparation of the Bill of Lading (BL), which includes a check for missing and/or incorrect information, the creation of a draft Bill of Lading (BL), which is sent to the customer for approval	shipping instructions received draft Bill of Lading approved Master information received
booking-to-return	1. Shipment Journey	1.4 Amendments prior to issuance	The process covers the amendments made to the draft Bill of Lading (BL) previously approved by the customer prior to issuance. This includes submitting the amendments, checking whether the amendments can be made, making the amendments, notifying the	Amendments made (BL) finalized

## Industry Blueprint – Container Shipping 2022.1 – Process Catalogue

Library of level 1 to level 3 processes contained within the Industry Blueprint including high level descriptions. Furthermore, contributing carriers will have access to a cross reference of their original process documentation.



## 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>



## Industry Blueprint – Container Shipping 2022.1 – Reading Guide (this document)

The current document is a reading guide, which is recommended to read before using the Industry Blueprint 3.1. This has been created to facilitate proper use and understanding of the Industry Blueprint 2022.1, as well as to make clear its limitations.

# Contribution



The DCSA Industry Blueprint will be expanded with more data elements as DCSA continues to standardize 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)



[@DCSA\\_ORG](#)



**Thomas Bagge**

CEO, DCSA



**Henning  
Schleyerbach**

COO, DCSA



Thank you

# Legal disclaimer



Copyright 2022 Digital Container Shipping Association (DCSA).

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the [License](#).

You may obtain a copy of the License here: License Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.