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TOC Americas: DCSA

Navigating the Future:
Enhancing Maritime Trade through Strategic
Digitalization & standardization

DCSA is founded and supported by carriers to accelerate digitalization in shipping

01 Help improve the **customer experience** through digitalization

02 Deliver **efficiencies** to the wider ecosystem, in particular members

03 Contribute actively to the **sustainability** goals of the industry

Members represent **70%** of global container trade

MSC

MAERSK

CMA CGM

EVERGREEN

ONE OCEAN NETWORK EXPRESS

YANG MING

ZIM

Hapag-Lloyd

HMM

New joiner since April 2024

PIL

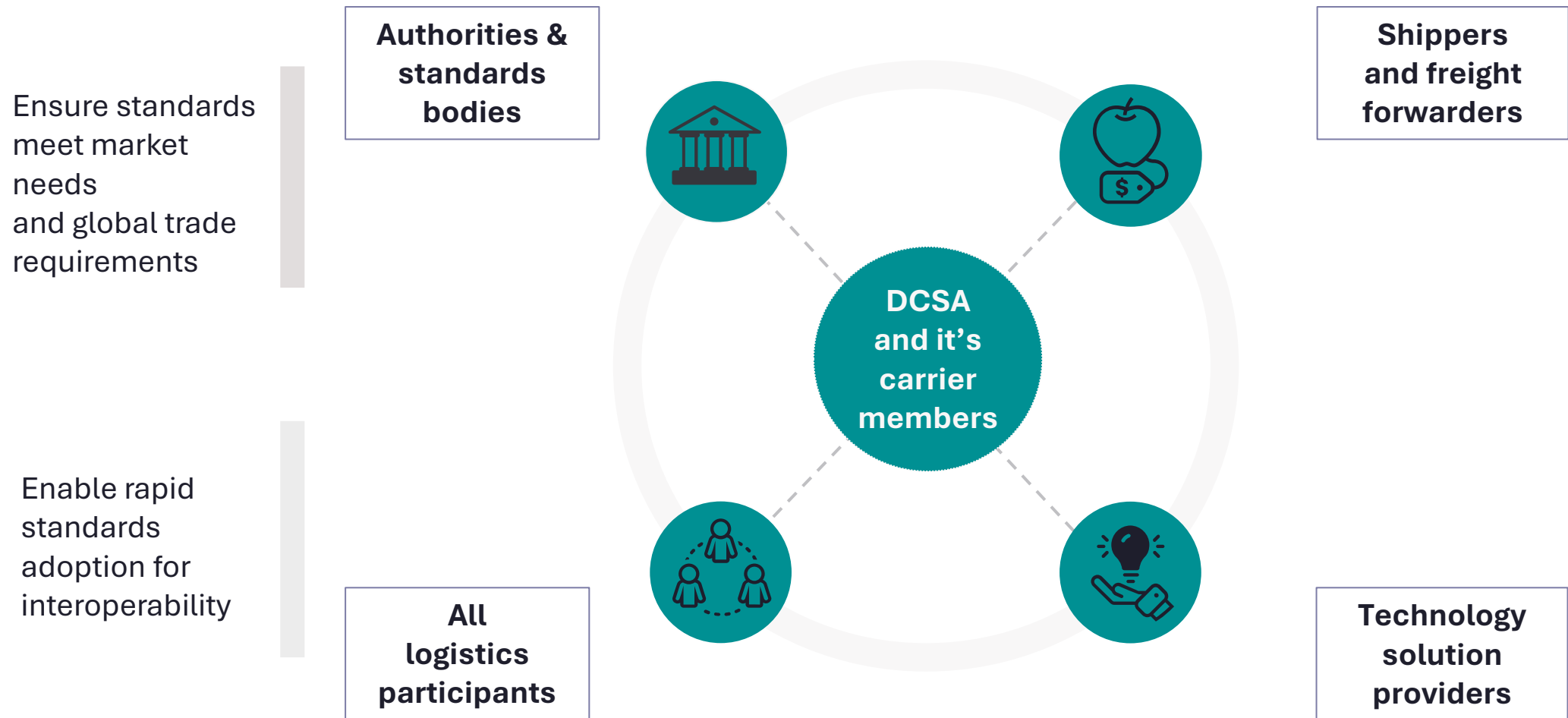| Non-profit | Open-source | Vendor neutral |

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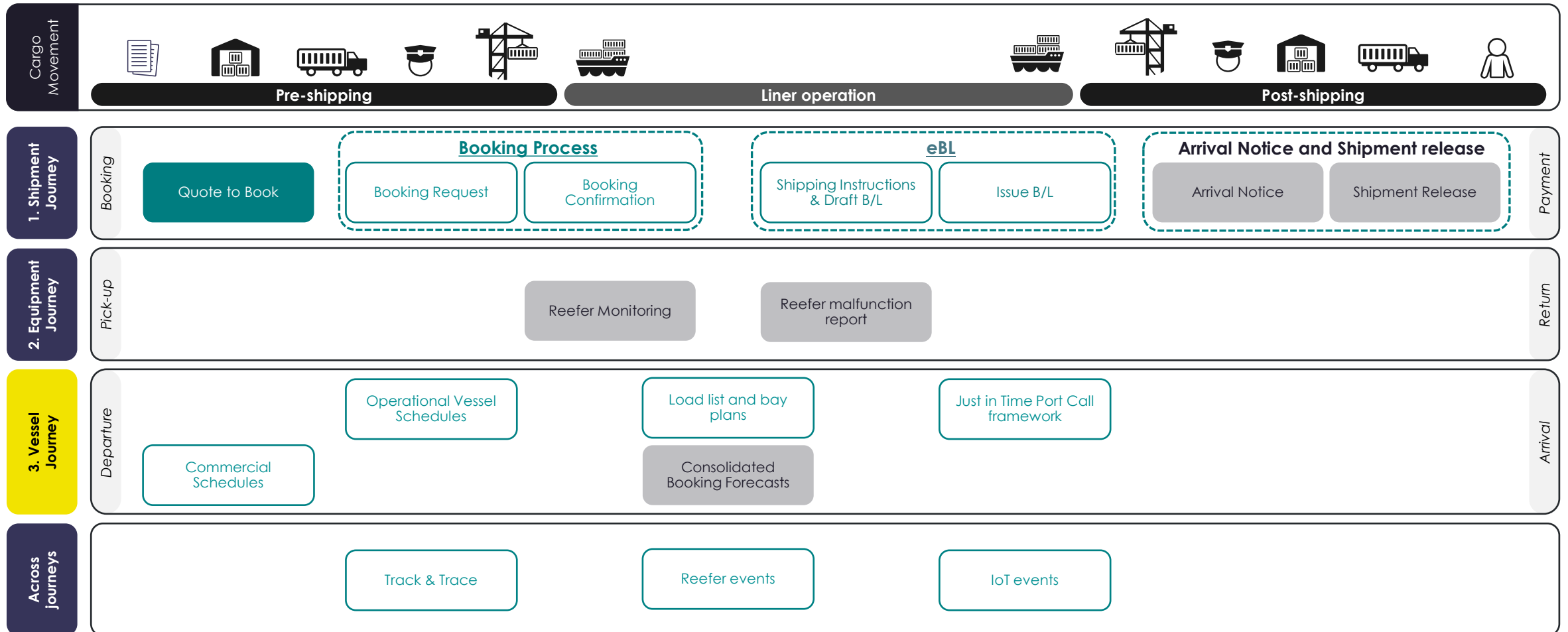# DCSA and its members collaborate with many stakeholders to drive change:

Ensure standards meet market needs and global trade requirements

Authorities & standards bodies

Shippers and freight forwarders

DCSA and it's carrier members

Enable rapid standards adoption for interoperability

All logistics participants

Technology solution providers

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Current DCSA standards overview:

Under Consideration	Published Standard	Planned Standard

Cargo Movement

Pre-shipping | **Liner operation** | **Post-shipping**

1. Shipment Journey

Booking

Booking Process
- Quote to Book
- Booking Request
- Booking Confirmation

eBL
- Shipping Instructions & Draft B/L
- Issue B/L

Arrival Notice and Shipment release
- Arrival Notice
- Shipment Release

Payment

2. Equipment Journey

Pick-up

- Reefer Monitoring
- Reefer malfunction report

Return

3. Vessel Journey

Departure

- Operational Vessel Schedules
- Commercial Schedules
- Load list and bay plans
- Consolidated Booking Forecasts
- Just in Time Port Call framework

Arrival

Across journeys

- Track & Trace
- Reefer events
- IoT events

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![dcsa logo]

Standardizing exchange of operational data is a complex journey as it involves multiple stakeholders along the way.

Schedule is a pre-requisite to many elements in the data flow between carriers & terminals

Data definitions (terminology)

Industry Blueprint (processes)
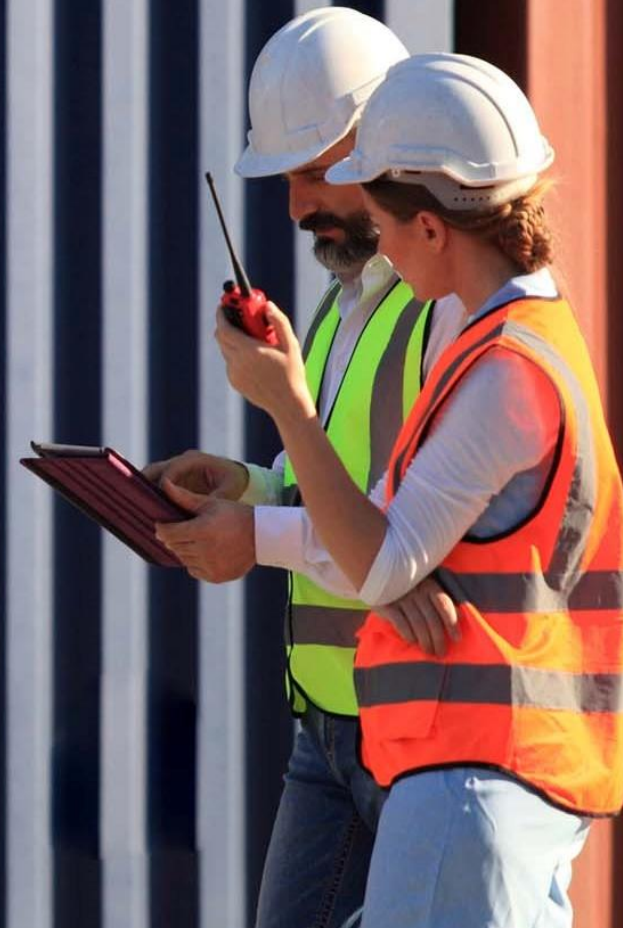
Information model -IM

Interface Standard Document -IFS

APIs design principle & implementation reference

Accompanied by reading guides, glossary of terms and FAQs

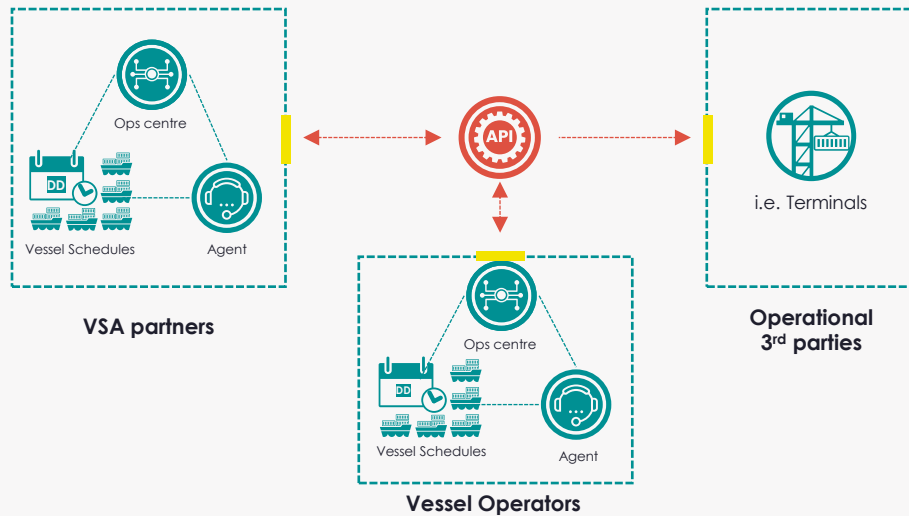Supporting documentation

01

DCSA Schedule standards (OVS and CS)

DCSA Schedules Standards:
Operational Vessel Schedule & Commercial Schedule

OVS

VSA partners

Ops centre

Vessel Schedules

Agent

API

i.e. Terminals

Operational 3rd parties

Ops centre

Vessel Schedules

Agent

Vessel Operators

Operational Vessel Schedules

Long Term Schedule & Regional/Coastal Schedule (Services, Vessels, Voyages, Port(terminals) calls.

› Deep-sea (interregional services)
› Intraregional & Feeder Services

**Universal References**

› Universal Service Reference
› Universal Voyage Reference
› Universal Port call Reference

Changes and Exceptions (i.e., Port Omission, Blank Sailing, Inducement, Phase In/Out, etc.)

Event types:

› Arrival (Planned, Estimated, Actual)
› Departure (Planned, Estimated, Actual)

Commercial Schedules

Point to Point Routings

Port/terminal Schedules

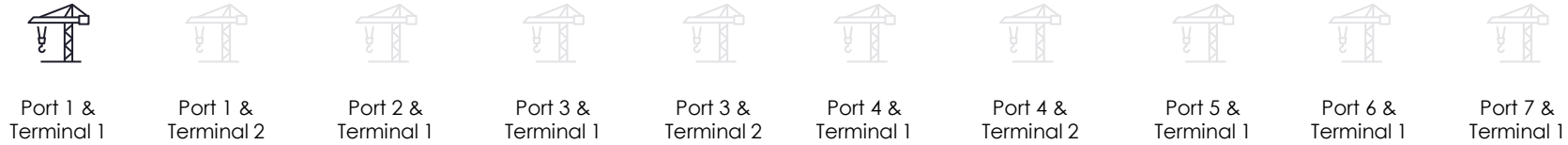Vessel Schedules

BCO's

LSP's

Platforms
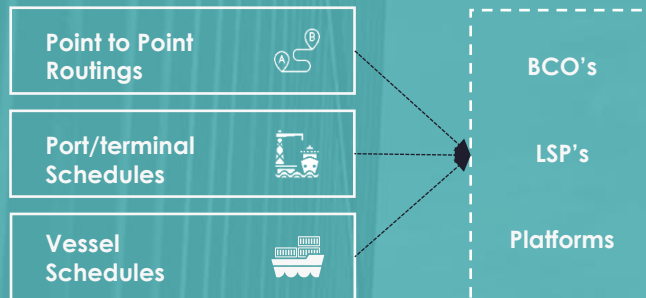
Commercial schedules – point-to-point routings: provides the product offering of single or multiple estimated end-to-end route options for a shipment in the pre-booking phase. This includes point-to-point specification of all transport legs, estimated timings, estimated schedules, and interdependencies between transport legs.

Commercial schedules – port schedules: provide, for a required specific port and starting date, the set of all vessels arriving and departing from the port(terminal) with the corresponding estimated timestamps.

Commercial schedules – vessel schedules: provide, for a required specific service and/or voyage and/or vessel and/or location, the timetable of estimated departure and arrival times for each port call on the rotation of the vessel(s).

Picturization

Port 1 & Terminal 1 · Port 1 & Terminal 2 · Port 2 & Terminal 1 · Port 3 & Terminal 1 · Port 3 & Terminal 2 · Port 4 & Terminal 1 · Port 4 & Terminal 2 · Port 5 & Terminal 1 · Port 6 & Terminal 1 · Port 7 & Terminal 1

DCSA – Operational Vessel Schedules Standard

OVS 3.0

Service Code
Service Name
USR (agreed by VSA partners)
Voyage Number
Voyage Reference (agreed by VSA partners)
Vessel Operator SMDG Code

Vessel Departure / Vessel Arrival (repeated across all ports)
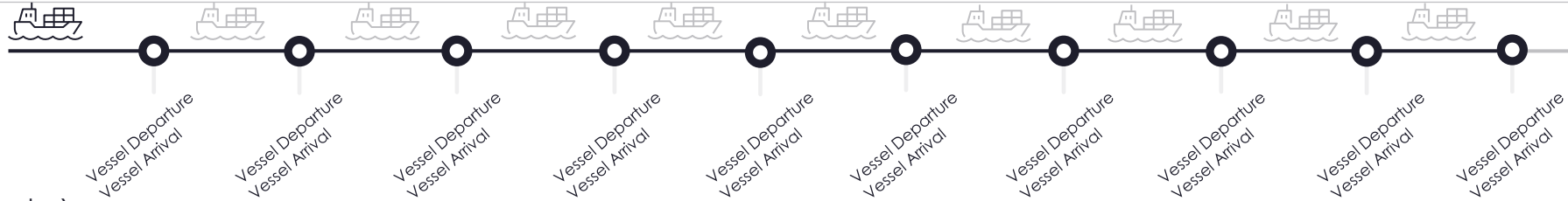
Planned
Estimated
Actual
+
Flag changes and exceptions
(Omission, Blank Sailing, etc.)

Key Elements

Event Type
- **Arrival:** At port terminal berth
- **Departure:** From port terminal berth

Event Classification
- **Planned:** Long term schedule
- **Estimated:** Coastal/Regional schedule
- **Actual:** actual timestamp

Changes & exceptions
- Port omission
- Cut & run
- Inducement / ad hoc call
- Port call swap (rotation change)
- Blank sailing
- Phase out/in
- Slide

Key Benefits

Increased Digitalization

Agreed semantics, data structure, and events means data have the same meaning regardless of the provider

Increased Efficiency

Easier and clearer communication within and between VSA partners and other operational partners (i.e. terminals) makes activities such as scheduling, berth and yard planning, customer and hinterland connectivity more efficient and reliable

Data driven optimization

Aligned, structure and high-quality data provides the necessary foundation for operational analysis and operations optimization

Universal Service reference & Voyage reference
USR & UVR

USR

5.4.1 Format for Universal Service Reference

The Universal Service Reference (USR) as defined by DCSA is composed of the letters SR followed by 5 digits, followed by a checksum character from A to Z. A service reference can look like, for example, SR0000X.

SR	5 numeric digits (0...91)	1 check character (A...Z)

DCSA distributes IJSRs to DCSA members and non-members, ensuring that each IJSR is assigned only once and belongs to only one carrier. If a carrier runs out of available USRs because they have all been used in services. a new batch can be requested from DCSA.

Service	Carrier 1	Carrier 2	Carrier 3	USR
Asia - Europe	Carrier 1 Service Code **XX2**	Carrier 2 Service Code **YYYY2P**	Carrier 3 Service Code **Z3Z4Z**	**SR12345X** (Reference managed by Carrier 3)
Oceania - Asia	Carrier I Service Code **UY3**	Carrier 2 Service Code **IYOP22**		**SR54321W** (Reference managed by Carrier 1)

UVR

5.5.1 Format for Universal Voyage Reference

The Universal Voyage Reference has been restricted to 5 digits to comply with US customs requirements:

Year YY	Sequence (0...9 & A...Z)	Bound (EWNSR)

- 2 digits identifier for the year (i.e., 23 = 2023)
- 2 alphanumeric characters for the sequence number of the voyage (i.e., 10 = 10, A0 = 100, etc)
  - See appendix for full table with logic for sequence numbers to cover from voyage 01 to 1295 in a year

- 1 character identifier for the direction/haul [import/export] (i.e., E = East)
  - E = East
  - W = West
  - N = North
  - S = South
  - R = Roundtrip

UVRs can be implemented in DCSA API or in EDI messages (SMDG to define segment).

Service	Carrier 1	Carrier 2	Carrier 3	USR
Asia - Europe	Carrier 1 Service Code **XX2**	Carrier 2 Service Code **YYYY2P**	Carrier 3 Service Code **Z3Z4Z**	**SR12345X** (Reference managed by Carrier 3)
Voyage	**Carrier 1**	**Carrier 2**	**Carrier 3**	**UVR**
Voyage N Operated Carrier	304E	04FENW1MA	V354E	**2304E**
Vessel	**IMO8712345**	IMO8712345	IMO8712345	IMO8712345

Implementation of Operational Vessel Schedule: (OVS)

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Status of standards implementation (member carriers)

	OVS	Carrier partner	Terminal partner	USR/UVR
CMA CGM	March 2024	MSK, MSC, feeders	HVCC, Hutchison, Gemalink, Navis	In scope
MAERSK	January 2024	CMA, HLAG, ZIM, feeders	HVCC, Navis, P44,	In scope
msc	June 2024	CMA, MSK	TIL	TBD
Hapag-Lloyd	March 2024	CMA, MSK	HVCC	In scope
EVERGREEN	March 2024	Yang Ming	Kaohsiung terminal	In scope
ONE	In progress	TBD	none	In scope
YANG MING	March 2024	Evergreen (march), HMM	Kaohsiung	USR, UVR not yet
ZIM	March 2024	MSK, MSC, HLAG	none	In scope
HMM	In progress	Yang Ming	none	Unsure

Status of standards implementation (non-member carriers & SP)

	OVS	USR UVR
Unifeeder	3.0 Beta	Ongoing discussions to implement in 2024
Xpress Feeder	3.0 Beta	
NCL	3.0 Beta expected soon	
NAVIS	3.0 Beta	
Portbase	Expected to consume	
HVCC Hamburg	Can consume OVS 3.0 and testing with MSK, CMA	
Hutchison Ports ECT Rotterdam	Can consume OVS 3.0 and testing with CMA	
Gemalink Vietnam	Can consume OVS 3.0 and testing with CMA	

02

Just in Time Port Call framework
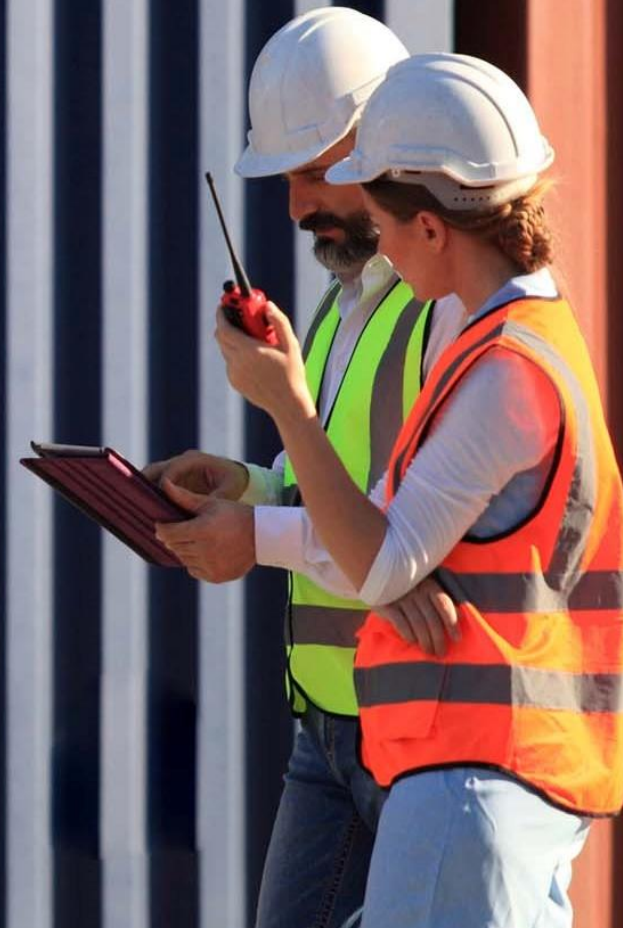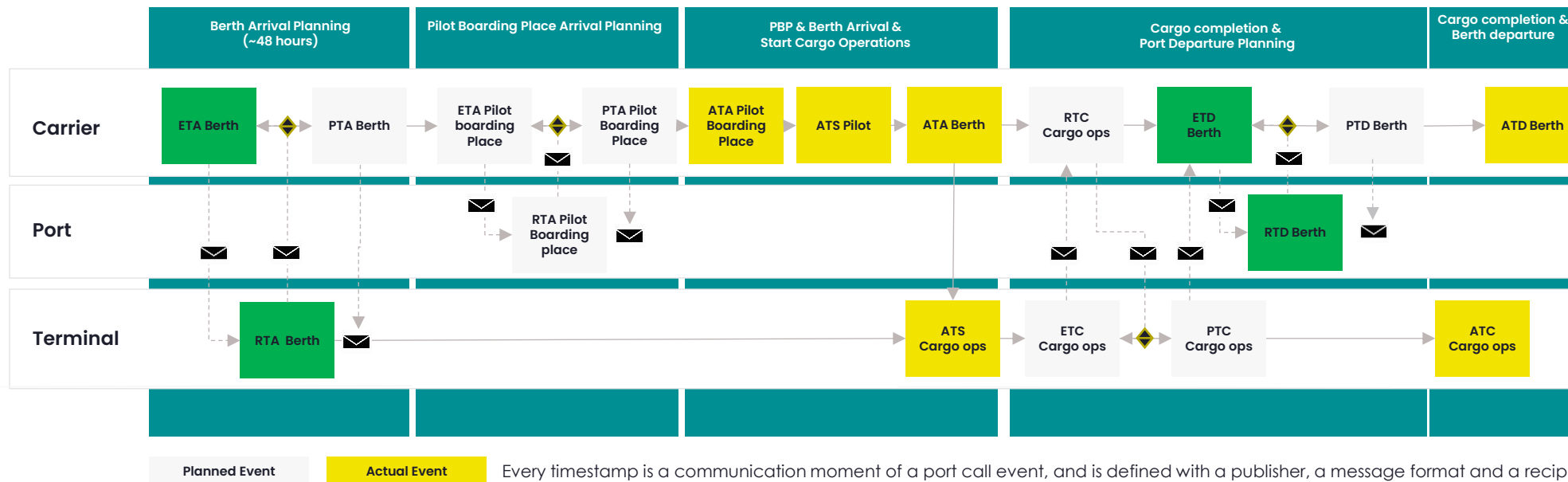
Just in Time Port Call scope & explanation

Understanding the Just in Time operational implementation framework

Scalable: Using globally aligned semantics and definitions; DCSA added information model & API specs

Usable: Message format very clear to communicate about important _operational_ port call events.

Lightweight: Only 22 data attributes, of which only 6 are needed for the core message

Complete: Nearly all port call events and services included as a pick & choose portfolio

V1.0	The main berth and pbp arrival, cargo operations and departure timestamps			→ **Core port call events**
V1.1	Mooring	Lashing	Pilotage in / out	All other services	→ Added granularity, **services ordering** and **port call planning** processes
V1.2	Vessel details (e.g. length, width, draft)	Anchorage, waste disposal and shore power	Missing timestamps on nautical services	Additional functions (cancel, omit)	→ **Additional functionality** (omit – cancel) & message information (vessel details)

DCSA observation: Current adoption focuses on berth window management / berth alignment (the **green** timestamps), **because:**

- Biggest business value for carriers & terminals
- Current tooling focuses on berth alignment
- Timestamps already commonly used

Most value experienced in local ecosystems.

Planned Event   Actual Event   Every timestamp is a communication moment of a port call event, and is defined with a publisher, a message format and a recipient.

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Insights for JIT Port call implementation: timing and data sourcing

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Many ways to implementation: automated messages versus manual message from own system: what (or who) triggers a message?

System landscape and map of information crucial: **where to find what information?** Is this live information? Is this readable by the application that is communicating?

Data quality and reliability are two absolutely essential drivers; errors popped up in the test weeks demonstrated **the value of data quality & timeliness.** Good quality data is a prerequisite to extract the benefits from JIT concept.

Every timestamp can have a slightly different set of compulsory information (includes mandatory & optional data attributes)

Examples of implementation challenges we seen:

- Lack of connectivity between systems prevent extract necessary data (e.g., current / previous port call in different systems)
- Internal systems unable to read data from one-another
- System information not synchronized in time to create msg
- Receiving and reading information poses a whole new challenge

JIT Port Call framework version 2.0 will be release on January 2025

Implementation of Just in Time port call framework:

	JIT version	Timestamps	Partners
CMA CGM	1.1	Berth and PBP arrival / departure	Navis, PSA, HVCC, APMT
MAERSK	none	none	
msc	1.1	Berth arrival and departure	
Hapag-Lloyd	1.1	Berth arrival and departure	Portchain, PSA
EVERGREEN	1.2 beta	Berth arrival and departure	Portchain, Antwerp, Piraeus, Kaohsiung, Navis
ONE	none	none	
YANG MING	1.2 beta	Berth and PBP arrival / departure	Kaohsiung, Navis
ZIM	None	none	
HMM	Ongoing	none	Busan

Status of implementation (member carriers)

Status of standards implementation (Ports, solution providers, terminals)

Organisation	JIT	Usage
Wartsila ECDIS	1.1	testing
NAVIS	1.1	Yes
Busan PNIT	1.1	Digital twin
PSA Singapore & VoyagerWW	1.1	Yes
HVCC Hamburg	1.1	Yes
APM Terminals	1.1	Shipping line dashboard
Kaohsiung	1.2	Testing

Unsure whether picture is complete, potentially other implementation projects ongoing due to open-source nature.
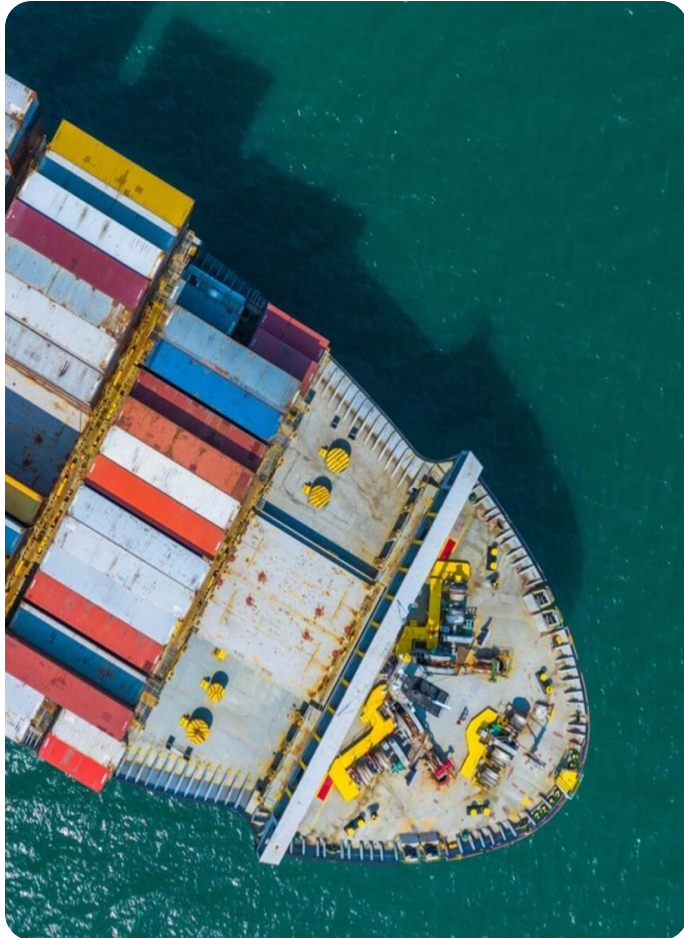
03

Closing

How can you get involved in getting a better schedule information and/ or JIT port call planning ?

Operational Vessel Schedule (OVS) standard

is meant for sharing a schedule information between VSA partners and to provide schedule from carrier → to terminal.

As a terminal operator, you can request to get an access to OVS APIs from DCSA members. For this you can either contact directly shipping line or ask DCSA team to get you in touch with the right team. **7 carriers -DCSA members- have already implemented OVS APIs.**

JIT Port call framework

is meant for a facilitation of port call planning & execution between carriers –terminals – ports and other ops stakeholders.

In 2024 DCSA is working on the next version of JIT Port Call framework (2.0) which will be released in January 2025 and similar to the previous version it will be tested between carriers, terminals & ports (and SP)

Get in touch with DCSA team to know more about opportunities to set up a joint test or integrations with the shipping lines for JIT port call framework. **4 carriers - DCSA members- have already implemented a previous version (JIT 1.2)**

*Commercial schedule standard (CS) is meant for sharing a schedule from the carriers towards their customers. It has been published in Sep- 2024 and currently under implementation. **To know how to consume CS data and which carriers are providing it- pls contact DCSA team**

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https://dcsa.org/standards/operational-vessel-schedules
https://dcsa.org/standards/commercial-schedules
https://dcsa.org/standards/just-in-time-port-call

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Thank you!

Kristina Jumelet
kristina.jumelet@dcsa.org

Please connect with DCSA team and/or DCSA member-carriers to know more about how your company can get involved in implementation of the standards.