



DCSA

Operational Vessel Schedule (OVS)

25th of April 2024










The Digital Container Shipping Association (DCSA) is founded and supported by carriers to accelerate digitalisation in shipping



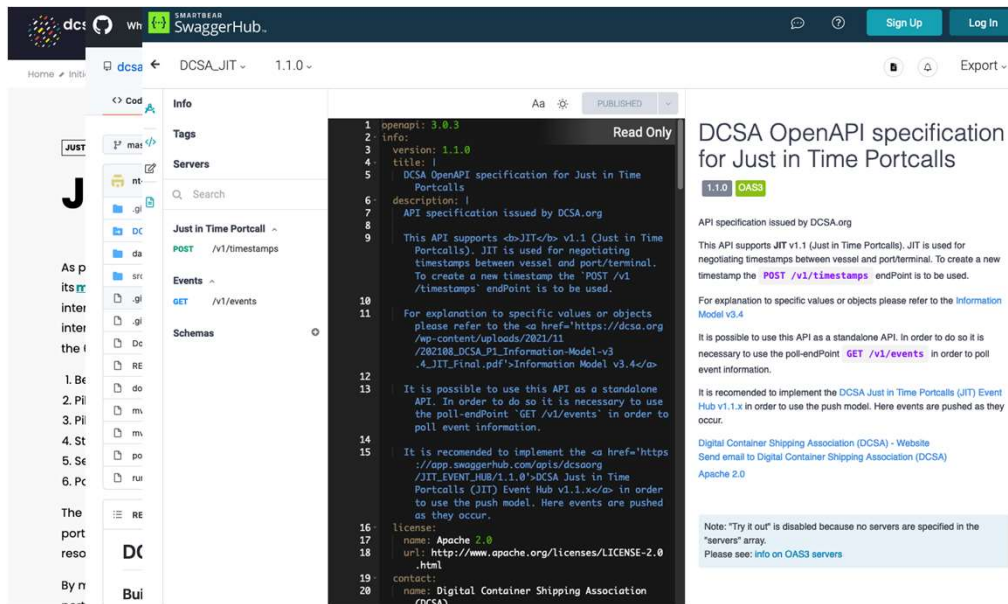
✔ To shape the digital future of container shipping by **being the industry's collective voice, working towards alignment and standardisation.**

✔ By **setting frameworks for effective, universally adoptable standards**, we can enable transparent, reliable, easy to use, secure and environmentally friendly container transportation services.

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

| | | |
|---|---|---|
|  |  MAERSK |  |
|  |  ONE <small>OCEAN NETWORK EXPRESS</small> |  |
|  |  Hapag-Lloyd |  |
| Non-profit founded in 2019 | Vendor neutral, technology agnostic | Open source standards, free for everyone to use |

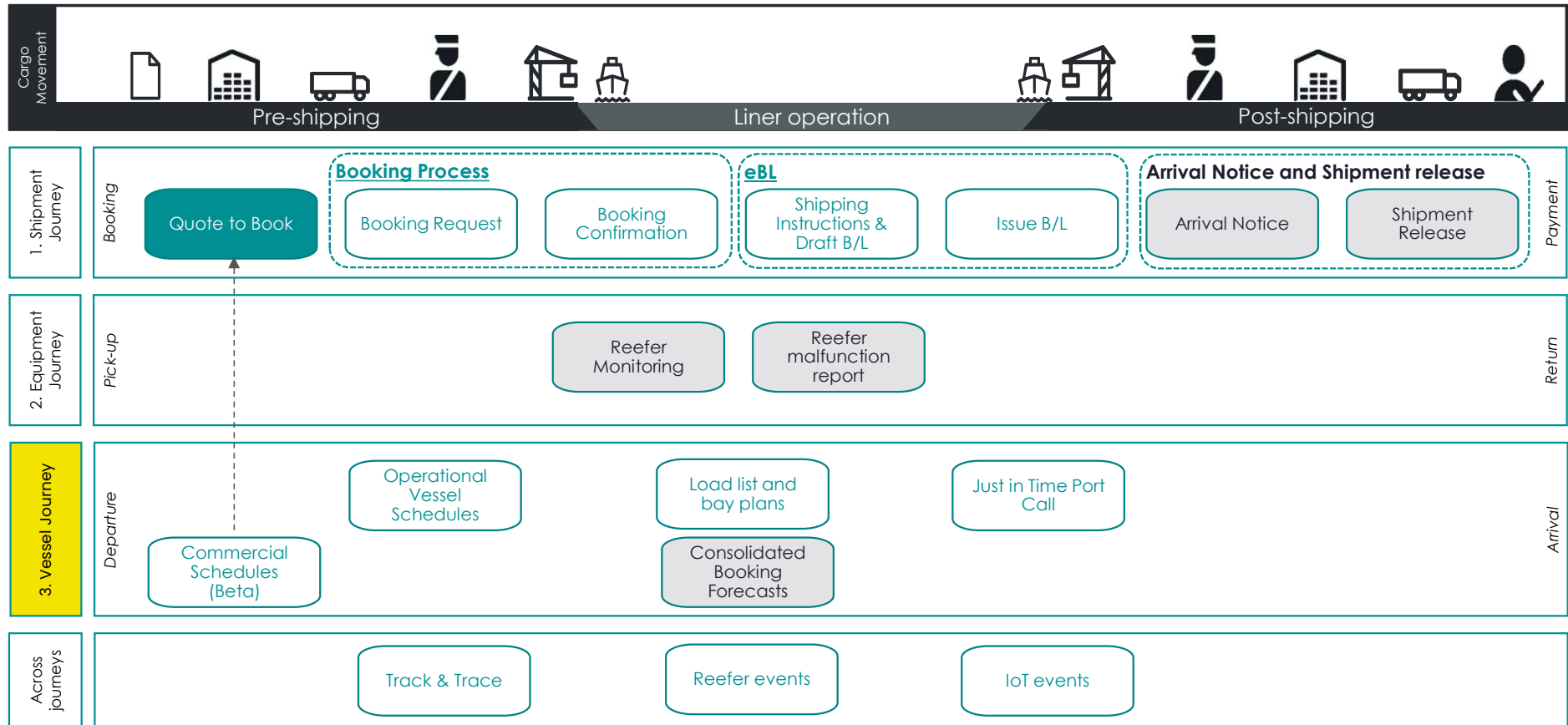
DCSA's publication provides industry stakeholders with a comprehensive set of documents and API developer help



01. Standards definitions / terminology (the language that is spoken)
02. The process model (when the information is distributed to whom)
03. Information model
04. Interface standards
05. API specifications (how the information is distributed)
06. Reference implementation
07. Sandbox for testing
08. Conformance checking

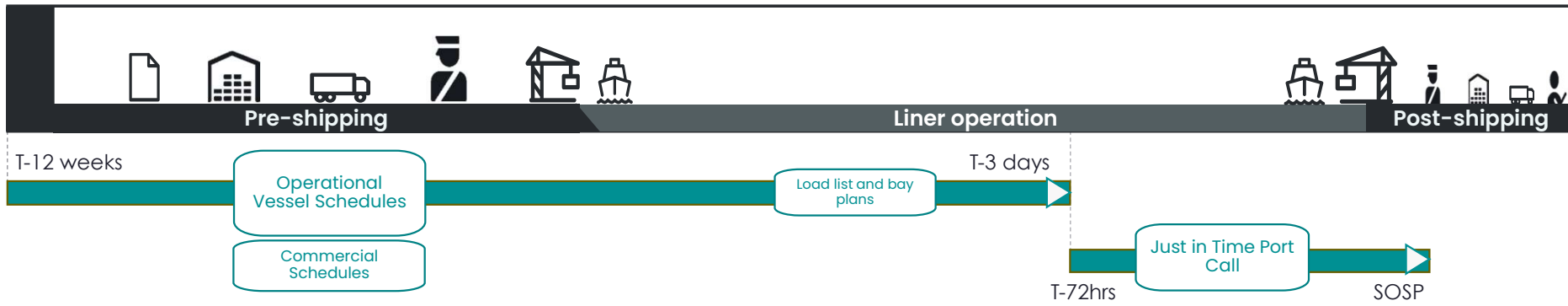
<https://dcsa.org/standards/>

Current DCSA standards overview



- Under Consideration
- Published Standard
- Planned Standard

Vessel journey standards and description



- Operational Vessel Schedules** Coherently sharing vessel schedules with operational partners (vessel sharing carriers and terminals). Includes USR-UVR
- Load list and bay plans** Suggested timelines and formants to exchange LL/BP information. Currently based on EDIFACT standards (Load list, DG, Stowage, etc.)
- Just in Time Port Call** Technical standard built upon IMO/ITPCO protocols. Message format & API specs to exchange operational port call timestamps
- Commercial Schedules** Coherently sharing Point to Point routing alternatives, Port (terminal) schedules, Vessel schedules between carriers and BCO, LSP, and SP.
- Consolidated Booking Forecasts** Aims to standardize the sharing of forecasted loadings and discharges per port from VSA partners to vessel operators to improve port planning and capacity management of the vessel. Standard release on hold until carriers have testing capacity.

Schedules & Operations (within DCSA = Vessel Journey)



Standards →

Operational Vessel Schedules 3.0

Final version released on Q4 2023

Subscription 3.X with no breaking changes expected in early 2024.

SCOPE:

- Vessel Schedules with operational detail exchange amongst Feeders, VSA, SCA, Terminals

Integration: Operational Partners



Operational Vessel Schedules



Commercial Schedules

Commercial Schedules 1.0

Beta version released on Q4 2023.

Working on feedback from HL and E2OPEN implementation to release final version in 2024.

SCOPE:

- **Point to Point routings** – alternative routings to move cargo from A to B (pre-booking phase) considering ocean and hinterland legs
- **Port Schedules** – Scheduled vessels to Arrive and Depart in a specific port/terminal
- **Service/Vessel Schedules** – Lightweight OVS

Integration: Carriers-Customers (BCO, LSP, SP)

Load list and Bay plan Definitions

Published in 2020.


SCOPE:

- Standards and timelines for communication of container load volumes and stowage details between VSA (vessel sharing agreement) partners, terminals and ports

Integration: Operational Partners



Load list and Bay plans



Consolidated Booking Forecast

Consolidated Booking Forecast 1.0

Beta version will be ready for release in Q4 2023, and released when carriers are ready to test

SCOPE:

- Contains all the forecasted loadings and discharges per port (full/empty and specials) for the entire region and is submitted from the partner to the vessel operator to allow port planning and capacity management of the vessel while in the specific region. Integration: Carriers-Customers

Integration: VSA/SCA Partners

Just in time Portcalls 1.2:

Published in 2022, final version expected in 2024

SCOPE:

- Port call data definitions, interface standards and messaging API (application programming interface) specifications for 112 event timestamps, which address the 6 main parts of a port call

Integration: Carriers – Port Call Operations Stakeholders



Just in Time Port Call

Under Consideration

Published Standard

Planned Standard

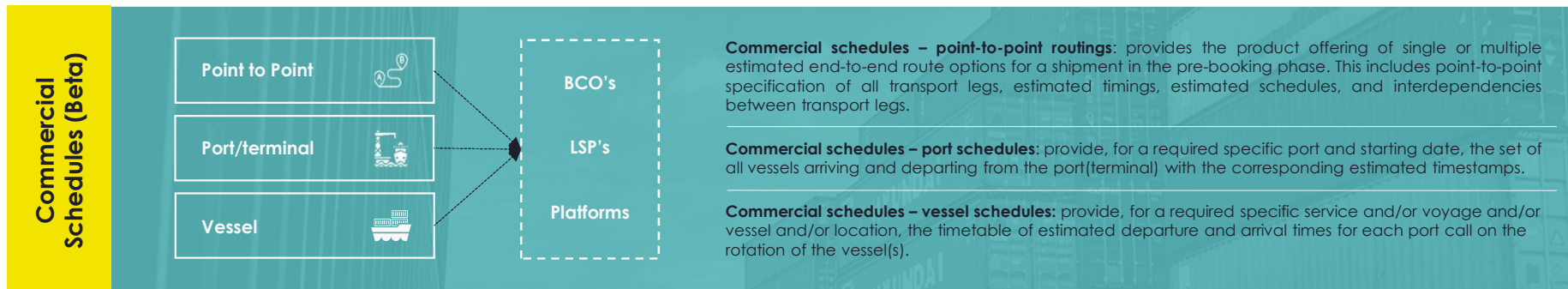
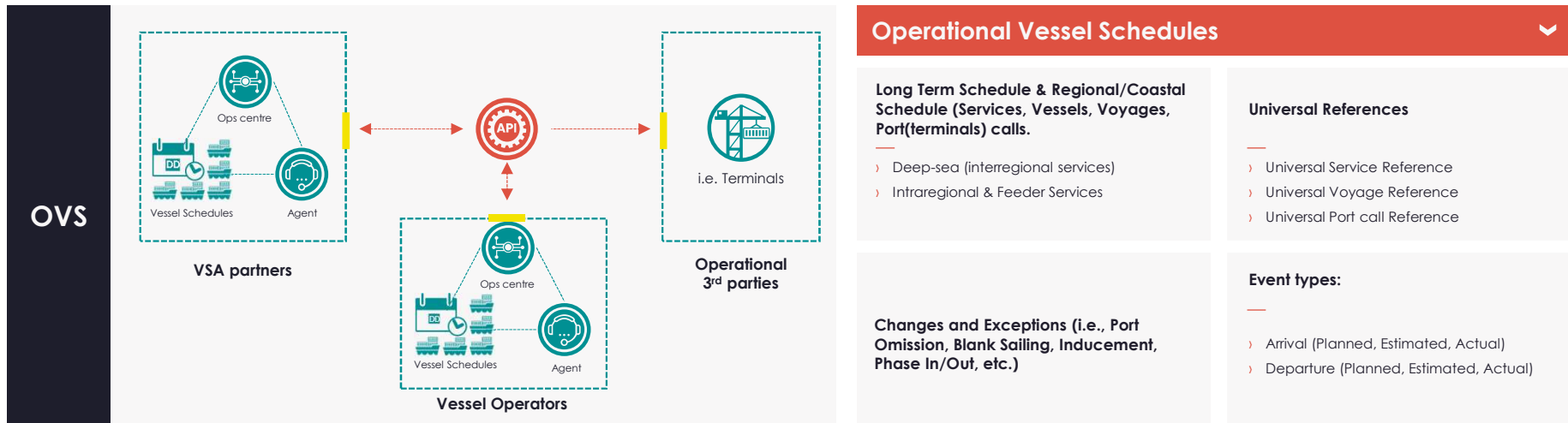
Standards enabling digital exchange of OVS data for better planning and service optimisation



Top 3 ways the DCSA standards-based OVS API can make your life easier:

- 1. Enables digital exchange of uniform data between carriers, vessel-sharing agreement (VSA) partners, terminals, port authorities, and operational service providers
- 2. Improves the quality of schedules shared between partners and increase process efficiency
- 3. Allows better planning and optimisation of container shipping activities and eliminates ambiguity during port calls

Schedules Standards: operational & commercial

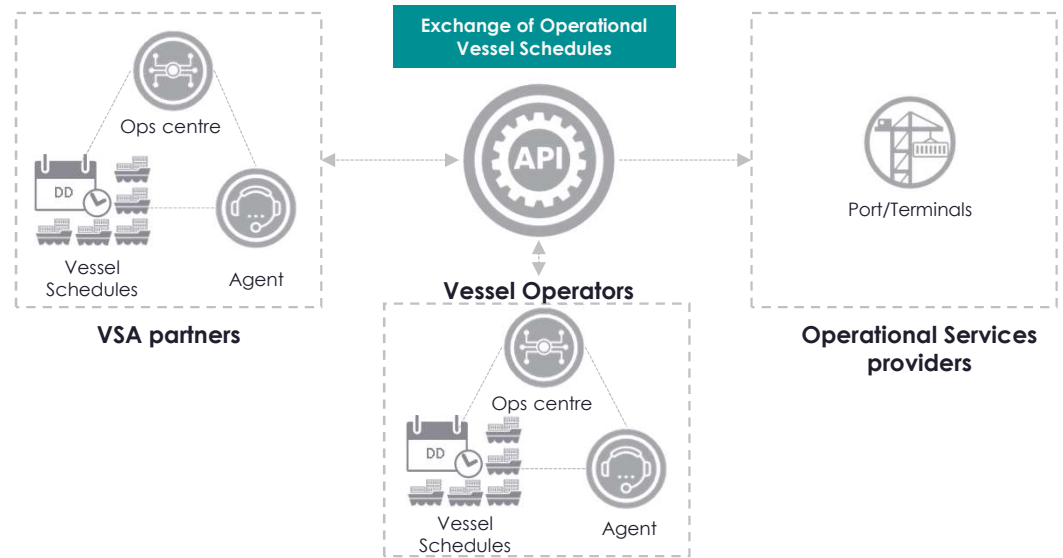


Exchange of Schedules with DCSA OVS 3.0 API



DCSA OVS standards cover the following aspects of vessel schedules:

- **Long Term Schedule & Coastal Schedule**
 - Deep-sea (interregional services)
 - Intraregional & Feeder Services
- **Changes and Exceptions** (Port Omission, Blank Sailing, Inducement, Phase In/Out, Slide)
- **Universal References:** An agreed coding system for operational identifiers that will allow carriers and other stakeholders to reduce errors when referring to services:
 - Universal Service Reference (i.e. SR12345J)
 - Universal Voyage Reference (i.e. 2302W)



| Timestamps exchanged in Operational Vessel Schedules | | |
|--|-----------|--------|
| Planned | Estimated | Actual |

Is equal to the Long Term Schedule with a published rotation and named vessel.

- Planned **Arrival**
- Planned **Departure**



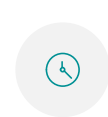
Is equal to the latest voyage data and results from updates to the Coastal Schedule sent by partners.

- Estimated **Arrival**
- Estimated **Departure**



Is equal to the actual timestamp of the scheduled event, after it happened, as published by the partner.

- Actual **Arrival**
- Actual **Departure**



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



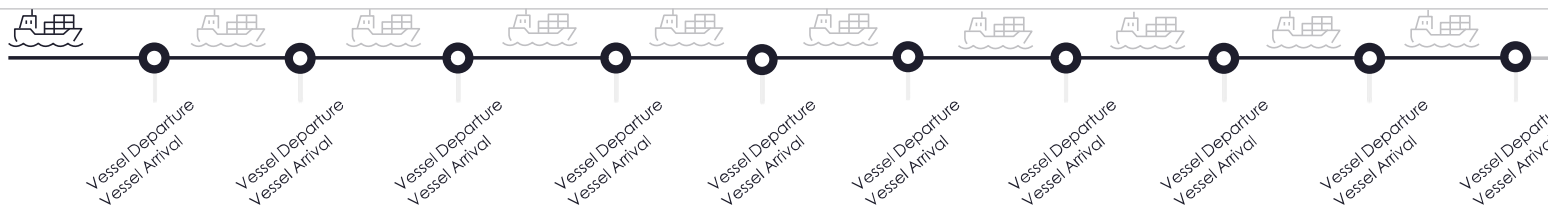
Port 7 &
Terminal 1

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



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

Data in the schedule standards:



OVS

Basic structure:

- Carrier service name 1
- Carrier service code 1
- Universal service reference 1
- Vessel schedules**
 - Vessel 1:** Vessel Operator, Vessel IMO, Vessel Name, Call Sign
 - Transport calls (sequence of ports/terminals as they happen):
 - Voyage Number (imp/exp), Universal Voyage Reference (imp/exp)
 - Port/Terminal: call reference, location & facility codes
 - Status: Changes and exceptions (i.e., Inducement)
 - Event:
 - Arrival Date Time (Planned, Estimated, Actual),
 - Departure Date Time (Planned, Estimated, Actual),
 - Delay Reasons and remarks
 - Vessel 2:**...
 - Vessel N:**...
- Carrier service name 2
- ...
- Carrier service name N
- ...

Commercial Schedules (Beta)

Point to Point



Basic structure:

Option A*:

- Place of receipt**
 - Facility type
 - Location: UN, SMDG, Address
 - Date Time
- Place of delivery (idem)**
- Transit time (days)**
- Legs**
 - Leg 1**
 - Mode of transport (vessel, barge, rail, truck)
 - Vessel Operator
 - Vessel IMO Number
 - Carrier Service Name
 - Universal Service Reference
 - Voyage Number/Voyage Reference
 - Departure
 - Facility type
 - Location
 - Date time
 - Arrival
 - Facility type
 - Location
 - Date time
 - Leg 2**
 - Leg 3**
 - Leg N**

Option B: ...

Option N: ...

*Information shared as per Carriers' available commercial offering for the requested place of receipt and place of delivery.

Port Schedule



Basic structure:

- Location: Port, Terminal
- Schedules
 - Carrier Service Name 1**
 - Carrier Service Code 1
 - Universal Service Reference 1
 - Vessel IMO Number
 - Vessel Name
 - Voyage Number/Voyage Reference
 - Event:
 - Arrival Date Time (Planned, Estimated, Actual), (latest available)
 - Departure Date Time (Planned, Estimated, Actual),
 - Carrier Service Name 2**
 - Carrier Service Code 2
 - Universal Service Reference 2
 -
 - Carrier Service Name N**
 - Carrier Service Code N
 - Universal Service Reference N
 -
- Location: Port, Terminal M
- Schedules
 - Carrier Service Name X

Vessel Schedule



Basic structure

- Same as OVS without Delay reasons, remarks and Status.
- Focused on the latest available timestamps (planned, estimated, or actual)

What schedules can be obtained:

- Service & date range (optional): Get all voyages within a service.
- Service & voyage (optional): Get a specific voyage within a service.
- Service & IMO (optional) & date range (optional): Get a specific vessel in a service and the voyages in which is involved
- IMO & date range (optional): a specific vessel and all the voyages in which is involved.

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...9] | 1 check character [A...Z] |
|----|-----------------------------|------------------------------|

DCSA distributes USRs to DCSA members and non-members, ensuring that each USR 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.

Example of USRs in place:

| 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 1 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 | Sequence | Bound |
|------|-----------------|---------|
| YY | [0...9 & A...Z] | [EWNSR] |

- 2 digit 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).

Example of a UVR in use:

| 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 1 | 304E | 04FENW1MA | V354E | 2304E |
| Vessel | IMO8712345 | IMO8712345 | IMO8712345 | IMO8712345 |

Process



5.4.3 High level process for distributing USRs to DCSA members and non-members

- Carriers assign responsible parties with requesting and managing USRs on their side
- The responsible parties are registered with DCSA
- A batch of USRs covering existing services is requested to DCSA, considering some room for potential new services
- The USRs are received

5.4.4 High level process for assigning USRs to services

Shared services:

- Receive the USRs from DCSA
- Update master data to support the USRs
- Integrate the USRs in the scheduling system (and other systems as needed)
- Update the Joint Working Procedures in agreement with partners
 - Decide in mutual agreement with carriers, that they will provide the USR for each service in the Joint Working Procedures
 - Assign the USR for each service

**[dcsa.org](#) > [OVS 3.0 documentation](#) >
[OVS 3.0 Definitions](#) > [Page 13](#)**

[Direct Link](#)

- A similar process is outlined for UVR in the document.
- For USR & UVR, carriers are the main responsible parties to discuss implementation within their VSAs or non VSA services.

Implementation of OVS standard



Status of standards implementation (member carriers)



| | OVS | Carrier partner | Terminal partner | USR/UVR |
|--|---------------------------------|-------------------------|----------------------------------|------------------|
| | Ready to test | MSK, MSC, feeders | HVCC, Hutchison, Gemalink, Navis | In scope |
| | Ready to test | CMA, HLAG, ZIM, feeders | HVCC, Navis, P44, | In scope |
| | Ready to test by Q3 | CMA, MSK | TIL | Unsure |
| | March 2024 | CMA, MSK | HVCC | In scope |
| | April 2024 | Yang Ming | Kaohsiung | In scope |
| | March 2024 | Partner to test TBD | TBD | In scope |
| | April 2024 | Evergreen (march), HMM | Kaohsiung | USR, UVR not yet |
| | Inb. Marcch, outbound June 2024 | MSK, MSC, HLAG | none | In scope |
| | Expected Q2 2024 | Yang Ming | none | In scope |

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 Rotterdam | Can consume OVS 3.0 and testing with CMA | |
| Gemalink Vietnam | Can consume OVS 3.0 and testing with CMA | |