



DCSA Operational Vessel Schedules Definitions 3.0 – Beta 1

June 2022

Purpose

This DCSA document aims to standardize the terminology, definitions, and processes, concerning the communication of operational vessel schedules between partners.

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Change history

Version	Issue	Description
V1.0	First publication	-DCSA Operational Vessel Schedule Definitions
V3.0	Second publication	-DCSA Operational Vessel Schedule Definitions -Universal References Inclusion of Service, Voyage, and Port Call References to standardize and improve communication between operational partners sharing Operational Vessel Schedules in the container shipping industry -Just In Time Definitions have been addressed in a separate document since 2021 by DCSA.

Acronyms, and abbreviations

The definitions of terms used in this document can be found in the Glossary of Terms available on the DCSA website.

Preface

DCSA envisions a digitally interconnected container shipping industry. Our mission is to be the de-facto standards body for the industry, setting the technological foundation for interoperable IT solutions. Together with our member carriers, DCSA creates vendor-neutral, technology-agnostic standards for IT and non-competitive business practices. By working towards the widespread adoption of these standards, we aim to move the industry forward in terms of customer experience, efficiency, collaboration, innovation, and respect for the environment. Please refer to the DCSA website (<https://dcsa.org/about/>) for more information.

This document is a publication on the definitions for Operational Vessel Schedules from DCSA. The aim of the DCSA Definitions for Operational Vessel Schedules is to ensure that all members and partners in the container shipping industry can have a common understanding of the data and processes of the industry to enable consistency, simplicity, and timeliness in the solutions for vessel schedules across the industry, supporting the interoperability in container shipping.

The standards published by DCSA are technology agnostic. DCSA does not point to the use of specific vendors' technologies or systems but relies on open-source, shared requirements for the industry that can be used by all parties, regardless of their choice of technology.

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1 Introduction

1.1 Scope of this publication

This document aims to standardize the terminology, definitions, and processes, concerning the communication of operational vessel schedules between partners.

This release of DCSA's Operational Vessel Schedules covers the following aspects of vessel schedules for interregional, intraregional, and feeder services:

- 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
 - Universal Service Reference
 - Universal Voyage Reference
 - Universal Port Call Reference

The following schedule types are not addressed in this document:

- Commercial Schedules.

The purpose is to facilitate standardization and accuracy in partner communication and hence reduce the pain points that have been raised in this area by carriers.

The purpose is to standardize what partners communicate and when (and to whom) concerning operational vessel schedules and related exception-management.

The definitions and time specifications are meant to add context to the vessel schedule process Maps.

2 Schedules Definitions

Schedule	Definition	Publishing
Proforma Schedule (PS)	Consists of the final port rotation with the planned time of arrival and departure for each port call. Partners agree/define the first load port of a region/voyage.	Not published. To be agreed upon before commencement of the service.
Master Schedule (MS)	A long-term view of the agreed Proforma Schedule including proforma dates of call, cycle, and agreed vessel sequence. The Master Schedule	Not published.

	is fixed at a certain date and is to be used as a reference.	
Long Term Schedule (LTS)	An updated schedule, based on the final Proforma Schedule, including specific vessel & voyage numbers, is to be published at least 12 weeks ahead of the commencement of the individual voyage. It incorporates planned arrival and departures, dry-dockings, vessel lay-bys, phase-in/out of a vessel, etc.	To be published before the commencement of each service. Provides sailings 12 to 14 weeks ahead.
Regional Schedule (RS) / Coastal Schedule (CS)	The updated schedule, based on the Long Term Schedule, that will be issued before arrival at the first port call in another region. Includes estimated port/terminal issues and any intended corrective actions to bring the schedule back to Long Term Schedule, i.e., port omissions, speeding up, etc. An updated schedule will normally be published if a vessel deviates more than 12 hours from LTS or the latest published RS/CS. RS/CS can be published daily/weekly.	Recommended to be published latest 24 hours after departure from the previous region.

Operational schedules should be updated in “real-time” between partners, as changes materialize. Timelines for publication of customer-facing changes (on websites, portals, etc.) should be agreed upon between VSA partners.

It is recommended that Blank Sailings, i.e., where an entire voyage is canceled by the VSA partners after publication in LTS or CS, will have all port calls “blanked”, but the voyage number will be retained for internal cost allocation/reporting purposes.

Intraregional and Feeder Services Schedules are based on the defined Long Term and Regional/Coastal Schedules, with the difference that for Intraregional and Feeder Services an updated schedule will normally be published if a vessel deviates more than 6 hours from LTS or the latest published RS/CS, or earlier if any delay or restriction are anticipated. Due to the dynamics of feeder services operation, the part of the process for receiving comments from a VSA partner upon receiving an update to a schedule is excluded from the overall process.

2.1 End to End Operational Vessel Schedules processes

The end-to-end processes are described in the images below, and available on the [DCSA website](#) in the document Industry Blueprint 2022.2 – Process Maps.

I. Long Term Schedule

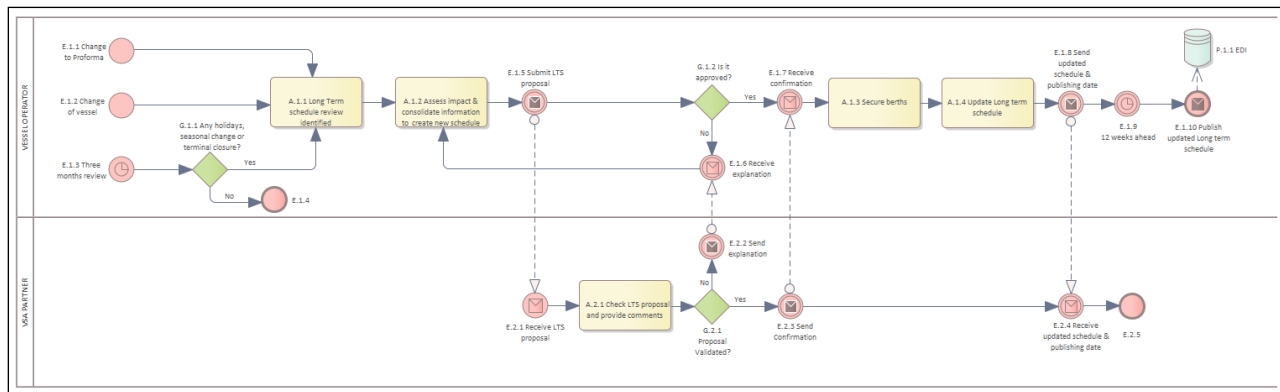


Figure 1: Long Term Schedule – Industry Blueprint 2022.2 – Process Maps 3.5

II. Coastal Schedule

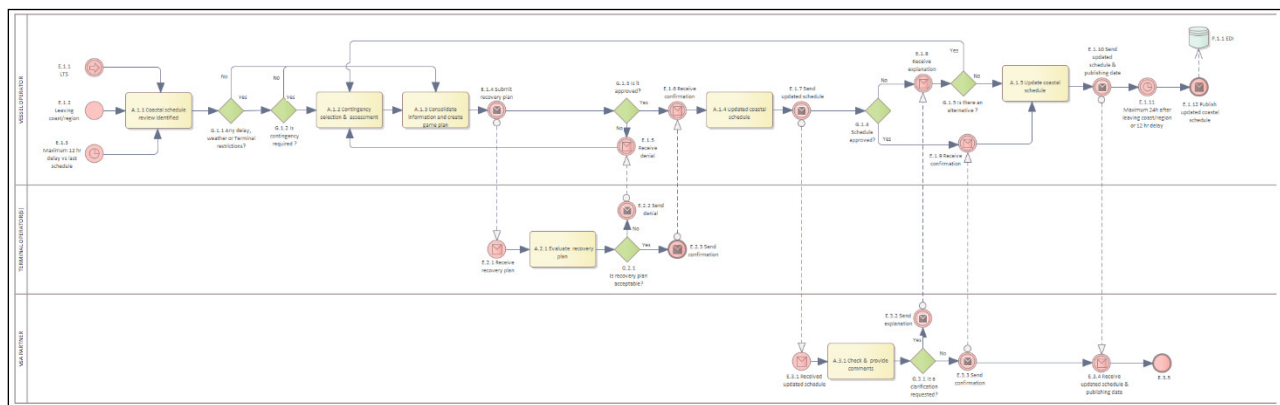


Figure 2: Coastal Schedule – Industry Blueprint 2022.2 – Process Maps 3.6

III. Intraregional and Feeder Services Schedule

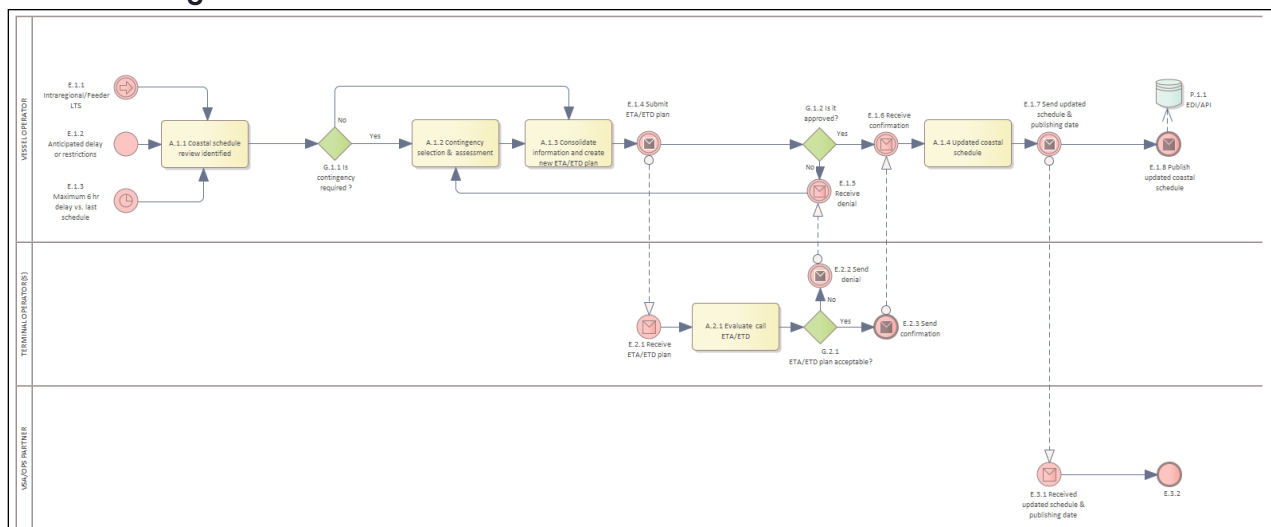


Figure 3: Intraregional & Feeder Services – Industry Blueprint 2022.2 – Process Maps 3.7

3 Key data definitions

The foundation for creating operational transparency is to use a common language and definitions for expressing timestamps

3.1 Event Types

There can be 2 event types with timestamps in a schedule:

- Arrival: is the event which occurs when a mode of transport reaches its final or intermediate destination, and the mode of transport is ready for load/discharge operations to begin at the specified location. A vessel has arrived once the vessel is berthed at the port terminal.
- Departure: is the event that occurs when a mode of transport leaves a place of operations. A vessel has departed from berth once the last mooring has been released.

3.2 Event Types Classification

Three versions of the timestamps can exist in a schedule event type:

- Planned: is equal to the Long Term Schedule with a published rotation and named vessel. In cases where a vessel has not yet been nominated, it will be displayed as TBN.
- Estimated: is equal to actual voyage data and could result from updates to the Coastal Schedule sent by partners.
- Actual: is equal to the actual timestamp of the scheduled event, after it happened, as published by the partner.

4 Definition of changes & exceptions in schedules

Schedule exceptions occur if or when a vessel is unable to maintain the intended schedule due to unforeseen events (i.e., weather, port congestion, technical issues, etc.).

4.1 Port Omission

When a ship does not call at a port included in the Long Term Schedule that was planned at the start of the voyage.

4.2 Planned (foreseen) cut and run operation

When a port call is reduced in time and move counts due to foreseen delay/congestion.

4.3 Unplanned (unforeseen) cut and run operation

When a ship terminates its discharge/loading operations prematurely due to unforeseen events.

4.4 Inducement call (ad hoc call)

An additional port call made on a specific voyage that was not originally included in the Long Term Schedule.

4.5 Port call swap

When the vessel port call rotation sequence is changed after the publication of the Long Term Schedule.

4.6 Blank Sailing

When an already announced voyage is cancelled. In this case, the voyage number is retained, and planned port calls are “blanked”.

4.7 Phase out

When a vessel moves out from a service at a given port from the latest issued schedule.

4.8 Phase in

When a vessel moves into a Service at a given port from the latest issued schedule.

4.9 Slide

When a vessel takes another position than planned in a service (i.e., due to relevant delay), resulting in one or more voyages being cancelled or blanked. Some carriers would choose to delete the voyage and create a new voyage, and some would reassign an existing voyage in the service to the joining vessel.

5 Universal References for Service, Voyage, and Port Call

5.1 Objective

This document contains DCSA’s proposed logic to achieve a globally consistent way of creating universal references for 3 key operational identifiers that follow a hierarchical structure:

- Service
- Voyage (and vessel)
- Port call (and terminal)

The aim is to standardize and improve communication between operational partners sharing Operational Vessel Schedules in the container shipping industry.

The proposed logic is based on input from DCSA members and others. The design criteria for the references look after simplicity, ease of integration with existing systems, and human readability.

The document also contains basic definitions to remove potential ambiguity in the implementation.

5.2 Key Definitions: Service, Voyage, Port Call

- **Service:** The roundtrip sequence of ports being served by a (number of) vessel(s) on a specific Proforma (schedule). Synonyms are Rotation, Loop, or String. A Service is defined by: Rotation, Transit times, Weekdays of departure per port, Frequencies
- **Voyage:** A part of a service roundtrip that normally changes at the geographical “end-point” of a vessel rotation and as such that specific port call can have 2 voyages – 1 for the discharge of final shipments on the “current” voyage, and a new voyage number identifying the commencement of loading shipments (for allocation purposes). One vessel rotation will normally have 2 voyages, one on each haul. Each voyage consists of a minimum of two ports.
- **Port call:** A port call is defined as a unique intermediate stop of a vessel in the rotation of ports on the voyage. A vessel may have several terminal calls during a single port call.

5.3 Scope and benefits

Based on workshops with members to understand the pain points in current processes for exchanging schedules between parties, the following benefits were identified and agreed for Universal References when introduced:

- **Common reference:** Clearly refer to a specific Service across all carriers, thus, speaking the same language.
- **Clear identification:** Any partner can find the relevant voyage and port call identifier based on Universal Service Reference, thus allowing interoperability between systems.
- **Efficient scheduling:** Improved quality of schedules shared with partners. First time right scheduling.
- **Effective communication:** No more ambiguity on port calls.
- **Optimized costs:** Overhead costs i.e. IT development would require one-time setup, optimization of billing or invoicing processes, etc.

The ambition is to substitute in the midterm current carrier and alliance-specific internal naming logic with Universal References and promote an industry-wide approach to refer to operational services, voyages, and port calls.

Logic should apply initially to Alliance-operated services and VSA services, and over time to carrier individually operated services (main haul and intraregional), and feeder services (internal and 3rd party).

Over time, the logic and naming convention could be adopted commercially by carriers and alliances.

5.4 Universal Service Reference

Most larger container shipping carriers participate in alliances or VSA. This imposes the need to share and store definitions outside the traditional boundaries of each carrier and has over time resulted in a multitude of mapping and conversion tables to achieve a consistent definition and identification of services.

Universally referring to a service across carriers will enable more efficient communication between vessel operators, ports, and terminals, and eliminate the need for internal mapping and conversion tables.

A Service Reference should reversely map into an individual carrier's commercial service name; thus, allowing members to link the internal translation table to a Universal Service Reference.

The aim is that after a testing period with DCSA's members, other carriers would also adopt the Universal Service References.

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, SR00000X.

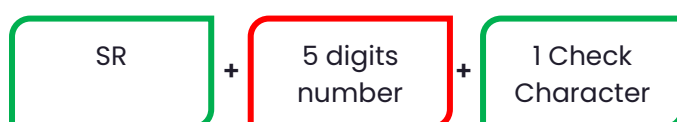


Figure 4: Format for Universal Services Reference

DCSA will look after the distribution of sets of 5 digits numbers amongst DCSA's members, ensuring that each 5 digits number is assigned only once and belongs to only one carrier. If a carrier runs

out of 5 digits numbers because they have all been used in services, a new range can be requested to DCSA.

In the short term, carriers will hold a set of 5 digits numbers between 00000 and 99999, in no specific order or range size, enough to cover the services they provide.

5.4.2 Changes of Universal Service Reference in VSA

The Universal Service Reference can change on VSA partners' needs.

It is the responsibility of the VSA partners to decide who is responsible for the lifecycle of the Universal Service Reference.

It is the responsibility of the VSA partners to decide when a Universal Service Reference requires to be changed (lifecycle).

5.5 Universal Voyage Reference

The Universal Voyage Reference assumes that in container shipping a vessel is always assigned to a service, regardless of whether it is an ad-hoc voyage, as an extra-loader, or assigned continuously. As such the Service Reference is a prerequisite for the Voyage Reference and the voyage can only be identified by knowing the Service. A voyage normally (not always, nor prescribed) starts at the extreme geographical "start and end" point of a service rotation.

The sequence number is determined incrementally starting from the first voyage of the year and starting at the first port of call on the service (measured in local time). The sequence number is for the vessel roundtrip, only the direction changes at the endpoint of the rotation. i.e., 2107W = year 2021 / voyage number 7 / Westbound.

The Voyage Reference will initially be generated by vessel operators when sharing their Long Term Schedule. In cases where the vessel has not yet been nominated a dummy vessel "TBN" (to be nominated) will be provided for the vessel. The dummy Vessel Name and IMO should be updated at the latest before the start of the voyage. The Voyage Reference can be generated automatically once Service Reference is generated thereby, minimizing manual updates. However, there is the flexibility to manually change the Voyage Reference when required for operational reasons.

5.5.1 Format for Universal Voyage Reference

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

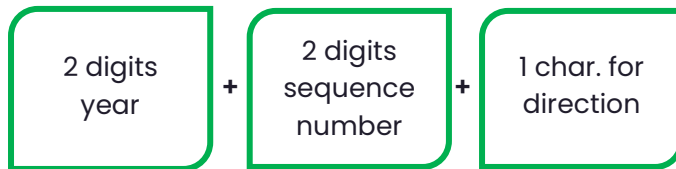


Figure 5: Format for Universal Voyage Reference

- 2 digits identifier for the year
- 2 digits identifier as the sequence number for the voyage
- 1 character identifier for the direction/haul [import/export] (E/W-N/S)

5.5.2 Overlapping port in voyages

The reference allows for overlapping ports within a voyage. However, it remains the responsibility of the VSA partners to agree on the Import Voyage start point, the Import Voyage end point, the Export Voyage start point, and the Export Voyage end point.

Example:

- Import Voyage start point: DOCAU
- Import Voyage end point: FRLEH
- Export Voyage start point: GBLGP
- Export Voyage end point: PECLL

port	importVoyage	exportVoyage
ECPSJ	1244 N	1244 N
PAPCN	1244 N	1244 N
PAMIT	1244 N	1244 N
COCTG	1244 N	1244 N
DOCAU	1244 N	1244 N
GBLGP	1244 N	2201 S
NLRTM	1244 N	2201 S
DEHAM	1244 N	2201 S
BEANR	1244 N	2201 S
FRLEH	1244 N	2201 S
DOCAU	2201 S	2201 S
COCTG	2201 S	2201 S
PAMIT	2201 S	2201 S
PAPCN	2201 S	2201 S
COBUN	2201 S	2201 S
ECPSJ	2201 S	2201 S
PECLL	2201 S	2201 S
CLPAG	2201 S	2201 N
CLVAP	2201 S	2201 N
CLSAI	2201 S	2201 N
PECLL	2201 N	2201 N
ECPSJ	2201 N	2201 N
PAPCN	2201 N	2201 N
PAMIT	2201 N	2201 N
COCTG	2201 N	2201 N
DOCAU	2201 N	2201 N
NLRTM	2201 N	2210 S
GBLGP	2201 N	2210 S
DEHAM	2201 N	2210 S
BEANR	2201 N	2210 S
FRLEH	2201 N	2210 S

Figure 6: Example of overlapping port in voyages

5.6 Universal Port Call Reference

When parties (relevant port-call actors, including authorities) exchange data concerning the activity of a vessel calling a terminal, the exact call must be identified uniquely (in conjunction with service, vessel, and voyage) and consistently, and the standardized identifier must be usable for all cases of exchanging and can also serve as an internal identifier if the parties so choose.

5.6.1 Format for Universal Port Call Reference



Figure 7: Format for Universal Port Call Reference

First Port Call Rotterdam

SR1111IX / 9321483 / 2107W / NLRTM / APM / 1 / 1

Netherlands Rotterdam / APM Terminal / first terminal call

SR1111IX / 9321483 / 2107W / NLRTM / NLMVII / 1 / 2

Netherlands Rotterdam / MAASVLAKTE 2 Terminal / second terminal call

Second Port Call Rotterdam

SR1111IX / 9321483 / 2107E / NLRTM / APM / 2 / 1

Netherlands Rotterdam / APM Terminal / first terminal call

SR1111IX / 9321483 / 2107E / NLRTM / NLMVII / 2 / 2

Netherlands Rotterdam / MAASVLAKTE 2 Terminal / second terminal call

Start Voyage
ESALG
DEHAM
NLRTM
BEANR
GBFXT
USORF
USSAV
GBFXT
BEANR
NLRTM
DEHAM
ESALG
End Voyage

Figure 8: Example of Universal Port Call Reference

5.7 Service and Voyage exception use cases

5.7.1 Butterfly Service

Butterfly service is a service containing ports that are called at a fortnightly frequency. It generally occurs when two services are merged allowing to reduce the frequency by half for some of the ports. This is handled inherently by the voyage sequence number, where the parity of the number would then indicate which of the butterfly's "wings" is currently visited.

5.7.2 Non-Weekly

In cases where e.g., feeder services conduct several roundtrips per week, the identifier for the voyage is a sequence number. This will allow up to 99 voyages using 0-9 digits. Should more be required, the first and second digit can be amended to be alphabetical i.e., after 99 the next voyage could be 0A, then 1A, 2A, 3A, etc. then 1B, 2B, and up to 9Z. This will allow 1296 voyages per year.

5.7.3 Tandem

Tandem services occur when two (smaller) vessels replace one (bigger). In this case there should be 2 different voyage numbers when there are 2 different vessels.

5.7.4 Blank Sailing

When an entire voyage is cancelled the VSA partners may still wish to retain the assigned voyage identifier despite having no vessel assigned, for internal accounting purposes.

5.7.5 Phase In / Phase Out

If a vessel phases into a service within a voyage it shall reuse the same voyage of the vessel phasing out from the voyage. If the vessel phases in/out between turning ports of the voyage, the new vessel will re-use the same voyage code as the original vessel; if the vessel phases in/out at the turning port, the new vessel will use the coming voyage of the original vessel, which was planned in LTS.

5.7.6 Dummy Vessel

In cases where a vessel has not yet been assigned to a specific voyage, but the carrier knows that a voyage will take place. TBN – To Be Nominated vessel can be used to identify dummy vessels, in this scenario the schedule shall demonstrate the vessel being used for the schedule is a dummy vessel. Thereby, also eliminates the need for using the IMO number to identify vessels, which in the case of dummies is non-existent. Using the service reference and adding the voyage as shown should be possible: Service: SR33333X / Voyage 2107W / TBN (dummy). – SR33333X / Voyage 2108W / TBN (dummy)