

## Identifying the Scope of Sea Traffic Management: The Interface to Ports Operations

by

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Sea Traffic Management (STM) is a highly integrative concept emphasising collaboration within and between different processes! To reach the full effects, to be expressed by performance targets, as addressed in MONALISA 2.0 and enabled by STM, it is essential to identify the interface towards port operations. Ports are departure and arrival hubs requiring a coordinated transportation system, addressing the goals of the transport system as a

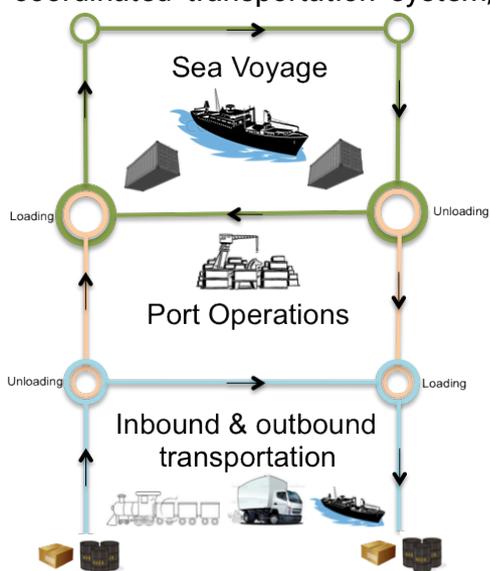


Figure 1: Separated and integrated processes in sea transportation

whole with smooth and seamless operations at sea, at port (reaching the port, departing from port, performing loading and unloading operations) as well as connections to inbound and outbound transportation. This means that the scope for STM needs to take port operations into account. Figure 1 depicts separated and integrated processes related to sea transportation. STM, amongst other purposes, addresses the creation of conditions for, and the coordination of, the safe, efficient and environmentally friendly sea voyage. Conditions and coordination mechanisms are, besides conditions at sea, determined by the states in processes for port operations that in turn are related to in- and outbound transportation.

In other words, STM needs to be positioned to adjacent processes, primarily to port operations (as indicated in the figure 1 above). MONALISA 2.0 has the ambition to innovate STM by improved situational awareness based on principles of information sharing. A challenging quest, though, is to identify which information that is necessary to share in order to reach the required level of efficiency within STM. Within MONALISA 2.0 it has been determined that the way forward is to use process control points within and as interfaces between, the separated and integrated processes in order to identify the content in information sharing. A distinction is made between *internal* control points for a certain process type and *external* control points for the depiction of the interface between the different process types.

Within MONALISA 1.0 and activity 1 in MONALISA 2.0 substantial efforts have been put into the development of a standardized protocol for the exchange of route information. This route exchange protocol embeds essential internal control points for enabling efficient STM of the sea voyage (ship at sea). Internal control points need to be related to external control points

whilst a voyage concept capturing control points in the interface between processes for the sea voyage and port operations<sup>1</sup> becomes necessary. Within MONALISA 2.0 the overall vision is to utilize a voyage ID as the identifier of a certain “trip” performed by a ship. Figure 2 shows the relationships between key concepts in STM. It is important to notice that variants of the voyage and adjacent processes are to be determined based on different variables. The proposed control points are to be seen as generic (i.e. applicable for all types of voyages).

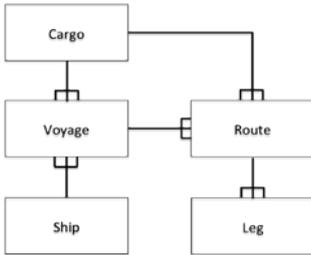


Figure 3: The voyage concept for enabling efficient STM

Inspired by Future Airports<sup>TM</sup> and with the sea voyage in mind, the control points enabling sustainable transportation processes have been identified. This document identifies the interface to port operations enabling the efficiency of STM. Figure 3 depict different *external* control points based on a combination of maritime/port standards (c.f. table below) together with (new) control points necessary for

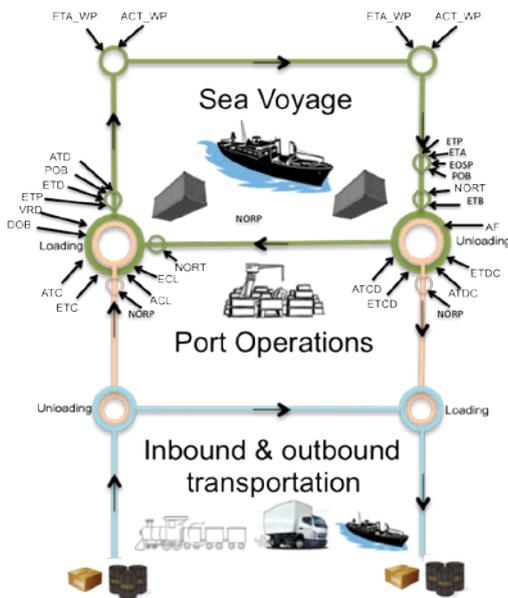


Figure 2: External control points enabling efficient “turn around processes”

making ships’ “turn around process” as efficient as possible. Some new measures (ETP, ECL, ETDC, and ETCB) related to estimation have been proposed for the purpose of planning to enable successful realization. Sustainable sea transport processes rely on high accuracy (based on solid estimations) related to birthing, unloading, loading, and departure. Solid conditions for the ultimate sea voyage can be established by enabling high accuracy on the arrival, operations at port, and the departure. Sea transportation is a multi-organizational business with numerous actors positioning and coordinating their performance in relation to different control points. One example is that the estimated time of departure (ETD) is to be determined based on that: 1) the loading of the cargo has been completed (ATC); 2) the ship is ready to sail (SRS); 3) the documents are on board (DOB). In line with the

ambitions of the MONALISA 2.0 project and amongst other factors, STM will be realized by sharing information about the status and values related to these control points for the particular voyage.

It is important to point out that MONALISA 2.0 is not about developing port operations. It is essential to understand that the realization of the safe, efficient and environmentally sustainable sea voyage enabled by STM needs to engage actors at port, and further actors engaged in inbound and outbound transportation, which establish conditions for, and take

<sup>1</sup> Within SESAR, especially Collaborative Decision Making (CDM), different control points capturing the context of the turnaround process has been identified as the key to enable a single European sky. Within Future Airports<sup>TM</sup> passenger, baggage, and turn around processes has been integrated by control points from baggage reconciliation, ground transportation, terminal operation, and CDM principles to enable sustainable passenger flows door-to-door

the consequences of the sea voyage. The ideas developed in this working document have received an initial encouraging feedback motivating us to continue the work in this area. The next step would be to approach a wider group of relevant stakeholders and detail our understanding of current situation, identify relevant stakeholders, and anchor (this part of) the target concept as a sustainable solution.

<b>Abbrev.</b>	<b>Definition</b>	<b>Source (maritime standards)</b>
ETA	Estimated Time of Arrival (Target ETA)	Standard abbreviation in shipping (c.f. e.g. GENCON, Baltic Exchange)
NORT	Notice Of Readiness Tendered	GENCON, BIMCO, FONASBA
ETD	Estimated Time of Departure	Standard abbreviation in shipping (c.f. e.g. Baltic Exchange)
ATD	Actual Time of Departure	Vessel sailed according to BIMCO, FONASBA
ETA_WP	Estimated Time of Arrival at Waypoint	Route exchange protocol??? Or is there a standard????
ATA_WP	Actual Time of Arrival at Waypoint	Route exchange protocol??? Or is there a standard????
POB	Pilot On Board	Application of BIMCO, FONASBA in SOF
ETP	Estimated Time for Pilot (on Board)	<b>New measure</b> (when the pilot is booked)
NORP	Notice Of Readiness Port	Abbreviation used by port (c.f. e.g. ????)
ECL	(Estimated) Time of Commenced Loading	<b>New measure</b> (when commence loading is expected)
ACL	(Actual) Commenced Loading	Loading completed BIMCO, FONASBA
ETDC	Estimated Time of Discharging Commence	<b>New measure</b> (when commence discharging is expected)
ATDC	Actual Time of Discharging Commenced	BIMCO, FONASBA
AF	All Fast (Vessel berthed)	BIMCO, FONASBA
ETC	Estimated Time of Completion	Standard abbreviation in shipping (c.f. e.g. Baltic Exchange)
ATC	Actual Time of Completion	Loading completed according to BIMCO, FONASBA
ETCD	Estimated Time of Completed Discharging	<b>New measure</b> (when discharging is expected to be completed)
ATCD	Actual Time of Completed Discharging	Discharging completed according to BIMCO, FONASBA
ETB	Estimated Time of Berthing	c.f. Baltic Exchange (when the Port advise vessel to be all fast).
DOB	Documents Onboard	BIMCO, FONASBA
VRD	Vessel Ready to Depart	<b>New measure</b> (When vessel is ready to sail)
EOSP	End Of Sea Passage (Actual ETA)	Application of BIMCO, FONASBA in SOF

## **SOURCES**

### BIMCO and FONASBA standard Statement of Facts

Oil and Chemical tank vessels

[https://www.bimco.org/Chartering/Documents/Ship\\_Agency/~/\\_media/Chartering/Document\\_Samples/Sundry\\_Other\\_Forms/Sample\\_Copy\\_Standard\\_Statement\\_of\\_Facts-Oil\\_and\\_chemical\\_tank\\_vessels.ashx](https://www.bimco.org/Chartering/Documents/Ship_Agency/~/_media/Chartering/Document_Samples/Sundry_Other_Forms/Sample_Copy_Standard_Statement_of_Facts-Oil_and_chemical_tank_vessels.ashx)

Bulk vessels

[https://www.bimco.org/Chartering/Documents/Ship\\_Agency/~/\\_media/Chartering/Document\\_Samples/Sundry\\_Other\\_Forms/Sample\\_Copy\\_Standard\\_Time\\_Sheet-Short\\_Form.ashx](https://www.bimco.org/Chartering/Documents/Ship_Agency/~/_media/Chartering/Document_Samples/Sundry_Other_Forms/Sample_Copy_Standard_Time_Sheet-Short_Form.ashx)

The Baltic Exchange

<http://www.balticexchange.com/default.asp?action=article&ID=50>

Herning Shipping

<http://www.herning-shipping.dk/www/pub1269.asp>

Gencon94

[https://www.bimco.org/en/Chartering/Documents/Voyage\\_Charter\\_Parties/~/\\_media/Chartering/Document\\_Samples/Voyage\\_Charter\\_Parties/Sample\\_Copy\\_GENCON\\_94.ashx](https://www.bimco.org/en/Chartering/Documents/Voyage_Charter_Parties/~/_media/Chartering/Document_Samples/Voyage_Charter_Parties/Sample_Copy_GENCON_94.ashx)

\*\*\* This paper describes preliminary findings within the MONALISA 2.0-project. We encourage readers to send feedback and comments on this paper! \*\*\*