LL #7 Real Time Information Services (RETIS and AAA)

FACTSHEET

29 SEPTEMBER 2022

A. GENERAL (BUSINESS CASE)

1. Objectives

- Transport tracking, based on the estimated and actual times for a ship's arrival or departure (ETA) at ports or at bridges/locks of inland waterways
- Simple low-cost digitized information sharing system between existing SMA and other port systems.
- Optimized infrastructure use, improved situational awareness and predictability of ships arrival and departure times to the actors involved in the logistical transport/ chain.

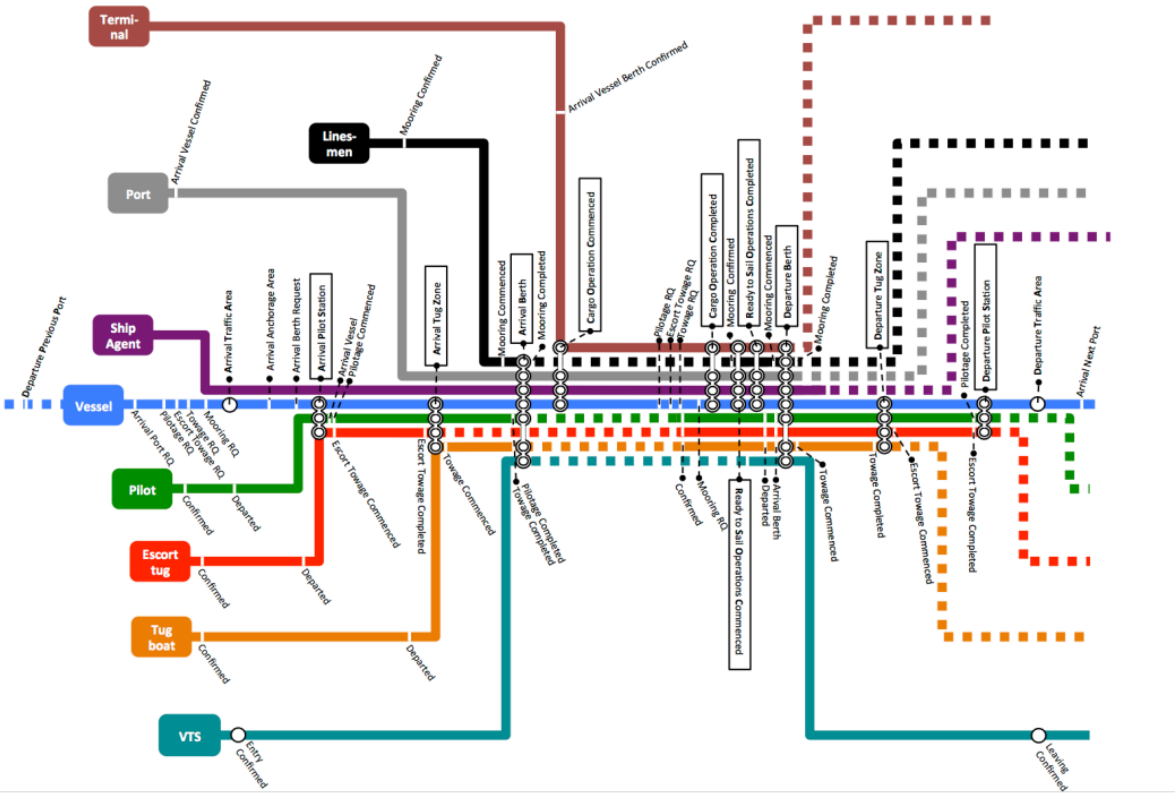
2. Main emphasis

The system integration between existing systems in the Swedish Maritime Administration and other stakeholders who are interested in the estimated and actual times for a ship's arrival or departure for planning purposes. It seeks to share data and provide improved awareness and predictability of ships arrival and departure times to the actors involved in the logistical transport/ chain.

The goal is seamless data flow management between SMA and stakeholder systems of estimated and actual arrival or departure times:

- to provide services and support to another,.
- to plan for various port operations like loading and unloading from other modes of transport bringing goods in or out of a port.
- for traffic planning purposes for ships travelling through canals/locks/archipelagos/inland waterways (as well as ports), due to traffic congestion, limitations in used infrastructure, and co-modal challenges.

Activities in a port call:



An example traffic planning is when multiple ships travelling in opposing directions is in canals where also locks are commonly used. This induces a need to synchronise ship passages with opening times of bridges to allow passage. The latter aspect affects and puts limitations on other modes of transport. To coordinate an optimal performance from the perspectives of the concerned ships, road and railroad traffic utilising the same infrastructure, information needs to be shared among involved actors. In the Göta älv and Trollhätte Canal, on the Swedish west coast, there is a need to ensure smooth and efficient traffic flows of rail and road transport coordinated with the opening of bridges.

3. Challenges

There is an ongoing challenge in finding stakeholders for sharing ETA data to for the traffic planning purposes in Göta Älv. We have been in contact with STA (Swedish Transport Administration) and city of Gothenburg (Trafikkontoret Göteborg and Trafik Göteborg) that operates the traffic planning for some of the bridges in Göta älv, neither have available resources for this project at the time being.

As a consequence the API:RETIS might fall outside the timeframe of this project.

The SMA organization had to prioritize their core business after the covid-pandemic which hindered development and caused delays on the new, EU-legislation based platform for API's that will be developed. SMA has also run into some legal issues concerning data sharing, currently this is solved although it has also contributed to delays in developing the API's. The living lab is now prioritizing development of the API for arrival, departure and pilotage information, API:AAA.

In developing the latter, SMA has suffered significant delays due to increased cybersecurity requirements and the implementation of a completely new IT platform at SMA.

4. Transport mode

Maritime, Rail and Road

5. EU Map Focus

Scandinavian – Mediterranean, SCANMED. Water and land transport.

6. Geographical coverage

Sweden.

Scandinavian – Mediterranean, SCANMED. Water and land transport

7. Actors

- Swedish Maritime Administration
  - Information provider
- Swedish Ports
  - Port of Halland
  - Port of Trelleborg
  - Port of Luleå
  - Port of Wallhamn
  - Port of Norrköping
  - Port of Gothenburg
  - Kvarken Ports (LL#13,#14,#15)
- Other possible information users
  - Traffic management systems
  - Logistic chain actors

8. Forecast scaling outside LL

Results can be used by ports in Sweden.

A. TECHNICAL SETTING

9. ICT vs physical

The LivingLab will develop ICT solutions for real-life tests and pilots and studies of future system management and administration.

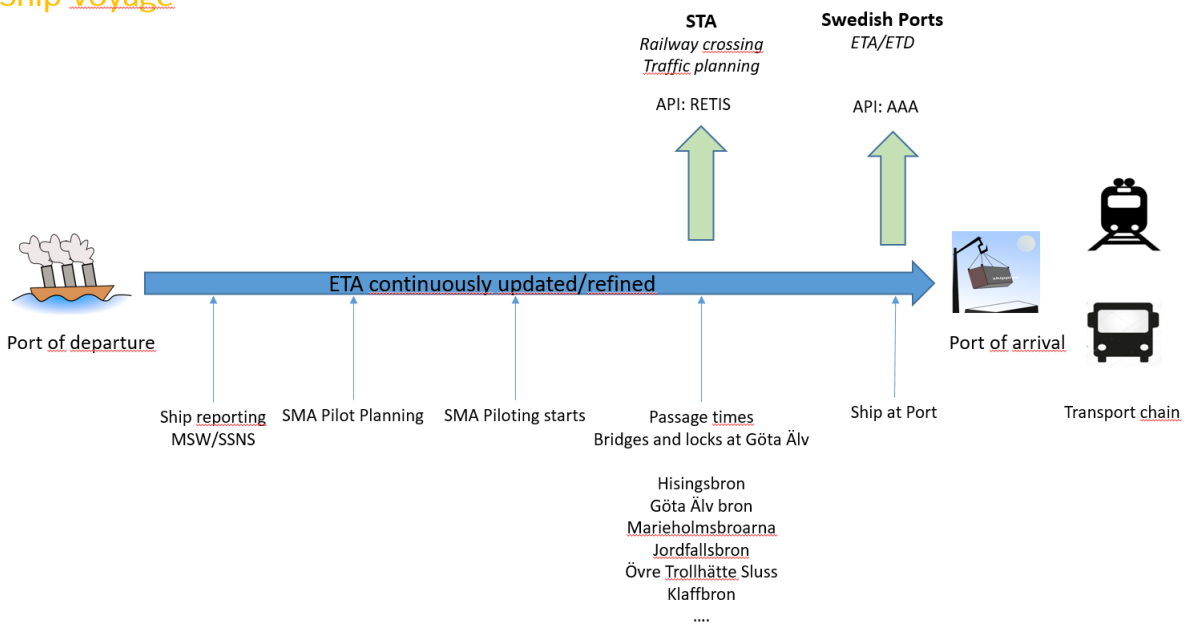
As the ships voyage progresses the information on Estimated Time of Arrival to different locations is getting more and more accurate e.g., arrival time in MSW, pilot booked and onboard from pilot planning system and eventually passage/arrival information based on actual and automatically updated route plans.

An API, named 'AAA', for exchanging ship's arrival and departure information will be developed, providing the same information to all partners before and during a port call. AAA aims to increase the port operator's efficiency by communicating arrivals and departures etc. to/ from ships. With AAA, the port-call process for ships will be more efficient and thereby increase the competitiveness of shipping and contribute to less environmental impact with better tailored and planned arrivals and departures of ships in the port. Furthermore, AAA enables reliable information about the ship's arrival/ departure and optimization of the entire transport chain through further information sharing to port hinterland stakeholders thus facilitating the transition to the next mode of transport.

In addition to the above, 'RETIS', an API for exchanging passage times at bridges and locks along Göta Älv may be demonstrated.

Based on the ships actual voyage along Göta Älv, from the pilot point of boarding to the final port, the route plan will be continuously updated with expected time of arrivals at bridges and locks and finally to the port. This gives other actors increased knowledge, predictability and accuracy of the ships expected time of arrival at specific places. This can be used for train and traffic planning purposes of other actors.

Ship Voyage



This Living Lab deals with the following FEDeRATED global features:

- Language
- Access
- Identity

10. DTLF implementation option:

The Living Lab aims to use ‘

B. Single Platform’, for the API’s to be created.

C. ORGANISATIONAL ISSUES

11. Success factors

- Increased knowledge of ship movements
- Predictability and accuracy of ships arrival times
- Predictability and accuracy of ships departure times
- Increased planning abilities for train and public transport
- Increased planning abilities for ports and hinterland stakeholders

12. Risks

- Starting up LL initiatives in lockdown: the need to meet and interact with people in order to come to a common understanding is vital to success. As

a result, important face to face meetings, particularly with other stakeholders, has been delayed.

- Lack of hardware equipment, shortage of components on the market
- Lack of technical personnel, high demand on IT personnel in the market
- Replanning of resources due to covid-19
- Focus on business due to covid-19, projects gets low priority

13. Timing

LL#07	2019				2020				2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Preparations																				
Planning and scoping																				
Stakeholder engagement																				
LL infrastructure development																				
Testing & piloting																				
Iteration & process analysis																				
Operational trials																				
Feedback & scaling																				

14. Contact

Maria Gripenblad, SMA Research and Innovation, Phone: +46(0)10-478 51 23
maria.gripenblad@sjofartsverket.se