

THE SEA TRAFFIC MANAGEMENT TEST BEDS






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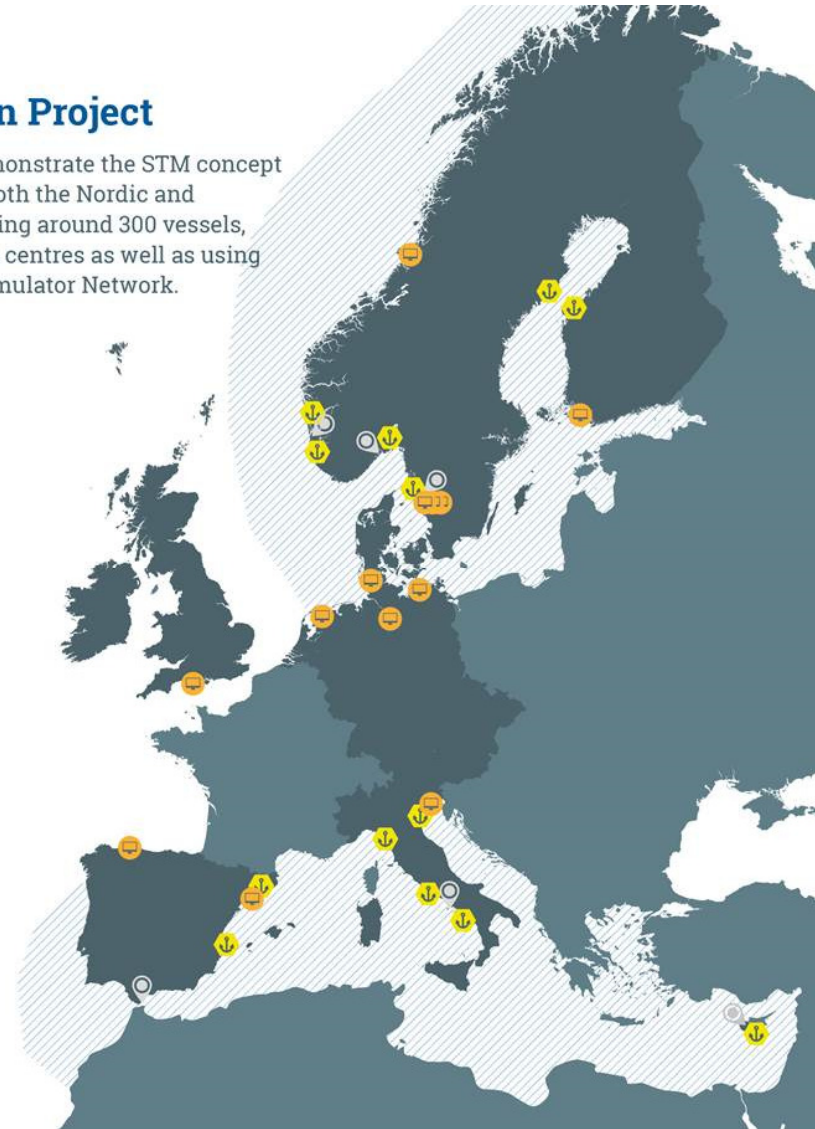
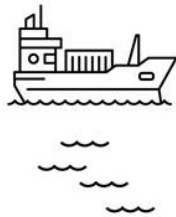


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STM Validation Project

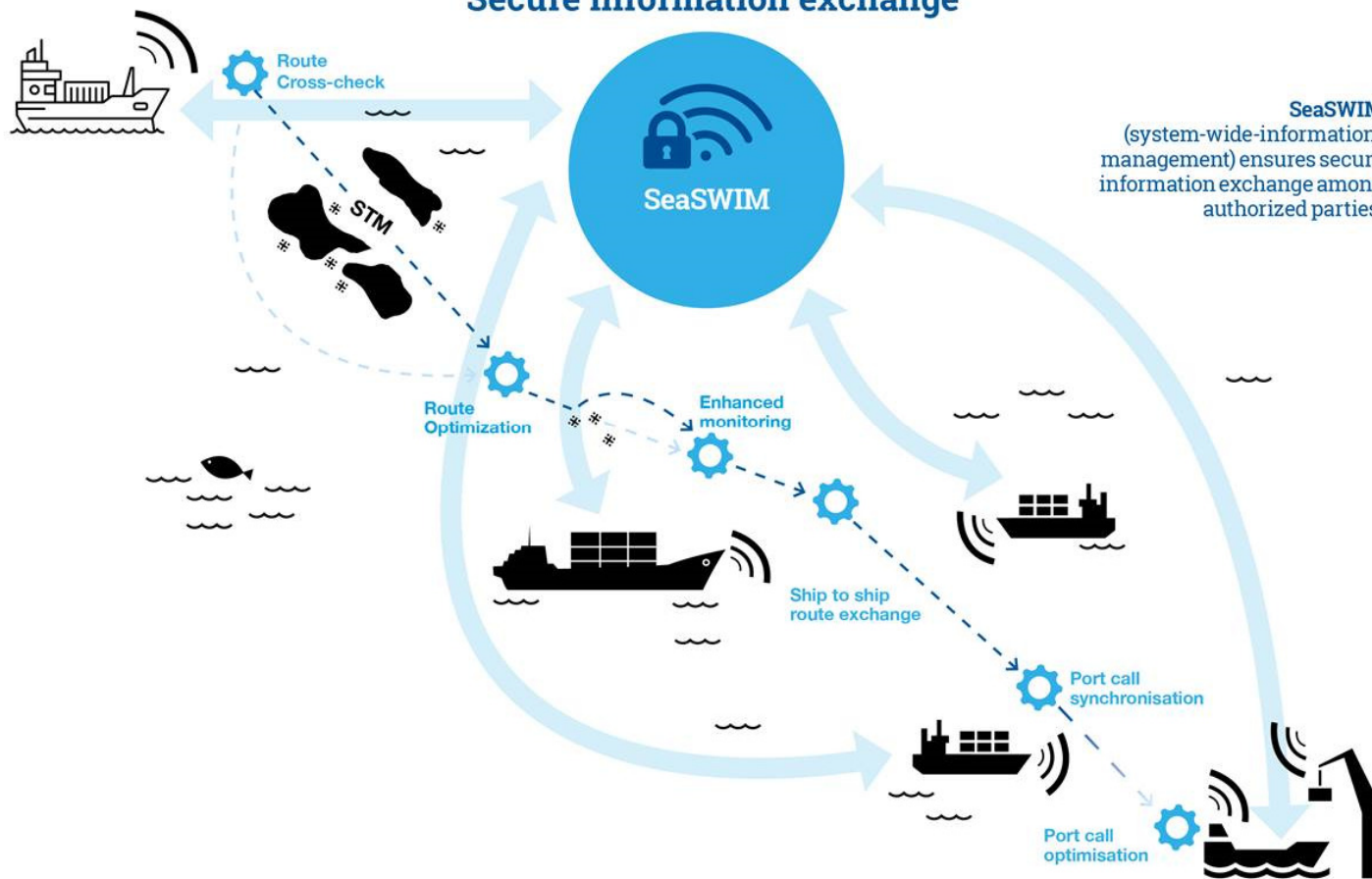
The STM Validation Project will demonstrate the STM concept in large-scale test beds in both the Nordic and Mediterranean Seas, encompassing around 300 vessels, 13 ports and 6 shore based service centres as well as using the European Maritime Simulator Network.

-  Simulation centre in European simulation network (EMSN)
-  Port CDM Port
-  Shore centre
-  Test bed for STM-services
-  Country with project partner(s)



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Secure information exchange



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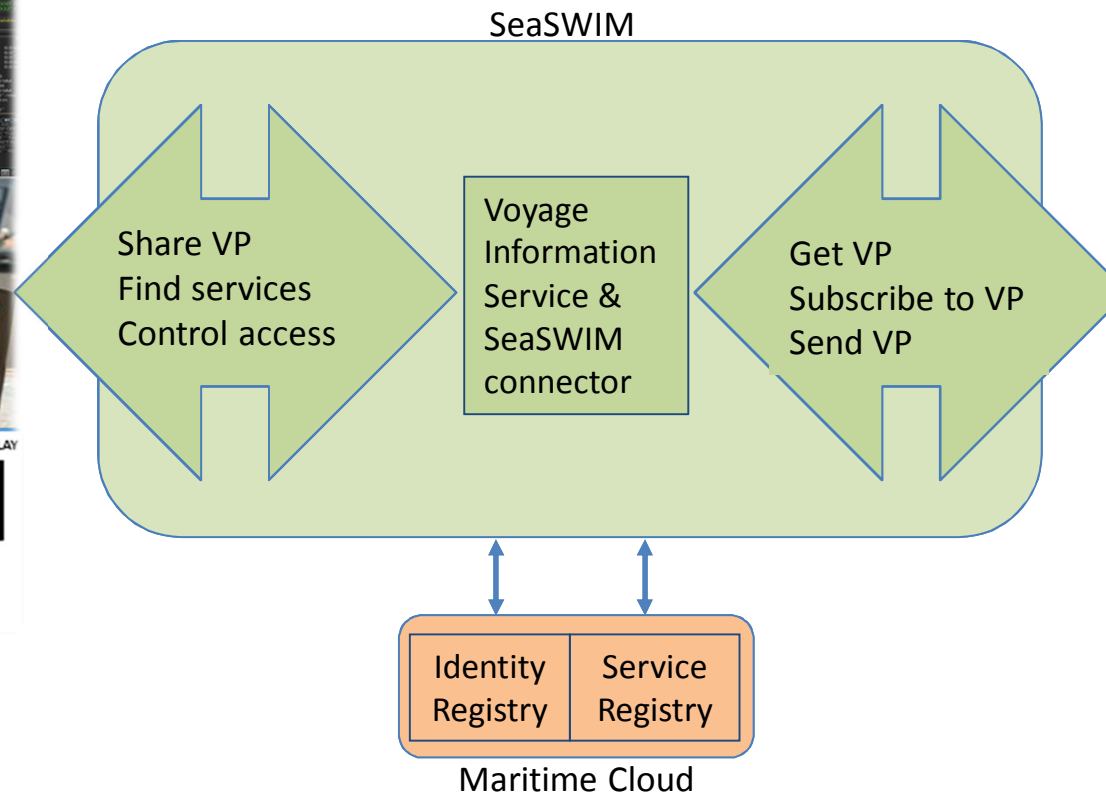
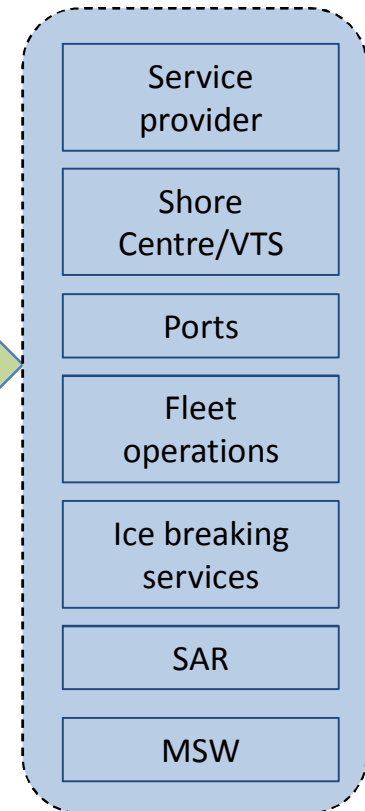
Voyage Information Service

Standardized exchange of voyage plans

Ship systems with STM functionality



Shoreside actors



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STM supported services

The screenshot displays a software interface for Sea Traffic Management (STM). At the top, a dark grey header contains a menu with four items: 'ROUTE OPTIMIZATION' (with a path icon), 'MONITORING SERVICES' (with a radar icon), 'Port Call Synchronisation' (with a clock icon), and 'STM SERVICES' (with a shopping cart icon). To the right of the menu, the text 'ETA 12.07' is displayed in red. Below the header is a map of the Mediterranean region. Overlaid on the map are eight circular icons, each with a green checkmark in the bottom right corner, representing supported services: 1. Route optimization (dashed line and location pin), 2. Monitoring services (radar), 3. Port call synchronization (clock and anchor), 4. Alert services (warning triangle), 5. Vessel identification (Wi-Fi signal and ship), 6. Port call synchronization (location pin and ship), 7. Vessel identification (Wi-Fi signal and ship), and 8. Alert services (warning triangle and ship). The STM logo is visible in the bottom right corner of the map area.



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Route message format (AIS-ASM)
Will be validated and brought forward
for standardization



Two dedicated testbeds

Utilizing STM for ice and SAR operations

Winter navigation:

- Exchange of standardized text messages and dynamic ice routes

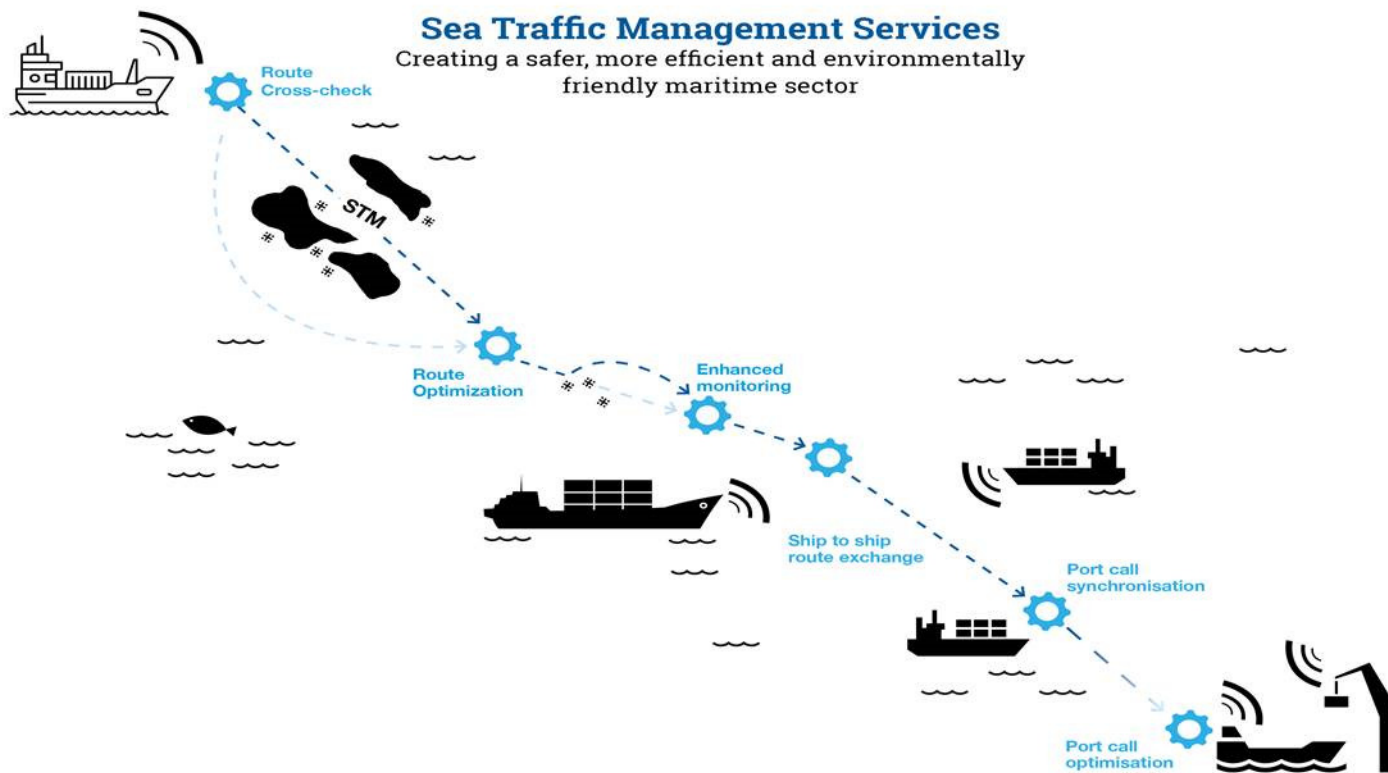
SAR operations:

- Exchange of standardized text messages, search areas and patterns



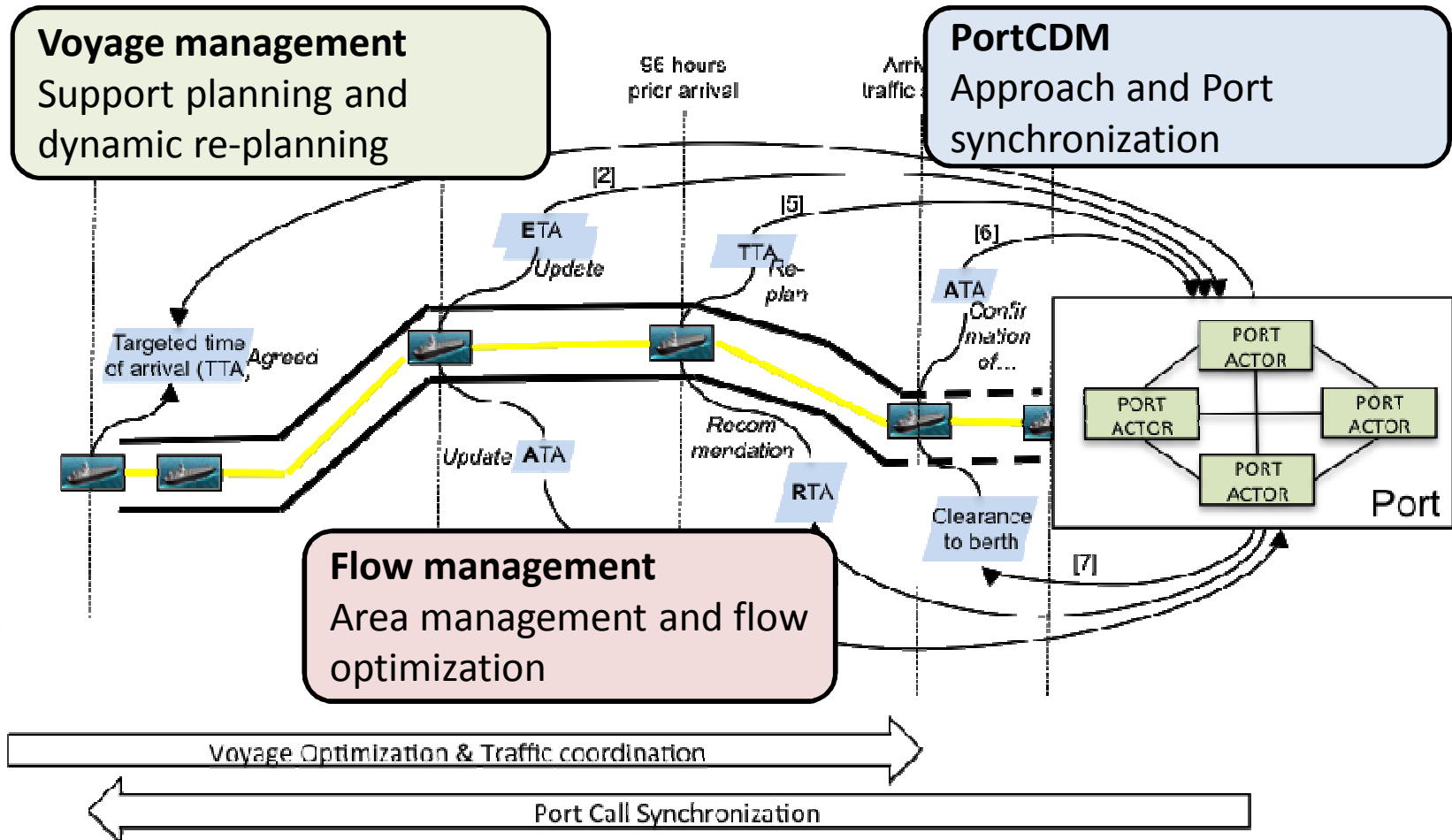
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Voyage Management Testbed

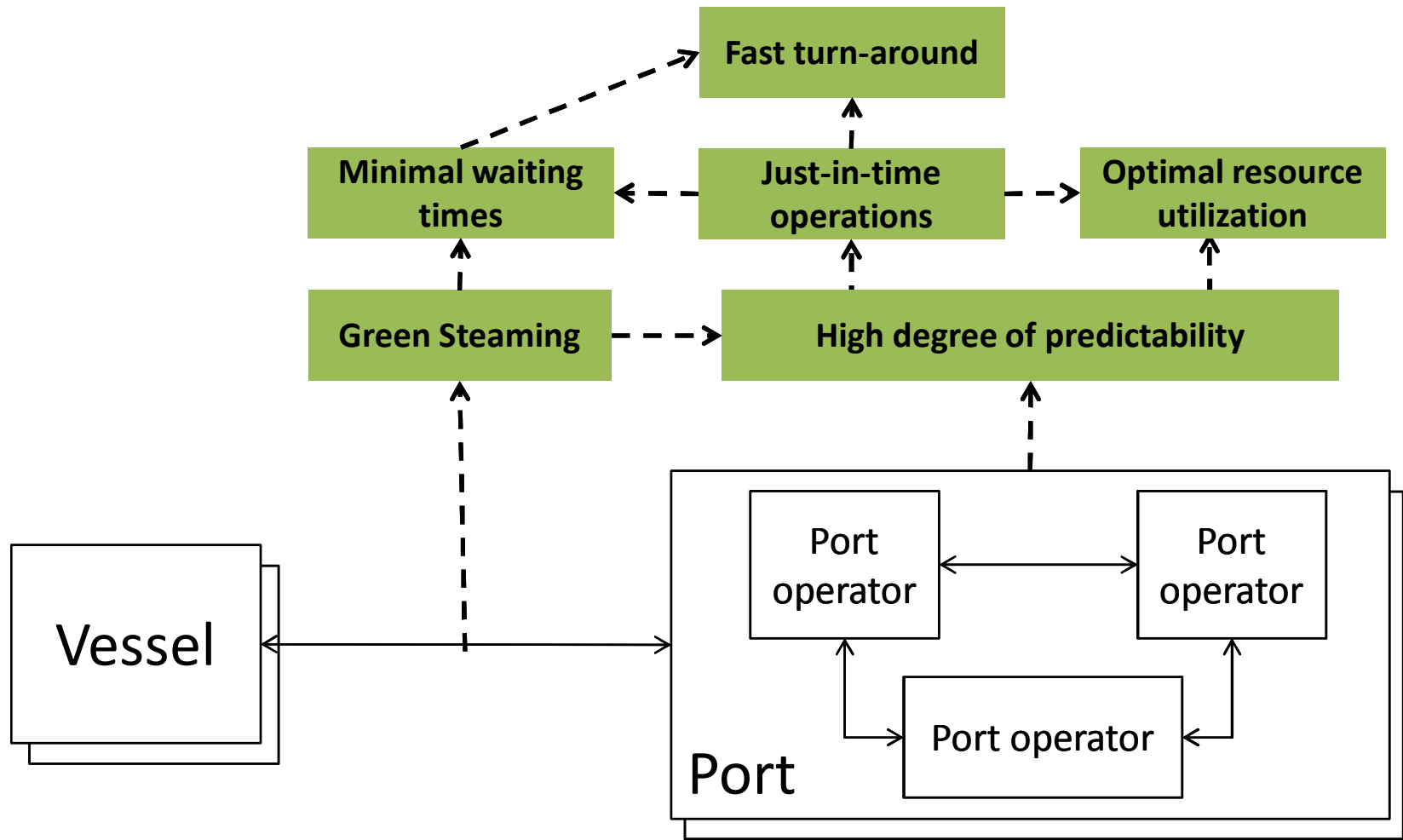


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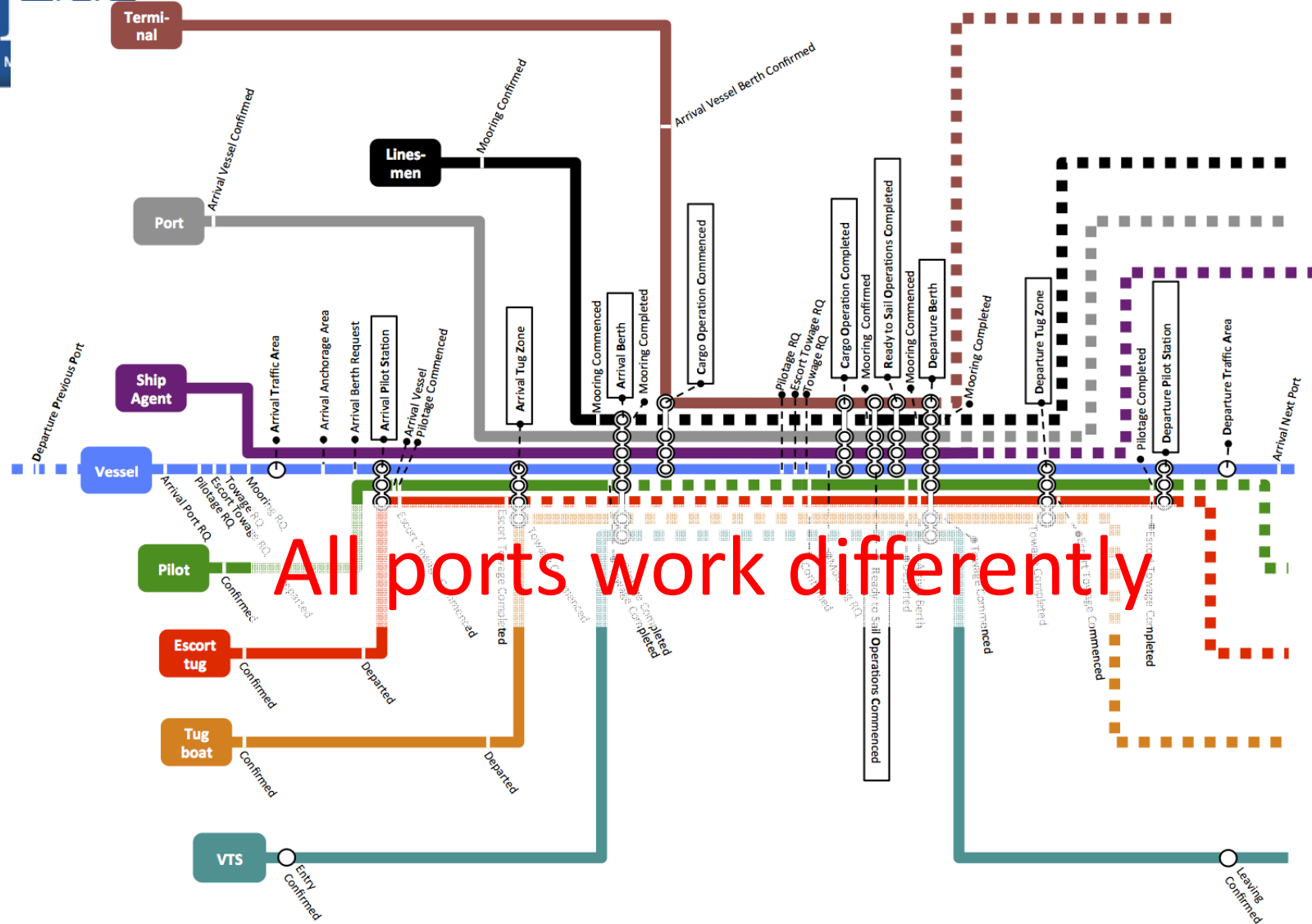
STM STRATEGIC CONCEPTS & OPERATIONAL SERVICES



DESIRED PORTCDM EFFECTS



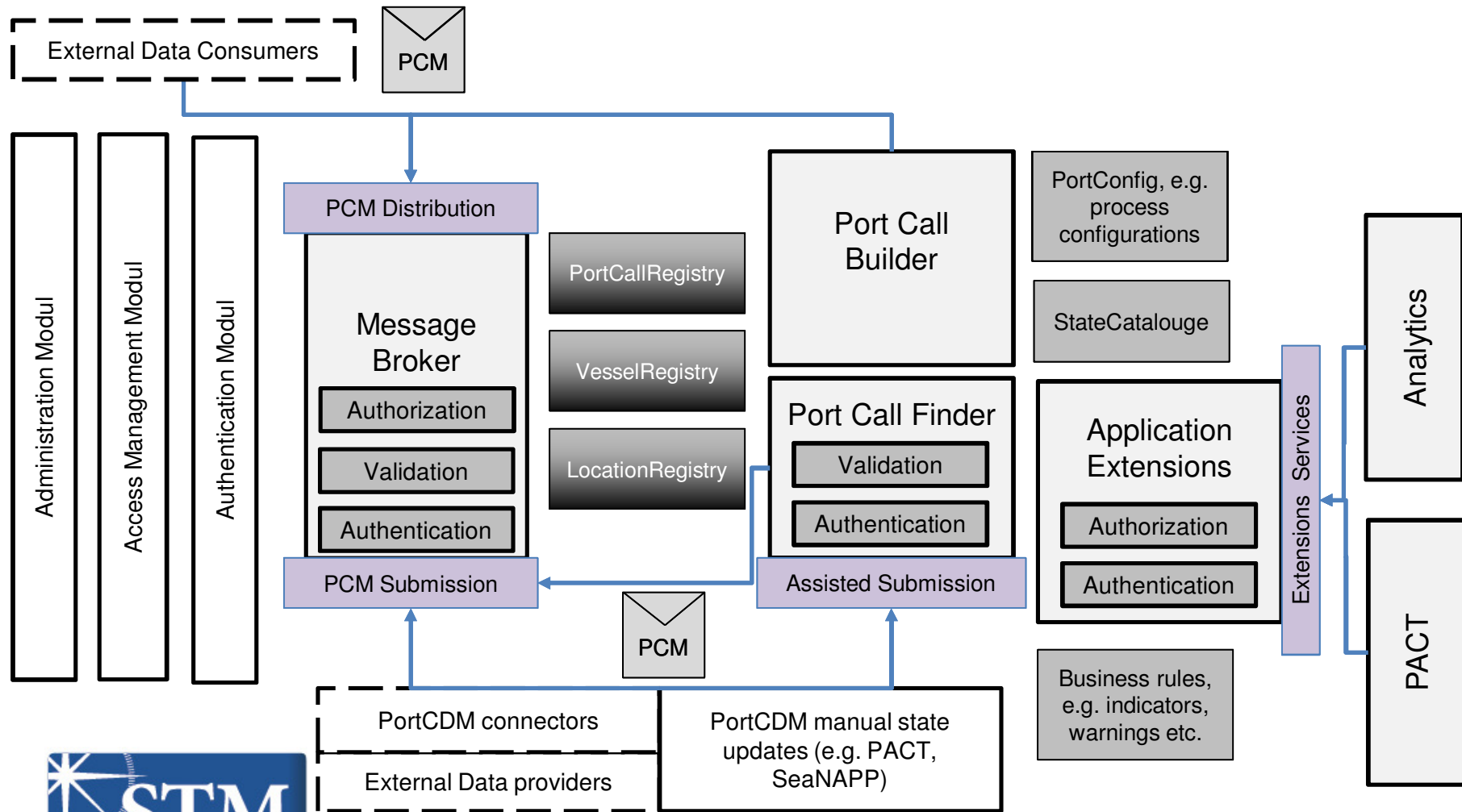
States prior and during port calls



All ports work differently

Lind M., Haraldson S., Karlsson M., Watson R.T. (2016) Overcoming the inability to predict - a PortCDM future, 10th IHMA Congress – Global Port & Marine Operations, 30th May – 2nd May 2016, Vancouver, Canada

Architecture – logical overview



Some characteristics

- Focuses

Within the port

Integration with
voyage man.

Port-to-port
collaboration

Port-to-hinterland
collaboration

- Operational services:

Port call
optimization

Port call
synchronization

Port call
monitoring

Port call
improvement

- KPI's

Predictability

Duration time

Berth productivity

Punctuality

Waiting times

Capacity utilisation



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Harmonization with other initiatives and connection to MSP

IMO E-navigation Maritime Service Portfolios (MSP):

As part of the improved provision of services to vessels through e-navigation, MSPs have been identified as the means of providing electronic information in a harmonised way

STM

A holistic approach to distributed service related to the **berth-to-berth voyage** enabling the efficient, safe, and environmentally sustainable sea transport

=> **STM is an example of implementing part of IMO's e-navigation initiative**



Harmonization with other initiatives and connection to MSP

- 1) VTS Information Service
- 2) VTS Navigation Assistance Service
- 3) VTS Traffic Organization
- 4) Local Port Service
- 5) Maritime Safety Information Service
- 6) Pilotage Service
- 7) Tug Service
- 8) Vessel Shore reporting
- 9) Telemedical Maritime Assistance Service
- 10) Maritime Assistance Service
- 11) Nautical Chart Service
- 12) Nautical Publication Service
- 13) Ice Navigation Service
- 14) Meteorological Information Service
- 15) Real-time hydrographic and environmental information Service
- 16) Search and Rescue Service



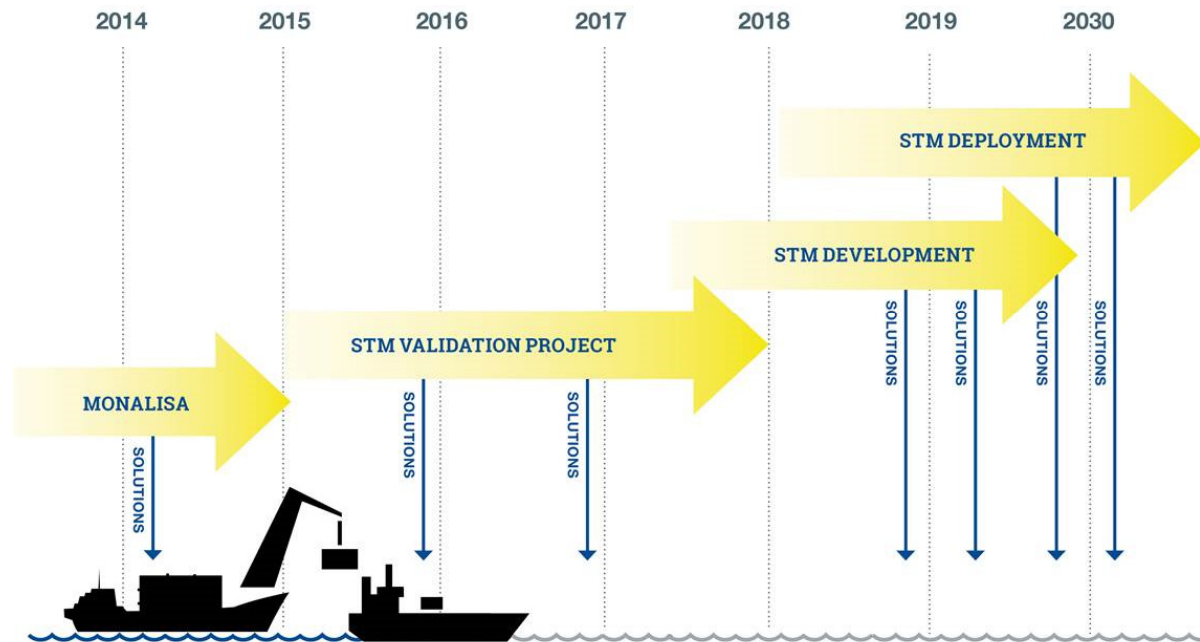
Harmonization with other initiatives and connection to MSP

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- 16) **Search and Rescue Service**



Next steps

STM past, present and future



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BENEFICIARIES



THINK DIFFERENT

MAKE THINGS HAPPEN

MAKE A DIFFERENCE

