



Progress of EfficienSea2

Mid-term status and demonstration of BalticWeb

07-12-2016

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GETTING CONNECTED FOR EFFICIENT, SAFE AND SUSTAINABLE TRAFFIC AT SEA



e-Navigation made real

Accidents and old technology – cognitive overload

Inefficient workflows and lack of standards

Administrative burdens – wasted time and money

Sulphur emissions

Weak cyber security and limited access



PRESENT



e-Navigation made real



PRESENT





e-Navigation made real



PRESENT



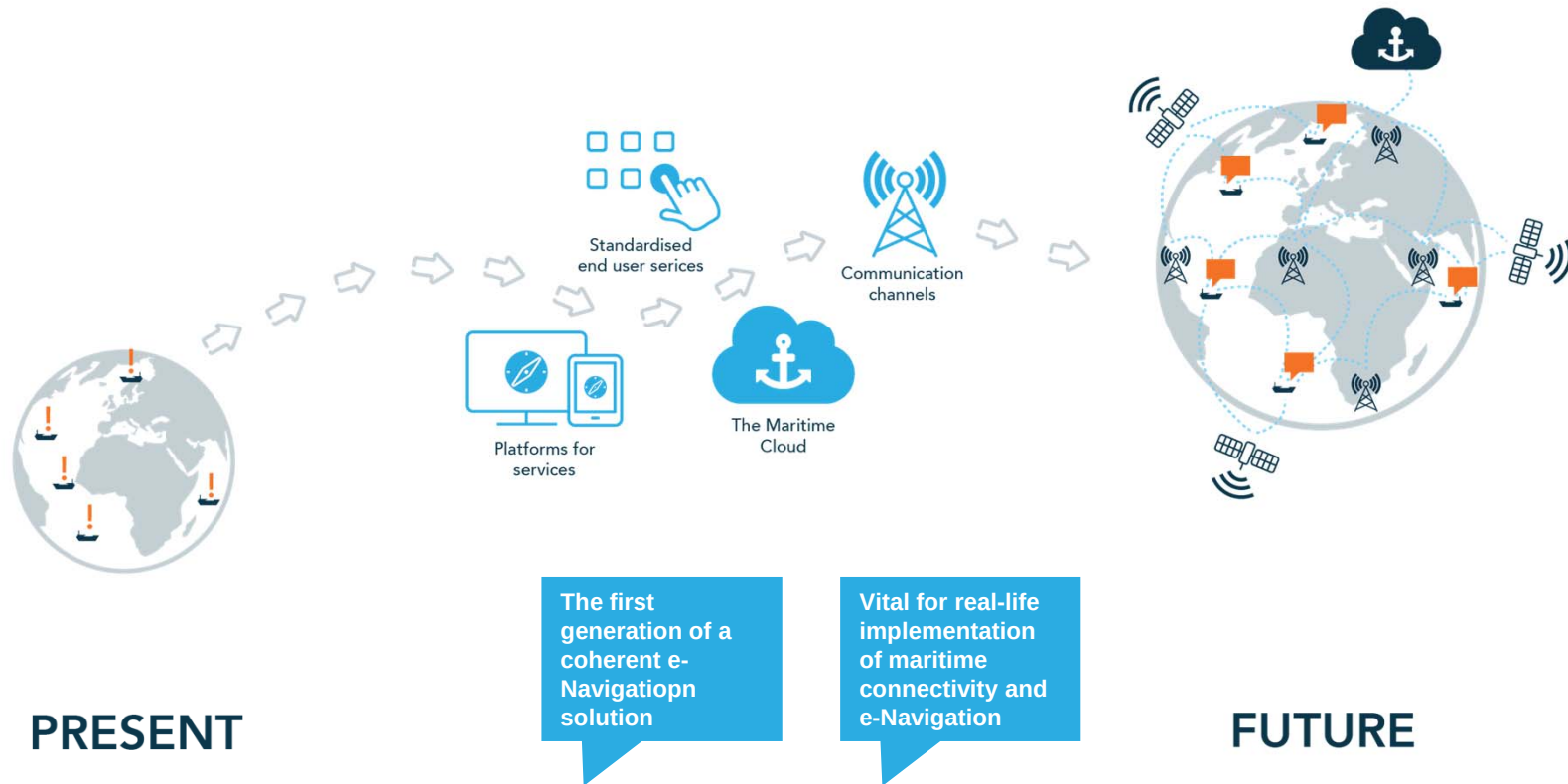
The first generation of a coherent e-Navigation solution



FUTURE



e-Navigation made real





Four solution areas





EfficienSea2 solutions



Project scope – four solution areas



End user services – smart navigation and administration



Platforms for services – web and onboard equipment



Communication framework – The Maritime Cloud



Communication channels – smart roaming and VDES

Standardised end user services





15 end user services

Navigation

- Navigational Warnings and Notices to Mariners (4.2)
- Weather on Route (4.3)
- Nautical Charts based on S100 Standards (4.4)
- Smart Buoy Interaction (4.5)
- Route Optimisation (4.6)
- Ice Charts (4.7)
- Crowd Sourcing of Ice Information
- Route Exchange (6.1)
- No-go Areas and Comfort Zones (6.4)

Arctic

- Arctic Live Position Sharing
- Arctic SAR Tool (6.3)
- Space Weather Forecast (6.5)

Administration

- Automated VTS/SRS reporting (6.2)
- Automated exchange of port information (5.1-2)

Emissions

- Sulphur emission monitoring (5.3)



Progress: Standardised end user services

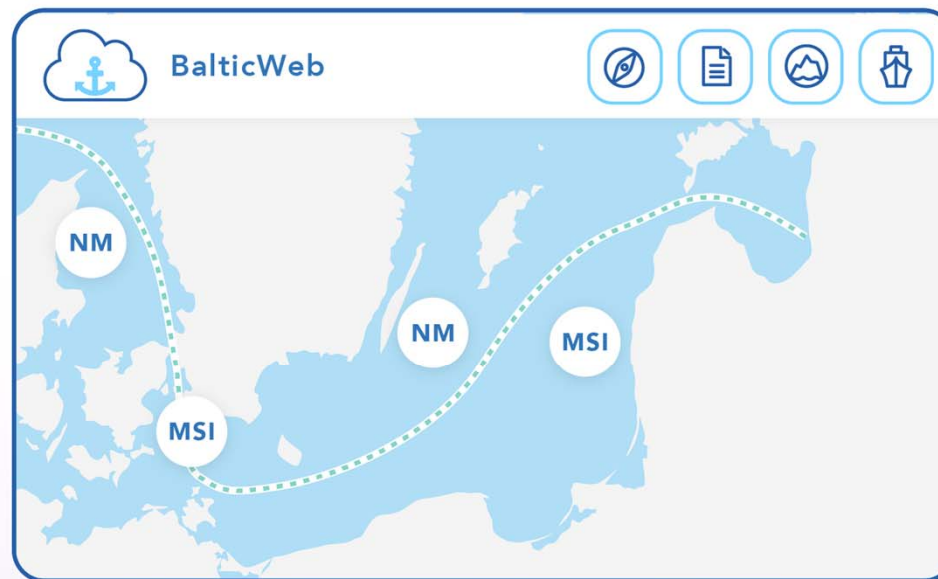
- Some of the more advanced services will be operational as well
- Navigational Warnings and Notices to Mariners are on Maritime Cloud
- Services are being registered in the near future, including STM
- We are looking for service providers to register additional services!



10 services operational on BalticWeb

2016	2017	2018
Navigational Warnings and Notices to Mariners (4.2)	Optimised route demonstrated on BalticWeb (4.6)	Sulphur emission monitoring (5.3)
	Meteorological Information on Route (4.3)	Route sharing ship to shore (6.1)
	Nautical Charts based on S100 Standards (4.4)	Information sharing between VTS/SRS (6.2)
	Smart Buoy Interaction (4.5)	Service for efficient SAR operations (6.3)
	Ice Charts (4.7)	

Platforms for services

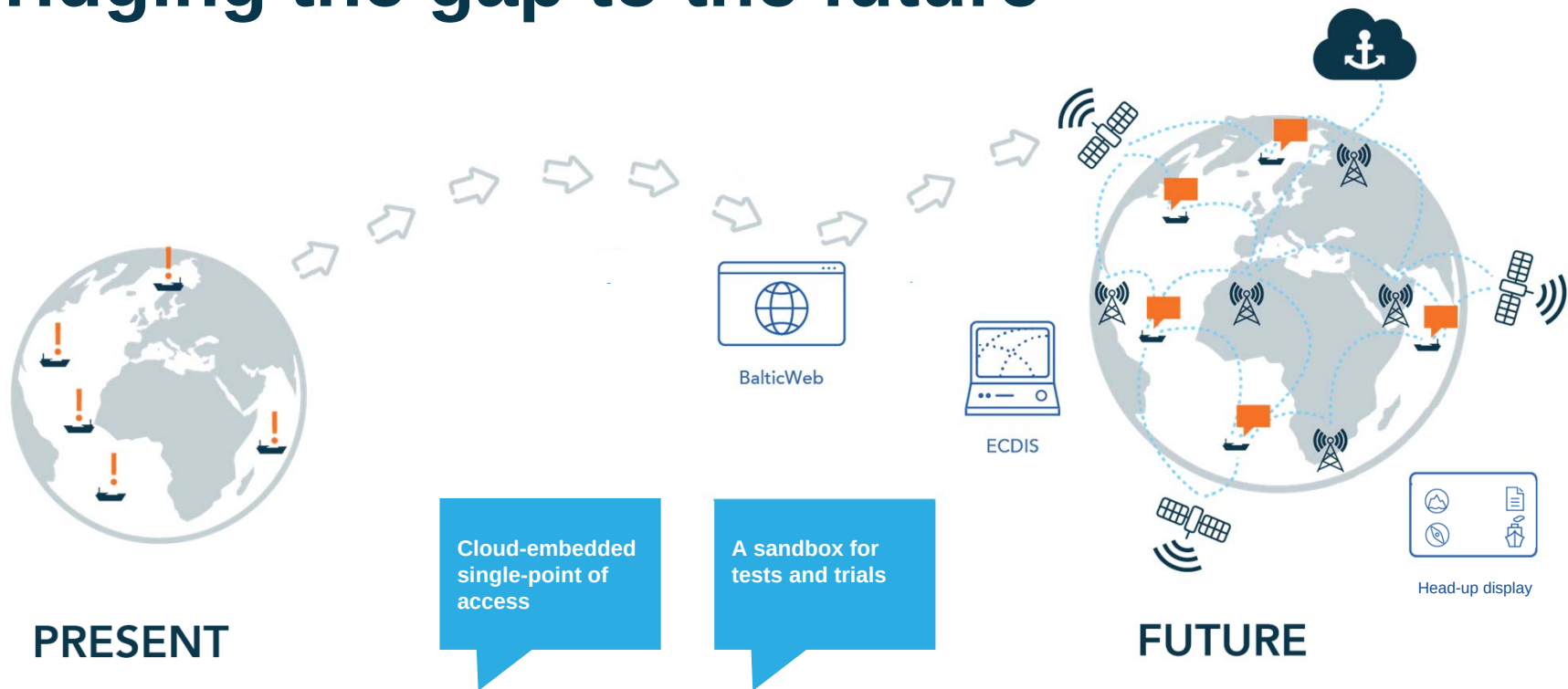




Bridging the gap to the future



Bridging the gap to the future



Present and future context





Test and demo's are essential



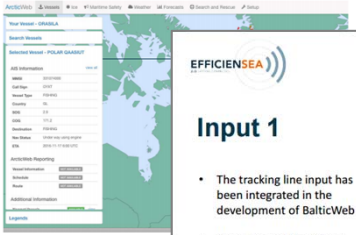
From limited to expanded connections



Based on human centered design

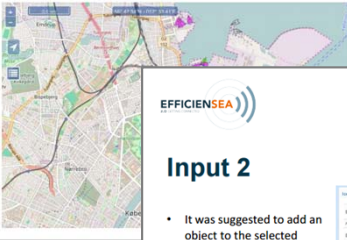
Input 1

- A traditional tracking line was suggested
- It helps:
 - Improve visualization of active vessels
 - Minimize the load on cognitive resources



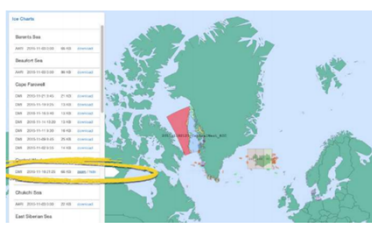
Input 1

- The tracking line input has been integrated in the development of BalticWeb
- Here, the tracking line is designed as an arrow – creating a direct link between information and vessel



Input 2

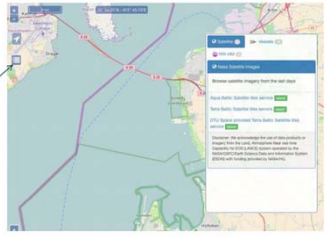
- It was suggested to add an object to the selected information – using the “squin for eye” technique
- It helps:
 - Selected informations stand out - overview
 - Minimize the load on cognitive resources



Input 3

input on the menu bar has been integrated in the development of BalticWeb

the menu button is to click the menu off – putting the user in rol





Progress: BalticWeb

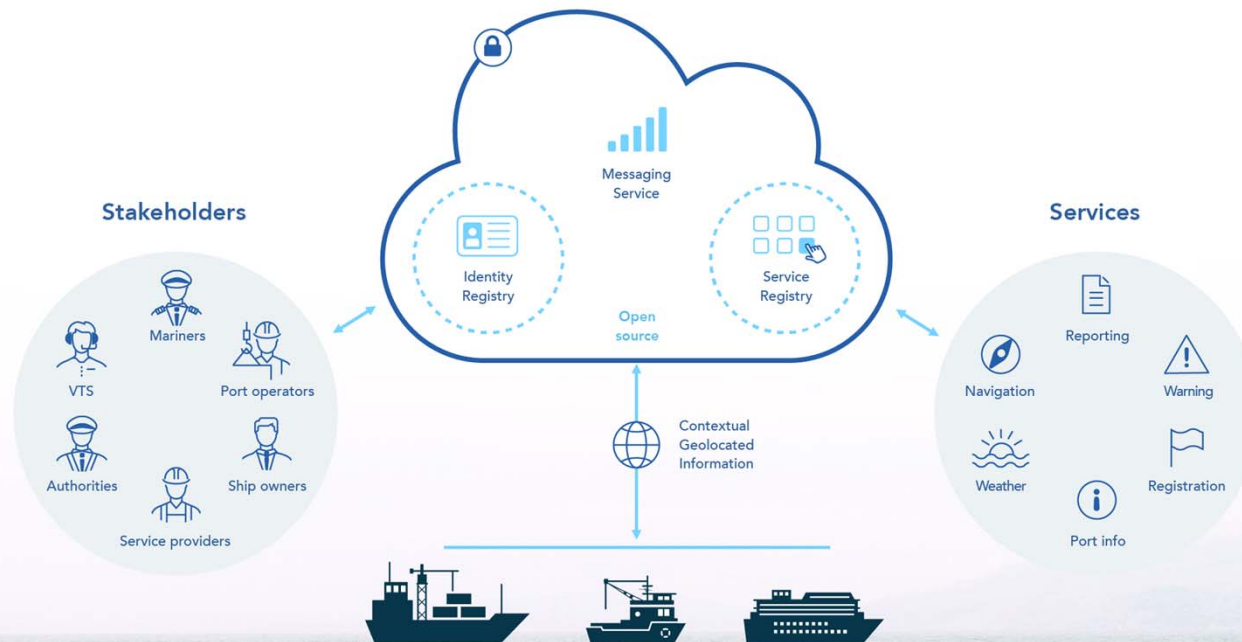
- Beta release at our mid-term conference
- Notices to Mariners and Navigational Warnings services are operational (on Maritime Cloud)
- Most E2 services will be on BW
- Testing of an early version of Arctic SAR Tool service on bridge display
- High-level user group workshop on how to deploy BalticWeb



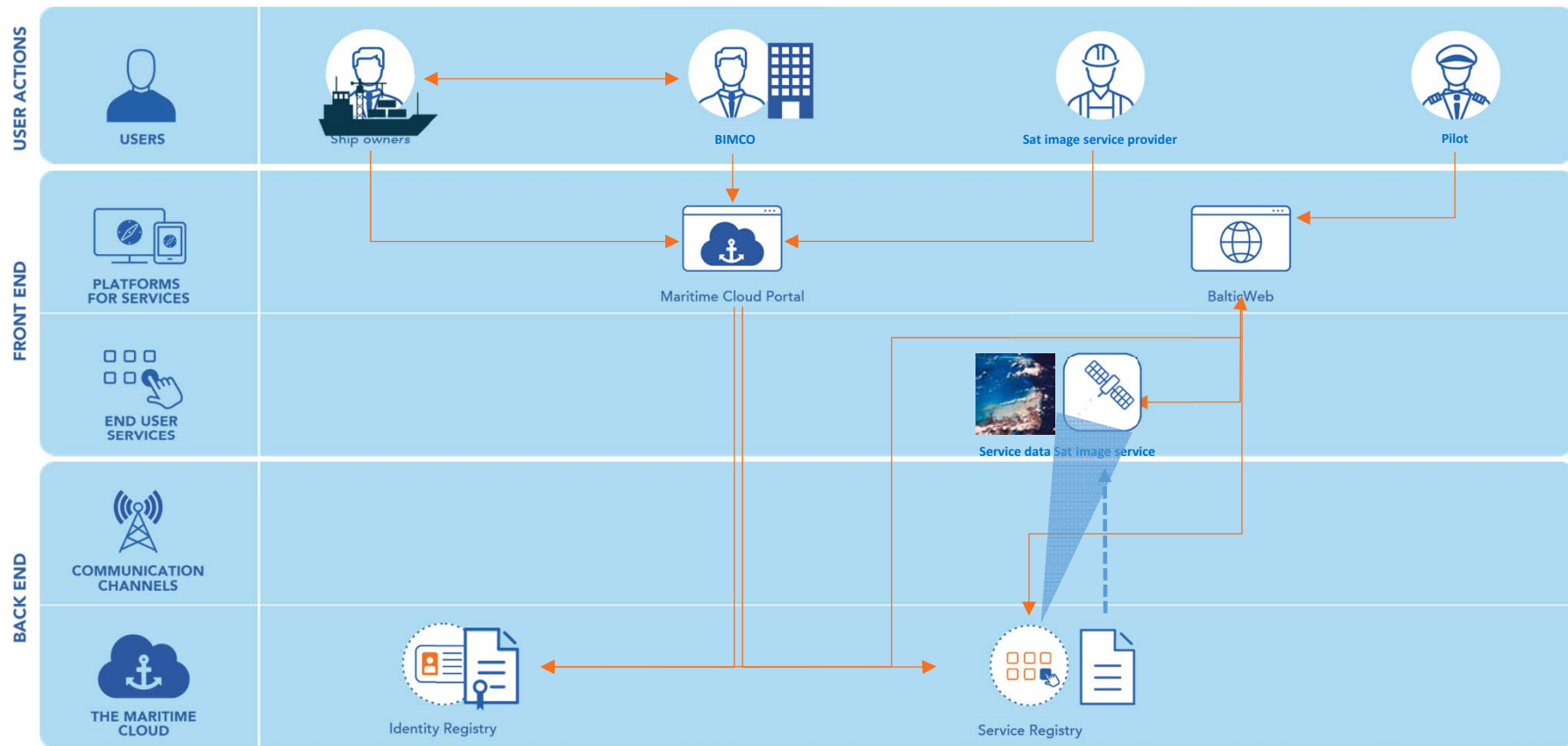
Demonstration of BalticWeb

- <https://balticweb.e-navigation.net/>

The Maritime Cloud



MC demo

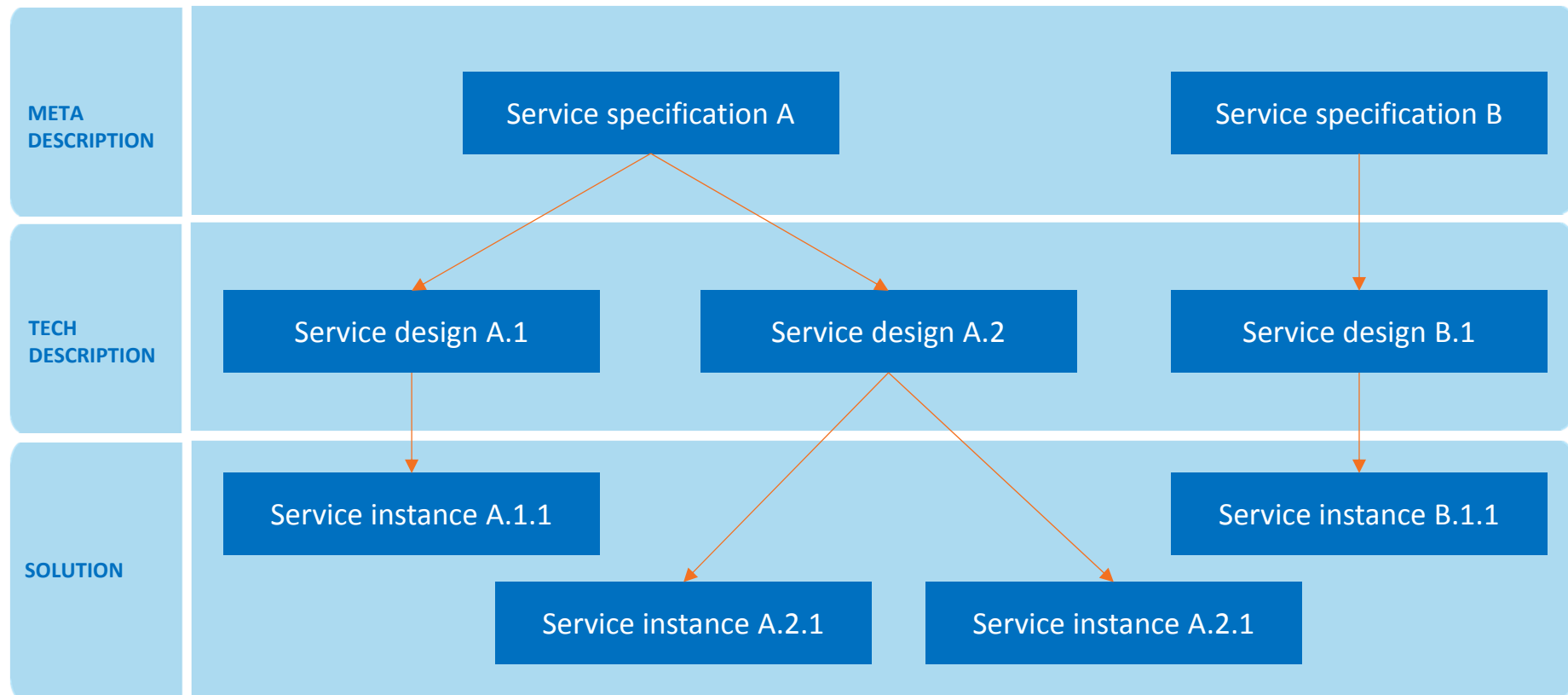




Progress: The Maritime Cloud

- Beta release of MC's core components
- Identity register
 - DMA and BIMCO federated
- Service register
 - Meta standard for e-Navigation services ready
 - NM on, more are getting ready
- Korea and Sweden (STM)
 - Maritime Messaging Service (MMS)
 - Maritime Ressource Name (MRN)

Service structure





Governance and business models

- Getting adopted by international organisations
 - BIMCO, IALA, CIRM, ...
- Governance model that ensures trust
 - MC Foundation, IMO Model
- Business model that convince the industry
 - Part of subscription fee or separate subscription
 - Requirements for ID validation



One model: Maritime Cloud Foundation



Service providers



VTS



Ship owners



Service providers



Ship owners



Authorities



Authorities



Mariners

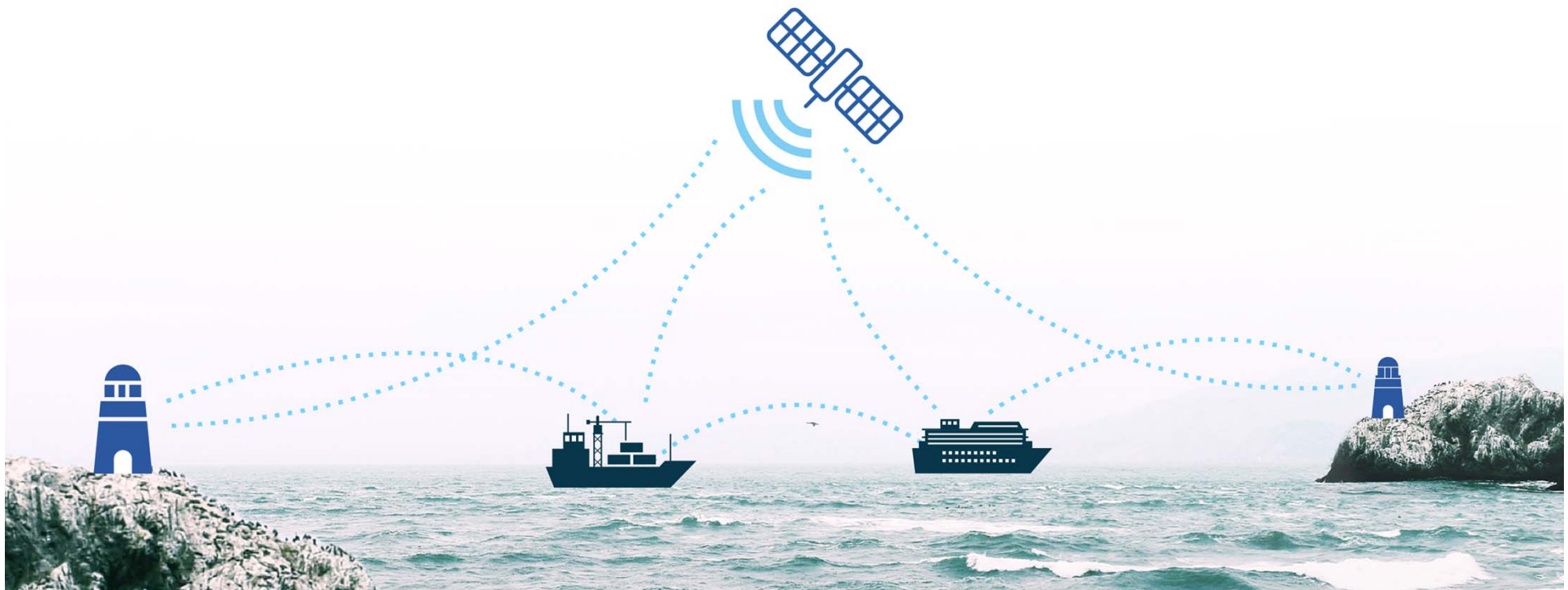


Mariners



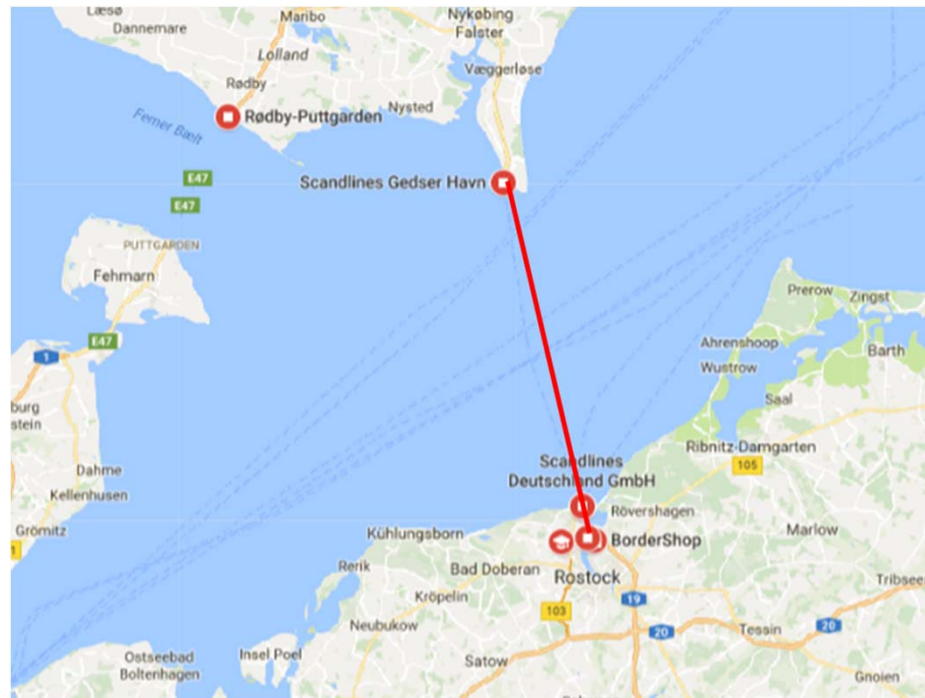
Port operators

Communication channels



Progress: Communication channels

- Running technical field tests at the moment (VDES propagation sea trial)
- Standardisation work slower than expected



Summary: Highlights and challenges

- Good technical progress
- Maritime Cloud momentum
- Operational models and impact = key focus
- Time is an issue
- Collaboration with external partners – more service providers on MC and BW!



Thank you!



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