



e-Navigation Update

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e-Navigation Update

- Introduction to CIRM
- What is e-Navigation?
- e-Navigation Projects
- Maritime Connectivity Platform – the heart of e-Navigation
- The future of e-Navigation

Introduction to CIRM



Comité International Radio-Maritime

- A global association of marine electronics companies, founded in 1928
- Aims to promote relations between organisations concerned with electronic aids to **marine navigation and communications.**
- 112 member companies
- NGO in consultative status to IMO
- Involved in regulation and standardization (IMO, IEC, ITU etc.)

Board of Directors



CIRM Working Groups

- e-Navigation
- Radiocommunications
- ECDIS
- Service
- Type Approval
- VDR
- Cyber Risk
- CIRM/BIMCO Joint Working Group on Software Maintenance



What is e-Navigation?



What is e-Navigation?

E-navigation is defined by the IMO as:

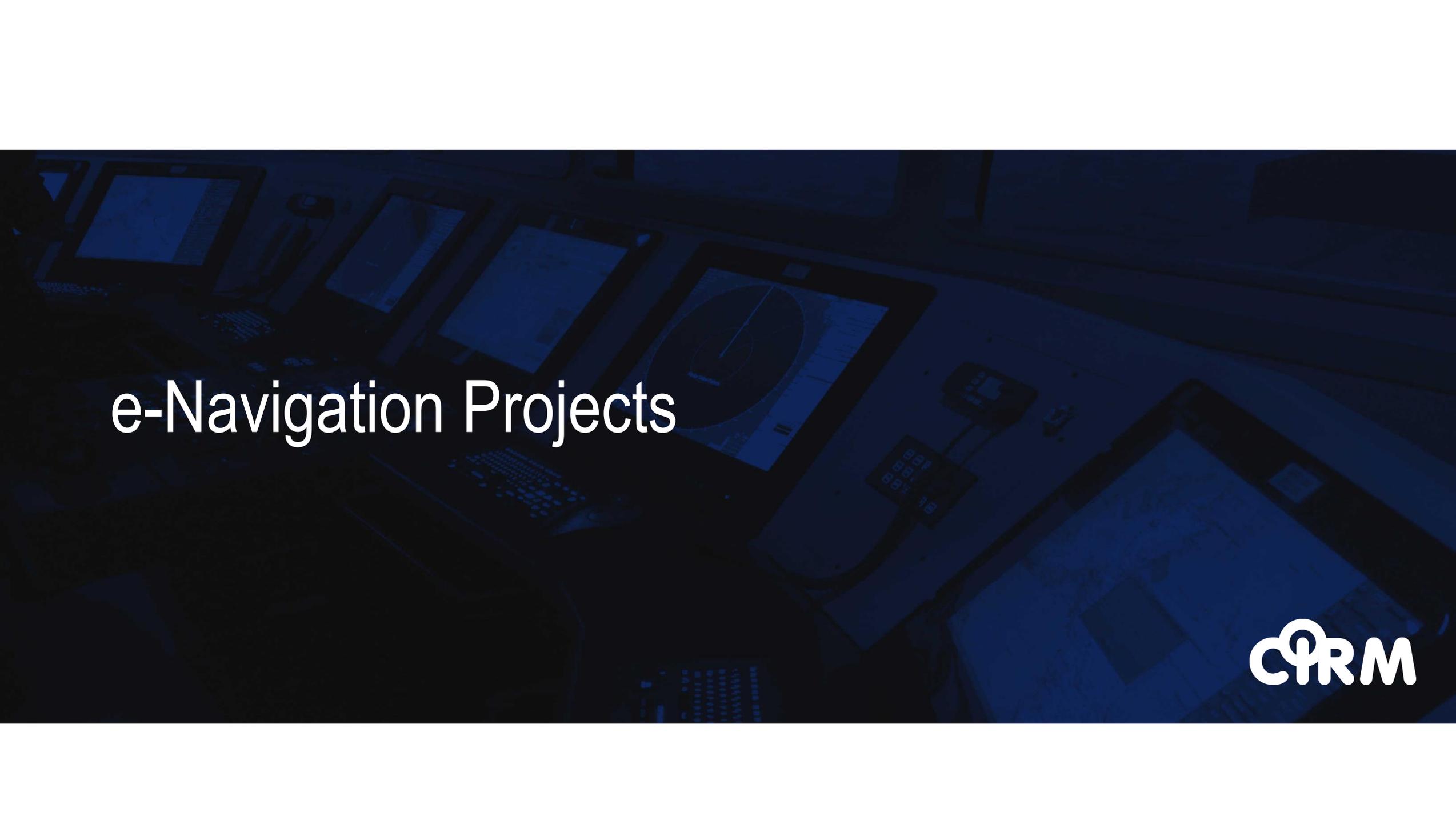
“the harmonized collection, integration, exchange, presentation and analysis of marine information on board and ashore by electronic means to enhance berth to berth navigation and related services for safety and security at sea and protection of the marine environment.”



What is e-Navigation?

Strategy Implementation Plan priorities:

- improved, harmonized and user-friendly bridge design;
- means for standardized and automated reporting;
- improved reliability, resilience and integrity of bridge equipment and navigation information;
- integration and presentation of available information in graphical displays received via communication equipment; and improved Communication of VTS Service Portfolio.



e-Navigation Projects



e-Navigation Projects



SMART NAVIGATION PROJECT
WIDER CONNECTION SAFER NAVIGATION



e-Navigation Projects - EfficienSea2

- Led by the [Danish Maritime Authority](#)
- 32 partners from 12 countries
- Budget: [€11.5M](#) of which EU funding [€9.8M](#)
- 3 year project - ended in April 2018



e-Navigation Projects - EfficienSea2

Overall aim:

to create and implement **innovative and smart solutions** for efficient, safe and sustainable traffic at sea through **improved connectivity for ships**.



e-Navigation Projects - EfficienSea2

■ Project focus areas



e-Navigation Projects - EfficienSea2



Emissions

Sulphur emission monitoring



Arctic

Arctic services – improving safety and emergency response



Route Optimization and exchange

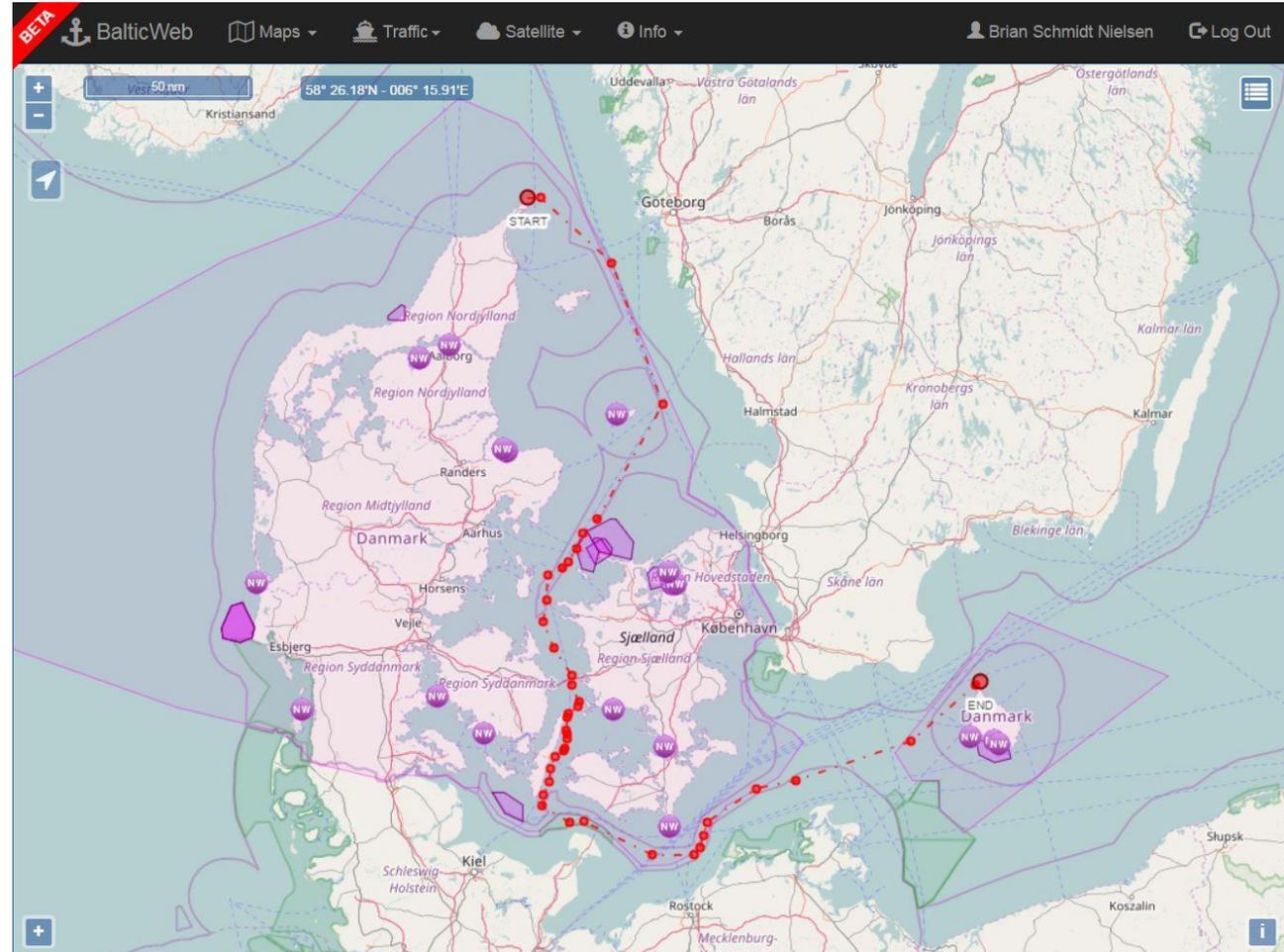


e-Navigation Projects - EfficienSea2



PLATFORMS
FOR SERVICES

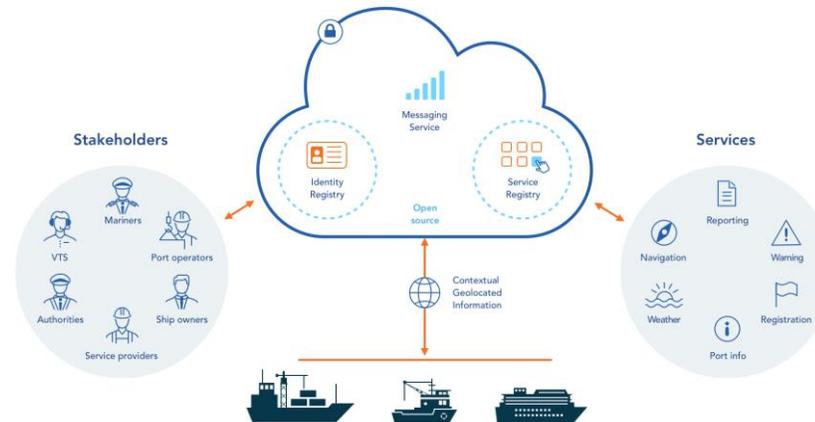
- BalticWeb
- S-124 data format
- ECDIS or other
- ArcticWeb



e-Navigation Projects - EfficienSea2



Maritime Connectivity Platform



e-Navigation Projects – Sea Traffic Management

Aims:

- To enable efficient exchange of information between maritime stakeholders through common standards.
- A decentralized service ecosystem for ships, ports and authorities.
- Secure and authenticated access to authorized parties.



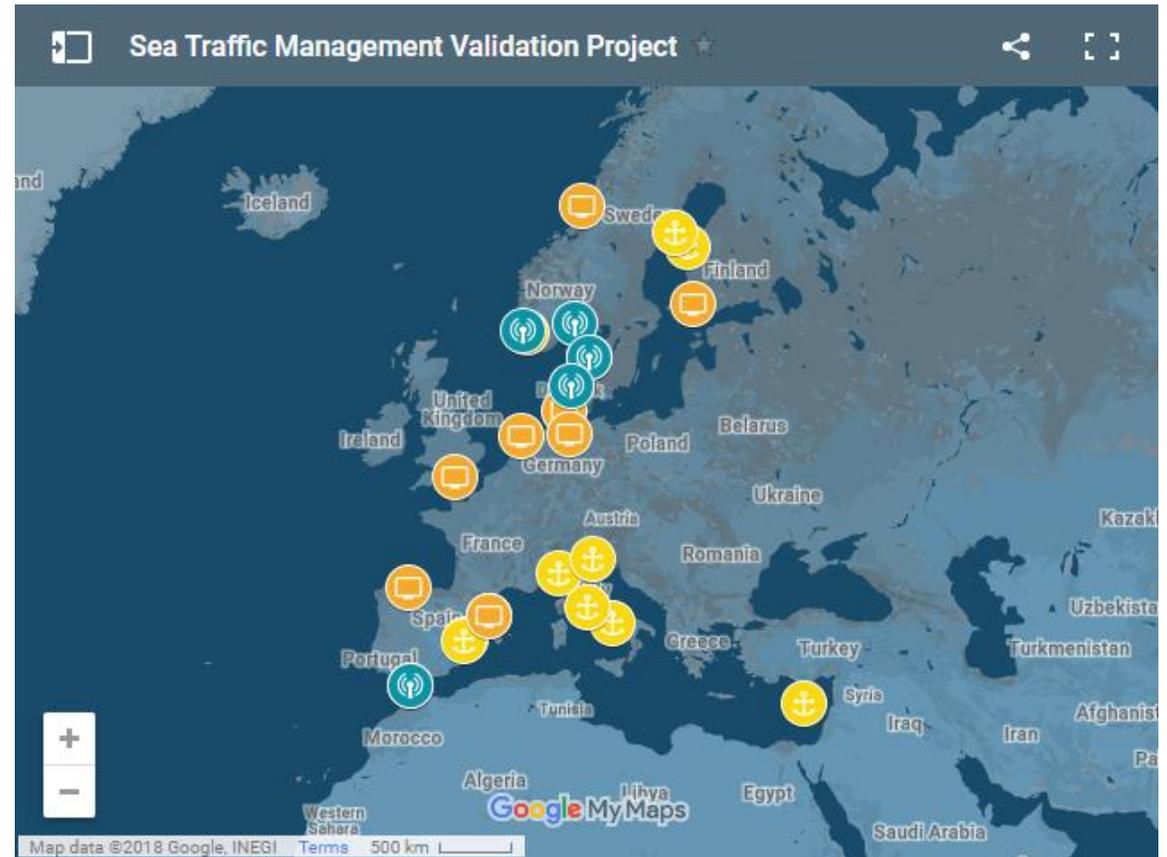
e-Navigation Projects – STM Validation



- Led by the [Swedish Maritime Administration](#)
- 39 partners from 13 countries
- Budget: [€ 43M](#) of which EU funding [€21M](#)
- Timeframe: [2015 to 2018](#)



e-Navigation Projects – STM test-bed



300 ships, 13 Ports:

Gothenburg, Umea, Vaasa, Oslo, Bergen, Stavanger, Valencia, Limassol, Civitavecchia, La Spezia, Naples, Venice, Genoa.

e-Navigation Projects – STM test-bed



e-Navigation Projects - SMART-Navigation

- Organized and Funded by the Ministry of Oceans and Fisheries, Republic of Korea
- Budget: US\$ 115M
- Timeframe: March 2016 – December 2020

e-Navigation Projects - SMART-Navigation

The SMART-Navigation Project aims to :

- improve the quality & efficiency of maritime transport while enhancing the quality of life for mariners at sea
- contribute to IMO's strategic implementation of e-Navigation
- create accompanied growth of the world maritime community via e-Navigation

e-Navigation Projects - SMART-Navigation

S Sea traffic coordination leading to optimized maritime traffic flow

M Maritime domain awareness enabling to detect risky situations that vessels may encounter with

A Active & proactive maritime safety management preempting identified incident hazards

R Remote monitoring enabling to evaluate ship system

T maritime Telematics service delivering information related to navigational safety in seamless manners

e-Navigation Projects - SMART-Navigation

- 3 activities, 13 Work Packages:
 - Activity 1 - Developing core technologies for e-Navigation service
 - Activity 2 - Developing an e-Navigation operating system & digital maritime communication
 - Activity 3 - Harmonization with e-Navigation international standards

e-Navigation Projects - SMART-Navigation

November 2017: S. Korea and Denmark perform validation test for maritime cloud technology

South Korea`s Ministry of Oceans and Fisheries said it tested its cloud-based navigation and communications system with the help of its Danish counterpart off the coast of Busan as a joint project to develop the globally-recognized maritime digital communications standard.

Maritime Connectivity Platform (MCP)



Maritime Connectivity Platform (MCP)

- Formerly known as ‘The Maritime Cloud’ (which it is not)
- It is a communication framework
- Analogy is an “app store”: involves similar concepts of authentication and service discovery
- Used in the EfficienSea2, STM, and SMART Navigation projects



Maritime Connectivity Platform (MCP)



Identity Registry

Identity Registry: Secure identity management



Service Registry

Service Registry: Registering, discovering and using relevant services



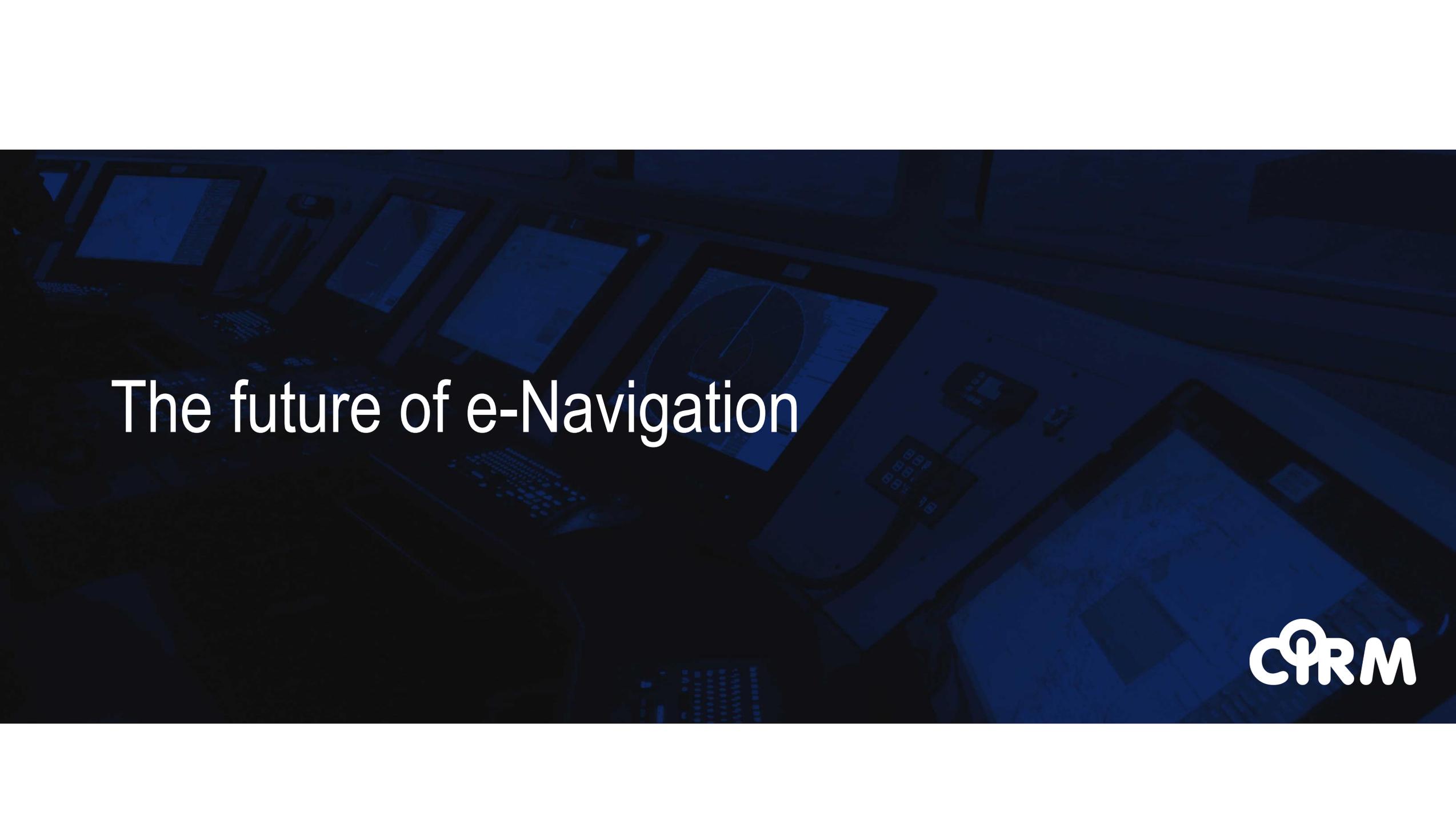
Messaging Service

Messaging Service: Intelligently exchanging information between communications systems

Maritime Connectivity Platform (MCP)



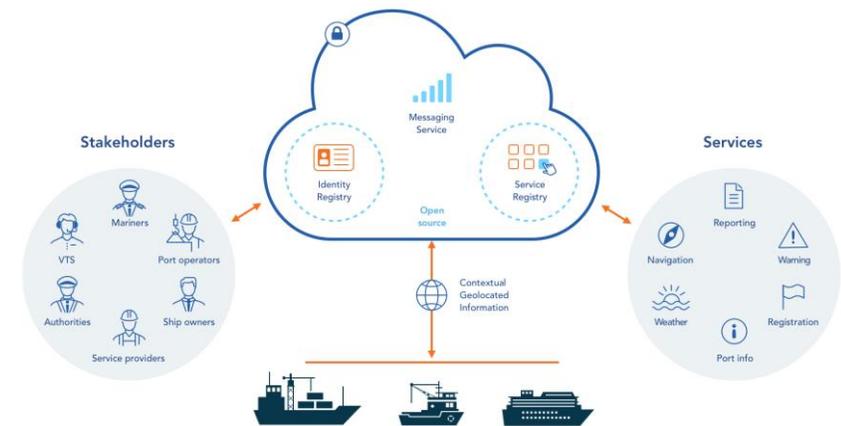
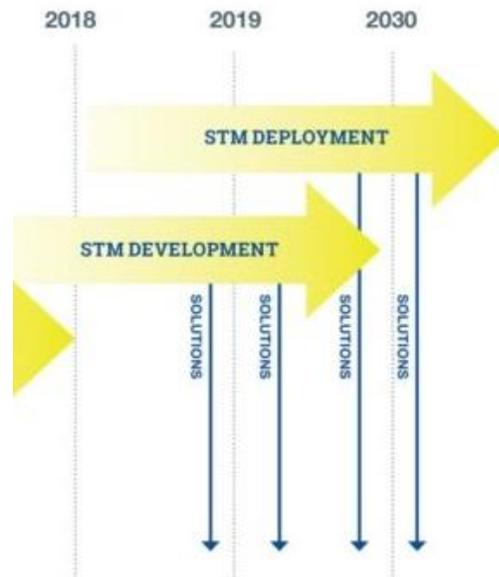
Source: maritimecloud.net



The future of e-Navigation



The future of e-Navigation





Thank you!

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