



Merenkulun automatisaatio

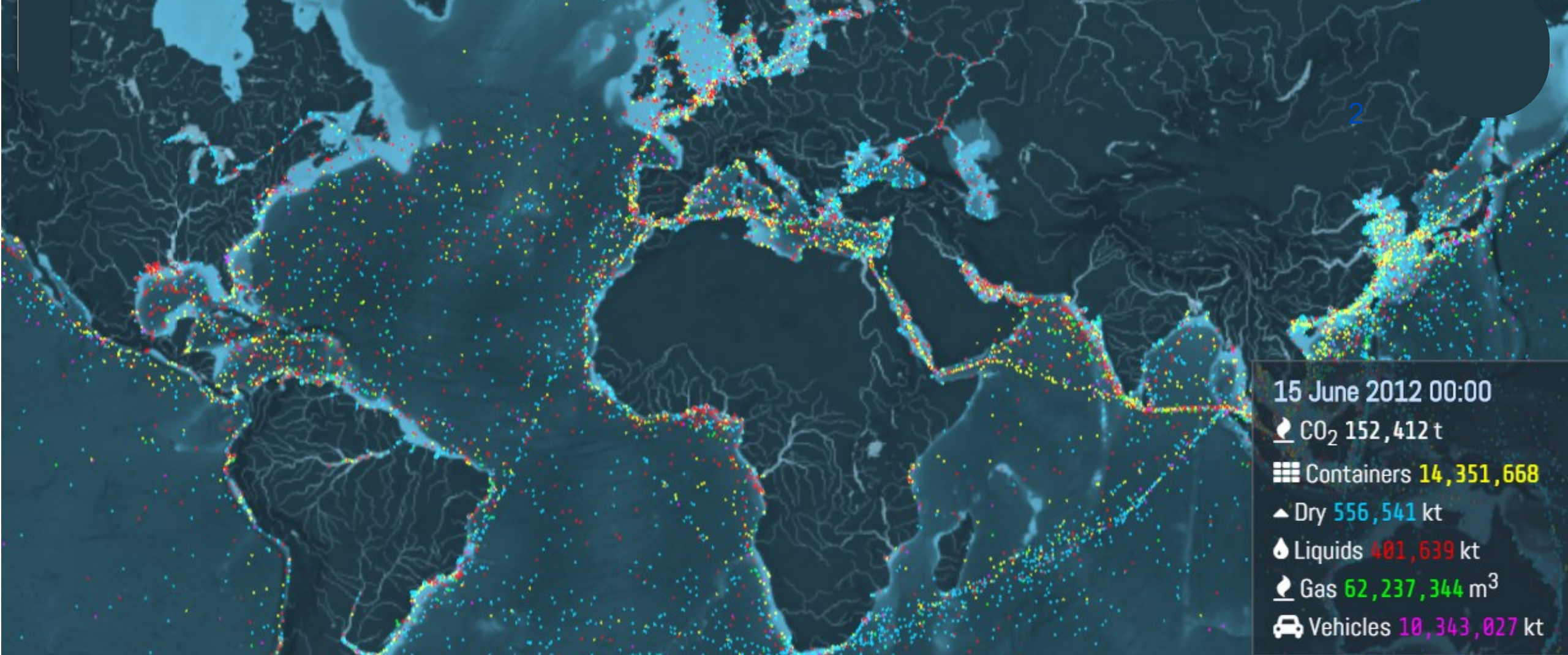
Miten hyödynnämme 5G:tä satamissa ja merenkulussa

21.3.2019

Jukka Merenluoto, M.Sc, MBA

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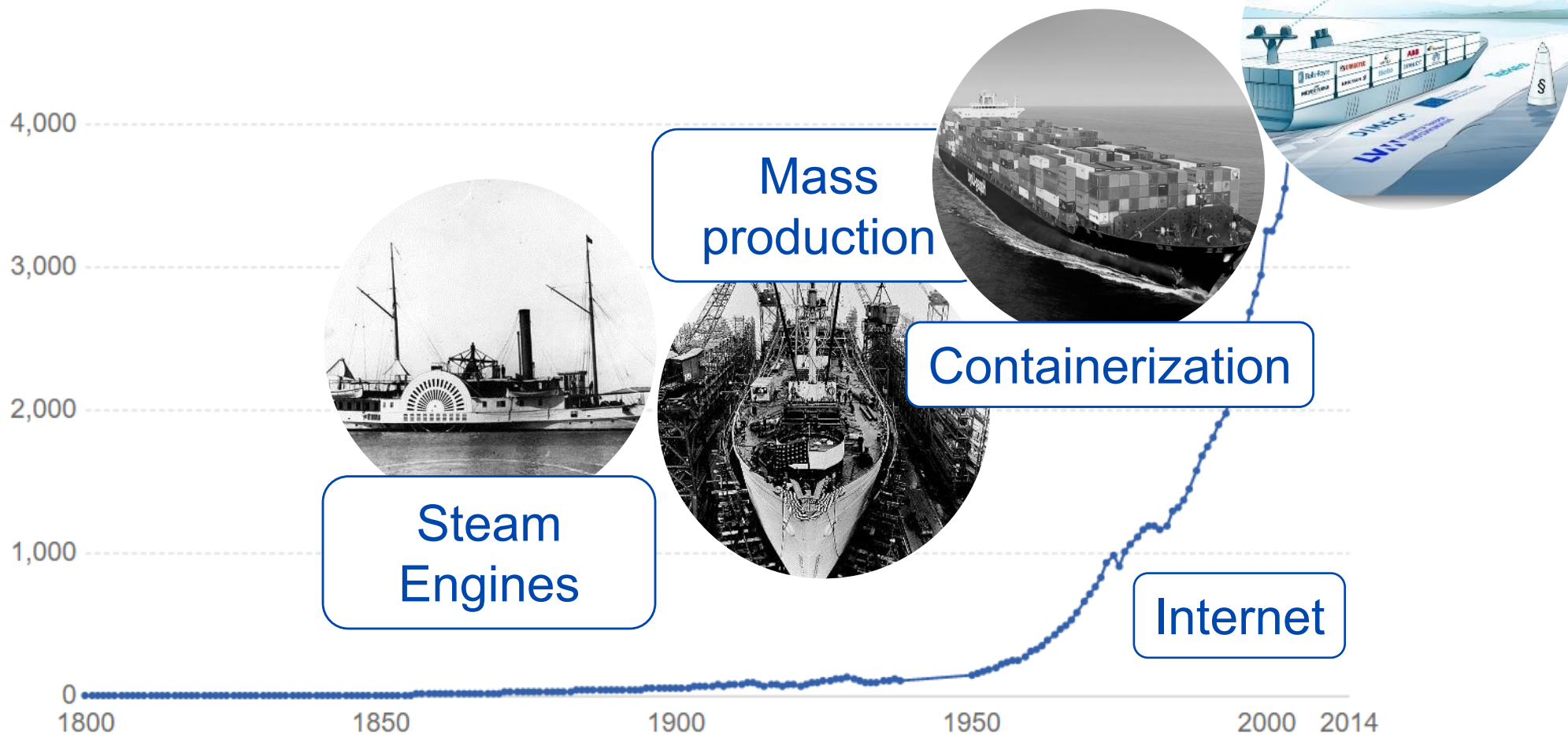
DIMECC



Maritime transport is the catalyst for economic development and prosperity

The value of global exports

Time series of value of world exports at constant prices, relative to 1913 (i.e. values correspond to world export volumes indexed at 1913=100)



Source: Federico and Tena-Junguito (2016)

A large container ship, the Tsingtao Emperor, is shown from an aerial perspective, sailing on a deep blue ocean. The ship's deck is densely packed with multi-colored shipping containers in shades of orange, yellow, green, and blue. The ship's hull is dark blue with the name 'TSINGTAO EMPEROR' visible in white. The ship is moving towards the right, leaving a white wake behind it. The sky is a clear, pale blue.

Global pioneers of marine industry are leading the business-driven project.

DIMECC

One Sea

One Sea Partners

ABB
Cargotec
Ericsson
Finnpilot Pilotage
Rolls-Royce
Tieto
Wärtsilä

ABB

tieto

 **CARGOTEC**
HIAB · KALMAR · MACGREGOR

 **Rolls-Royce**


ERICSSON


WÄRTSILÄ


FINNPILOT


Suomen Varustamot
Rederierna i Finland
Finnish Shipowners' Association

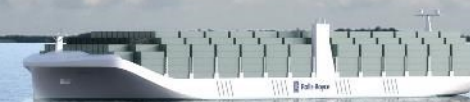

Meriteollisuus
Finnish Marine Industries

 **Suomen Satamaliitto**
Finnish Port Association

 **SHIPBROKERS**
FINLAND

BUSINESS
FINLAND

Digitalization will transform marine industry in near future and give a powerful push towards new innovations. The early adopters will get clear benefits simply by being the first ones on the market.



SAFE



EFFICIENT



RELIABLE

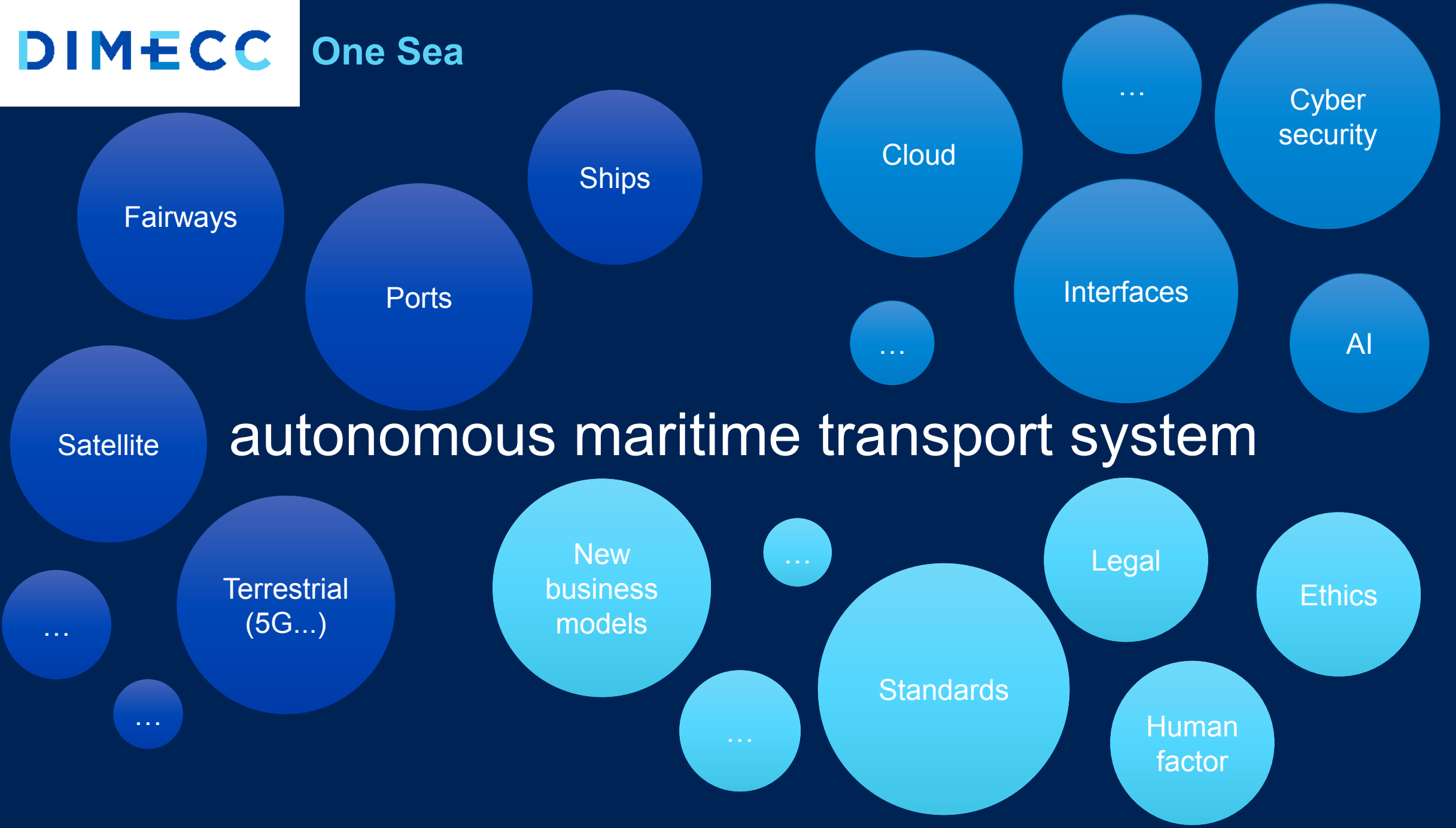


SUSTAINABLE

The objective of **One Sea** is to create the world's first autonomous maritime transport system by 2025

autonomous maritime transport system

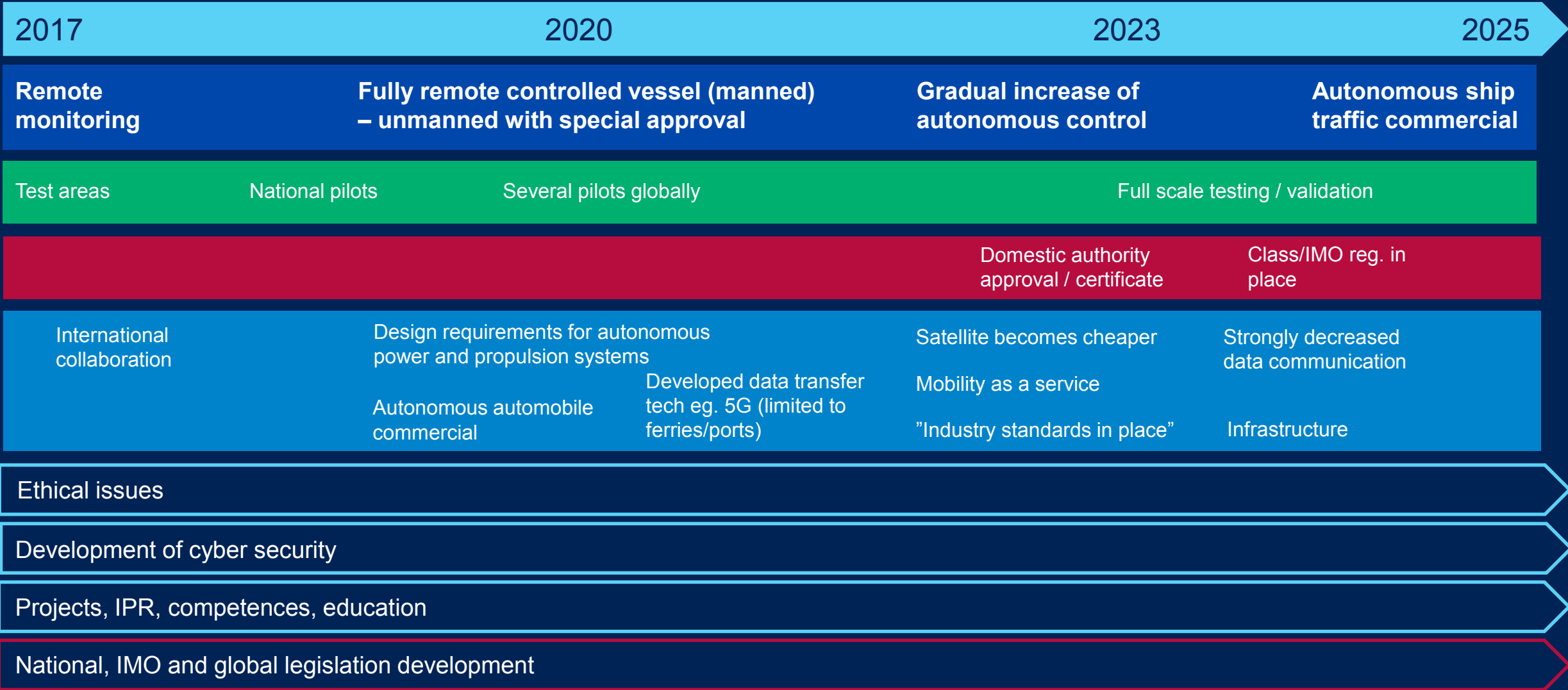
autonomous maritime transport system



Ecosystem activities

Ecosystem Core Activities	Vision & Strategy Roadmaps
Ecosystem Program Activities <i>Open to all parties</i>	Product & service creation
	Startup ecosystem
	Pilots, PoC's
	R&D Programs
	Rules & regulations
	Test areas, Labs

Timeline for autonomous ships



Connectivity via satellite and terrestrial connection

Situational Awareness

Monitoring & Surveillance

Harbour operations

Ship to shore

Ship to ship

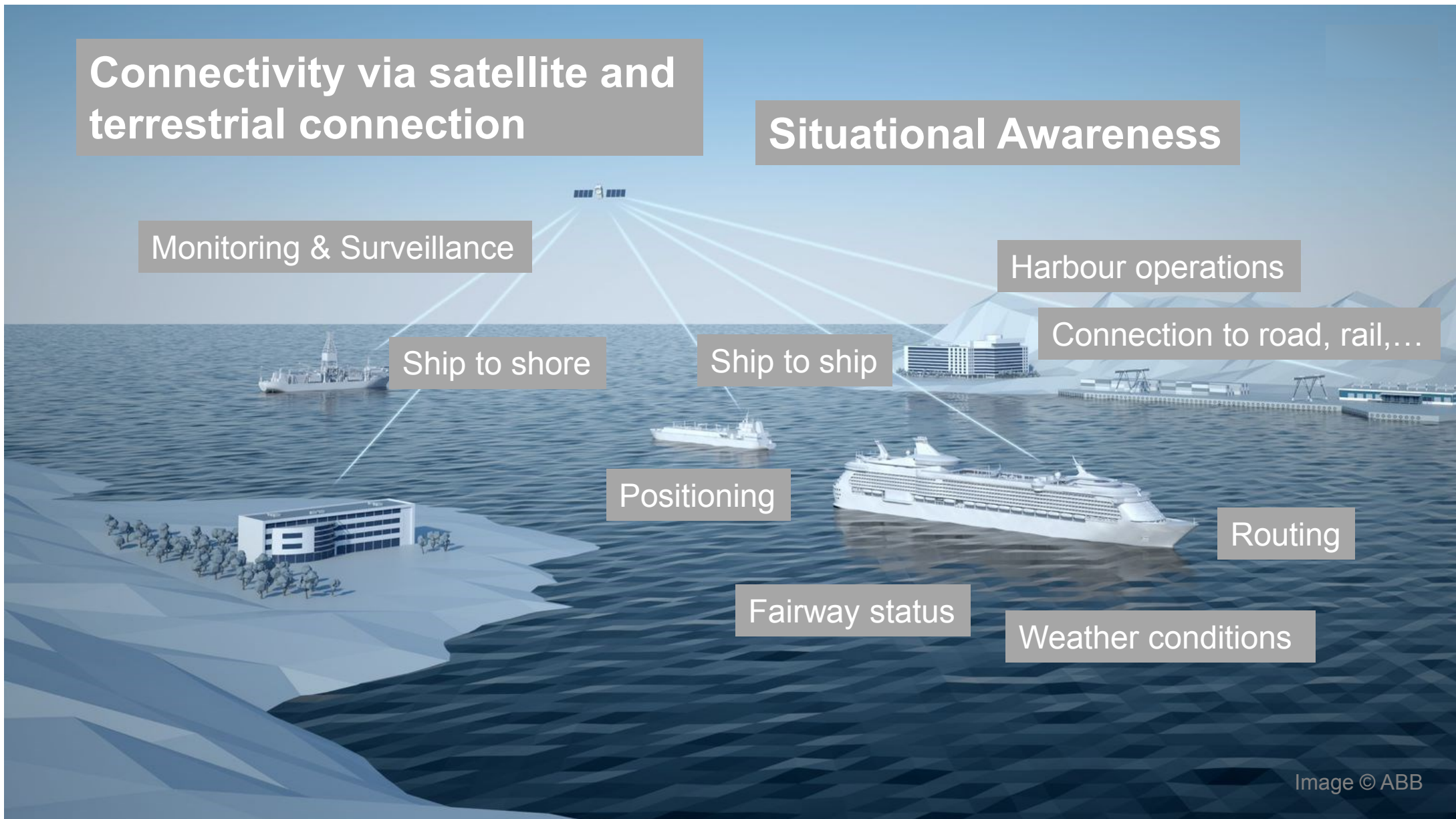
Connection to road, rail,...

Positioning

Routing

Fairway status

Weather conditions



Products & services



ABB Ability™ Marine Pilot Vision looks beyond human vision for ship automation

ABB Ability™ Marine Pilot Vision is a software solution that makes it possible to operate a vessel remotely from a third party location from a third party location, making it possible to operate a vessel remotely from a third party location, making it possible to operate a vessel remotely from a third party location.

Historiallinen linjaus” – ohjautuvien laivojen testaus laan aloittaa laajasti: Suomi ja Sea -ekosysteemi edelläkävijöitä

Lakimuutos edistää miehityksen ja vahdintidon osalta laivaliikenteen automatisaatiokokeiluja

NEWS 6 months ago

Wärtsilä successfully tests remote control ship operating capability

Wärtsilä Corporation, Press release, 1 September 2017 at 10:00 AM E. Europe Standard Time

Wärtsilä achieves notable advances in automated shipping with latest successful tests

Wärtsilä Corporation, Press release, 20 November 2018 at 2:00 PM E. Europe Standard Time



The technology group Wärtsilä has successfully completed a further round of test procedures of its automated dock-to-dock solution. In an unprecedented operation, in the presence of the Norwegian Maritime Authority (NMA), the system was further tested on the ferry 'Folgeforn', this interrupted for the entire route, visiting all three ports serviced

KALMAR AND YARA TO DEVELOP WORLD'S FIRST FULLY-DIGITALIZED AND ZERO EMISSION CARGO SOLUTION FOR YARA BIRKELAND

24/05/2018

Kalmar, part of Cargotec, and Yara have announced a joint venture to develop a fully autonomous and electric container vessel for Yara's Porsgrunn facility in Norway. This vessel will be the world's first fully autonomous and electric container vessel, operating in a fully autonomous and electric manner, with zero emissions. The vessel will be the world's first fully autonomous and electric container vessel, operating in a fully autonomous and electric manner, with zero emissions.

NOKIA, ABB AND KALMAR CONDUCT INDUSTRY'S FIRST TRIAL WITH ULTRA-RELIABLE, LOW-LATENCY 5G TECHNOLOGY FOR ELECTRICITY GRID AND HARBOR AUTOMATION

14/11/2018

Yhteistyö on testimien - DIMECC ja One Sea avaavat maailman ensimmäisen kaikille avoimen testialueen: Itseohjautuvien laivojen kokeilu täyteen vauhtiin

NEWS 1 year ago

DIMECC opens the first globally available autonomous maritime test area on the west coast of Finland – One Sea implementation moves forward

NEWS 1 year ago

B0 – a conditionally and periodically unmanned bridge



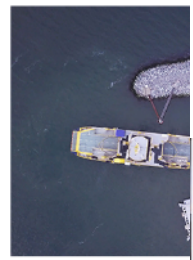
Rolls-Royce and Finferries demonstrate world's first Fully Autonomous Ferry

More about: [Press release](#) [Marine](#) [Ship Intelligence](#) [United Kingdom](#)

Rolls-Royce and Finnish state-owned ferry operator Finferries have today successfully demonstrated the world's first fully autonomous ferry in the archipelago south of the city of Turku, Finland.

The car ferry *Falco* used a combination of Rolls-Royce Ship Intelligence technologies to successfully navigate autonomously during its voyage between Parainen and Nauvo. The return journey was conducted under remote control.

During the demonstration, the *Falco*, with 80 invited VIP guests aboard, conducted the voyage under fully autonomous control. The vessel detected objects utilising sensor fusion and artificial intelligence and conducted



Rolls-Royce offers ship navigators a bird's-eye view with Intelligent Awareness game-changer

Tuesday, 6 March 2018

Rolls-Royce has unveiled a sophisticated situational awareness system that fuses multiple sensors with intelligent software to mitigate against the safety risks navigators face when operating vessels at night, in adverse weather conditions or in congested waterways.

One Sea lisää mukamerer

NEWS 6 hours

Nokia erittäi 5G-tel sähkö autom

NEWS 2 weeks

Rolls-autom

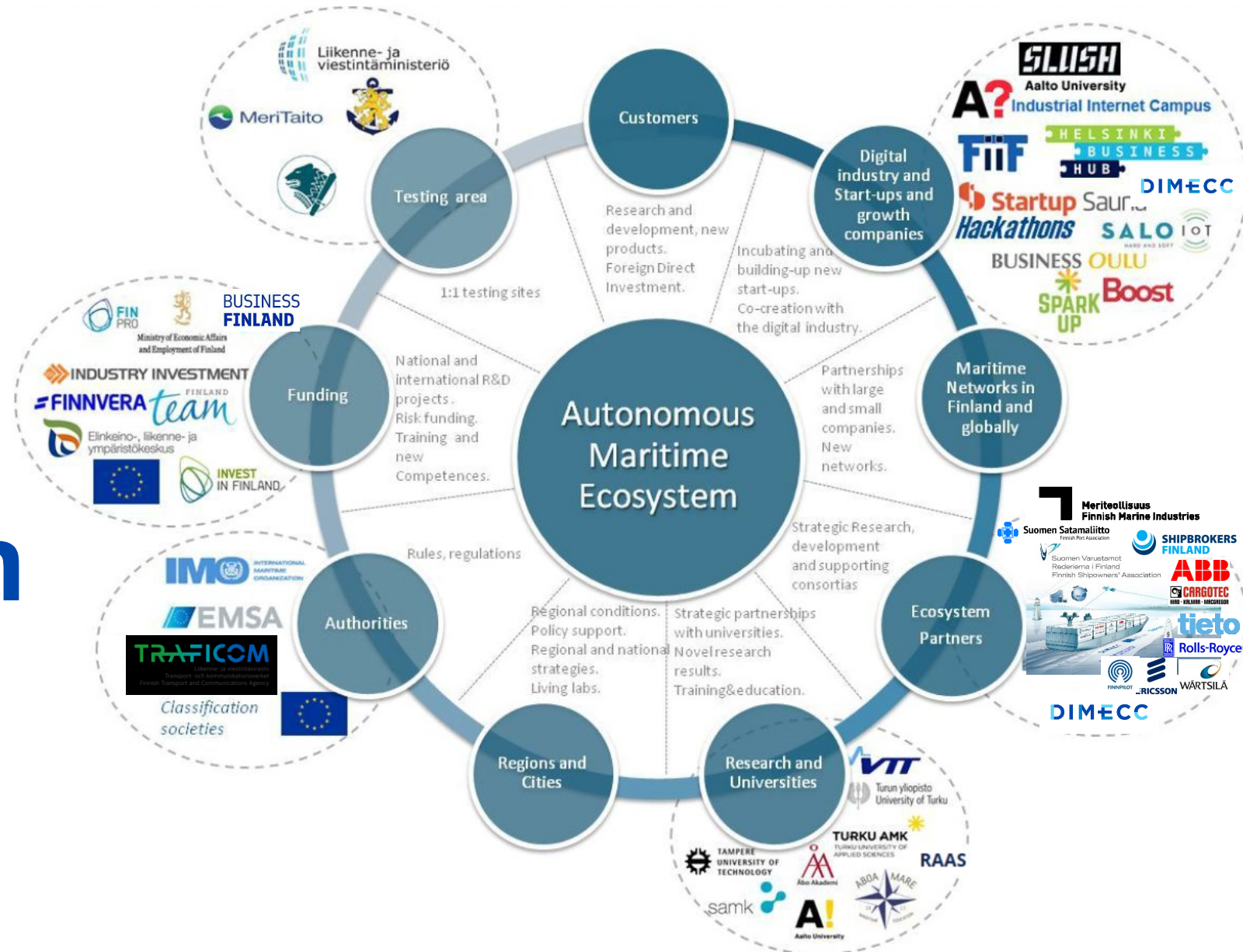
NEWS 2 weeks ago

Tieto toimitt Meripelastu johtamisjärj

NEWS 3 months ago



Ecosystem collaboration



DIMECC

One Sea

**DIMECC's co-creation ecosystem
One Sea seeks global partners to join
the leading co-creation ecosystem.**

Join us!

www.oneseaecosystem.net

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ABB

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CARGOTEC
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