Ship Intelligence

Sauli Eloranta, Head of Innovation & Technology

Baltic Sea Region as a leading region for autonomous shipping

June 14, 2017

Trusted to deliver excellence

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What is happening?

- The change happens right now – shipping is getting digitalised!
- Needed technology is here and now – we just need applications in our industry
- Numerous research, commercial, military and governmental activities globally
- Decoupling manning from the vessel enables inflagging and may disrupt maritime operations – to the benefit of end customers
- Synergies in current manned vessels

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Disruptive change - digitalisation

Internet of Things

Industry 4.0

Big Data

airbnb

UBER

TESLA

amazon.com

Spotify

Hotels.com

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Situational awareness

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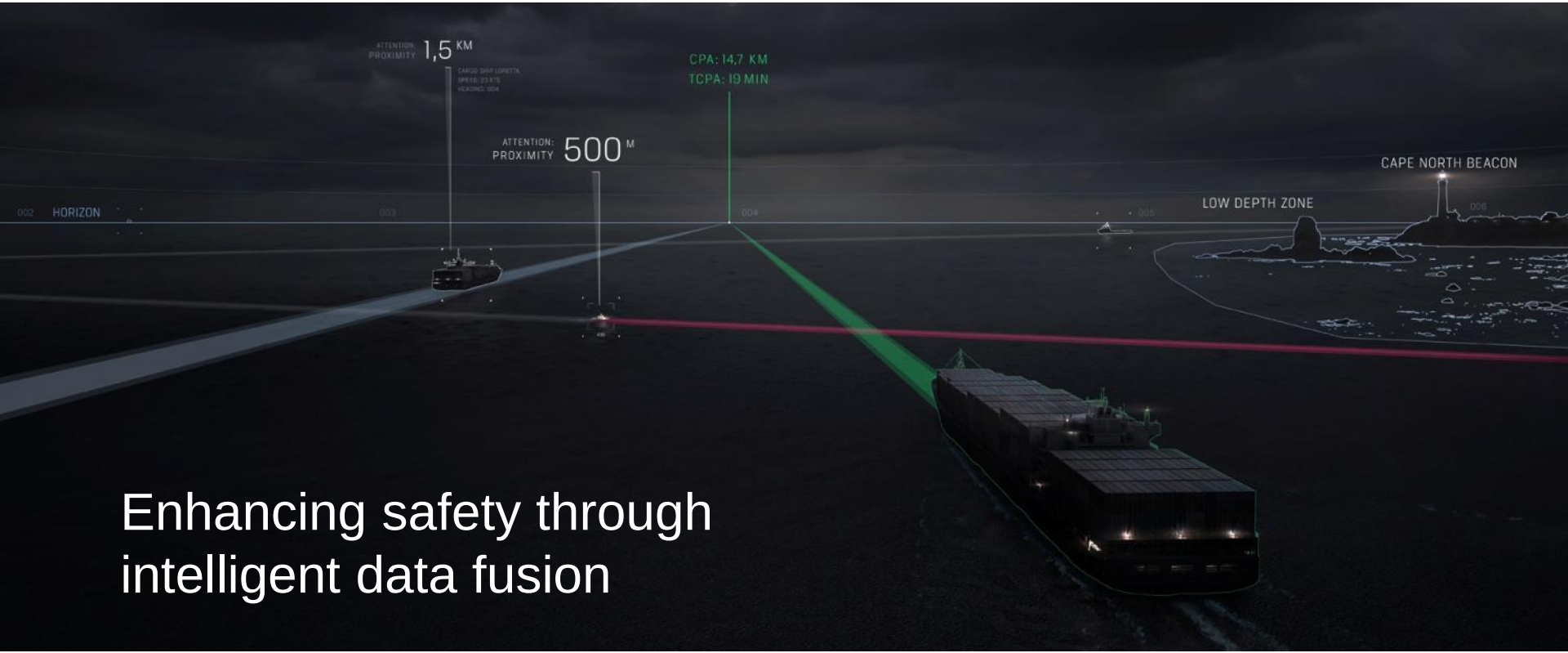
Situational awareness



Enhancing safety through intelligent data fusion

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Ecosystem approach

- World´s first Autonomous Maritime Ecosystem ”One Sea” established in 2016
- Brings together competitors to collaborate and gain synergies in precompetitive areas (education, roadmaps, test areas, certification criteria, etc.)
- Boosts collaboration across a wide range of public and private players
- How would the Ecosystem look like in Baltic Sea context?

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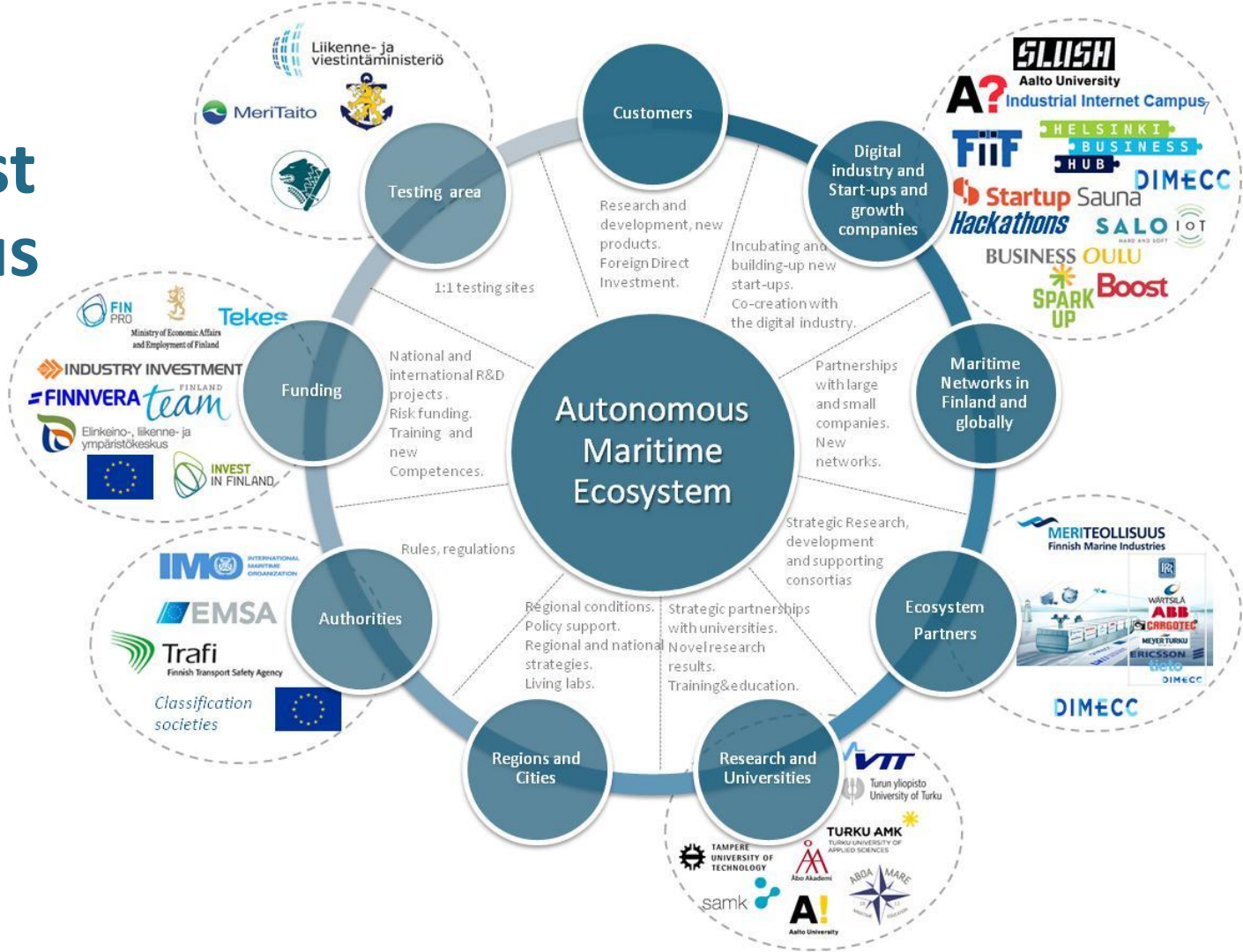
DIMECC

World´s First Autonomous Maritime Ecosystem



What does the Ecosystem do?

OECD
BETTER POLICIES FOR BETTER LIVES

Global Industry Standards

Test Areas

IMO INTERNATIONAL MARITIME ORGANIZATION

ILO International Labour Organization

IACS
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES LTD.

International Rules & Regulations

Technology Acquisition & Roadmaps

Business Creation & Global Collaboration

New Maritime Culture

MERITEOLLISUUS Finnish Marine Industries · ABB · CARGOTEC HIAB · KALMAR · MACGREGOR · ERICSSON · MEYER TURKU SHIPYARD 1737 · Rolls-Royce · tieto · WÄRTSILÄ · Tekes

Ambition Level

- All digital business will be global, it is all about speed
- We have a serious mis-match of competences in our industry (95%+ of competence, assets and infrasturcture are related to the non-digital ”old world”, rapid change of education priorities need to happen – including re-education of current workforce
- Profile the Baltic Sea as a globally leading testbed for adcvanced maritime solutions (safe, sustainable & automated)
- Not something for everyone, join forces and prioritise!

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European transport commissioner wants digital cooperation

- “We are going to make 2018 the year of multimodality in the EU, in which we will focus on finding and addressing missing links,” she promised.
- The commission is also accounting for autonomous driving and connected-vehicle technology in legislation on logistics corridors.

Violeta Bulc, the European commissioner for transport, has urged the finished vehicle logistics sector to work with the European Commission and EU member states to push for legislative reforms and policies to support better use of developing technologies.

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Horizon 2020 FP 8 Call for 2018 - 2020

MG-3.2-2018: The Autonomous Ship

- With a focus on first adopters (inland waterways, short sea shipping, ferries and urban water transport) develop and demonstrate to TRL7 a fully autonomous vessel within a realistic environment which encompasses all of the necessary features including collision avoidance, interaction with waterway and/or port infrastructure, interaction with waterborne traffic, connectivity, control, navigation and docking, condition monitoring and fail safe operation.
- The Commission considers that proposals requesting a budget in the range of EUR 10 to EUR 20 million would allow this specific challenge to be addressed appropriately.
- (we have been approached by SINTEF to consider joining Kongsberg)

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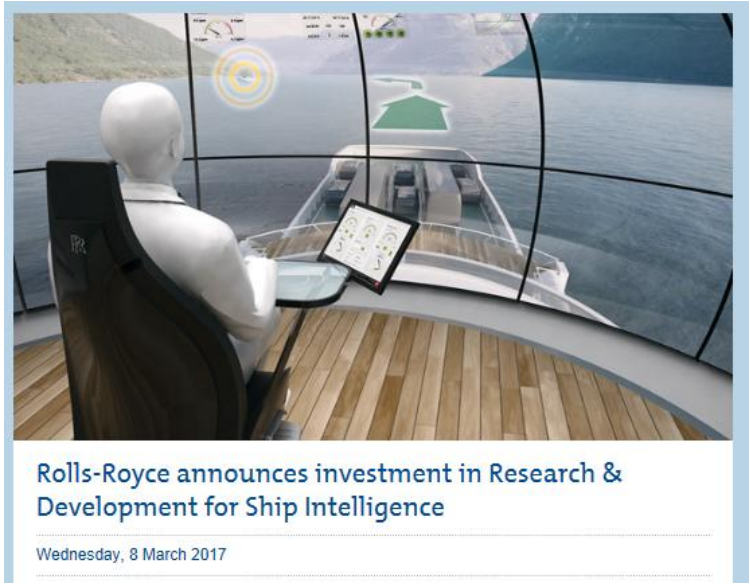
Rolls-Royce R&D Centre in Finland



Rolls-Royce announces investment in Research & Development for Ship Intelligence

Wednesday, 8 March 2017

Today, the latest part of that programme has been confirmed with the announcement, in Finland, of a significant research grant by Tekes - the Finnish Funding Agency for Innovation. The funding will enable Rolls-Royce to invest further in a research and development centre in Turku, Finland. The company plans to carry out further development projects there focused on the future development of land-based control centres, and the use of artificial intelligence in future remote and autonomous shipping operations.

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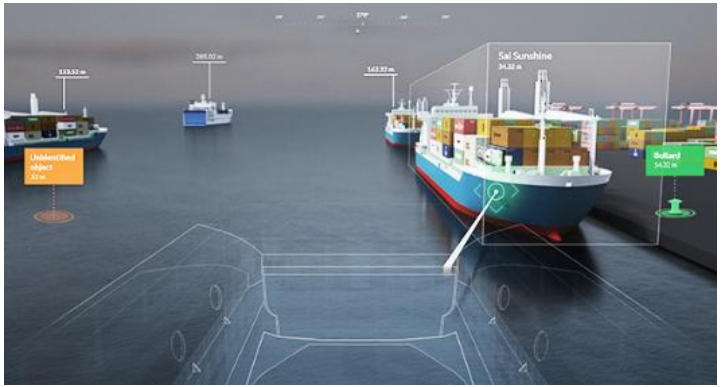
Rolls-Royce and Stena Line to work together to develop intelligent awareness for ships



Harry Robertsson, Technical Director at Stena Teknik, expert technical advisors to the Swedish ferry company, said: “Stena Teknik continuously conducts research and development in the marine technology sector. This project gives us an opportunity to explore how new technologies can be integrated with the systems we already have on-board and to provide a more informed view of a vessel’s surroundings in an accessible and user friendly way. This will give our crew an enhanced decision support tool, increasing the safety of our vessels.”

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Potential Areas for Baltic Sea Collaboration

- Easy funding arrangements for joint projects
- Lobbying (e.g. digital shipping infrastructure)
- Piloting of new technology
- Technology and Start-up collaboration
- International collaboration

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”The best way to predict the future
is to **create** the future”
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