



# TAL TECH

## SMART SEA CENTRE OF EXCELLENCE

Merit Kindsigo (D Sc)  
Smart Sea CoE / Kuressaare College  
Tallinn University of Technology

14.01.2025

# THE STORY OF THE CENTRE..

Rector's directive No. 1-8/18 of  
28.05.2024 "Creation of top focus centres  
of faculties,,

## What is a smart sea?

- A dynamic community of the sea, related physical infrastructure and smart systems (ports, ships, wind turbines, underwater connections, fish farms, terrestrial support infrastructure, digital platform, AI, etc).
- A smart digital marine environment that builds on physical infrastructure, collaborating with nature, using responsible artificial intelligence to make sustainable and safe decisions and choices with quick response in real-time.





## VISION

- The Smart Sea Centre of Excellence is a European Centre of scientific excellence in the field of maritime research and innovation.

## MISSION

- To cultivate and develop the image of Estonia as a modern and innovative, leading e-sea country, relying on high-level scientific competence.

## GOALS

- To consolidate maritime competences and potential in Estonia into a unified whole.
- To achieve a significant increase in funding for maritime R&D.
- To develop a digital platform based on data, models and artificial intelligence for the sustainable development of blue economy.
- To develop the Smart Sea CoE into a European centre of scientific excellence in the field of maritime R&D.
- To increase the international competitiveness of Estonian maritime and marine research and promote R&D&I in the maritime sector by 2035.



# FOCUS TOPICS:

- **Digital twins** (ships, sea/Ocean, processes, ice dynamics), AI etc.
- **Smart technologies** (e.g. carbon neutrality, energy), autonomous systems, systems integration and communication
- **Situational awareness**, monitoring (e.g. hydroacoustic), safety and security (e.g. cyber security)
- **Sea ecology, operational oceanography, green corridors**





# WHO WE ARE?

## Management Board:

- 1) CEO (**Merit Kindsigo**) – general management and sustainable development of the Centre
- 2) Director of Research (**prof. Kristjan Tabri**) - maintenance and development of excellence in science
- 3) Administrative Manager (**Inga Zaitseva-Pärnaste**) – coordination of the centre's technical functioning and communication



# WHO WE ARE?

## Academic Board:

- Centre for Biorobotics (prof. Maarja Kruusmaa)
- Embedded AI Research Lab (Mairo Leier)
- Laboratory of Proactive Technologies (Jaanus Kaugerand)
- Division of Modeling and Remote Sensing (prof. Rivo Uiboupin)
- Mechanics and Fluids and Structures RG (prof. Aleksander Klauson)
- Naval Architecture and Hydrodynamics RG (prof. Mihkel Kõrgesaar)
- Waterways Safety Management RG (prof. Pentti Jouko Sakari Kujala)
- Centre for Maritime Cybersecurity RG (prof. Sanja Bauk)
- Blue Economy and Aquatic Bioresources RG (prof. Jonne Kotta)
- Maritime Transport RG (prof. U.P. Tapaninen)

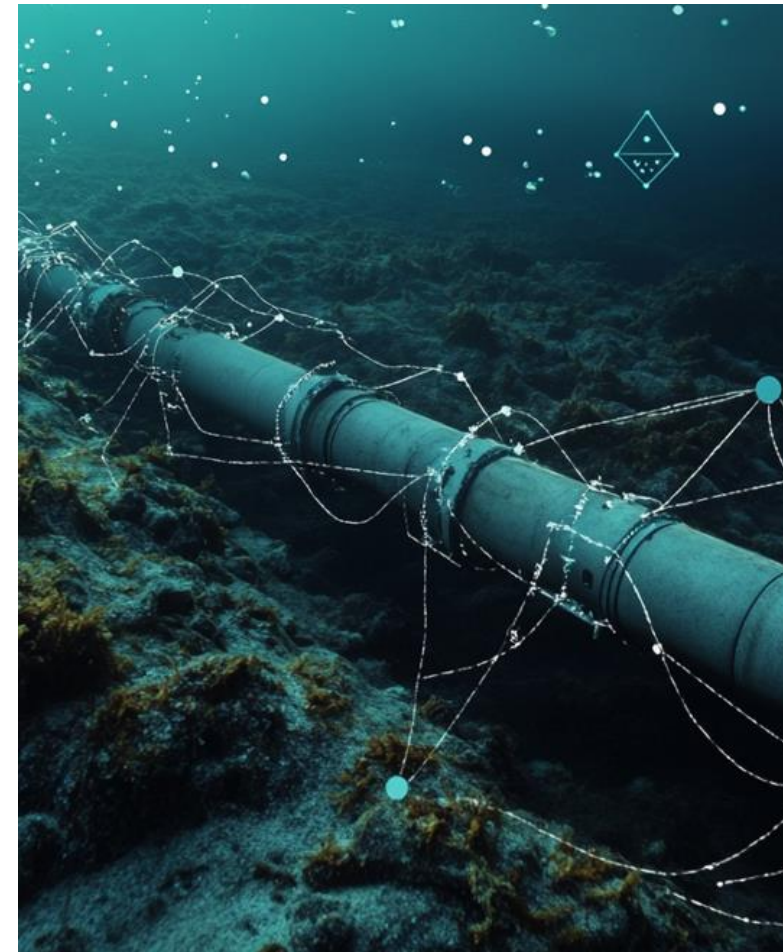




# SUPPORTING RESEARCH GROUPS:

- *Wave Engineering Research Group (prof. T. Soomere)*
- *Energy Economics and High Voltage Engineering RG (prof. I. Palu)*
- *Sustainable Value Chain Management RG (prof. G.K. Prause)*
- *Centre for Environmental Sensing and Intelligence (prof. J.A. Tuhtan)*

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# HOW TO FIND US?

- CoE – single point
- Web-page:  
<http://smartsea.taltech.ee/>

## Platform concept:

- *Holistic view*
- *Big projects*
- *Small projects (incl. demo's and validations)*
- *Consortias*
- *Problem solving*
- *Expert opinions*
- *Partners*
- *Innovation*
- *etc*







# **TAL TECH**

## **TALLINN UNIVERSITY OF TECHNOLOGY**

### **SMART SEA CENTRE OF EXCELLENCE**

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