



# **EUSBSR** EU STRATEGY FOR THE BALTIC SEA REGION

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**EUSBSR PA SAFE Operational Advisory Board**

**Interreg**  
Baltic Sea Region



Co-funded by  
the European Union

## Agenda

12.30 Tour de table - Short intro of everybody online

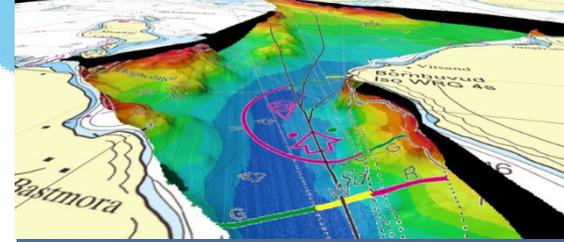
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13:30 Focus Winter navigation (Sustainable Flow, WINMOS III)

14:15 BREAK

14:30 Focus Digitalisation and Accident preparedness (MaDaMe, OpenRisk II, Ormobass)

15:30 End



## Tour de table - top of mind challenge

Which challenge do you see in your organisation related to the policy area on maritime safety and security?



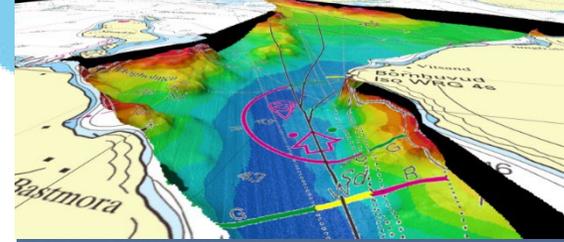
## PA MARITIME SAFETY - maritime safety and security

Action 1: Enable reliable and secure navigational conditions to the Baltic Sea.

Action 2: Develop navigation in ice to meet future challenges

Action 3: Enable efficient traffic management and implement maritime services.

Action 4: Ensure accurate preparedness and response for maritime accidents and security incidents.



## Tour de table - Short intro of everybody online

- Name
- Role
- Organisation
- Mention one challenge you see in your organisation related to the policy area on maritime safety and security.



## Agenda

12.30 Tour de table - Short intro of everybody online

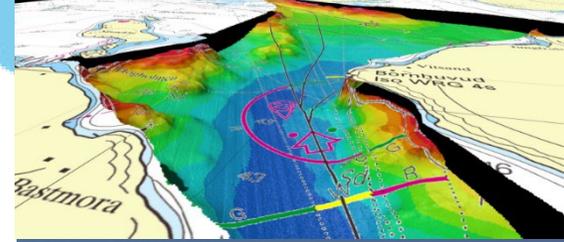
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## PA SAFE

# Baltic Sea E-Nav

Marlene Svegreus | Project Manager | [marlene.svegreus@sjofartsverket.se](mailto:marlene.svegreus@sjofartsverket.se)

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BLUE ECONOMY

Baltic Sea e-Nav

## Baltic Sea E-Nav:

Our project aims to unlock the value of Baltic Sea big data and kickstart the implementation of cutting-edge S-100 navigational products. By fostering transnational cooperation, we ensure seamless navigation despite varying maturity levels across countries. This not only enhances shipping efficiency but also supports the transition to a sustainable blue economy, aligning with the EUSBSR goals.

Our first objective is to empower data producers to generate next-gen navigational products by enhancing their capabilities and upgrading systems to S-100 standards. Secondly, we aim to harmonize these products regionally under BSHC, ensuring a uniform user experience. Through these efforts, we'll roll out the Baltic Sea e-Nav base package, facilitating easier navigation and laying the groundwork for future automation and greener, safer shipping practices.

**The Baltic Sea E-Navigation Project will have a lasting impact on the maritime industry, particularly in terms of improving safety, efficiency, and environmental sustainability.**

### **Impact on the Maritime Industry:**

- **Enhanced Safety:** Real-time or near real-time data on water levels (S-104) and currents (S-111), Bathymetric surfaces (S-102), and ENC (S-101) improves navigation safety and reduces risks.
- **Increased Efficiency:** Precise data enables better route planning, reducing fuel consumption and operational costs.
- **Better Decision-Making:** Real-time/near real-time data allows for informed operational decisions and improved risk management.

### **Tangible Lasting Results:**

- **Standardization of S-100 Standards:** The project ensures that S-101, S-102, S-104, and S-111 are integrated into navigation and maritime operations systems, ensuring that these standards are used consistently throughout the Baltic Sea region.
- **Stronger Regional Cooperation:** Continued collaboration among hydrographic offices.
- **Sustainable Practices:** Enhanced navigation efficiency contributes to reduced environmental impact and lower emissions.

## Looking into the future: Next project after Baltic Sea E-nav in October 2026.

- Development, testing, and implementation of additional S-100 standards for more efficient and safer maritime navigation: S-104 (water level), S-111 (surface water currents), and S-124 (navigational warnings) will contribute to higher precision in Under Keel Clearance (UKC) sailing and provide important safety information displayed in ECDIS.
- Dynamic near-real-time services require a new type of distribution. The project explores and tests the delivery of services using the communication protocol SECOM and the service platform MCP (Maritime Connectivity Platform).
- Focus on end users and mapping their needs and expectations, both from ports and ship officers.
- Collaboration between partners in the Baltic Sea region (Öresund, Kattegat, Skagerrak): hydrographic offices, meteorological institutes, bridge system manufacturers, ports, and educational and research institutions. The project is expected to run from the second half of 2026 to the second half of 2029.



# **EUSBSR**

## EU STRATEGY FOR THE BALTIC SEA REGION

# Thank you!

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# **EUSBSR** EU STRATEGY FOR THE BALTIC SEA REGION

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## PA SAFE

# Speed up re-surveys



Maarit Mikkelsen [maarit.mikkelsen@traficom.fi](mailto:maarit.mikkelsen@traficom.fi)

## Speed up re-surveys background

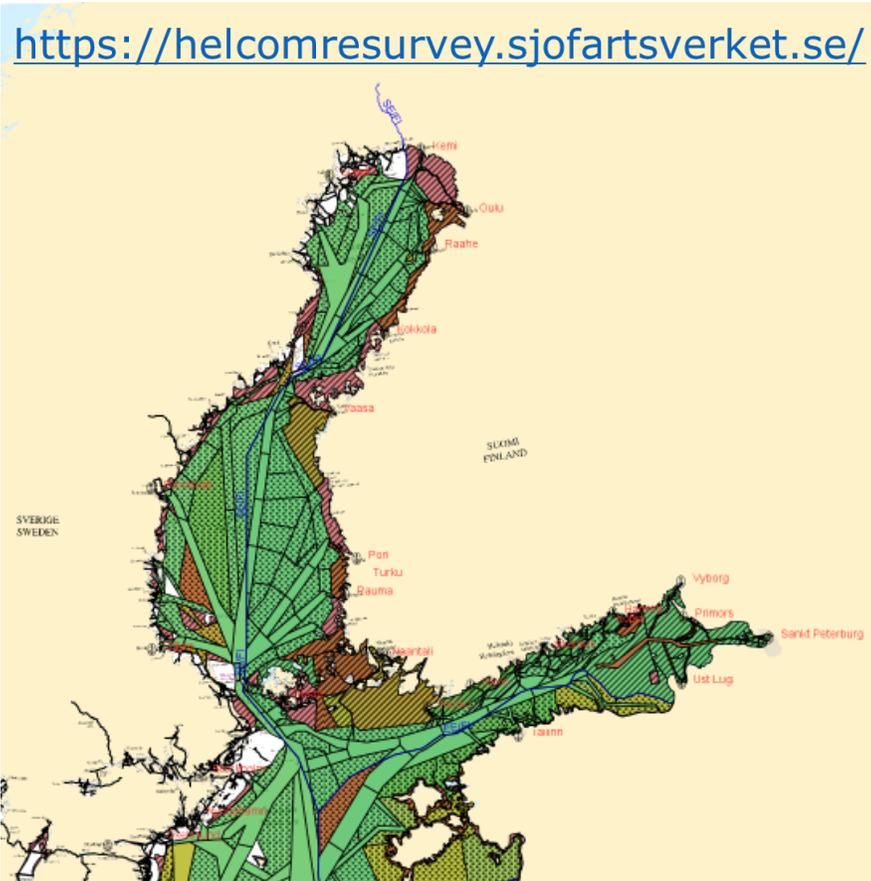
- Updated HELCOM Baltic Sea Action Plan (BSAP 2021), Actions S2 and S3
- BSHC MWG agreed timelines for hydrographic surveying in the Baltic Sea (BSHC MWG: Cat I & Cat II by 2030, Cat III by 2045)
- The aim is that the entire Baltic Sea will be surveyed according to IHO standards and with full seabed coverage.
- Challenges encountered:
  - Funding, since field hydrographic survey work at sea is labour intensive.
  - Precise positioning due to GNSS disturbances
  - Use of new technologies, such as USV, hindered due to lack of national (and international) legislation
  - High density data is classified, not available publicly



# Current status of the Re-survey Scheme and results so far



<https://helcomresurvey.sjofartsverket.se/>



2024:

- CAT I completed
- CAT II remaining ~8 %
- CAT III remaining ~67 %

HELCOM Survey statistics, spring 2024					Completed field surveys and data verified					
[based on e-mails of member states spring 2024]										
Country	CAT I [~year compl]	Cat I area total / remaining [~km²]	CAT II [~year compl]	Cat II area total / remaining [~km²]	CAT I & II total [~km²]	CAT III [~year compl]	Cat III area remaining [~km²]	Cat III area total [~km²]	statistics by	
Denmark	2013	7 631 / 0	2030	14750 / 2874	22 381	2033	9 912	10 926	01.4.2024	
Estonia	2015	8 465 / 0	2035	24 822 / 6877	33 287	2040	2 524	2 956	28.11.2023	
Finland	2016	22 321 / 0	2016	28 678 / 0	51 000	2040	21 380	31 077	31.12.2023	
Germany	2019	3 273 / 0	2025	12 127 / 0	15 400	not applic	-	-	17.6.2024	
Latvia	2015	2 461 / 0	2026	6 368 / 927	8 829	2045	17 784	19 048	15.7.2024	
Lithuania	2019	1 569 / 1	2027	1 823 / 463	3 400	2040	2 389	3 041	1.7.2024	
Poland	2024	3 782 / 268	2021	906 / 0	4688	2039	18 743	25 126	4.7.2024	
Russia	2018		2018		1 200	2017		22 204		
Sweden	2023	48 568 / 0	2023	69 302 / 976	117 870	(*) 2036	35 557	(*) 47 393	31.12.2023	

(\*) SE has prioritized and categorized their Cat III areas (High/Medium/Low). Areas used for navigation completed 2036

## Future work of the Baltic Sea national Hydrographic Offices and Impacts

To progress re-surveys and to enhance the use of the data

- Produce data for EMODnet and for the Digital Twin of the Baltic Sea;
- Safety of navigation and up to date ENC's and nautical charts;
- Enable Interreg Baltic Sea funded Baltic Sea eNav project to pilot S-1XX /S-100 standard products;
- Multiple use of the data, e.g. environmental purposes, Maritime Spatial Planning, recreational use, SAR
- High density data is needed from ports and harbours



## Speed up re-surveys would like to learn

- From ORMOBAS – is the positioning system precise enough for field hydrographic surveys (say horizontal accuracy at platform < 1m)?
- From BS eNav – feedback on usability of the high density data to form S-100 products, from where data is needed to pilot S-100 products further?





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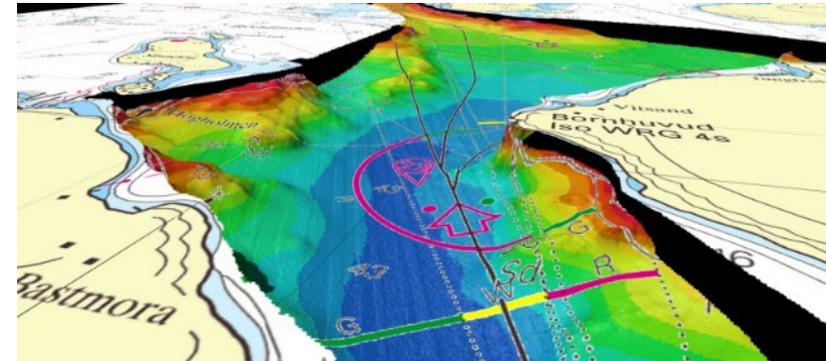
**Thank you!**

Maarit Mikkelsen [maarit.mikkelsen@traficom.fi](mailto:maarit.mikkelsen@traficom.fi)



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- Q & A
- Comments
- Future initiatives needed



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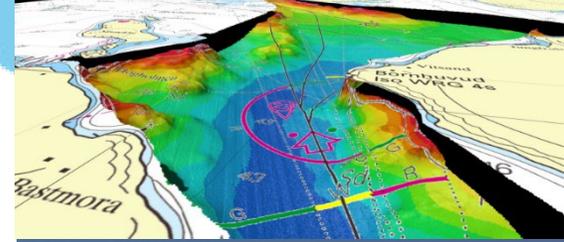
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## PA SAFE

# Sustainable Flow

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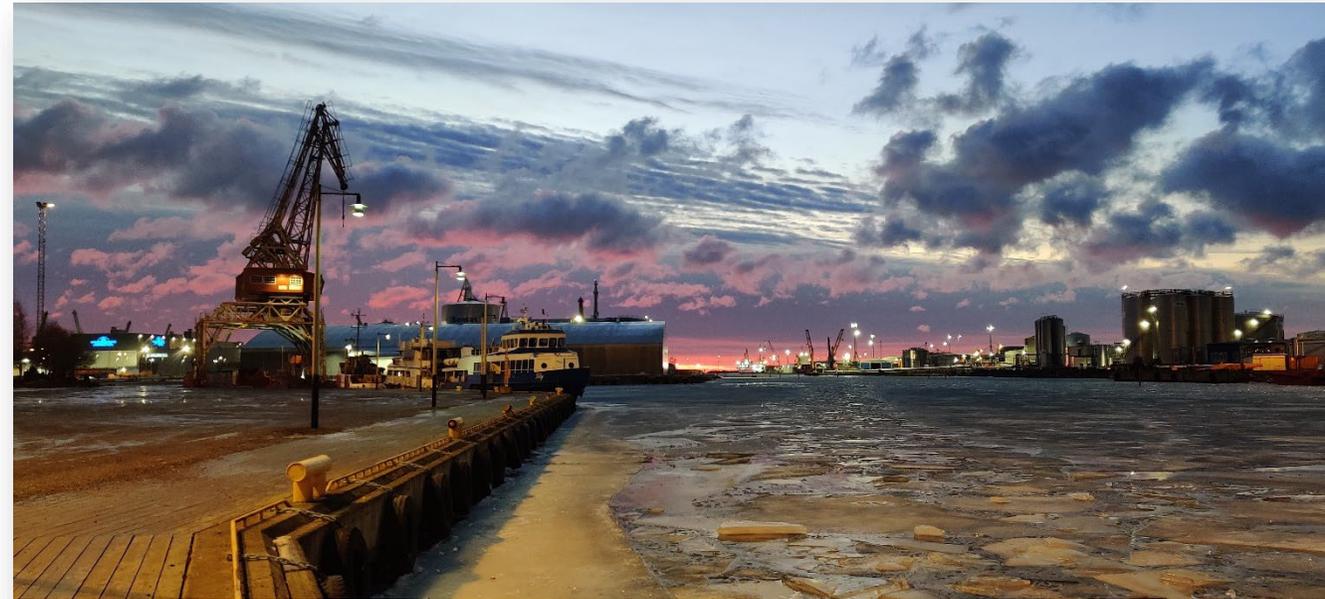
**Sustainable Flow**

Hanna Kajander (hanna.kajander@samk.fi)

Satakunta University of Applied Sciences, SAMK

## Sustainable Flow of Goods and Decreased CO2 Emissions of Transportation

- Development of practical solutions and a **digital tool to support CO2 reduction** and energy saving measures in transportation systems
- A concept for energy savings and **production of renewable energy** in ports as hubs of multimodal operations
- Support of efficient port operations by **sharing plans between ports and icebreakers**



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Central Baltic Programme

Sustainable Flow

## Sustainable Flow – impact on the maritime industry

- An easier way to analyse and report CO2 emissions in ports
- 10% lower CO2 emissions in the seven pilot ports
- Better planning of operations during the period with navigation in ice, both at sea and in ports



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**Sustainable Flow**

## Sustainable Flow – due April 2026: afterlife

- The digital tool developed in the project being implemented in many more Baltic Sea ports
- Further integration of planning between icebreakers and ports – involving more ports as well



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Sustainable Flow

## What would you like to learn from...

- Successful strategies to assure adaption of project results



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**Sustainable Flow**



# **EUSBSR**

## EU STRATEGY FOR THE BALTIC SEA REGION

# Thank you!

Hanna Kajander [hanna.kajander@samk.fi](mailto:hanna.kajander@samk.fi)

<https://centralbaltic.eu/project/sustainable-flow/>

*This activity is supported as part of Sustainable Flow, which is an Interreg Central Baltic Programme 2021–2027 project co-funded by the European Union.*

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the European Union

Central Baltic Programme

**Sustainable Flow**



# **EUSBSR** EU STRATEGY FOR THE BALTIC SEA REGION

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**WINMOS III**



Helena Orädd [helena.oradd@ftia.fi](mailto:helena.oradd@ftia.fi)



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Facility of the European Union

## **WINMOS III - Winter Navigation Motorways of the Seas III**

### **Enhancing year round maritime traffic**

- Safeguarding icebreaker resources (newbuildings, life extensions, pilots for new innovations etc.)
- Ensuring information exchange and optimal utilization and digitalization of supporting systems and services (IBNet, weather and ice data...)

**AND**

### **Finding out more about the future**

- Studies in our mixed projects (changes in operational environment, merchant vessels, ice conditions due to climate change, offshore wind power etc.)



## WINMOS III - Winter Navigation Motorways of the Seas III The impact the project will have on the maritime industry?

- Big and long term investments that require innovative thinking and innovations as solutions
- Generating a base for further development of assets



## WINMOS III - Winter Navigation Motorways of the Seas III

### When is the project due and what do you see happening after the project?

- Project implementation period is until 31.12.2027
  - By results will comprise of:
    - One new Swedish A-class icebreaker
    - One design for a new Finnish B+ icebreaker
    - Better redundancy and enhanced safety for IBNet with possibility to accommodate the new S100 and/or S200 standards in electronic charts
    - Better training facilities and effective means for icebreaker operators' skills management
    - Better understanding of the winter navigation operational environment changes
- During this projects' implementation period we will see WINMOS IV as a natural continuation of its three predecessors



## What would you like to learn?

- Similarities in other transportation modes, system thinking with a neverending number of parameters moving and changing?
- Lessons learned from other EU-projects?
- Common ground and synergies





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SEA REGION

**Thank you!**

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Facility of the European Union

## Focus Winter navigation (Sustainable Flow, WINMOS III)

- Q & A
- Comments
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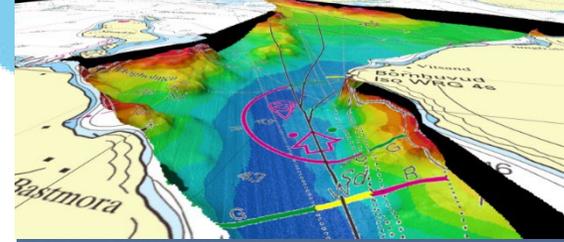
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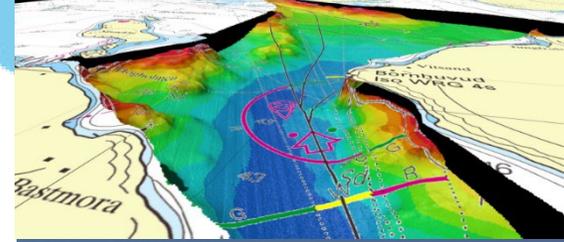
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## **EUSBSR** EU STRATEGY FOR THE BALTIC SEA REGION

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### PA SAFE

# MaDaMe (Maritime Data Methods for safe shipping)

Tero Jokela, Turku University of Applied Sciences

[tero.jokela@turkuamk.fi](mailto:tero.jokela@turkuamk.fi)

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 BLUE ECONOMY  
**MaDaMe**

## MaDaMe:

### The Challenge The Project is Aiming to Solve

- The Baltic Sea is one of the world's most significant maritime regions, with dense traffic and the transportation of hazardous cargoes
- This congestion poses substantial risks to navigational safety, highlighting the need for advanced digital solutions
- Maritime digitalization is advancing rapidly, particularly with IMO's decision to approve the new ECDIS (Electronic Chart Display and Information System) performance standards, which will allow ships to receive real-time digital information directly into their ECDIS.
- While this shift will enhance decision-making by providing more accurate and timely data to support navigators, it also presents challenges for maritime authorities and service providers tasked with implementing these new digital services in the future.

## MaDaMe:

### The impact the project will have on the maritime industry

- The project focuses on developing, piloting, and evaluating new digital information-sharing and messaging services based on the IHO S-100 framework. The three key services developed in the project are:
  - Digital Navigational Warnings, providing timely and accurate warnings to mariners
  - Digital Aids to Navigation, offering real time information on Aids to Navigation
  - Digital VTS Traffic Clearance, facilitating two-way communication for efficient traffic management in the VTS areas
- Insights from the project and the pilots will offer valuable information for the ongoing international standardization work of IHO, IALA, and other international bodies.
- The global standards ensure the interoperability of the equipment and systems required for implementing the digital e-navigation services around the world.

## MaDaMe:

### What news would you want to share externally from the project?

- Services development ongoing
- MCP development ongoing, demo of sending and receiving Navigational warning using MCP presented at IALA by DMA and DMC <https://vimeo.com/1019632391?share=copy>
- ECD/display system development for the piloting purposes ongoing
- VDES terrestrial basestations installed in Denmark and Sweden
- VDES equipment installed for Navigational Warnings service pilots on vessels
- First pilots to be executed spring 2025
- Simulator pilots on VTS traffic clearance service ongoing





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**Thank you!**

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 BLUE ECONOMY  
**MaDaMe**



# **EUSBSR** EU STRATEGY FOR THE BALTIC SEA REGION

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**PA SAFE**

# **OpenRisk II**

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SUSTAINABLE WATERS



**OpenRisk II**

## OpenRisk II:

### The Challenge The Project is Aiming to Solve

The Baltic Sea's maritime risk environment is dynamic and uncertain, necessitating innovative joint risk assessment initiatives for safety and spill response. A need for efficient, joint risk assessments in Baltic Sea intergovernmental work, to avoid inefficiencies, and increased accident risks.

OpenRisk II aims to develop joint regional risk assessment tools that empower maritime authorities to prevent accidents, minimize human and environmental impacts, and enhance risk management. These tools must be user-friendly, practical, and tailored to real-world challenges, ensuring they improve the quality and efficiency of risk assessments in the Baltic Sea region.

## OpenRisk II:

### What will be the tangible lasting results after the project duration?

- OpenRisk II delivers user-focused online risk assessment and risk management tools aimed at preventing maritime accidents, minimizing their impact, and improving risk management:
  - AISyRISK Baltic together with module on ice (link to [AISyRisk Norway](#))
  - EcoSensitivity tool
  - R-Mare Matrix (link to [R-Mare](#)) & Q-Mare (i.e., a risk quality method for tendering process)
- These tools are designed for national maritime authorities, intergovernmental organizations, and other stakeholders.

## OpenRisk II:

### What news would you want to share externally from the project?

- Join our online risk assessment tool workshops! We are forming a **correspondence group** for online/hybrid risk assessment tool workshops. If you are interested, we invite you to join us!
- OpenRisk II Final Conference in June 2026, Kristiansand Norway



[Interreg-baltic.eu/project/openrisk-ii/](https://interreg-baltic.eu/project/openrisk-ii/)

 @OpenRiskII

## What would you like to learn from the audience and other project in same session?

- If you would like to collaborate or discuss the project and its solutions further, please contact us.
- Additionally, we plan to apply for the next **Interreg BSR Project Platform** call (date to be confirmed). If you are interested in joining, feel free to reach out!



# **EUSBSR**

## EU STRATEGY FOR THE BALTIC SEA REGION

**Thank you!**

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SUSTAINABLE WATERS

**OpenRisk II**



# **EUSBSR** EU STRATEGY FOR THE BALTIC SEA REGION

**PA SAFE**

**ORMOBASS**

**Interreg**  
Baltic Sea Region



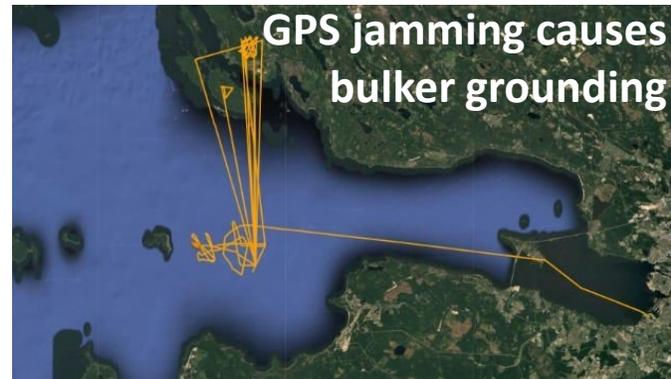
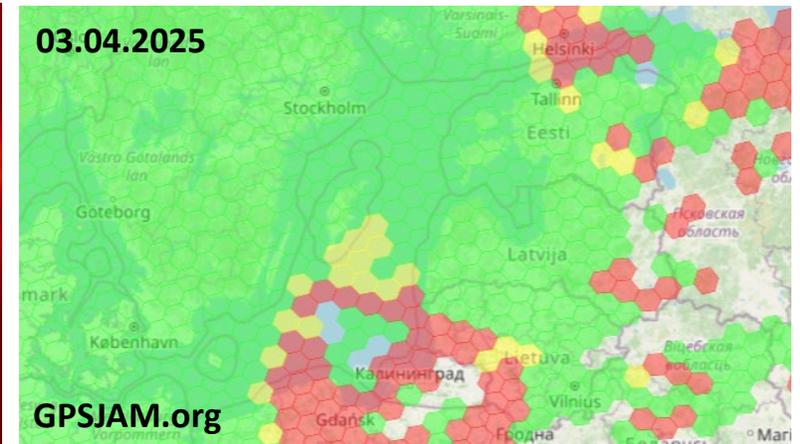
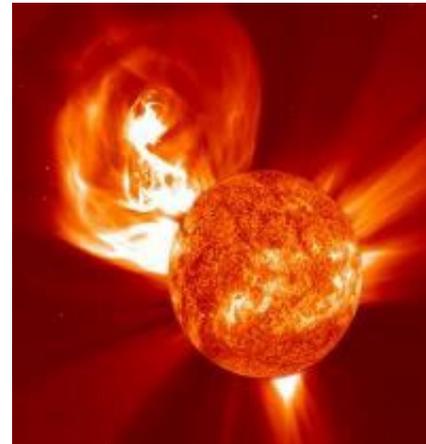
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 BLUE ECONOMY  
**ORMOBASS**

[Niklas Hehenkamp](mailto:Niklas.Hehenkamp@dlr.de) (Niklas.Hehenkamp@dlr.de),  
Stefan Gewies (Stefan.Gewies@dlr.de)  
German Aerospace Center (DLR)

## ORMOBASS: Operational R-Mode Baltic Sea System to support resilient navigation

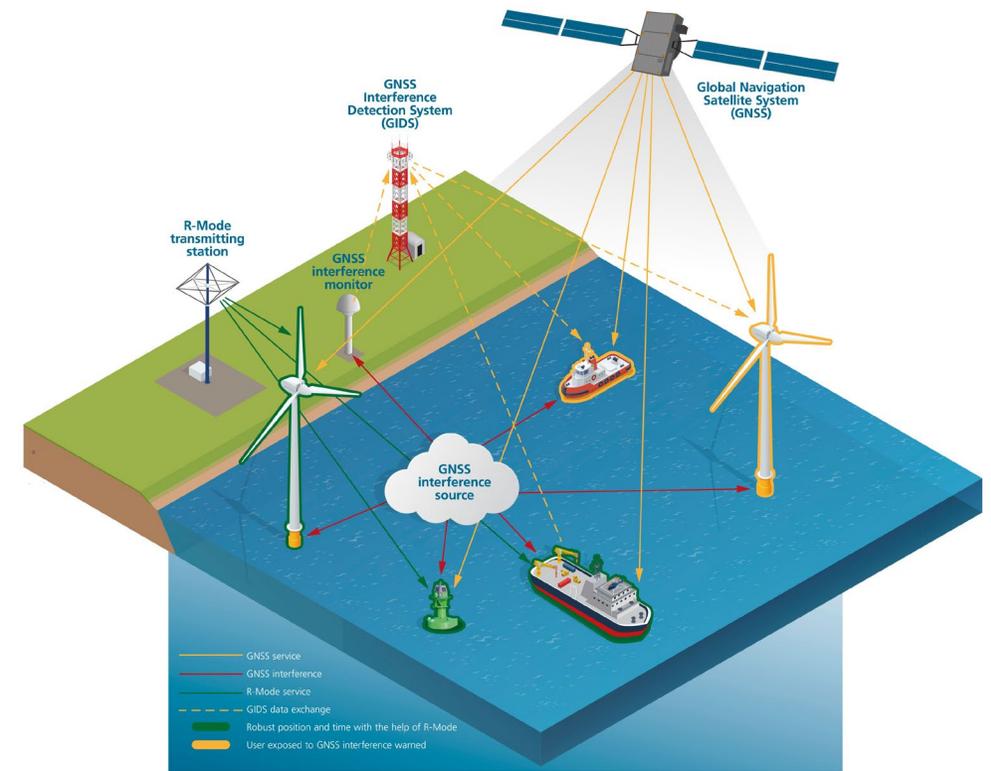
- GNSS (Global Navigation Satellite System)
  - primary source for electronic navigation support at sea
  - signals are vulnerable to interferences
  - jamming serious threat for shipping at the Baltic Sea
- Increased risk for collisions and grounding
- Measures to minimize risks are necessary
  - ensure awareness and provide warnings
  - provide resilient navigation



Source: [The Maritime Executive](#)

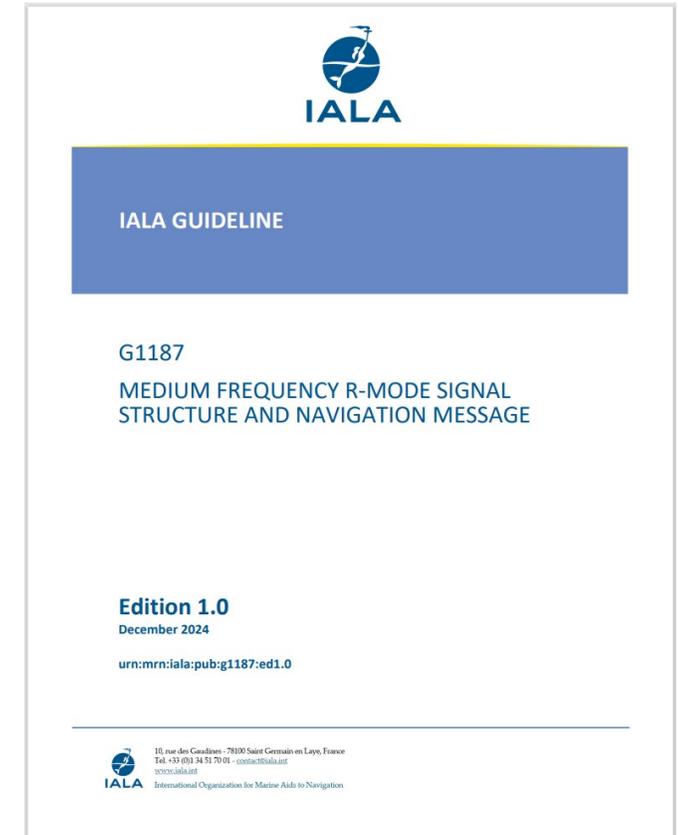
## ORMOBASS: project pilots

- Ranging-Mode (R-Mode): terrestrial backup system for GPS will provide alternative navigation signals at the Baltic Sea
- Supports navigation with positioning accuracy of significant better than 100 m at sea
- **R-Mode Baltic System**: provides pre-operational standardised navigation service between Helgoland and Gulf of Finland
- **On-board receiver**: provides continuous navigation information for marine applications
- **GNSS interference detection system (GIDS)**: provides warning about navigational risks to mariner



## ORMOBASS: project news

- R-Mode Baltic System architecture draft created
- System implementation started (new modulator software and three transmitters procured)
- Successful time and frequency transfer over optical fibre between maritime research infrastructures (ns accuracy)
- Successful VDES R-Mode channel measurements in port of Gdynia
- Standardisation
  - IALA Guideline on medium frequency R-Mode signal published (G1187)
  - IALA input paper about proposal to have a standardised GNSS interference monitoring (S200 series)
  - IMO proposal to develop a performance standards for R-Mode



## What would you like to learn from ...

- Strategies and ideas to get support for Baltic Sea region wide pilot implementation (completion of the R-Mode Baltic Sea system)



ChatGPT



# **EUSBSR** EU STRATEGY FOR THE BALTIC SEA REGION

**Thank you!**

**Niklas Hehenkamp** (Niklas.Hehenkamp@dlr.de),  
Stefan Gewies (Stefan.Gewies@dlr.de)

**Interreg**  
Baltic Sea Region



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 BLUE ECONOMY  
**ORMOBASS**

## Focus Digitalisation and Accident preparedness (MaDaMe, OpenRisk II, Ormobass)

- Q & A
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EU STRATEGY  
FOR THE BALTIC  
SEA REGION

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PA SAFE

**EU MFF consultation**

## EU public consultation on the post 2027 Multiannual Financial Framework

PA Safe (and PA Ship) stakeholders are encouraged to answer the consultation call

Link to various calls: <<https://eusbsr.eu/the-road-to-the-next-multiannual-financial-framework-and-public-online-consultation/>>

It is important to prioritize in **Implementing EU Funds with Member States and Regions** call, in reference with Macro Regional Strategies e.g.:

- \* cross border – multi country funding calls
- \* advocate for simpler and clearer EU funding processes
- \* ensure a strong regional dimension through acro-regional co-operation
- \* align funding clearly with thematic Policy Area actions, specially maritime and shipping

There are other interests as well.

Deadline 6.5.2025

## REQUEST

PA Safe and PA Ship projects are encouraged to provide material to European Maritime Day event, 21.-23.5.2025 in Cork, Ireland.

PA Safe and PA Ship will have a stand ad therefore we kindly ask projects to provide:

1. a A3 size poster (PDF-file to be printed)
2. a PPT-four slider presentation (+ header page), maybe modified from today's presentation (for continuously running PPT slide show on a screen)
3. A4 / 3-folded brochures (say 20-30 pieces), if available
4. Any other small giveaways, that may easily to be carried to the event

Deadline 8.5.2025.

Please e-mail to [emelie.tingstrom@sjofartsverket.se](mailto:emelie.tingstrom@sjofartsverket.se) and [seppo.makinen@traficom.fi](mailto:seppo.makinen@traficom.fi)

Emelie Tingström, Sjöfartsverket, Emigrantvägen 2E, 414 51, Göteborg, Sverige

Seppo Mäkinen, Traficom, Yliopistonkatu 38, 33100 Tampere, Finland

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