



# OpenRisk II Project Mid-Term Conference

## “Maritime Risk Management and Piloting in the Baltic Sea Region”

Held on 26-27 March 2025, in Tallinn, Estonia



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## Introduction of the project

The project OpenRisk II "*Tools for shared & dynamic maritime traffic risk picture of the Baltic Sea region*", initiated in November 2023, is funded by EU's Interreg Baltic Sea Region Programme 2021-2027. The project develops risk assessment and risk management tools designed to assist competent maritime authorities in preventing maritime accidents, while also minimizing their impact on both humans and the environment. The focus lies in enhancing the overall quality of maritime risk management. Specifically, the aim is to prioritize user needs by concentrating on practical solutions that directly tackle real-world challenges encountered by maritime authorities and other end-users of the tools. This approach ensures that the tools are not only user-friendly but also highly effective in elevating the standard of risk management across the board.

The tools developed in OpenRisk II are:

- 1) **AI SyRisk Baltic** (Baltic adaptation of the AISyRISK tool (<https://aisyrisk.no>)) presents the risk picture in the risk landscape of the Baltic Sea in an interactive map and graph format, accessible online. It will also feature **a new risk assessment module on ice navigation**, which could have applications beyond the Baltic Sea Region. Primarily designed for long-term planning and risk mitigation, this tool helps users better understand and address maritime risks.
- 2) **The EcoSensitivity tool** is a cutting-edge web-based decision support system designed to evaluate the consequences of oil spills on marine environments. It covers all stages, from defining accident specifics to modeling oil distribution and ecological impacts, providing comprehensive insights for effective response planning. (<https://gis.sea.ee/bluebiosites/>; EcoSensitivity tool).
- 3) **The R-Mare matrix** is a risk maturity model that allows maritime administrations to assess their current risk management performance and identify areas for improvement, guiding them toward higher maturity levels. Additionally, **a method for assessing quality during the tendering process of maritime risk studies** introduces specific evaluation criteria, ensuring that the proposals meet required standards for reliable and actionable results.

The project consortium consists of 7 partners including Finnish Transport and Communication Agency Traficom (Finland, Lead Partner), Aalto University (Finland), Norwegian Coastal Administration (Norway), Gdansk University of Technology (Poland), University of Tartu (Estonia), University of Helsinki (Finland) and Northern Dimension Partnership on Transport and Logistics (NDPTL) secretariat (Intergovernmental).

## Aim of the Conference

The OpenRisk II Mid-Term Conference, organised 26.-27. of March 2025 in Tallinn, focused on engaging national, regional, EU, and global stakeholders to gather valuable feedback, refine, and validate the risk assessment and risk management tools. Piloting workshops provided a critical opportunity for testing and collecting feedback to ensure the tools are user-friendly, practical, and optimized for real-world application.

The conference gathered 55 participants representing national, EU, and intergovernmental authorities and policymakers, academic institutes, and industry sector from different countries across the Baltic Sea, Nordics and other parts of the Europe. Altogether, participants across 9 different countries were represented. See the list of participating organizations as Annex I.

**On Day 1**, the objective was to set the stage through presentations on end-user needs on national, regional, EU and international levels as well as the potential solutions the OpenRisk II project contributes to.

**Day 2** shifted focus to collaborative piloting workshops, translating the end user needs expressed on Day 1 to detailed specifications of the OpenRisk II outputs. In three parallel piloting workshops the participants were introduced to the initial versions of the tools developed in the project. The sessions demonstrated how the tools function and how they can be applied for risk assessment and management. Depending on their interests, the participants could choose two workshops out of three that interested them the most.

See the full agenda for the conference as Annex II.

## Summary of conference day 1

The conference started with welcoming words from the main organizers and host of the event, represented by Anneliis Kõivupuu from the University of Tartu and Jakub Montewka from the Gdansk University of Technology.

The first session of the conference focused on the international and EU approaches and needs for new risk management tools. Two keynote presentations were given by Omar Frits Eriksson (IALA; Presentation 1) and Víctor Díaz Seco (EMSA; Presentation 2). To go deeper into the national and regional efforts regarding risk assessment tools and approaches in managing hybrid threat in current situation on the Baltic Sea, a keynote presentation was given by Jaak Viilipus (Estonian Ministry of Climate; Presentation 3). Presentations and discussions highlighted the importance of adapting to emerging threats and evolving challenges. One example is the increasing need to assess our capacity to respond to low-sulphur oil spills using available knowledge and technologies. This calls for improvements to existing simulation models to better reflect the characteristics, impacts, and behaviour of these newer fuel types. Another major concern raised was the growing number of vessel gatherings in the Gulf of Finland, alongside the broader issue of the 'shadow fleet' operating in the Baltic Sea—both of which present serious risks. Reflections on the keynote presentation and further points for discussions were made by Sakari Kuikka (University of Helsinki; Presentation 4).

To explain and show how the challenges and needs will be addressed, project partners provided presentations outlining the key components of the OpenRisk II project during the next session. Mirka Laurila-Pant, representing the lead partner, the Finnish Transport and Communications Agency Traficom, offered an overview of the project (Presentation 5). This was followed by more detailed presentations on the AISyRISK Baltic and the new ice module (Presentation 6), and the Environmental Sensitivity Decision Support Tool (Presentation 7). Additionally, organizational risk management maturity and evaluation of risk assessment quality tool R-Mare was presented side by side with a risk quality method for tendering process (Presentation 8). The presentations were followed by Q&A session to gather feedback and thoughts from the participants. The day ended with a wrap-up session with a brief look at the agenda for day 2.

## Summary of conference day 2

Day 2 shifted focus to collaborative piloting workshops, translating the end user needs expressed on Day 1 to detailed specifications of the OpenRisk II outputs (Presentation 9). Based on the feedback received from the participants during the two sessions of three different workshops, the following general remarks and notes were made:

### Group Work on AISyRisk Baltic & ice module

**Organizers:** Aalto University, Norwegian Coastal Administration and Gdansk University of Technology

The Baltic adaptation of the AISyRISK tool presents the risk picture in the risk landscape of the Baltic Sea in an interactive map and graph format, accessible online. It will also feature a new risk assessment module on ice navigation, which could have applications beyond the Baltic Sea Region. Primarily designed for long-term planning and risk mitigation, this tool helps users better understand and address maritime risks. The current AISyRisk tool is accessible by <https://aisyrisk.no/>.

The workshop focuses on demonstrating the current AISyRisk tool and the methodology underlying the tool as well as the new method for ice module (Presentation 10). Participants are introduced with the presentations and demonstration of the current tool and new designs. Discussions take place in an interactive manner.

General feedback and discussions on the current tool and methodology:

- Shadow fleet detection is raised and discussed on the implementation of the tool
- The tool is commented as world-class and discussion on inclusion in IALA documentation
- The cost of running and system after project is mentioned and discussed
- Wintertime accident analysis for three/four years are discussed and further analysis is ongoing
- The combination of using AISyRISK and e.g. IWRAP is mentioned for comprehensive analysis
- The comparison with real accidents is suggested and drawbacks are also discussed
- Question on how it is used in practical work
- Discussion with icebreaker captain on cutting loose operation records and difficulties
- Discussion on trend rather than as a predictive tool was raised
- Possibility of implementing different grounding ahead sector (other than 20 minutes)
- The methodology of ice module should be included as an additional chapter in the methodology report
- Discussion with icebreaker captain about ships that pose a higher risk in ice – this is mostly based on personal experience if the icebreaker captain and IBNet service data; difficult to capture
- The issue of storage, processing and accessibility of high resolution AIS data in cooperation with EMSA was raised.



- The question of when the tool will be fully accessible
- Accident type should also be included in trend analysis
- New types of fuels should be considered in consequences analysis
- Further agreement between Baltic countries may be needed to use the tools for strategic risk assessment
- Discussion of the storage and processing of AIS data and the calculations used in the tool, as well as the future costs of this.

## Group Work on Environmental sensitivity decision support tool

**Organizers:** University of Tartu and University of Helsinki

The second workshop focused on the EcoSensitivity tool (<https://gis.sea.ee/bluebiosites/>; click on EcoSensitivity tool). The aim of the workshop was to test the online tool and gather crucial feedback from the participants. Participants were given the experience to use it on their own, under the guidance of the tool developer. The structure of the workshop contained three different steps and was as follows:

Step 1: EcoSensitivity tool developer and programmer first gave an overview about the tool. It was introduced how to create an account, log in and which sub-tools (ADSAM, STW, PW4B) the main EcoSensitivity tool contains. Additionally, the purpose of each of the sub-tools was introduced and discussed.

Step 2: Second, a short introductory video was shown with a comment from the developer.

Step 3: Participants registered themselves and started to test the tool themselves according to the instructions by the developer.

In general, the tool was well received. Participants reflected the usefulness of the tool in the operational response of the oil spill to protect the most vulnerable species and ecosystems. It was indicated also that the tool probably raises the interest to decline oil spills and helps to understand how to react in the case of the spill. It was also highlighted that the oil movement and footprint in SeaTrack Web (STW) was incredibly interesting to see. However, during the first session we faced some technical problems with using the tool, which will be fixed after the conference workshops. Because of that, the second session was slightly restructured, and 3<sup>rd</sup> step was replaced by the step-by-step showcase by the tool programmer and the participants could ask questions and discuss the advantages and disadvantages of the different functionalities of the tool at the same time.

The feedback gathered during the two sessions will be crucial in the improvement of the EcoSensitivity tool to meet the needs of the end-users. Below is a summary of key observations from both sessions combined.

Participants provided feedback on both the technical functionalities and practical implementation of the tool. Key observations included:



Technical improvements:

- ADSAM model is currently little bit “raw” and under complicated, should be improved for easier interpretation.
  - In the results tabs “Time” needs units.
  - Currently only grounding model is active and usable. Collision model should be fixed, in that case both tankers’ damages during the collision will be taken into account.
- Some of the steps (analysis) are taken longer than expected (in STW especially)
  - Should consult deeper end-users of the tool (who are responding operationally if an oil spill happens) about which timeframe would be optimal for the calculations of oil spill movement in the STW. Currently it’s calculating every 15 minutes, maybe longer timestamp would be also acceptable. In that case, tool calculations will be much faster.
- In PW4B module creating a polygon feature takes longer time when several users are in at the same time.
  - To add units (biomass, abundance etc.) for nature assets and interpretation of colors on a map.
  - To add photos/pictures of nature assets.
  - TIFF downloading not working currently on a results tab, CSV available for downloading the results.

Practical implementation:

- The user manual is crucial for such a tool. It’s good that the first version is already out, but it has to be improved for easier readability.
- In STW around 20 different fuels are currently available, now newer types during the last years. To include new fuel typer (ULSFO etc.), the model owner SMHI should update it, or alternative option is to develop a regional/local model like STW, that would also include new fuel types, but this would need some other new project in the future, too much for this project.
- It was asked does the STW also show how long the oil will stay in the environment. It considers evaporation and other natural processes but doesn’t show directly how long the oil will stay in the environment.
- It would be nice if at the end of the tool (PW4B results tab) there would be some kind of summary report/table or instructions on how user should interpret the results.
- It was indicated that for researchers at least it will be important that the data used in the calculations would be possible to track – data transparency. Also, for which map layers which datasets are used.
- It was mentioned that at the end of the project it would be interesting to see how the EcoSensitivity and AISyRisk tools support each other and will be connected.



## R-Mare & Risk Quality Method for Tendering Process

**Organisers:** Finnish Transport and Communications Agency Traficom and Northern Dimension Partnership on Transportation and Logistics

The third workshop focused on two key outputs: the R-Mare Matrix, a risk maturity model for maritime authorities, and a tool for assessing quality in the tendering process of maritime risk analysis (Presentation 11). Additionally, participants were introduced to the next steps in piloting these tools to encourage their involvement in later stages of the project.

- The first session aimed to test the R-Mare Matrix tool (accessible at [gis.sea.ee/r-mare](https://gis.sea.ee/r-mare)) and collect feedback. Through expert discussions, the session also explored how the tool could be used in different organizations.
- The second session focused on a draft version of the tool designed to evaluate the quality of risk analysis in tendering. The goal was to validate the concept with stakeholders and gather a broader perspective on quality elements relevant to the tendering phase.

Both tools were well-received and have the potential to enhance the overall risk management performance of organizations and tendering processes. The feedback gathered will be instrumental in refining these tools for practical use in maritime risk management and risk analysis procurement. Below is a summary of key observations from both sessions.

### Session 1: R-Mare Matrix

Participants provided feedback on both the technical functionalities and practical implementation of the tool. Key observations included:

Technical improvements:

- Provide outputs in table and numerical formats (e.g., Excel, CVS-formatted file) to facilitate integration with other systems.
- Improve features for saving previous answers and comparing results within the same organization. This would help track progress over time.
- Ensure attribute descriptions are easily readable.
- Address technical issues, such as scaling of output figures and mobile compatibility.
- Reassess the purpose of the community overview feature, clarifying who the respondents are and whether the comparisons are meaningful.



#### Practical implementation:

- The tool was seen as easy to use and low-cost to implement. It could serve as a first step in risk management by providing an overview of the current situation and identifying areas for improvement.
- The usefulness of the tool was seen to be always related to the context of the organization using it. To enhance adaptability, the tool should allow users to add their own risk attributes or subcategories to the existing ones.
- Organizations with existing risk management tools need to carefully consider how to integrate R-Mare into their system. Technical integration might not always be necessary or practical.
- For organizations without established risk management practices, the tool could act as a starting point for development.
- Clearly defining who within the organization should complete the assessment is crucial. Gathering responses from different levels of the organization can improve the accuracy of the results. The tool also has potential for internal audits. Additionally, involving external stakeholders or customers in the evaluation process could help reduce bias.

#### Session 2: Quality of Risk Assessments in Tendering

The results of the second session showed that tendering for risk analysis, and tendering in general, is a challenging process. While the tool has the potential to help, there are certain pitfalls to avoid:

- A key takeaway from the participants was that each tendering process is unique, and the evaluation criteria should be defined as precisely and clearly as possible. To do this, it is essential to first determine what you want and don't want as the outcome of the risk analysis. Therefore, the quality criteria should be modifiable to fit the specific tender.
  - Tenders should then explain how they will meet the presented criteria. If the criteria are defined precisely, it will be more likely that the descriptions will be comparable and measurable between the tenders.
  - A well-defined scope helps minimize the risk of receiving tenders with vastly different approaches. However, being too specific might limit the use of new and innovative methods.
- Clarity in evaluation criteria and their weightings is critical to ensuring a fair and objective assessment. The quality criteria must be clearly defined in the call for tenders, alongside price and other factors.
  - To avoid subjective interpretation clearly measurable criteria (quantitative or qualitative) should be preferred.



- The tool could use a two-stage approach, where technical and financial capacity is first assessed as a minimum requirement to filter proposals before evaluating quality. The first step could use a simple Yes/No evaluation.
- It was noted that previous experience of the company should not be used as a quality criterion in the evaluation. For instance, it cannot be used as a quality criterion to disqualify the company if they have not completed their previous work well.
- Evaluators should be experts in the field. The tool should not be designed with the expectation that non-experts can use it effectively.
- Other general issues related to tendering were also discussed, for example:
  - Setting clear contract terms, including delay penalties, helps ensure accountability.
  - The balance between quality and price is crucial: abnormally low offers may be awarded tenders despite poor quality, making appropriate weighting essential.

## Pre-conference questionnaire results

Before the conference a questionnaire was sent out to all the registered participants. The aim was to give the participants the opportunity to share their views on the current maritime risk environment at the Baltic Sea and get familiar with OpenRisk II tools before the conference.

Out of the 66 registered participants, 8 answered. Considering that the response rate was low, all the pre-conference questionnaire answers should be taken with that information in mind.

To get familiar with the background of the participants, they were asked to evaluate their experience in several risk management related issues using a scale from 1 to 5 (1=strongly disagree to 5 = strongly agree). The results show

that most of the respondents considered themselves experienced in maritime risk management in general (highest average rating, ~3.7) (Figure 1). Lowest scores were received to the expertise on impacts of oil on marine ecosystems.

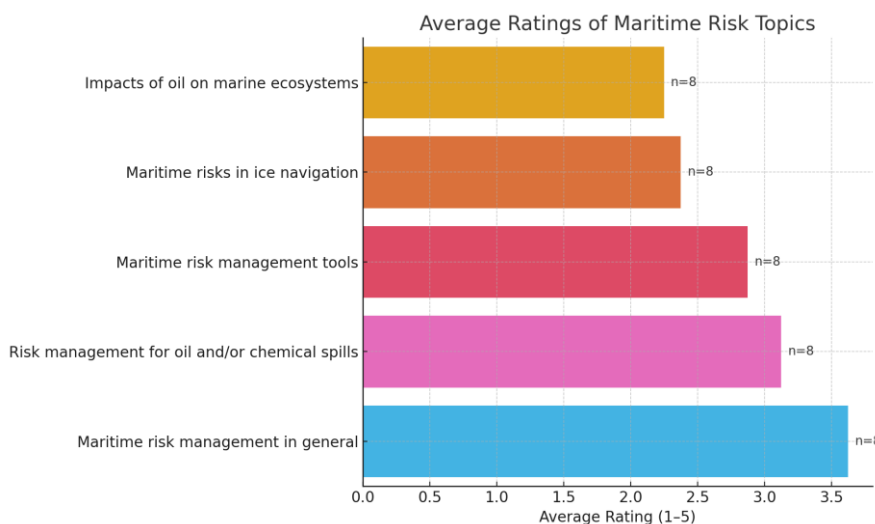


Figure 1: The average ratings of the expertise in the 5 different topics based on the self-evaluation of the respondents.

### Perceptions of the Maritime Risk Environment of the Baltic Sea

Participants described the current maritime risk landscape in the Baltic Sea as increasingly complex and continuously evolving. Many noted the growing geopolitical tensions, especially in light of recent global events, which have amplified the sense of insecurity. Additionally, environmental risks were highlighted, including pollution from vessels (notably oil spills), non-compliance with environmental regulations, and challenges tied to the shadow fleet operating in the region. Several respondents stressed the need for improved monitoring and response capabilities, especially in the face of rising maritime traffic and economic activities.

### Most Urgent Issues to address

The respondents prioritized the need to address oil pollution and its persistent threat to the Baltic Sea ecosystems. They also emphasized protecting biodiversity and natural habitats, as well as curbing illegal or non-transparent shipping practices. The presence of a large shadow fleet, often flagged under non-compliant or less-regulated

jurisdictions, was repeatedly cited as a major concern. Some also pointed out the necessity of enhancing cross-border cooperation and preparedness to effectively manage both environmental and security-related risks.

The respondents also provide their initial feedback on the tools developed under the OpenRisk II project. The questionnaire included short descriptions complemented with other available materials (links to the tools, introductory videos and use manuals). As the tools are currently in different stages of development, the basis for evaluating them was not the same.

### Feedback on the AISyRisk Baltic Tool

Participants appreciated the AISyRisk Baltic tool's ability to provide a quick overview of maritime risk using up-to-date AIS data. Features like visual risk charts, area-specific risk mapping, and statistical summaries were noted as especially valuable for gaining insights into high-risk zones and shipping intensity. Some suggestions for improvement included enhancing the clarity of risk metric representations (e.g., nautical mile values), tailoring features more closely to specific user groups, and refining the user interface for greater ease of interpretation.

### Feedback on the EcoSensitivity Tool

Respondents highlighted the tool's ability to visualize the consequences of oil spills and predict affected areas as key strengths. The graphical representation was seen as helpful in communicating environmental risks and potential impacts. However, some users found it difficult to provide detailed feedback due to limited interaction with the tool. Suggestions included for example that the ADSAM tool (one sub-tool of the EcoSensitivity) could also include a possibility that the spill may happen from ships manifold and main deck during cargo transfer or bunkering if it's not already included. Additionally, that oil spill affected area could be determined more realistically by taking weather data from local sensors.

### Feedback on the risk management and assessment tool

Participants appreciated the tool's simple and clear user interface, along with its visual self-evaluation capabilities. These features were seen as helpful for identifying organizational strengths and gaps in risk management practices. Suggestions for improvement were limited but included refining the interface, particularly in how users interact with and adjust input parameters.

## ANNEX I: List of Participating Organizations in the Conference

Participating Organizations	
1. Transport Accidents and Incidents investigation Bureau	17. GDWS
2. Riga Technical University	18. Estonian Fund for Nature
3. University of Tartu, Estonian Marine Institute	19. MA/JS Interreg Baltic Sea Region
4. Kotka Maritime Research Centre	20. HELCOM
5. Estonian Transport Administration	21. Finnish Transport Infrastructure Agency
6. RISE	22. Estonian Ministry of Economic Affairs and Communications
7. Estonian Ministry of Climate	23. Aalto University
8. Gdansk University of Technology	24. Politechnika Gdanska
9. The Norwegian Coastal Administration	25. Kymenlaakso Rescue Department
10. Arctia Icebreaking Oy	26. Finnish Transport and Communications Agency Traficom
11. Finnish Border Guard HQ	27. IALA
12. NDPTL Secretariat	28. EU SBSR PA Maritime Safety
13. RTU Latvian Maritime academy	29. Estonian State Fleet
14. TalTech Estonian Maritime Academy	30. EMSA
15. University of Helsinki	31. Finnish Environment Institute
16. Estonian Ministry of Regional Affairs and Agriculture	

## ANNEX II: Full agenda of the Conference

### Programme of the OpenRisk II Project Mid-Term Conference on Maritime Risk Management and Piloting in the Baltic Sea Region 26th to 27th March 2025, Tallinn, Estonia

**Venue: Tallink Spa & Conference Hotel, Sadama 11a, 10117 Tallinn**

#### Day 1 (Wednesday 26.3.2025, 12:00-17:15)

**12:00 – 12:30** Registrations and coffee table with snacks

**12:30 – 12:45** Introductions / Context of the event

- **Anneliis Kõivupuu**, University of Tartu
- **Jakub Montewka**, Gdansk University of Technology

**12:45 – 13:45** International and EU approaches and needs for new risk management tools

- **Omar Frits Eriksson**, Deputy Secretary-General, IALA
- **Víctor Díaz Seco**, Senior officer, European Maritime Safety Agency (EMSA)

**13:45 – 14:15** National and regional approaches in managing hybrid threat in current situation on the Baltic Sea

- **Jaak Viilipus**, Head of the Maritime Affairs Department, Ministry of Climate (Estonia)

**14:15 – 14:45** “Chairmans summary” of the keynotes

- **Sakari Kuikka**, University of Helsinki

**14:45 – 15:30** Coffee Break

**15:30 – 15:45** Overview of OpenRisk II project and key points from the Kick-off Conference

- **Mirka Laurila-Pant**, Finnish Transport and Communications Agency Traficom

**15:45– 16:45** Presentation of the OpenRisk II tools

AISyRisk Baltic & Ice module

- **Jon-Arve Røyset**, Norwegian Coastal Administration
- **Osiris Valdez Banda**, Aalto University
- **Jakub Montewka**, Gdansk University of Technology

Environmental sensitivity decision support tool

- **Jonne Kotta**, University of Tartu

R-Mare & Risk quality method for tendering process

- **Valteri Laine**, Finnish Transport and Communications Agency Traficom
- **Hermanni Backer Johnsen**, Northern Dimension Partnership on Transport and Logistics Secretariat

**16:45 – 17:00** General discussion about OpenRisk II tools



17:00 – 17:05 Wrap-up of the day

- **Anneliis Kõivupuu**, University of Tartu

17:05 – 18:30 Free time

18:30 – ca. 20:30 Dinner at F-Hoone (*Telliskivi street 60a, 10412 Tallinn; covered by the project*)

## Day 2 (Thursday 27.3.2025, 09:00-15:30)

09:00 – 9:30 Registration

09:30 – 09:35 Welcome words

09:35 – 09:50 Setting the scene for Day 2 and key points from Day 1

- **Mirka Laurila-Pant**, Finnish Transport and Communications Agency Traficom

09:50 – 10:00 Introduction to piloting workshops

- **Anneliis Kõivupuu**, University of Tartu

10:00 – 11:45 Piloting workshops

*Groups (~1.5h sessions, people are asked to join one of the groups indicated in registration form):*

1. [AISyRISK Baltic & Ice module](#)
2. [Environmental sensitivity decision support tool](#)
3. [Tools for organizational risk management maturity & Evaluation of quality of risk assessments](#)

11:45 – 12:45 Lunch break buffet in the venue (*covered by the project*)

12:45 – 14:15 Piloting workshops (continued, 2<sup>nd</sup> preferred workshop group)

14:15 – 14:35 Short break

14:35 – 15:15 Wrap-up of the piloting workshops

15:15 – 15:30 Final Discussion and closure of the conference

- **Anneliis Kõivupuu**, University of Tartu

The most up-to-date agenda and information can be found from the project [WEBSITE](#).

*OpenRisk II project (2023-2026) is co-funded by the EU Interreg BSR programme 2021-27.*



## ANNEX III: List of presentations

Presentation 1\_IALA\_International Approach to Risk Management\_Omar Frits Eriksson

Presentation 2\_EMISA's work in support of Risk Assessment and ongoing discussions to make the PRS toolbox future proof\_Victor Diaz Seco

Presentation 3\_National and regional approaches\_Jaak Viilipus

Presentation 4\_Reflections on the keynote presentation and further points for discussion\_Sakari Kuikka

Presentation 5\_Overview of OpenRisk II project and key points from the Kick-off Conference\_Mirka Laurila-Pant

Presentation 6\_AISyRisk Baltic & Ice module\_Osiris Valdez Banda\_Jon-Arve Røyset\_Jakub Montewka

Presentation 7\_Environmental sensitivity decision support tool\_Jonne Kotta

Presentation 8\_R-Mare & Risk quality method for tendering process\_Valtteri Laine\_Hermann Backer Johnsen

Presentation 9\_Setting the scene for Day 2 and key points from Day 1\_Mirka Laurila-Pant

Presentation 10\_AISyRisk Workshop\_Automated calculation of risk related to ship traffic\_Jon Arve Røyset

Presentation 11\_R-Mare & Risk quality method for tendering process-workshop\_Valtteri Laine\_Mirka Laurila-Pant\_Vesa Arki\_Hermann Backer Johnsen