Collaboration to enhance marine security in turbulent times

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Theme: Secure & Digital Ocean

Welcome and introduction

Frans Sjölander, Stockholm Environmental Institute, and Eveline Buyck, De Blauwe Cluster welcomed the audience to the workshop and introduced themselves.

Frans explained that the content of the today workshop has originated from the insight that rising geopolitical tensions and security issues are affecting offshore activities and actors working within the field of the blue economy. Frans also highlighted that the purpose of the workshop was to explore the challenges and opportunities surrounding actor collaboration in relation to maritime security.

Eveline presented Blue Cluster and explained why the workshop focused on the topic of security of marine infrastructure. As a way of setting the scene Eveline described that the European economy is already today highly dependent on the European seas, and that the Blue Economy is growing in importance. Yet this is happening against a backdrop of rising geopolitical turbulence causing new kinds of security risk, threats and challenges to blue economy actors, in particular touching in the energy and communications sectors and maritime transport and ports.

To navigate this changing landscape, it is important to understand the risks but also potential opportunities for solutions and collaboration. Eveline presented a previously conducted SWOT analysis assessing strengths, weaknesses, opportunities and threats. Maritime infrastructure is inherently complex, acting as a natural deterrent against potential threats. Wind farms consist of dispersed assets, making it difficult for malicious actors to occupy or disrupt these locations. Furthermore, there is a strong awareness of security among stakeholders, supported by well-developed contingency plans that can be promptly activated in case of incidents. Despite these strengths, there are vulnerabilities that require attention. Wind farms lack physical fencing, which makes physical access less controllable. Additionally, these sites are often located in open seas, beyond territorial waters, presenting legal and jurisdictional challenges. Another critical concern is the potential impact of incidents on the energy supply, given the essential role of wind farms in the energy transition. There are significant opportunities to further enhance security.

Establishing forward-based fixed installations could provide strategic advantages. Strengthening continuous monitoring and ensuring regular presence at these locations could significantly improve response times during emergencies. Technological advancements, such as expanded 4G, 5G, and future XG coverage, also open new avenues for improved communication and remote surveillance. At the same time, various threats must be addressed. The operational environment at sea presents unique challenges, including threats on, above, and below the water surface. Harsh conditions can complicate operations and limit response capabilities. Moreover, both physical and cyber threats remain persistent risks to this critical infrastructure.

Keynote speakers

Frans Sjölander, Stockholm Environmental Institute

Frans presented Stockholm Environment Institute and the work related to marine security conducted by SEI in the research projects Mistra Geopolitics and Mistra Co-Creating Better Blue (C2B2). Both projects explore the role of collaboration in mitigating security risks and co-creating solutions, which was also the topic of today's workshop. Frans described how the workshop would focus on actor collaboration in relation to the security of marine infrastructure against the backdrop presented by Eveline.

Frans described how marine security and co-existence between different activities has recently become a contentious topic in his native Sweden. In November, the Swedish government rejected 13 applications to build offshore wind parks in Sweden's Exclusive Economic Zone of the Baltic Sea, citing geopolitical tensions and security concerns. The ensuing national debate on co-existence between offshore wind and the Swedish armed forces has sometimes been heated but has also demonstrated the need for better actor collaboration on security issues and marine infrastructure. Frans continued by describing conclusions from a recently conducted study as part of the research programme Mistra Geopolitics, one of the conclusions stressed the need for governance structures that facilitate co-existence between security and renewable energy goals.

Today's workshop builds on two previously organized round-tables on the same topic and Frans shared insights from those discussions. SEI organized a workshop at the previous Mission Arena in Riga to explore the need for informal regional dialogues to address the complex security challenges affecting European seas. The event resulted in a broad range of reflections on emerging threats and how countries can formulate a regional response. Similarly, Blue Cluster has previously organized a round-table discussion focused on challenges for protection of offshore critical infrastructure and port facilities.

Rodrigue Bijlsma, Managing partner, Officers on Watch

In his keynote presentation, Rodrigue Bijlsma shared insights from Officers on Watch to give the audience a better understanding of the maritime domain. He stressed the connection between safety and security issues, and how different actors must collaborate to address multiple risks, which requires improved “hybrid awareness”. Furthermore, it is essential to understand security weaknesses related both to security - e.g. vessels performing malicious activities underwater that are not visible - and to safety e.g. the risk of accidents if shipping routes are close to offshore infrastructure.

Pitches

Six speakers were invited to share short presentations of interesting solutions and approaches.

Torsten Linders, Programme Director, Mistra Co-creating Better Blue Torsten talked about how to govern the multiple demands posed on the ocean. To explore this, the project Co-Creating Better Blue has set up three living labs with innovation experiments in real-life settings around Swedish coasts. Torsten stressed that for co-creation to occur and innovations to be adopted, the stakeholders involved need to develop a common language.

Lottie Dahl Ryde, Regional Development Strategist, Region Blekinge Lottie described the work of the Marine Technology Centre located in Karlskrona in Sweden. The centre functions as a collaboration platform between academia, industry and government. As a success factor for collaboration, Lottie emphasized that actors need to allocate time to get to know each other and build trust.

Thomas De Meester, Innovation Manager IMEC Thomas presented IMEC’s mission-driven research in interaction with regional industry and described their focus on resilient critical infrastructure. He stressed that security is an important enabler of the blue economy.

Karel Buijsee, Chief Product Officer, e-BO Enterprises Karen explained how digital solutions facilitate cooperation by ensuring that all relevant stakeholders have access to necessary data. This must however be managed with due consideration of national legal requirements, EU regulations like GDPR, and cyber safety precautions.

Auke Huistra, Director Industrial & OT CyberSecurity, DNV Cyber Auke highlighted the need for collaboration between actors involved in the safe and secure operation of an offshore wind farm. Current megatrends and geopolitical tensions increase demands to enhance offshore wind farm security, not least against cyber threats. Auke described how offshore wind farms can be manipulated and how the industry is developing counter measures. One example is the new joint industry project on offshore wind cybersecurity by DNV and Siemens Energy.

Walter Driesen, Business Development Manager, dotOcean Walter's presentation related to maritime infrastructure monitoring, including how to detect perimeter intrusion. In particular, he described a new solution for maritime infrastructure where a hybrid, distributed multi-sensor network improves the situational awareness.

Panel discussion with audience participation through Slido

Marijn Rabaut, Blue Cluster, and Maria Sköld, Stockholm Environment Institute, moderated a panel discussion with Rodrigue Bijlsma, Karel Buijsse, Walter Driesen, Auke Huistra, Torsten Linders and Thomas De Meester. The starting point was a set of questions that were also posed to the audience through the digital tool *Slido*. The panellists then gave their view on the questions and statements and commented on the audience's answers.

Participants in this workshop:

- Science: 44%
- Industry - Service Provider: 24%
- Policy: 24%
- NGO: 8%
- Industry - Asset Owner: 4%
- Security Expert: 8%
- Defence: 0%

This indicates that the largest group of participants identified themselves as working in science, followed by equal representation from the service provider industry and policy. Smaller groups came from NGOs, asset owners, and security experts.

What is maritime security for you in one word?

Comments by the panelists:

- Cross-border collaboration, e.g. in order to enable detection beyond the limits of one country, is important. However, with 27 countries, cross-border collaboration is also difficult. Distances and the detection of vessel far out are two challenges.
- Regarding "Safety", the panelists had expected the word to feature more prominently: "we don't have security if we don't have safety".
- Trust among actors is important for collaboration.

Is the North Sea exposed to security threats more than other sea basins in the EU?

- No, the Baltic Sea is more exposed: 56%
- No, the North Sea is more exposed: 28%
- No, the Mediterranean is more exposed: 0%
- No, the Black Sea is more exposed: 17%
- No, the Arctic is more exposed: 11%

The majority of participants (56%) believe that the Baltic Sea is more exposed to security risks than other sea basins in the EU. The North Sea follows with 28%. None of the participants identified the Mediterranean as the most exposed, while smaller groups selected the Black Sea (17%) and the Arctic (11%).

Comments by the panellists:

- The Slido results make sense in light of recent developments in the Baltic Sea, it is not surprising that the Baltic Sea comes to mind when thinking about security threats.
- It is however important to understand that each sea basin faces its own risks. As home to Europe's largest ports, the North Sea is particularly exposed to a specific set of security risks (beyond the war-related), e.g. smuggling and drug trade that enters countries through the harbors and trade ports.
- It is important to factor in the potential impact of different risks. The North Sea region is densely populated and a key trade hub with intense container traffic etc.
- It is also home to a significant amount of critical infrastructure so disruptions here would have major consequences in large parts of Europe. This perspective is important to bear in mind; in comparison, the much-publicized damage of the North Stream cables may not have directly caused damage to any private person on land. To summarize, it is essential to reflect both on the likelihood of risks occurring and of the potential consequences.
- The paradox is that exposure to security risks can make it even more difficult to collaborate, even if collaboration is essential to mitigate some risks.

Will multi-use contribute to cooperation on maritime security?

- Yes: 78%
- No: 22%

Comments by the panellists:

- Thanks to offshore wind parks we can learn more about what is going in the EEZ. The OWFs allow us to have a good image of passing vessels and generate useful data. Thereby we become more aware of activities in our own sea area and it is easier to collaborate with others.
- When discussing military risks with OWFs, we must also consider the value brought by the data we get from multi-use; the net result will probably be positive.
- The industry would probably not mind if they were obliged take multi-use into greater consideration in their design.

Technological solutions are ready to be implemented at sea

- Yes: 57%
- No, there is still a technological gap: 43%

Comments by the panellists:

- Two conflicting points of view: do we already have the necessary technology in place, or do we need to develop new solutions? If the technology exists, the discussion should center around how regulations, incentives and business models can facilitate implementation and application. But if the technological solutions are not yet sufficient, focus will be on which applications should be developed.
- If the market is not encouraged to find solutions related to security at sea – the market will not develop new technologies.

What innovations are urgently needed for tackling security challenges at sea?

Comments by the panellists:

- The need for early warning systems and sub-sea level innovation technologies were mentioned.

Is one infrastructure more critical than another?

- Yes: 86%
- No: 14%

Wrap-up

Frans Sjölander, Stockholm Environmental Institute, wrapped up the workshop by reminding the audience about the purpose and outline of the workshop. He highlighted two key takeaways. Firstly, the need to talk more about how to enhance collaborating, noting that trust was one of the most-mentioned words during the day. Secondly, Frans commented on the interesting debate on whether we are primarily facing a technical challenge or an implementation problem. The workshop participants' conclusion was that technical applications are still often missing but also that existing solutions are not used to the extent needed. Moving forward, actors and stakeholders must work much closer together to accelerate both technical innovation and implementation.