

Report on the Conference
“Maritime Security 2024: Innovations and
Partnerships for the Future”

Praia, Cabo Verde – 08/09 October 2024

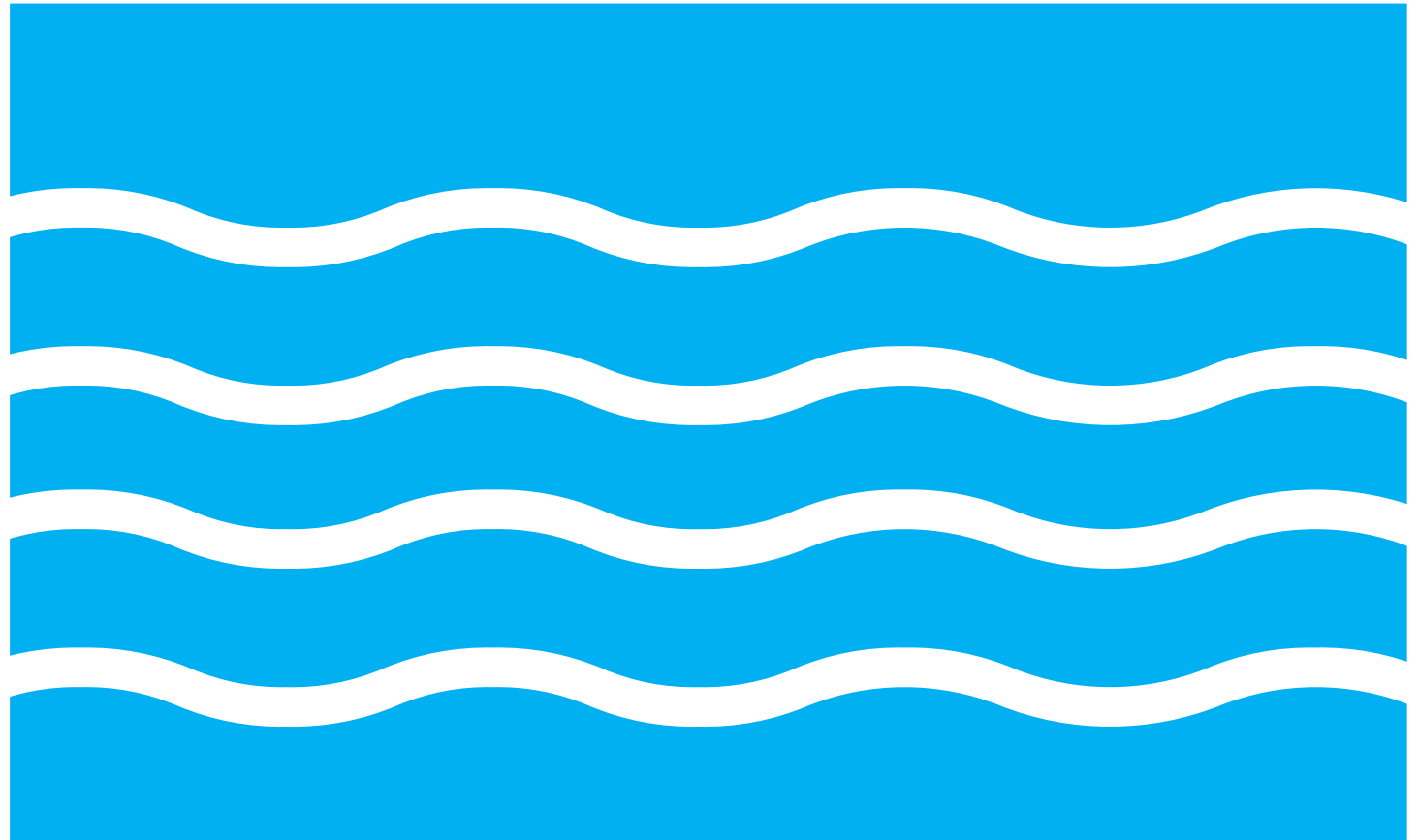




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List of Abbreviations

AIS	Automatic Identification System
AI	Artificial Intelligence
CRESMAO	West Africa Regional Maritime Security Center
CSP	Cybersecurity Plan
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EMSA	European Maritime Safety Agency
ESG	Environmental, Social and Governance
EO	Earth Observatory
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GFFO	German Federal Foreign Office
IUUF	Illegal, Unreported and Unregulated (fishing)
IMO	International Maritime Organization
ISIPSK	Creating Synergies between Indigenous Practices and Scientific Knowledge (research project)
ISMI	Institut de Sécurité Maritime Interrégional
IT	Information Technology
LRIT	Long-Range Identification Tracking
MAOC (N)	Maritime Analysis and Operations Center (Narcotics)
MMCC	Maritime Multinational Coordination Center
OSCM	Ocean Science Center Mindelo
OT	Operational Technology
PSO	Port Security Officer
RPAS	Remotely Piloted Aircraft Systems
SAR	Synthetic Aperture Radar
SOC	Security Operations Center

SSF	Small-Scale Fisheries (related to FAO guidelines)
T-AIS	Terrestrial Automatic Identification System
T-RMN	Transregional Maritime Network
UAV	Unmanned Aerial Vehicle
UNITAR	United Nations Institute for Training and Research
VMS	Vessel Monitoring System

Report on the Conference “Maritime Security 2024: Innovations and Partnerships for the Future”

Praia, Cabo Verde – 08/09 October 2024

The recent conference “Maritime Security 2024: Innovations and Partnerships for the Future” held on the 8 and 9 October 2024 in Santiago Island, was hosted by the Government of Cabo Verde, and brought together various stakeholders to address pressing maritime security issues. The conference was organized by the *Atlantic Centre*, (AC) the *International Maritime Organization* (IMO) and the *United Nations Institute for Training and Research* (UNITAR), and was financed by the *German Federal Foreign Office* (GFFO).

The event highlighted the need for innovative approaches and collaborative efforts to address maritime challenges and the blue economy, while understanding in the process, the sheer diversity of opportunities that arise when collaborative and comprehensive strategies focused on regional development are developed.

Maritime Security is a vast topic with an intersection on sub-fields of knowledge such as Illegal, Unreported and Unregulated Fishing (IUUF), critical infrastructure (such as ports or submarine cables) and going as far as exploring the intersection that new technologies such as satellite monitoring and artificial intelligence (AI) may change decision making processes and operational theaters as a whole.

This report summarizes the main aspects discussed at the 2-day conference while, based on what experts and various stakeholders alike presented, to offer recommendations that may guide the larger public towards better understanding of the complexities anchored in the Atlantic Ocean, with an accessible deliverable highlighting several topics that are normally dense and complex, deserving respective reports of their own.

This exercise is structured in two levels: 1- Summaries of the main aspects of all panels held during the conference and 2- on two levels of recommendations.

Holistic, far-reaching recommendations based on the overall structure and insights of the conference and focused, specific recommendations, which are attached at the end of each panel’s summary. Through this structure, it is intended that the two-levels of

information can be expressed and thus help the reader on a better understanding of the main challenges but also opportunities on maritime security in the Atlantic.

Objectives and Themes

Starting with the “objectives and themes”, the central objective of the conference was to promote international cooperation in strengthening maritime security and recognizing the vital role of the oceans in sustaining the Blue Economy. The main topics of discussion were:

- 1. Importance of Maritime Resources:** Participants emphasized the important role of the oceans in economic development, sustainability and global security. The dual nature of opportunities and challenges in managing the maritime domain was recognized.
- 2. Technological Advances:** The role of cutting-edge technologies, in particular AI, satellite surveillance and unmanned aerial vehicles (UAV), in enhancing maritime security was highlighted. These innovations are essential to address and mitigate various threats.
- 3. Collaborative Efforts:** It was evident that addressing maritime security issues requires a collective approach involving governments, industry and civil society. Building strong partnerships was seen as essential to achieve resilient maritime operations.
- 4. Regional Cooperation:** The conference highlighted the need for Atlantic countries to work together and establish frameworks for cooperation, sharing knowledge and resources to strengthen security in shared maritime areas.

Speeches and Presentations

The agenda included numerous speeches and presentations from international and regional organizations, outlining current maritime security strategies and the key role of inter-agency cooperation, information sharing, and effective presence at Sea. Highlights included:

- **National Ownership:** Speakers emphasized that maritime security initiatives must be defined and taken up by coastal states in accordance with their national strategies.
- **Integrated Approaches:** Panelists discussed the importance of a comprehensive security strategy that addresses traditional and new challenges posed by globalization and technology.
- **Innovative Technology Solutions:** Speakers shared ideas on new technologies that can transform approaches to maritime security, highlighting the use of drones and sophisticated data analytics for real-time surveillance and situational awareness.
- **Private Sector Engagement:** The need to actively engage the private sector in maritime security discussions was highlighted, with a focus on creating a regulatory environment that encourages investment in security technologies and infrastructure.
- **Port Security and Maritime routes:** With the geopolitical theater in the Atlantic changing rapidly through over-arching complexities such as climate change and the renewal of maritime trade routes, speakers pointed to the importance of resilient and sustainable infrastructures that can safeguard national and regional interests both at sea and on land.

Key Recommendations

Before this report gets into a detailed summary of the panel, it is relevant to write on the holistic recommendations shed throughout the conference. The event concluded with a series of commitments aimed at improving maritime security in the Atlantic region and the main recommendations thus are:

- 1. Strengthening Cooperation:** All stakeholders were encouraged to underline cooperation through joint initiatives and improved information exchange.
- 2. Investing in Technology:** Governments and the private sector were urged to invest in new technologies to improve surveillance, operational effectiveness and sustainable presence at sea.
- 3. Capacity Building:** The need for educational initiatives, training programs and conferences such as this one, to prepare maritime professionals for the challenges ahead was highlighted.
- 4. Holistic Security Strategies:** Participants called for integrated approaches that link maritime security to broader socio-economic development goals (the UN sustainable development goals as an example)
- 5. Continuous Dialogue:** A framework for continuous dialogue was proposed to ensure that strategies remain adaptable to evolving maritime threats. Dialogue may take the form of Seminars, Webinars or specialized courses, targeting a “whole-of-society” framework.

The Conference

The Maritime Security Conference was structured by 9 panels dedicated to several issues in the Atlantic and with experts from across all sectors of the Atlantic geopolitical scenario.

With the ownership and commitment of Cabo Verde, an Atlantic nation with an Atlantic predisposition, the Conference thus started with the opening intervention of Dr. Miryan Djamila Sena Vieira, State Secretary of Foreign Affairs.

Panel 1 - Building Stronger Maritime Networks

In the session "Innovations and Partnerships for the Future: Maritime Security," participants focused on enhancing maritime security and fostering the growth of the blue economy in the Atlantic. The importance of Cabo Verde's strategic location and vast EEZ was highlighted, emphasizing that Atlantic security is crucial not only for the country but also for global trade, which relies heavily on maritime routes.

Maritime security was discussed beyond traditional threats like piracy and trafficking, extending to environmental preservation and sustainable use of ocean resources. The need for international cooperation to address transnational threats was emphasized, along with the role of technological innovation in improving maritime surveillance. Advanced technologies such as drones, satellites, and data analytics were highlighted as essential for securing Atlantic waters.

The panel also discussed the blue economy, stressing the balance between resource exploitation and conservation for long-term sustainability. Regional cooperation initiatives and centres like the Atlantic Centre and the Partnership for Atlantic Cooperation were mentioned as relevant to addressing common challenges and deliver to the Atlantic community with consistent and periodic knowledge production. Finally, the panel called for collective action and stronger inter-agency, regional, and international cooperation, encouraging participants to turn discussions into concrete actions for a secure and prosperous Atlantic.

Recommendations

- **Strengthen collaborative networks between sectors:**
 - Engage multiple sectors (governments, private sector, international organizations) in blue economy security and development activities to strengthen the resilience of regional and global economies.
 - Explore public-private partnerships to drive innovation in maritime security and ocean sustainability, ensuring financial and technical support from different stakeholders.
- **Translate discussions into concrete action**
 - Ensure that agreements and discussions at conferences are translated into concrete actions and projects and monitor the progress and results of cooperative initiatives.
 - Strengthen presence in international fora to ensure continued support and exchange of best practices between Atlantic countries.

Panel 2 - Sustainable Innovations / Blue Economy

Panel 2 focused on sustainable innovations in the maritime realm to potentially strengthen the Blue Economy. The *Ocean Science Center* (OSCM) in Cabo Verde, which acts as a pivotal hub for marine research, technology exchange and sustainable ecosystem management across West Africa was presented. It demonstrates and exemplifies how Cabo Verde's unique environmental factors, such as deoxygenation, volcanic activity and rich marine biodiversity, position the country as a critical site for studying climate change impacts. OSCM's efforts focus on scientific research, public outreach, and cross-sectoral collaboration with local authorities, such as the Cabo Verde Coast Guard, to enhance regional environmental resilience. Moreover, the global shipping industry's response to environmental, social and governance (ESG) standards were outlined. The discussion of these responses shed light on challenges

such as reaching net-zero emissions, supporting seafarer welfare and navigating complex regulatory landscapes. In relation to these responses, the need for a balanced, inclusive transition that considers all stakeholders as the industry moves toward sustainable practices, adopting green fuels, digitalizing operations and improving cybersecurity were emphasized. Above all, the importance of Cabo Verde's geostrategic position for the private industry was repeatedly stressed as companies support the region's economic growth through comprehensive logistics and transport services, handling millions of passengers and substantial cargo across the archipelago. The discussion shed light on how this allows Cabo Verde to emerge as a regional investment destination due to companies operating emphasizing sustainability through digitalization, automation and workforce training.

Recommendations

- **Invest in Green Technologies and Digitalization:** Support investments in green fuel alternatives, digital systems and cybersecurity to meet ESG goals, improve operational efficiency, and reduce environmental impact across maritime operations.
- **Enhance Policy Support for Sustainable Practices:** Work closely with policymakers to create and enforce regulations that support sustainability in the maritime sector, covering areas like resource conservation, emission reduction and ethical supply chains.
- **Develop Comprehensive Training Programs:** Building a skilled and adaptable maritime workforce is critical to effectively managing technological advancements and sustainable practices. Training initiatives ensure that maritime professionals are well-equipped to address evolving industry challenges, particularly in a technology-driven landscape.

Panel 3 - How Can Space Technology Be Used in Maritime Surveillance?

During the discussions of Panel 3 on the usage of space technology in maritime surveillance, the critical role of advanced surveillance technologies and international cooperation in enhancing maritime security and resource protection was highlighted. To exemplify the usage of space technologies, Argentina's efforts to combat illegal, unreported and unregulated (IUU) fishing within its EEZ served as a case study. Argentina faces significant challenges from unauthorized vessels, including those sanctioned by the unrecognized Falkland Islands/Malvinas government, which threaten the country's maritime sovereignty. To address these issues, Argentina has implemented an integrated surveillance strategy utilizing satellite-based systems such as automatic identification system (AIS) SAT, Long-Range Identification Tracking (LRIT) and the Transregional Maritime Network (T-RMN). Additionally, the synergy of Argentina's SAOCOM and SABIA-MAR satellites provides comprehensive monitoring of maritime activities, pollution and environmental conditions. Generally, the need for robust international collaboration and data sharing to strengthen regional maritime security and protect national resources was emphasized.

In a similar vein, the *European Maritime Safety Agency's* (EMSA) use of space technologies to enhance maritime domain awareness within the EU served as an additional example. EMSA employs a range of tools, including Terrestrial and Satellite AIS, vessel monitoring systems (VMS) and remotely piloted aircraft systems (RPAS) to monitor vast maritime areas in near real-time. Using *Earth Observatory* (EO) services with Synthetic Aperture Radar (SAR) and optical imagery, EMSA enhances its ability to detect vessels, monitor oil spills and identify illegal activities. The agency is also investing in new technologies like thermal sensors and high-resolution imagery to improve automated threat detection and response capabilities. Above all, the panel underscored the importance of leveraging advanced space technologies and fostering international cooperation to enhance maritime security, protect ecosystems and ensure sustainable use of ocean resources.

Recommendations

- **Leverage Advanced Satellite Surveillance:** Invest in expanding the use of satellite-based technologies such as high-resolution imagery and synthetic aperture radar to enhance real-time maritime monitoring, detect illegal activities and protect national maritime interests.
- **Strengthen International Cooperation and Data Sharing:** Foster deeper collaboration between countries and agencies to share surveillance data and coordinate responses to maritime threats, ensuring a more secure and sustainable use of global maritime resources.
- **Enhance Real-Time Monitoring Systems:** Invest in systems like RPAS and thermal sensors to provide near real-time monitoring is vital for improving maritime domain awareness.

Panel 4 - Port Authority Collaborations

Panel 4 extensively discussed the essential role of port safety and security in supporting economic growth across West and Central Africa, with a particular focus on Cabo Verde, Ghana and Nigeria. A primary challenge identified is the lack of effective regional cooperation among port authorities, which hinders coordinated responses to shared port security threats. It was emphasized that enhancing collaboration among West and Central African countries is crucial for establishing a secure maritime environment. This security is foundational for advancing the Blue Economy as economic growth in areas such as sustainable resource use, trade and tourism relies on safe and protected waters. Moreover, approaches to tackle respective challenges that limit economic growth due to maritime insecurity were addressed. To address the respective challenges, innovative strategies, such as the establishment of a specialized port inspection unit used by NIMASA in Nigeria, for a securer maritime sector to counter the undermining of regional stability and economic potential were proposed. Above all, the panel underscored that improved regional cooperation, strategic security initiatives and specialized units are vital for

strengthening maritime security, thereby unlocking the full economic potential of the Blue Economy in West and Central Africa.

Recommendations

- **Strengthen Regional Cooperation:** Foster greater collaboration among Port Authorities in West and Central African countries to ensure a coordinated approach to shared maritime security challenges.
- **Enhance Security Infrastructure:** Invest in infrastructure and technology to improve surveillance, monitoring and rapid response capabilities across maritime borders.
- **Increase Capacity Building and Training:** Developing comprehensive training programs ensures that security personnel are well-prepared to handle complex maritime security threats. A skilled workforce is critical to implementing and sustaining security measures effectively in the face of evolving challenges.

Presentation of the MMCC Zone G in Praia and Piracy Incident

The presentation on the *Maritime Multinational Coordination Center* (MMCC) Zone G provided a detailed analysis of a recent maritime security incident involving the hijacking of the vessel MT FIDAN, emphasizing the critical role of regional cooperation in combating piracy. It introduced MMCC Zone G's background, noting its establishment in Praia, Cabo Verde, through agreements with *Economic Community of West African States* (ECOWAS) to enhance maritime security across West Africa. This regional framework, with MMCC Zone G at its core, coordinates resources, communications, and joint actions among neighboring states. Central to this approach is the Yaoundé Architecture, a multi-level collaboration model encompassing political, interregional, national, and multinational partnerships across West and Central Africa. This network of centers, including MMCC Zone G, facilitates intelligence sharing and cooperative security operations to address regional maritime challenges. Speaking of

maritime security challenges, the hijacking of the MT Fidan on May 17, 2024, approximately 363 nautical miles off Cabo Verde, illustrated possible future challenges. Armed pirates boarded the vessel, restrained the crew, and disabled key systems such as AIS, GPS, and radar. Although no cargo was stolen, the pirates' Slavic-accented communication raised questions about their non-African connections and motivations, leaving unresolved concerns about the attackers' affiliations and objectives. Overall, the presentation underscored the importance of coordinated responses, with MMCC Zone G and the Yaoundé Architecture as essential frameworks for regional security. Through shared resources, intelligence, and cross-border collaboration, MMCC Zone G and its partners play an instrumental role in securing maritime operations across Africa and beyond.

Recommendations

- **Enhance Regional Collaboration:** Strengthen cooperative efforts across West and Central Africa through the Yaoundé Architecture, enabling better intelligence sharing and coordinated security responses to maritime threats.
- **Improve Technological Capabilities:** Invest in advanced surveillance and communication systems for vessels and ports, ensuring resilience against piracy-related tampering and improved real-time tracking across maritime zones.
- **Focus on Capacity Building and Training:** Implement specialized training programs equips maritime personnel with the skills needed to address modern security challenges, including the use of new technologies. This is vital for maintaining a prepared and capable security force in the face of evolving threats.

Opening Intervention - S.E. Miryan Vieira

In her address in the beginning of the second conference day, S.E. Miryan Vieira drew attention to the Atlantic Ocean's strategic role in global maritime security and emphasized the importance of cooperation and innovation in addressing the region's complex challenges. She put forth the idea of an "Atlantic vision" that could foster a secure ocean corridor and promote sustainable development in Atlantic-bordering nations. This aligns with Cabo Verde's National Sea Strategy, which integrates socio-economic and security dimensions to enhance maritime governance and surveillance. She put forward three key pillars to achieve these objectives: first, developing integrated strategies aligned with international commitments while recognizing Cabo Verde's pivotal Atlantic position; second, fostering collaboration between public and private stakeholders, citing initiatives like SWAIMS and ZOPACAS; and third, advancing international partnerships with a focus on capacity building, advanced technologies such as AI, and coordinated actions against transnational crime.

The Secretary of State also highlighted the importance of the Yaoundé Architecture and the G-Zone Centre's operationalization, suggesting that there might be value in exploring ways to enhance collaboration among Atlantic security frameworks. She called for special attention to the unique needs of African island nations, including bolstering maritime surveillance capabilities.

Panel 5 - National, Regional and International Maritime Security Strategies in Support of Investment and Development

The panel on "National, Regional and International Maritime Security Strategies in Support of Investment and Development" emphasized the critical connection between maritime security, regional cooperation, and sustainable economic growth in the Atlantic. The strategic importance of maritime security for regional stability was highlighted, with *the ECOWEAS Integrated Maritime Strategy* (EIMS) making significant strides in improving security, supported by organizations like the EU and the UN. The creation of multilateral coordination centres, such as the *West Africa*

Regional Maritime Security Center (CRESMAO), has enhanced the region's ability to tackle piracy and maritime crimes.

Advanced surveillance technologies, including satellite tracking and radar, were identified as essential for improving maritime safety, alongside joint patrols organized through ECOWAS naval agreements. Regional and global cooperation, notably through initiatives like the *Fisheries Committee for the West Central Gulf of Guinea* (PESCAO), has strengthened maritime governance and resource management, essential for combating illegal activities like IUU fishing. Sustainability was a key theme, with responsible resource management and efforts to protect marine ecosystems vital for sectors such as tourism and fisheries.

Upgrading port facilities and enhancing resilience to maritime hazards were seen as crucial for supporting growing trade and attracting investment. The modernization of ports, development of maritime economic zones, and sustainable fisheries were highlighted as key elements of the SMIC strategy. Additionally, the importance of workforce training and technological innovation in sectors like renewable energy and aquaculture was underscored for driving sustainable development in the blue economy.

In conclusion, the panel emphasized the need for continued efforts for an integrated, comprehensive strategy that balances economic growth, maritime safety, and environmental sustainability to ensure a secure and prosperous maritime future.

Recommendations

- **Utilize advanced surveillance technologies:** Provide resources for advanced surveillance systems such as satellite tracking and radar to enhance maritime security, especially in high-risk areas.
- **Create a cohesive legal system:** Formulate and synchronize regional legal frameworks to address unlawful maritime activities, including IUU fishing and other maritime offences.
- **Balancing economic growth with environmental sustainability:** Implement a holistic strategy that combines economic progress, maritime safety and environmental protection to ensure a safe and prosperous maritime future.

Panel 6 - Protection of Critical Infrastructure

Panel 6 “Protection of Critical Infrastructure” focused on strategies to secure vital maritime and port systems through comprehensive cybersecurity and anti-corruption measures. Experts from prominent organizations such as the *Maritime Analysis and Operations Center - Narcotics* (MAOC-N), ECORSYS and UNITAR discussed the need for a multifaceted approach to safeguard critical infrastructure. To showcase the importance of doing so, a case study of Aqaba Port revealed vulnerabilities within operational technology (OT) and information technology (IT) systems highlighted the significance of identifying and mitigating cyber risks within ports, particularly in Africa. To address these vulnerabilities, speakers emphasized the development of robust cybersecurity plans (CSPs) aimed at reducing exploitation risks and protecting critical systems through tailored protection measures. Furthermore, organizational recommendations included creating specialized cybersecurity roles such as *Cybersecurity Officer* (CSO), along with establishing *Security Operations Centers* (SOCs) to manage cyber incidents and ensure consistent monitoring. The security framework also called for multi-layered teams consisting of static and mobile security, specialized crisis responders, and real-time intelligence gathering to provide comprehensive protection. Speaking of protection, the presentation outlined good practices for tackling corruption, advocating for multiagency cooperation, automated digital reporting and staff rotation to enhance supply chain integrity. Emphasis was also placed on cybersecurity governance where defined roles support continuous monitoring, threat analysis and training to strengthen cybersecurity resilience. Finally, speakers stressed the importance of legislative compliance, recommending adherence to IMO guidelines and national regulations to create standardized cybersecurity practices across ports and maritime infrastructure. In conclusion, the experts advocated for a holistic, structured approach combining advanced technology, effective governance and rigorous incident management to protect critical maritime assets comprehensively.

Recommendations

- **Strengthen Cybersecurity Infrastructure:** Implement CSPs to address vulnerabilities in OT and IT systems across ports, with a focus on reducing exploitation risks and enhancing system resilience.
- **Establish Specialized Cybersecurity Roles and Teams:** Create dedicated roles such as CSO and PSO and set up SOCs for incident management, prevention and continuous monitoring.
- **Invest in Continuous Training and Threat Monitoring:** Provide ongoing training for security personnel and establish real-time monitoring systems for threat detection, intelligence gathering and continuous improvement on updated threat analysis.

Presentation - Enhancing Coastal Community Partnerships

Nana Kweigyah, President of the Canoe and Fishing Gear Owners Association of Ghana, emphasized the importance of building strong partnerships with coastal communities to enhance maritime security, environmental stewardship and community empowerment. Coastal communities play a vital role in maritime security, using their local knowledge and sustainable practices for effective monitoring. The presentation advocated for inclusive collaboration strategies such as training and capacity building while also incorporating local knowledge into policy decisions. Private sector investments in sustainable initiatives and technology were encouraged to support these efforts. The “*Creating Synergies Between Indigenous Practices and Scientific Knowledge*” (ISIPSK) project was mentioned to demonstrate successful shared decision-making within coastal communities, particularly empowering women’s participation. Initiatives such as the *Landing Beach Enforcement* (LaBEC) and the #SafetyAtSea campaign illustrated effective community-led enforcement and participatory surveillance, highlighting the benefits of active local involvement. Similar to previous panels, this presentation also addressed challenges posed by the Blue Economy, including risks of displacement, reduced access to resources and

marginalization, particularly for women, stressing the need for “Blue Justice” to ensure fair access and rights. Moreover, human rights-based frameworks aligned with the *Food and Agriculture Organization of the United Nations* (FAO) Small-Scale Fisheries (SSF) Guidelines were advocated for to emphasize equality, cultural respect and transparent governance. Above all, the presentation underscored the importance of including community voices in maritime governance. Similarly, it called for a human-centered approach to coastal partnerships, promoting secure access to resources, cultural respect and active community participation to foster sustainable and equitable development in maritime sectors.

Recommendations

- **Enhance Community Partnerships:** Strengthen partnerships with coastal communities by involving them in maritime security through knowledge-sharing, training, and collaborative monitoring efforts.
- **Invest in Sustainable Initiatives:** Encourage private sector investment in sustainable practices and technology for maritime operations, providing incentives for projects that benefit both communities and environmental stewardship.
- **Promote “Blue Justice” in the Blue Economy:** Address potential injustices by ensuring that coastal development does not lead to displacement or restricted access to resources, thereby supporting the livelihoods and rights of local communities.

Panel 7 - Drones in the Maritime Environment

The "Drones in the Maritime Environment" panel focused on the role of UAVs and autonomous systems in enhancing maritime security, with contributions from organizations like the *Institut de Sécurité Maritime Interrégionale* (ISMI) and TEKEVER. ISMI introduced a \$11 million UAV Training Centre project for the Gulf of Guinea, aimed at training law enforcement and maritime professionals to improve surveillance

capabilities. Set to open in 2025, it will address logistical challenges in maritime monitoring.

TEKEVER showcased how drones provide real-time insights for environmental protection, law enforcement, and immigration management. Case studies, such as a UAV project in the English Channel, demonstrated drones' effectiveness in search and rescue and illegal fishing control. Their ability to cover vast maritime areas is vital for regions like West Africa.

A video of the Portuguese Navy using a PUMA UAV during this year's *Mar Aberto* was shown to illustrate the value of UAVs to improve ISR in support of Maritime Security Operations.

For Cabo Verde, the discussions highlighted the importance of leveraging technology: UAVs and satellite systems to improve surveillance over vast oceanic areas, essential for archipelagic countries with large EEZs. The Cabo Verdean representative emphasized the need for global cooperation in acquiring advanced technology to combat threats like trafficking, piracy, and illegal fishing.

The panel concluded that strategic alliances and investment in UAV-based surveillance will strengthen resilience against organized crime and environmental hazards, underscoring the need for regional cooperation to ensure maritime security.

Recommendations

- **Invest in UAV training initiatives:** Establish or improve UAV training facilities in the region, similar to the ISMI UAV Training Centre, to develop local skills and knowledge in maritime surveillance. This will enable law enforcement and military personnel to effectively use UAVs for security and economic operations.
- **Emphasize the value of real-time data:** Implement technologies that enable the collection and distribution of real-time information among maritime security organizations. This will improve the response to threats such as illegal fishing, smuggling and pollution.

Presentation - Coastal Communities and Environmental Protection

The essential role of coastal communities in environmental protection and maritime security, advocating for sustainable and just ocean management was highlighted during the presentation of Professor Stella Williams. By emphasizing “ocean equity”, the presentation called for the integration of human rights and local knowledge into ocean management to ensure that technological advancements do not overlook social and environmental impacts. Likewise, the presentation warned against industrial exploitation such as overfishing and pollution which threaten coastal ecosystems and drive irregular migration. To counter these issues, sustainable practices such as ecosystem-based management and limiting juvenile fish catches, to restore resources and build community resilience were promoted. Moreover, participatory governance is central, encouraging local stakeholders – including youth and women – to actively participate in decision-making and marine conservation efforts. This approach is reinforced through transparency and accountability in resource governance, with a call for governments to protect citizen interests and foster balanced partnerships that empower communities. The presentation also stressed the importance of translating international marine agreements into local actions. Projects in Ghana and Senegal exemplify this as efforts to combat overfishing, mitigate migration drivers and address corporate conflicts of interests. Environmental justice is a key theme, with a focus on collective action against IUU fishing, empowering small-scale fishers to protect local resources. Above all, the presentation advocated for sustainable governance models centered on human rights, ecological balances, and community empowerment to promote a fair and resilient ocean economy.

Recommendations

- **Integrate Human Rights and Local Knowledge in Ocean Management:** Ensure that ocean management practices prioritize human rights, including equitable access, and incorporate local community knowledge to balance technological advancements with social and environmental considerations.
- **Combat Industrial Exploitation through Sustainable Practices:** Address the impacts of overfishing and pollution by promoting ecosystem-based

management, restricting juvenile fish catch and educating communities on sustainable practices to build long-term resilience.

- **Empower Local Communities through Participatory Governance:** Encourage active participation of local stakeholders, particularly youth and women, in marine protection initiatives and decision-making processes to strengthen community-led conservation efforts.

Panel 8 - West and Central Africa: Opportunities in Increased Maritime Traffic

The panel "West and Central Africa: Opportunities in Increased Maritime Traffic" discussed the increasing maritime traffic in the region and the potential for West and Central Africa to become a key maritime hub. Key points included the strategic location of the Gulf of Guinea, abundant resources, and growing global demand, but also the historical challenges faced by regional ports, such as outdated infrastructure and high freight rates, which hinder competitiveness.

The panel highlighted the positive impact of initiatives to modernize African ports and emphasized the need for continued investment in key ports like Lekki, Tema, and Abidjan. Improving regional integration, modernizing ports, and strengthening transport networks were also seen as crucial for enhancing mobility and economic growth.

Maritime security strategies were identified as critical for addressing piracy, trafficking, and environmental threats, with a call for ethical standards and international governance to ensure sustainable development. The importance of sustainable transport practices was also underscored, alongside the need to train young people in maritime fields to strengthen local capacity.

Ultimately, with international partnerships, regulatory reforms, and greater regional integration, the region could become a competitive and sustainable maritime hub, driving economic growth and benefiting local communities.

Recommendations

- **Invest in port infrastructure and capacity:** Expand and upgrade West and Central African ports to handle greater volumes and meet the demands of growing maritime traffic.
- **Leverage strategic location:** Capitalize on the location of the Gulf of Guinea to attract traffic diverted from other routes, such as the Suez Canal, by improving readiness and competitiveness.

Panel 9 - Needs and Opportunities: Using New Technologies in the Maritime Sector

Discussions of Panel 9 focused on the potential of technology and community-driven efforts to transform maritime security and ocean sustainability. The need for community involvement and advanced technology in ocean conservation, in particular, were emphasized to achieve goals such as enhancing quality of life, promoting sustainable fisheries and advancing the “Blue Economy”. To exemplify this, the CoopMEMO Operational Concept, a distributed sensing system leveraging fishing boats, drones and citizen science to collect real-time environmental data was presented. Such data is then centralized in a cloud-based system for broader analysis, allowing for an inclusive, community-centered approach to ocean sustainability. Furthermore, the impact of emerging technologies such as autonomous, AI and big data on maritime security and commerce was addressed. While these developments bring about possible benefits, it is important to be aware of these technologies requiring regulatory updates as current laws are not equipped to manage autonomous operations across international waters. Similarly, cybersecurity was also critically discussed while advocating for robust safeguard digital systems from potential cyberattacks on ships and ports. Above all, the panel’s insights illustrate the

importance of merging community engagement with technological innovation to ensure sustainable, secure oceans. On the one hand, community-centered approaches support resilient ecosystems. On the other hand, emphasis on regulatory reform, cybersecurity and international collaboration reinforces the need for coordinated efforts. The combination of these two visions promotes an interconnected, sustainable future for maritime operations and ocean conservation.

Recommendations

- **Update Maritime Regulatory Frameworks:** Adapt international and national maritime laws to address the unique challenges of autonomous AI-driven vessels, ensuring clear standards for safety, liability and operations across international waters
- **Invest in Cybersecurity Infrastructure:** Strengthen cybersecurity measures to protect autonomous ships, ports and digital networks from cyber threats, safeguarding the entire supply chain and maritime operations.
- **Foster International Collaboration for Sustainable Innovation** Encourage partnerships between governments, communities and private entities to harmonize data, share insights and coordinate on ocean conservation and secure maritime technology adoption.

Conclusion

The Atlantic Ocean requires much more global attention. It became visible that critical infrastructures need to be improved, that countries need to harmonize regional cooperation structures and deliver said harmonization back to their communities.

It became clear that civil society cannot be detached from solutions. The political and economic diversity in Atlantic communities' further stresses that regional and multilateral initiatives that can produce and provide knowledge and capacity building programs are welcomed and a relevant tool for the emancipation of fragile coastal states whose economic sustenance (looking at the example of IUU fishing) is highly dependent and highly fragile.

It is evident that some challenges weigh more than others due to their long term and scale of effects. Climate change is altering the Atlantic landscape by testing countries' resilience on multiple levels. Here too, and perhaps more difficult to achieve, mitigation and investment are relevant to come close to positive outcomes.

New technologies are here to stay. AI, large language data models, UAVs, drones and satellites are a mirror of conflicting strategic dispositions. The ability to do harm may be as equal as to do good, subjective as this might be, the principle behind it ought not to be so. Stakeholders called for a deeper understanding of the impacts these new models may have on multi-sectoral scenarios and the Atlantic as a whole ought to either understand, adapt and incorporate in a sustainable manner or it risks becoming prey to what they no longer can control or legislate.

Shipping is not only a way to connect (communities) but a method to project (power and interests). The obligations entailed under maritime law and International Law of the Sea pay relevance to what is revealing heightened importance on the Atlantic Ocean once again, i.e. the resurgence of maritime trade routes, the debate around sustainable fleets and effective naval presence at sea both at an enforcement- and deterrence level.

The Atlantic Community cannot remain "sea blind". Unlike the ocean's floors, which a great part remains unmapped, undiscovered and not researched, the Maritime Security Conference 2024, encouraged its attendees to achieve just the opposite of the current global "modus operandis" when it comes to understanding what lies below.

May this report with its recommendations and summaries assist in creating sea-awareness, in opening the eyes of civil society as a whole to the challenges addressed.

To conclude, this report aimed at presenting a broader view of specific topics, encourages the reader to go a bit deeper on maritime security and its complexity in today's fast-paced world. Nevertheless, even though this report offers summarized knowledge, posing as a deliverable in itself, it is not enough to comprehend the issues and opportunities currently at the geopolitical table. May it, however, help rekindle debates, restart projects of untouched complexities and, ultimately, assist in empowering an engaged, informed, and active Atlantic Community.

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