

Maritime Domain Awareness in the Atlantic: Strengthening Information Sharing for Regional Cooperation

Policy Brief for the Working Group on Human Security in the Atlantic

Christian Bueger, *University of Copenhagen*

October 2025

Introduction

Maritime surveillance and information sharing form the backbone of effective ocean governance. Given the transnational character of maritime industries and the global reach of ship movements, the exchange of information ensures that all nations gain an accurate understanding of activities occurring in maritime zones under their jurisdiction, in adjacent regional waters and of the behaviour of vessels under their flag. Data exchanges enable more accurate operational pictures of patterns and allow for the detection of suspicious behaviour and enhanced law enforcement at sea.

Regional information sharing thus contributes to tackling organized crime networks operating at sea—whether engaged in smuggling operations, sanction evasion, or environmental crimes such as illicit fishing or illicit waste dumping. It also proves vital for coordinating search and rescue operations and emergency responses across countries and agencies. Accurate maritime activity data, moreover, contributes to protecting critical maritime infrastructure, such as submarine cables and pipelines that increasingly underpin Atlantic economies and digital connectivity.

Strengthening information sharing and data exchange within regions has been a core priority of the maritime security agenda since at least the early 2000s. These initiatives are often organized around the concept of Maritime Domain Awareness (MDA)—a comprehensive framework for collecting, analysing, and sharing maritime data to enhance security and safety.¹

Originally proposed as a concept by the United States for counter-terrorism purposes, MDA was subsequently adopted by the International Maritime Organization and is now widely used globally to leverage advanced maritime surveillance technology, fuse data from multiple sensors, extract meaning through machine learning and analytical techniques, and enhance inter-agency and international operational cooperation. Over the past two decades, a growing transnational network of national and regional MDA

centers has emerged, with most concentrated in the Indo-Pacific and Indian Ocean regions. The Atlantic, however, remains fragmented.

This policy brief investigates the state of MDA initiatives in the Atlantic and argues that the region would benefit significantly from stronger integration between existing initiatives and from closing identified gaps, particularly in the South Atlantic. Enhanced coordination across Atlantic MDA networks would improve maritime law enforcement, strengthen protection of critical infrastructure, support environmental conservation objectives, and ultimately advance the blue economy aspirations outlined in the Declaration on Atlantic Cooperation.²

The Current State of Atlantic MDA: A Patchwork of Initiatives

The Atlantic does not benefit from a unified pan-Atlantic MDA initiative comparable to attempts to set up regional architectures in Southeast Asia or the Indian Ocean. Rather, Atlantic states rely on a patchwork of sub-regional centers and networks, global platforms, and specialized issue-specific initiatives. Understanding this landscape is essential for identifying where integration can add value.

Global Platforms with Atlantic Participation

Several initiatives with global scope provide data sharing services to Atlantic nations. The U.S.-funded Seavision platform, initially developed for counter-terrorism purposes, offers information sharing capabilities and is used by multiple Atlantic states. The European Union has developed Indian Ocean Region Information Sharing System (IORIS), a network designed to support maritime security communication and information sharing across multiple regions. As implied by the name, it was originally designed for the Indian Ocean but then gradually extended with partners joining from the Indo-Pacific, and increasingly the Atlantic. The Italian Navy's Trans-Regional Virtual Maritime Traffic Centre (V-RMTC), launched in 2006, operates another virtual platform that connects countries across the Mediterranean, Atlantic, and Indian Ocean through secure communication channels and shared data communities. These platforms demonstrate the feasibility of cross-regional information architecture, though integration between them remains limited.

North Atlantic and Arctic Initiatives

In the North Atlantic and Arctic regions, MDA efforts are primarily concentrated within NATO and EU frameworks. NATO's Maritime Command hosts the NATO Shipping Center and maintains specialized analytical capabilities focused on maritime security threats

and critical infrastructure protection. The European Union's European Maritime Safety Agency (EMSA) operates the SafeSeas and CleanSeaNet networks for exchanging maritime safety related data as well as the Common Information Sharing Environment (CISE), expected to become fully operational in 2025, which facilitates information exchange among European maritime agencies. The European Space Agency provides satellite imagery and monitoring capabilities. These initiatives are relatively well-resourced and institutionally mature, though they operate primarily within a NATO/EU context and do not extend significantly beyond European waters.

Specialized issue-specific centers complement these broader initiatives. The Maritime Analysis and Operations Centre (Narcotics)—MAOC(N)—operates as a Memorandum of Understanding-based mechanism involving seven EU member states, the UK, and partner states including Brazil, Colombia, and Senegal. MAOC(N) focuses specifically on narcotics smuggling and provides a model for successful issue-specific cooperation.

Caribbean and Western Hemisphere Initiatives

In the Caribbean, MDA initiatives are primarily led by the Caribbean Community (CARICOM),³ which operates two dedicated maritime security centres, the Regional Intelligence Fusion Centre (RIFC) and the Joint Regional Communications Centre (JRCC) supported by the Caribbean Community Implementation Agency for Crime and Security (IMPACS). These structures reflect regional priorities focused on drug trafficking, human smuggling, and other transnational crimes. While these initiatives address regional security challenges, their capacity and resource base remain constrained, limiting their ability to generate the analytical and operational products that could serve broader regional cooperation.

West African and Gulf of Guinea Initiatives

West Africa and the Gulf of Guinea region benefit from the Yaoundé Code of Conduct (YCOC), established in 2013 as part of counter-piracy efforts.⁴ The YCOC includes YARIS, an information-sharing system designed specifically to combat piracy and maritime crime in the region. Complementing this is the Maritime Domain Awareness for Trade—Gulf of Guinea (MDAT-GoG) initiative, supported by the UK and France. These initiatives, modelled on structures in other regions, have driven measurable reductions in piracy incidents and represent important regional cooperation mechanisms. However, West African states have reported persistent challenges with funding, capacity, and sustained institutional commitment, limiting the platforms' full potential.

The South Atlantic Gap

The South Atlantic represents a critical gap in Atlantic MDA architecture. This region, stretching from South America's Atlantic coast to Southern Africa, lacks a dedicated MDA centre or institutionalized regional platform comparable to structures in other Atlantic sub-regions or in other global maritime regions. While the Zone of Peace and Cooperation of the South Atlantic (ZOPACAS) has signalled ambitions to improve information sharing among its members, these initiatives remain incipient and have not yet translated into operational structures.⁵ This represents a significant shortfall: the South Atlantic lacks the information infrastructure to monitor maritime activities and to share data.

Commercial Platforms and Their Limitations

An increasingly important layer of MDA is provided by commercial platforms.⁶ such as those offered by the companies Windward and Starboard, which provide vessel tracking, behavioural analysis, and risk assessment services using commercially available data. These platforms offer valuable capabilities and are used by government agencies, port authorities, and private entities. However, they present significant limitations for regional cooperation. They operate as closed systems; information exchange between two countries is possible only if both are licensed users of the same platform. This creates fragmentation and prevents the comprehensive regional picture needed for effective governance. Furthermore, commercial platforms may not have security classifications suitable for sensitive law enforcement or national security purposes, limiting their utility for addressing the most serious maritime threats.

The Case for Networking the Networks

Despite the fragmented nature of Atlantic MDA, the region possesses the building blocks for enhanced coordination. Rather than attempting to replace existing initiatives, the focus should be on networking these networks—creating interoperability, facilitating information exchange, and building communities of practice among analysts and operational personnel across Atlantic initiatives. The Declaration on Atlantic Cooperation here provides an important potential framework for such activities.

Information Sharing on Vessels of Interest

One concrete area for immediate cooperation is the systematic sharing of information on vessels of interest—vessels engaged in suspicious activity, such as flag-hopping, ship to ship transfers or uneconomical patterns, or known to be associated with

criminal networks. Illicit operators often move across jurisdictions and regional waters, exploiting gaps in surveillance and communication. Enhanced information sharing on suspicious vessel movements, behavioural patterns, and port visits would enable each regional centre to strengthen its operational picture and identify threats more effectively. This could be facilitated through standardized reporting protocols, agreed-upon vessel classification systems, and secure communication channels connecting key Atlantic MDA initiatives.

Application Programming Interfaces and Platform Interoperability

Technical interoperability represents another crucial dimension. While initiatives operate different platforms reflecting different legal constructs, mandates, and security classifications, application programming interfaces (APIs) could enable limited but meaningful data exchange at appropriate classification levels. This would not require a single unified platform—indeed, such centralization might face resistance on sovereignty, security and commercial grounds—but rather technical bridges between existing systems. Shared protocols for vessel identification, incident categorization, and threat assessment could permit the kinds of data sharing that enhance regional awareness without requiring complete platform harmonization.

Technology Transfer and Capacity Building

MDA effectiveness depends not only on systems and data but on human expertise. Enhanced cooperation should include joint training initiatives for analysts and technical staff working in national and regional information-sharing centres across the Atlantic. Training on best practices in data fusion, emerging surveillance technologies, threat identification algorithms, and analytical tradecraft would elevate capabilities across the region. Technology transfer concerning algorithms for data fusion and suspicious behaviour detection—particularly from more advanced centres to less well-resourced ones—would accelerate capability development. Such cooperation could be facilitated through the establishment of working groups under existing regional frameworks such as the Partnership for Atlantic Cooperation or through expanded coast guard forum mechanisms.

Integration of New Sensors and Uncrewed Systems

Maritime surveillance is rapidly evolving with the emergence of new sensor technologies and uncrewed systems. The development and testing of uncrewed aerial vehicles (UAVs) and uncrewed surface vessels (USVs) for maritime surveillance potentially offers cost-efficient means to extend monitoring capabilities, particularly in

areas with limited national infrastructure. Sharing best practices on integrating these capabilities, establishing protocols for their operation in shared maritime spaces, and developing cost-sharing mechanisms for their deployment could extend surveillance reach across Atlantic regions. Joint exercises and pilot projects could test interoperability and operational procedures.

Recommendations

Enhanced Maritime Domain Awareness across the Atlantic would strengthen ocean governance, advance sustainable blue economy development, improve maritime safety, and enable more effective responses to transnational challenges. The building blocks exist; what is needed now is the will to network them effectively. To advance integrated MDA across the Atlantic, Atlantic states should:

Advance MDA in the South Atlantic.

Establish a dedicated MDA center for the South Atlantic region with leadership support from regional states including Argentina, Brazil, Colombia, or South Africa, drawing on institutional models and lessons from centers in Singapore, India, and Madagascar.

Network existing Atlantic initiatives.

Develop operational linkages between existing North Atlantic, Caribbean, West African, and South Atlantic MDA initiatives through working groups under Partnership for Atlantic Cooperation frameworks or expanded coast guard forums, with focus on shared vessel information protocols and threat assessment methodologies.

Establish technical interoperability standards.

Develop application programming interfaces and agreed protocols enabling limited but meaningful data exchange between platforms at appropriate security classification levels, without requiring unified platform architecture.

Launch joint training and capacity-building initiatives.

Establish regular training courses on MDA best practices, analytical tradecraft, emerging technologies, and threat identification for personnel across Atlantic centers, potentially coordinated through existing regional institutions or knowledge partners such as Atlantic policy centers.

Organize coordinated maritime exercises.

Conduct regular multi-national exercises testing information sharing capabilities, coordination protocols, and crisis response procedures across Atlantic regions, building trust and interoperability among agencies and identifying operational gaps.

Assess and strengthen national MDA capabilities.

Commission regional assessments of national MDA infrastructure and data-sharing capacity, identifying gaps and developing targeted technical assistance and partnership mechanisms to strengthen maritime knowledge at national levels.

Biography

Christian Bueger is professor of international relations at the University of Copenhagen, one of the directors of SafeSeas – the network for maritime security and a research fellow at the United Nations Institute for Disarmament Research (UNIDIR). He is the author of *Understanding Maritime Security* (with Tim Edmunds) published with Oxford University Press (2024). Further information is available on his personal website at <http://www.bueger.info> He can be contacted at Christian.bueger@ifs.ku.dk.

Endnotes

¹ See Bueger, Christian and Timothy Edmunds. 2024. *Understanding Maritime Security*. Oxford & New York: Oxford University Press, and Brewster, David and Simon Bateman. 2024. *Maritime Domain Awareness 3.0. the Future of information and intelligence-sharing in the Indian Ocean*. Australian National University.

² See The White House. 2023. *Declaration on Atlantic Cooperation*, September 18, 2023; for a discussion, see Bueger, Christian. 2024. *Developing blue economy, addressing maritime insecurities: Information sharing for the Atlantic Ocean*, Policy Brief, Digital Atlantic Initiative, Transatlantic Leadership Network, May 2024, <https://www.transatlantic.org/wp-content/uploads/2024/06/Bueger-2024-Information-Sharing-for-the-Atlantic.pdf>

³ Steegstra, Abeni and Yvon Dandurand. 2025. *International Cooperation among Caricom Countries*," *Transnational Criminal Law Review* 3(2): 207-214; Smith, Troy, and Andy Short. 2025. *Strengthening Caribbean Intelligence: Education and Training for Enhanced Intra- and Inter-Agency Collaboration*. *International Journal of Intelligence and Counter Intelligence*, April, 1–20.

⁴ Yücel, Hüseyin. 2021. *Sovereignty and Transnational Cooperation in the Gulf of Guinea: How a Network Approach can Strengthen the Yaoundé Architecture*. *Scandinavian Journal of Military Studies* 4(1): 146-157.

⁵ See e.g. Borges, Marcio. 2022. Strengthening ZOPACAS: the Maritime Safety Roadmap for the South Atlantic. EGN Magazine Journal of the Naval War College 28(3), 615-642.

⁶ See the review in Brewster, David and Simon Bateman. 2024. Maritime Domain Awareness 3.0. the Future of information and intelligence-sharing in the Indian Ocean. Australian National University.