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Conference Paper

INTERCONNECTING THE MARITIME DOMAIN IN THE INDO-PACIFIC REGION

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Abstract.

The operationalisation of the Indo-Pacific Regional Information Sharing (IORIS) platform is examined as a tool for advancing maritime governance across one of the world's most strategically significant maritime regions. Funded by the European Union through the CRIMARIO initiative, IORIS facilitates real-time, secure communication among over 100 maritime stakeholders, tackling persistent challenges like piracy, geopolitical instability, regulatory complexity, and environmental risks. Drawing on maritime governance theory, collaborative governance frameworks, and socio-technical systems perspectives, this study applies a qualitative content analysis of policy documents, institutional reports, and scholarly literature. The results highlight IORIS's role in dismantling institutional silos, enhancing situational awareness, supporting regulatory compliance, and streamlining emergency response. By integrating digital infrastructure and fostering cross-sectoral cooperation, the platform contributes to a more resilient and secure maritime environment. The findings affirm the need for sustained technological innovation, expanded regional partnerships, and adaptive policy frameworks to ensure the long-term stability of global maritime trade.

Keywords: digital coordination, Indo-Pacific, maritime governance, maritime security.

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Introduction

The Critical Maritime Routes Indo-Pacific Project (CRIMARIO) Project, funded by the European Union, advances maritime governance in the Indo-Pacific by fostering regional cooperation and dismantling the institutional silos that often separate maritime stakeholders (1,2). The project provides expert tools and financial support to encourage collaboration, reflecting a shared commitment to securing vital trade routes in a region central to global commerce. The maritime domain is critical in international trade, with over 90% of global goods transported by sea (3). However, the sector faces a range of challenges, comprising of security threats, operational complexities, regulatory burdens, economic volatility, and rising geopolitical tensions (3).

Literature Review

Theoretical Studies

Maritime governance theory highlights the complexity of managing shared ocean spaces from overlapping jurisdictions, transnational threats, and economic interdependence (4). The sector faces persistent challenges, comprising of maritime security threats, operational complexities, regulatory compliance burdens, economic pressures, and geopolitical risks. These challenges align with broader theories of global governance, which stress the limitations of state-centric approaches in mitigating transboundary issues. Mitigating these multifaceted problems requires a networked model of cooperation that integrates both public and private actors (5). Collaborative governance theory supports this approach, emphasising the value of joint decision-making, shared responsibilities, and inter-organisational trust. In maritime, this cooperation must also involve the application of advanced technological solutions to enhance connectivity, streamline information exchange, and improve collective situational awareness. Socio-technical systems theory further reinforces this perspective (6).

Empirical Studies

Global maritime transport carries over 90% of the world's goods, making the type of transport a critical component of international trade (4). However, this sector consistently faces a wide range of challenges (7). Maritime security threats remain prevalent, with piracy and armed robbery continuing to affect key areas like the Indian Ocean and the Celebes Sea. These incidents disrupt shipping operations, endanger crew safety, and increase insurance and security costs.

Geopolitical risks further complicate maritime stability (8). Conflict zones like the Red Sea and the Bab al-Mandab Strait frequently experience militant activity, posing severe threats to

strategic trade routes and global supply chains (9). In addition to security concerns, the maritime sector must navigate a complex regulatory environment, manage environmental risks, and tackle persistent logistical hurdles (10). These risks comprise of adapting to evolving international regulations, mitigating the impacts of pollution and climate change, and overcoming port congestion and inefficiencies in cargo handling. Together, these empirical realities underscore the urgent need for integrated solutions that combine regulatory compliance, technological innovation, and coordinated regional responses.

Methods

The study adopts a qualitative content analysis approach, defined as a systematic method for making replicable and valid inferences from textual data (11,12). The analysis focuses on policy documents, institutional reports, and scholarly literature related to the operationalisation of the Indo-Pacific Regional Information Sharing (IORIS) platform and the platform's role in enhancing maritime governance. Data sources, consist of EU-funded project documentation, maritime security frameworks, regional cooperation agreements, and peer-reviewed publications from the last decade. Selection criteria prioritize materials mitigating maritime security threats, inter-agency coordination, digital governance tools, and regional responses in the Indo-Pacific. The unit of analysis centres on the practical application of regional information-sharing platforms in mitigating security, regulatory, and environmental challenges. The study was conducted over a one-year period, with source credibility ensured through triangulation, cross-referencing institutional data, and validating findings against expert-reviewed literature.

1. Results and Discussion

The development of the Indo-Pacific Regional Information Sharing (IORIS) IT platform has significantly enhanced maritime coordination and security across the region (2). Funded by the European Union through the CRIMARIO initiative, the platform now connects more than 100 stakeholders, consisting of shipping companies, regulatory bodies, and maritime agencies, through a secure and neutral digital interface. This tool facilitates real-time information exchange, reduces operational silos, and enables greater collaboration among ship owners, government authorities, and security actors while protecting commercially sensitive data.

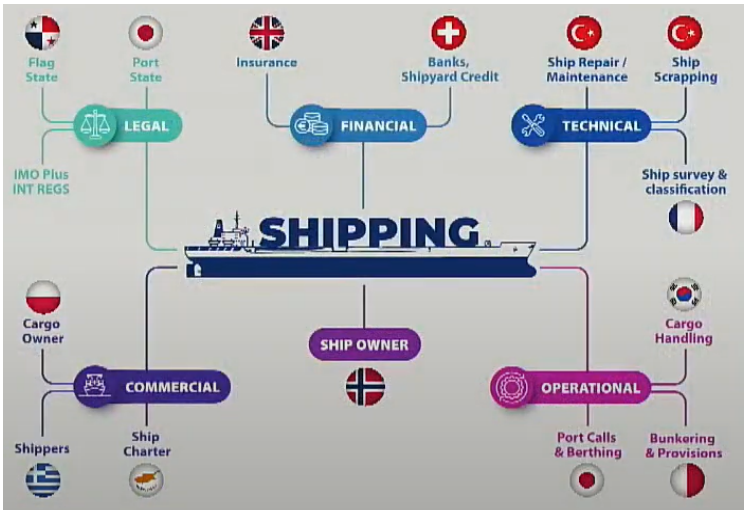

Figure 1. Multi-Stakeholder in IORIS

Source: Inglott (2024)

The platform proves especially effective in mitigating maritime security threats, for example piracy and armed robbery, which remain persistent in hotspots like the Indian Ocean and the Celebes Sea (2). Real-time communication between coast guards, navies, and the commercial shipping sector has improved situational awareness and allowed for faster response times to emerging threats. During operations, IORIS successfully supported coordinated actions to respond to piracy incidents and facilitated safe transit planning, demonstrating tangible results in enhancing maritime security.

In regions marked by geopolitical volatility, for example the Red Sea and the Bab al-Mandab Strait, the platform has strengthened coordination among coastal states, European partners, and both military and civilian vessels (2). The platform has helped ensure the safe passage of maritime traffic through conflict zones affected by militant activity. In addition to kinetic threats, IORIS supports secure communication protocols that mitigate cyber vulnerabilities like GPS spoofing and data breaches which increasingly endanger maritime operations.

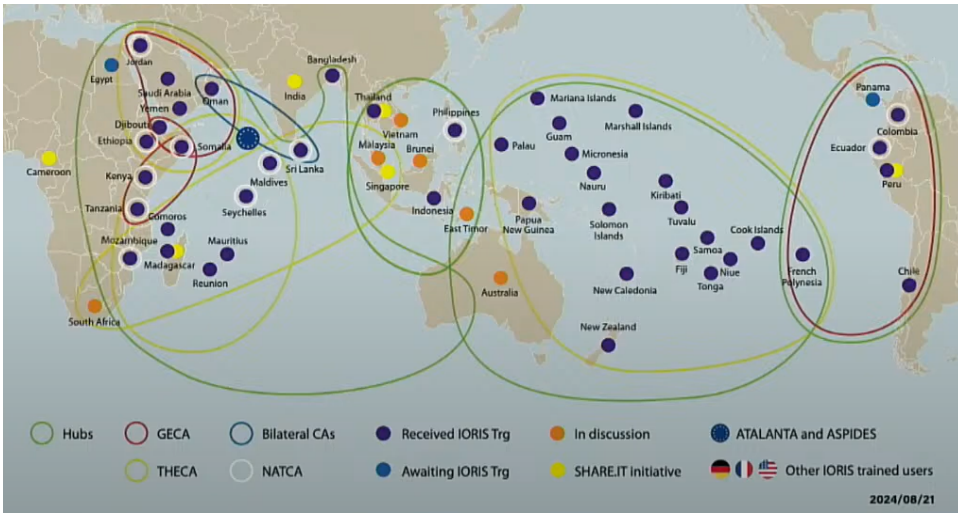

Figure 2. IORIS Institutionalisation
Source: Inglott (2024)

Beyond its security applications, IORIS also contributes to maritime safety and emergency response (2). The platform links rescue coordination centres across the Indian Ocean, streamlining search and rescue efforts and improving emergency planning. Its integration with vessel traffic monitoring systems and AI-based analytics enables early detection of erratic vessel movements, reducing the risk of collisions and environmental damage.

IORIS also tackles regulatory compliance and environmental risk management (2). The tool facilitates adherence to international standards, for example the IMO 2020 sulphur emission cap, by simplifying regulatory submissions and promoting transparency. The platform has supported real-time updates and coordination during environmental incidents, enhancing the efficiency of maritime responses.

Figure 3. Discreet and Real-time Comms on IORIS
Source: Inglott (2024)

In operational practice, CRIMARIO has deployed IORIS in maritime exercises involving over 45 countries, integrating the expertise of navies, coast guards, and fisheries authorities (2). These collaborative engagements have shaped the platform's technical design and governance. Since its deployment in 2018, IORIS has demonstrated cost-effectiveness, reliability, and adaptability in meeting the evolving needs of the global shipping industry. The results indicate that expanding the platform's reach and refining its capabilities will continue to strengthen maritime governance in the Indo-Pacific. The empirical evidence affirms that IORIS is critical in improving maritime security, enhancing operational efficiency, supporting regulatory compliance, and fostering regional cooperation.

Conclusion

The Indo-Pacific Regional Information Sharing (IORIS) platform has emerged as a vital tool in enhancing maritime governance by enabling real-time, secure communication and coordination among over 100 stakeholders across the maritime domain. The tool effectively mitigates persistent security threats like piracy, armed robbery, and geopolitical instability while also supporting maritime safety, environmental compliance, and operational efficiency. By breaking down institutional silos and fostering collaboration among governments, navies, shipping companies, and regulatory bodies, IORIS strengthens situational awareness and response capabilities across the region. Its integration with digital infrastructure and AI-driven analytics further improves early threat detection and regulatory adherence. The success of IORIS underscores the importance of sustained multi-stakeholder cooperation and technological innovation in securing vital sea lanes. As maritime risks evolve, expanding the platform's reach and aligning policy frameworks will be essential to safeguarding the stability, sustainability, and resilience of global maritime trade.

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