

# Webinar Report- Indian Ocean Security Framework

## Topic:

Underwater Domain Awareness (UDA)  
Framework for Effective Security in the  
Tropical Waters of the Indian Ocean Region  
(IOR)

Held on October 22, 2024

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## [Webinar on the 'Indian Ocean Security Framework'](#)

### [The Underwater Domain Awareness \(UDA\) Framework for Effective Security in the Tropical waters of the Indian Ocean Region \(IOR\)](#)

#### [Event Overview:](#)

The Maritime Research Center (MRC), India, in partnership with the Near East South Asia Center for Strategic Studies (NESAS), USA, hosted a webinar titled **“Underwater Domain Awareness (UDA) Framework for Effective Security in the Tropical Waters of the Indian Ocean Region (IOR)”** on October 22, 2024. This virtual event brought together leading strategic thinkers, experts, policymakers, academicians, researchers, and stakeholders to discuss the vital security concerns of the IOR. As the Indo-Pacific region becomes increasingly significant in global geopolitics, the Indian Ocean has emerged as a key area of strategic interest due to its political and economic importance. The webinar successfully provided a platform to deliberate on the UDA framework as an effective solution to the IOR’s security needs. The **diverse expertise of participants** reflects the importance of strategic alliances and collaborative mechanisms to advance regional resilience. The event concluded by reinforcing the value of cooperative frameworks to address the complex challenges of the Indian Ocean’s tropical waters. ***Our webinar has been watched by more than 7,400 YouTube viewers, demonstrating that the event has successfully conveyed its key messages to the right stakeholders.***

#### [Focus and Objectives:](#)

The webinar focussed on the UDA framework, a strategic approach developed by MRC to improve maritime security in the IOR through the integration of policy and technology. The framework aims to address regional challenges, including submarine proliferation and emerging threats from non-state actors, by advancing real-time acoustic surveillance and capacity building.

#### [Key Sessions and Discussions:](#)

The event began with opening remarks by Mr. Jeffery Payne and Dr. (Cdr.) Arnab Das, who framed the geopolitical context and highlighted the unique challenges facing the IOR. This introduction set the stage for a comprehensive examination of the region’s security landscape.

##### ***Session 1:***

The first session, moderated by Mr. Payne, explored the Challenges and Opportunities in Tropical Waters. Expert insights from Dr Thomas F. Lynch, Vice Admiral A R Karve, Ms Nilanthi Samaranayake, and Dr Ajay Kumar addressed regional security dynamics, environmental concerns, and geopolitical complexities. Discussions revealed a nuanced perspective on balancing security with sustainable resource use, underscoring the distinct needs of tropical marine environments.

##### ***Session 2:***

In the second session, moderated by Amb. Anup Mudgal, the focus shifted to Capacity and Capability Building and Strategic Partnerships. Panelists, including Capt. Charles B. Marks, Dr. Geoffrey Gresh, and Shri Ashwin C. Shroff emphasised the importance of building collaborative frameworks and resilient partnerships. Discussions highlighted the need for a unified approach, bringing together military, academic, and industrial stakeholders to support long-term stability in the IOR.

## [Key details on Session 1: 'Challenges and Opportunities in Tropical Waters](#)

### **Challenges**

1. **Geopolitical Tensions and Security Risks:** The Indian Ocean has become a theatre for geopolitical competition, particularly between the United States and China. The rapid expansion of China's submarine fleet presents significant challenges to regional security dynamics. As tensions rise, the increased naval presence in the region raises the risk of maritime clashes, jeopardising commercial shipping and threatening the stability of vital trade routes.
2. **Complex Underwater Environment:** The underwater domain poses numerous challenges for effective monitoring and surveillance. The vast expanse of the Indian Ocean and strategic choke points such as the Strait of Hormuz complicate the efforts to track submarine movements and other underwater activities. This lack of visibility can lead to surprise military actions and hinder maritime security, making it essential to enhance underwater domain awareness (UDA).
3. **Emerging Technologies and Threats:** The advent of autonomous underwater vehicles (AUVs) introduces new complexities to maritime security. While these technologies enhance operational capabilities, they also require the development of new countermeasures to mitigate potential threats. Regional powers' rapid modernisation of naval systems necessitates a proactive approach to ensure that nations remain competitive and secure in the face of evolving threats.
4. **Environmental Sustainability and Biodiversity:** Balancing security measures with preserving marine biodiversity presents a significant challenge. The degradation of underwater ecosystems can undermine both security and economic interests. Policymakers must navigate the complex interplay between ensuring maritime security and addressing environmental concerns, as illegal fishing and unregulated activities threaten the ocean's health.
5. **Vulnerabilities in Communication Infrastructure:** The security of underwater sea cables, vital for global communication and economic stability, is at risk due to military activities and environmental changes. Protecting these cables from disruptions is crucial for maintaining international connectivity, requiring nations to implement proactive measures and enhanced monitoring systems.

### **Opportunities**

1. **Strengthening Partnerships and Collaborations:** A key opportunity lies in enhancing partnerships, particularly with regional players like India. The U.S. aims to position India as a net security provider in the Indian Ocean, fostering bilateral cooperation that enhances maritime security. Such partnerships can address shared challenges and contribute to a broader regional security framework.
2. **Emerging Interoperability Initiatives:** Opportunities for interoperability in maritime domain awareness are emerging, signalling a move toward enhanced cooperation among nations. Establishing common standards and norms for security collaboration can facilitate joint responses during crises. Countries can coordinate their efforts more effectively to address maritime security challenges by fostering interoperability.



3. **Leveraging Quad Cooperation:** The Quadrilateral Security Dialogue (Quad)—comprising the U.S., India, Japan, and Australia—has the potential to drive security initiatives in the Indian Ocean. By leveraging their collective experience, the Quad nations can improve regional governance and bolster maritime security efforts. Strategic collaboration can enhance surveillance capabilities, share intelligence, and coordinate responses to emerging threats.
4. **Technological Innovations for Enhanced Monitoring:** Integrating advanced technologies such as sonar systems, oceanographic data, and fixed sensors can significantly enhance underwater monitoring capabilities. Investing in these technologies will improve situational awareness and enable timely responses to potential threats, strengthening maritime security in the Indian Ocean.
5. **Empowering Smaller States:** The strategic significance of smaller states in the Indian Ocean presents opportunities for tailored strategies that recognise their unique strengths and vulnerabilities. Nations like Sri Lanka and Mauritius can leverage their geographic advantages and economic potential to play critical roles in regional security. Collaborating with these states can enhance collective security efforts and foster regional stability.
6. **Investment in Capacity Building:** Engaging in technology transfer initiatives and capacity-building efforts with allied nations can enhance the capabilities of regional powers, particularly India, in underwater operations. Strengthening these capacities is crucial for ensuring readiness and effective responses to evolving maritime security challenges.

#### [Key details on Session 2: 'Capacity & Capability Building and Strategic Partnerships'](#)

1. **Understanding Environmental Dimensions of Ocean Security:** The discourse emphasises the critical need for understanding the environmental dimensions of ocean security to address climate change and its implications for global stability effectively. It highlights the contrast between tangible traditional security threats and intangible challenges like environmental degradation, which pose significant risks to national and global stability. As the global economy expands, the demand for resources will increase, raising concerns about sustainable extraction and the health of oceans, which are vital for resource extraction and climate regulation. The lack of understanding of underwater ecosystems complicates efforts to combat climate change and implement effective conservation strategies, necessitating enhanced awareness of the underwater domain.
2. **Enhanced Monitoring and Technological Integration:** Robust monitoring systems are being called for to observe environmental changes in underwater ecosystems, aiming for proactive measures to prevent irreversible damage. Integrating advanced technologies, such as artificial intelligence (AI) and data analytics, is crucial for gaining insights for informed decision-making that balances economic interests with environmental sustainability. This holistic approach to ocean security necessitates a paradigm shift, recognising the health of marine ecosystems as integral to national and global security discussions.
3. **Capacity Building and Strategic Partnerships:** The importance of capacity building and strategic partnerships in maritime security within the Indian Ocean is underscored. Professional military education (PME) is highlighted as vital for enhancing national security capabilities and fostering collaboration among nations. Improving operational readiness and interoperability through education and training enables better responses to maritime security threats. Environmental



challenges, including climate change and natural disasters, necessitate integrated responses and collaborative efforts to enhance resilience in maritime operations.

4. **Securing Maritime Supply Chains:** Securing maritime supply chains is crucial for national security, with disruptions having far-reaching impacts. A strategic focus on protecting these vital pathways and recognising diverse perspectives in problem-solving is necessary. Fostering inclusive dialogue among stakeholders can lead to innovative strategies for addressing maritime security challenges. Additionally, smaller nations can contribute unique capabilities, particularly in disaster response and environmental management, enhancing regional cooperation.
5. **Proactive Roles of Leading Nations:** The proactive role of leading nations in deep-sea exploration and maritime security through strategic partnerships is noted, particularly in Southeast Asia. Initiatives such as comprehensive ocean mapping reflect a commitment to understanding marine ecosystems and ensuring sustainable resource extraction. Support programs for local maritime capabilities reinforce alliances against rising tensions.
6. **Transformative Role of the Private Sector:** The transformative role of the private sector in addressing climate change and ensuring sustainable development is highlighted, emphasising the need for immediate action to preserve marine ecosystems while promoting economic resilience. Responsible extraction of critical minerals and transitioning to renewable fuels in the shipping industry are advocated. Collaborative efforts among the private sector, government, and local communities are essential to tackle complex environmental challenges.
7. **Interconnectedness of Capacity Building and Sustainable Practices:** The discussions emphasise the interconnectedness of capacity building, strategic partnerships, and sustainable practices in addressing ocean security and climate change. By prioritising the understanding of marine ecosystems, leveraging technology, and fostering collaboration across various sectors, stakeholders can navigate the challenges of climate change and promote a sustainable future for the oceans.

### [Videos of our speakers](#)

*Please find below the video presentations/keynote addresses by our speaker:*

1. **Mr Jeffery Payne**, Assistant Professor (Maritime), NESAs, USA- [Link here](#)
2. **Dr (Cdr) Arnab Das**, Founder and Director of MRC- [Link here](#)
3. **Dr Thomas F Lynch III**, Distinguished Research Fellow at the Center for Strategic Studies, Institute of National Strategic Studies, National Defence University, USA- [Link here](#)
4. **Vice Admiral A R Karve** PVSM, AVSM (Retd), Former CinC, Indian Navy and Anti Submarine Specialist- [Link here](#)
5. **Ms Nilanthi Samaranayake**, Visiting Expert, South Asia Program, United States Institute of Peace (USIP)- [Link here](#)
6. **Dr Ajay Kumar**, Former Defence Secretary of India- [Link here](#)



7. **Ambassador Anup Kumar Mudgal**, Former Indian Diplomat and current Member of FICCI's Blue Economy Task Force- [Link here](#)
8. **Capt (Retd) Charles B Marks (Chuck)**, Associate Dean and Professional Military Education, NES- [Link here](#)
9. **Dr. Geoffrey Gresh**, Professor of International Security Studies at the College of International Security Affairs (CISA), National Defense University (NDU), USA- [Link here](#)
10. **Shri Ashwin C Shroff**, Executive Chairman Excel Industries Ltd, India- [Link here](#)
11. The link to the complete program's video is- [Here](#)

**Enclosure 1:**

**The program line-up was as follows (as per Washington DC Time)**

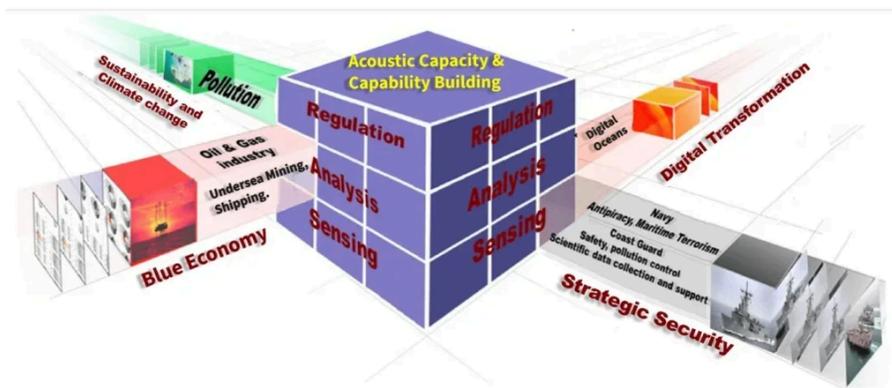
0800 hrs	Opening Remarks on the 'Geopolitical Realities in the IOR' by Mr. Jeffery Payne, Assistant Professor (Maritime) NES, USA.
0820 hrs	Introductory Remarks on the 'UDA framework' by Dr (Cdr) Arnab Das, Founder & Director MRC, India.
0840 hrs	<p><b>Session 1: Challenges &amp; Opportunities in the Tropical Waters of the IOR</b></p> <p><b>Session Moderator:</b> Mr. Jeffery Payne, NES.</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. <b>Dr Thomas F Lynch III</b>, Distinguished Research Fellow at the Center Strategic Research (CSR), Institute of National Strategic Studies (INSS), National Defence University (NDU).</li> <li>2. <b>Vice Admiral A R Karve</b> PVSM, AVSM (Retd), Former CinC Indian Navy and Anti-Submarine Specialist.</li> <li>3. <b>Ms. Nilanthi Samaranayake</b>, Visiting Expert, South Asia Program, United States Institute of Peace (USIP).</li> <li>4. <b>Dr. Ajay Kumar</b>, Indian Administrative Service (IAS), Former Defence Secretary, Government of India.</li> </ol> <p>This was followed by a 'Question and Answer Session', which the moderator closed with remarks.</p>
1000 hrs	<p><b>Session 2: Capacity &amp; Capability Building and Strategic Partnerships</b></p> <p><b>Session Moderator:</b> Amb Anup Mudgal, Indian Foreign Service (IFS), Former</p>

	<p>Diplomat at the Government of India</p> <p><b>Speakers:</b></p> <ol style="list-style-type: none"> <li>1. <b>Capt (Retd) Charles B Marks (Chuck)</b>, Associate Dean and Professional Military Education, NESA.</li> <li>2. <b>Dr. Geoffrey Gresh</b>, Professor of International Security Studies at the College of International Security Affairs (CISA), National Defense University (NDU), USA.</li> <li>3. <b>Shri Ashwin C Shroff</b>, Executive Chairman Excel Industries Ltd, India</li> </ol> <p>This was followed by a ‘Question and Answer Session’, which the moderator closed with remarks.</p>
1120 hrs	Closing Remarks by Mr. Jeffery Payne, NESA
1130 hrs	Vote of Thanks by Shri Praful Talera, MRC Advisor on Blue Economy.

**Enclosure 2**

**Introducing the Underwater Domain Awareness (UDA) and its Framework**

The excessive Submarine Proliferation and the non-state actors having unlimited access to sub-surface capabilities make the strategic security dimension unimaginably challenging. The Underwater Domain Awareness (UDA) needs to be prioritised with a cohesive framework that deals with policy & technology intervention along with acoustic capacity & capability building. The region's demography demands the meaningful engagement of the aspirational youth along with economic growth and prosperity. The strategic security initiative has to be inclusive to ensure the blue economy, sustainability & climate change, and science & technology are all integrated into one holistic framework.



The UDA framework, proposed by the Maritime Research Center (MRC), encourages the pooling of resources and synergising of efforts by the stakeholders and the nations in the IOR and beyond. The UDA framework will ensure digital transformation to optimally deal with the tropical challenges & opportunities, particularly for the Global South with limited resources and competing socio-economic priorities. An integrated framework with five pillars, including research, innovation, skilling, knowledge, and policy, ensures nuanced transformation. The Indo-US partnership could prioritise the UDA framework and work towards acoustic capacity & capability building across the IOR. The Indo-US strategic maritime partnership has an opportunity to consider a holistic UDA framework to drive the strategic security agenda with greater public good as an integral component.

The digital transformation could be a game changer and allow optimal resource deployment for a larger strategic objective. Given its talent pool of young and aspirational human resources, India could be a formidable partner. Local site-specific field experimental R&D will be critical. More about the UDA framework is available at <https://udafoundation.in/>.

[www.maritimeresearchcenter.com](http://www.maritimeresearchcenter.com)

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 UDA Framework Page

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