

UDA

UNDERWATER DOMAIN AWARENESS

E-NEWSLETTER



1ST QUARTER AT A GLANCE

200+
Internship
Applications
Received

4
Research
Publication

6
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Articles

3
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Articles

2 Lac+
Social Media
Reach

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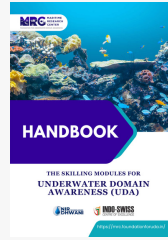
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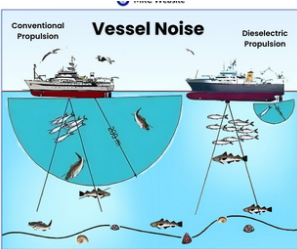
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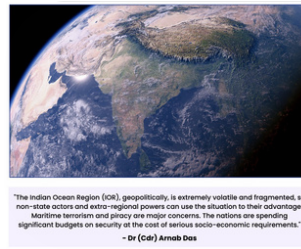
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"The Indian Ocean Region (IOR), geographically, is extremely volatile and fragmented, so non-state actors and extra-regional powers can use the situation to their advantage. Maritime terrorism and piracy are major concerns. The nations are spending significant budgets on security at the cost of serious socio-economic requirements."
- Dr (Capt) Anand Das



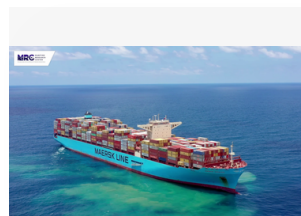
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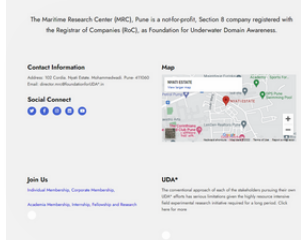
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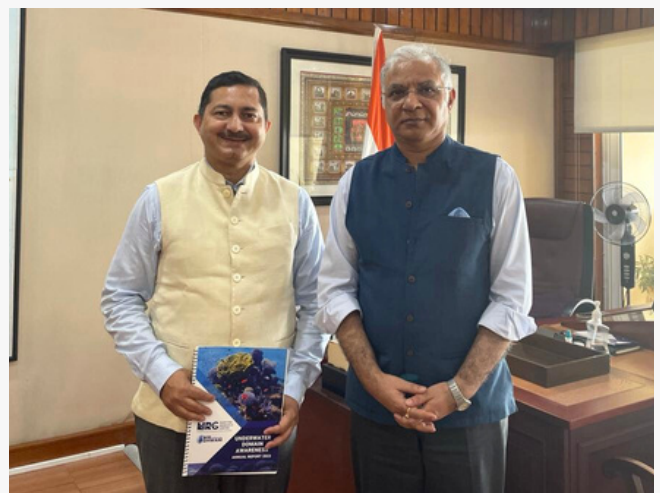
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COLLABORATION WITH THE CAPACITY BUILDING COMMISSION OF INDIA

MRC and the Capacity Building Commission of India joined forces to provide e-learning modules titled 'Fundamentals of the Underwater Environment' for the Karmayogi iGot platform. These modules are designated as resource materials tailored for government officials.

INTERACTION WITH H.E. SHRI SANTOSH JHA

Dr. (Cdr) Arnab Das from MRC had a productive meeting with His Excellency Shri Santosh Jha, the High Commissioner of India to Sri Lanka, at his office in Colombo, Sri Lanka. He was extremely positive about the UDA Framework being able to contribute towards the Indo-Sri Lankan bilateral relations.



PATHFINDER INDIAN OCEAN SECURITY CONFERENCE (PFIOSC)

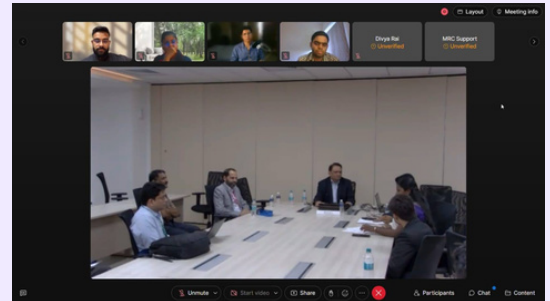
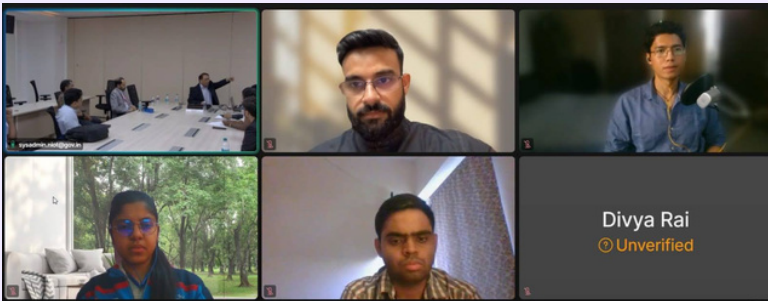
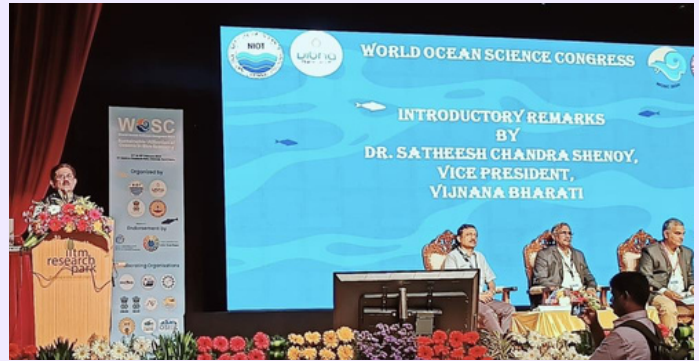
Dr. (Cdr) Arnab Das, representing MRC, participated in the international conference on February 28, 2024.

Dr. Das served as the primary presenter during Session 2 of Day 1, which focused on "Underwater Domain Awareness: Security and Economic Dimensions."

Admiral Jayantha Perera, former Commander of the Sri Lanka Navy, moderated this session. His Excellency Ranil Wickremesinghe, the Honorable President of Sri Lanka, emphasized Sri Lanka's dedication to Indian Ocean security and its responsibility as a protector of prosperity.



WORLD OCEAN SCIENCE CONGRESS (WOSC) 2024



Team MRC made a significant impact at the **World Ocean Science Congress 2024 (WOSC)** held in Chennai, Tamil Nadu, on February 27. Notable achievements included G A Ramadass from NIOT acknowledging MRC's session on **Underwater Domain Awareness (UDA)**. Ambassador Anup Mudgal delivered a keynote address, while team members J. Catherine and Romit Kaware presented offline on UDA. Dr. Sateesh Shenoy from MRC's Research Advisory Board emphasized the importance of traditional knowledge. Dr. Vijaykumar participated in MRC's oral and poster sessions.

The key representatives from MRC included Ambassador Anup K Mudgal, followed by presentations from J. Catherine, Head of Research & Publication; Mr. Shridhar Prabhuraman, MRC Deputy Director; Divya Rai, MRC Fellow; Romit Kawre from IIT Delhi; Aradhya Kapoor, Research Fellow; and Shlok Nemani from IIT Bombay.

Additionally, it is exciting to note that **WOSC 2024 highlighted UDA as one of its major sub-themes** for the sessions, demonstrating our dedication to promoting the concept of UDA across various domains.



February 2024 - Dr. (CDR) Arnab Das held insightful discussion at the 3rd International Conference on Education, Science, Technology, and Management held in Mumbai on Feb 3, 2024.

During his presentation, Dr Das shared his thoughts on creating a sustainable world order focusing on climate sustainability.

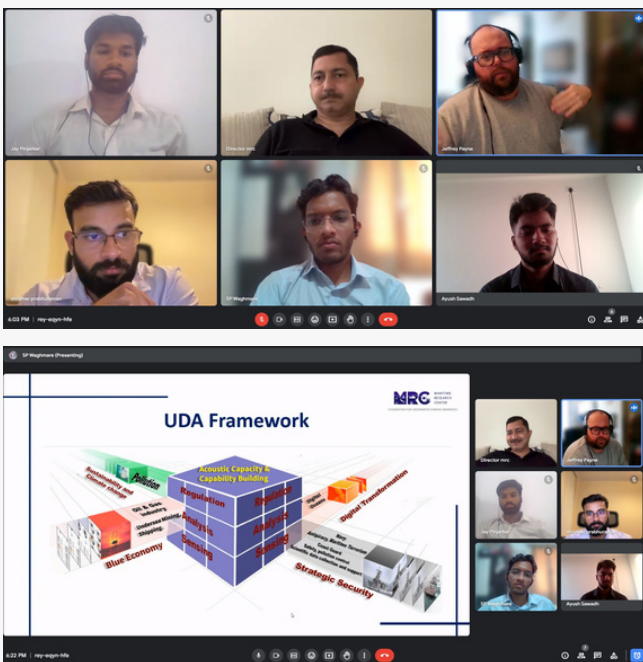
February 2024 - On 15 Feb 2024, Dr. (CDR) Arnab Das highlighted the importance of UDA and its framework at a two-day National Conference on "Sustainable Development Goals (SDGs): Technology and Management". He emphasized how UDA addresses maritime issues, strategic concerns, climate change, and sustainability, underscoring the collaborative efforts of MRC and NDT.



March 2024 - On March 12, 2024, Dr. (Cdr) Arnab Das presented on Underwater Domain Awareness and its framework at Fergusson College, Pune, Maharashtra. He engaged students, highlighting India's unique demographic advantage alongside the challenges it poses in fostering meaningful youth engagement.



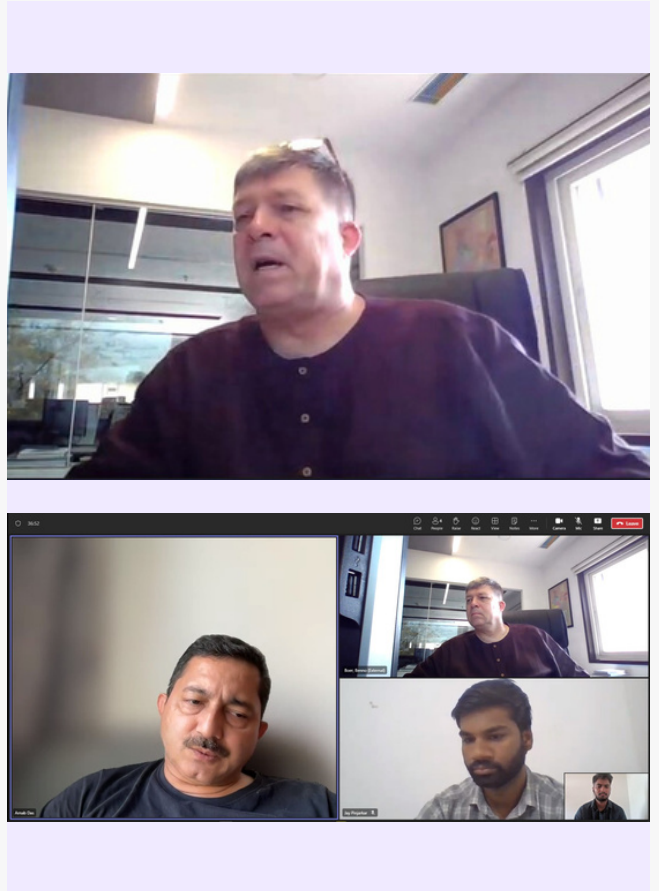
March 2024 - Dr. (CDR) Arnab Das delivered a compelling address during a Round Table Conference on Fisheries Startup and Policy Framework, hosted by the ICAR-Central Institute of Fisheries Education in Mumbai on 18th March 2024. Dr. Das spoke during Session 3 of the conference, entitled 'Charting the Course: Understanding the Policy Framework of Fisheries in India'. His expertise illuminated the intricacies of the policy framework governing fisheries in India.



March 2024 - MRC and Jeffrey Payne from NESAs recently discussed collaboration to enhance maritime security in the Indian Ocean Region and Indo-Pacific. We explored cooperation avenues like events and webinars for knowledge exchange. MRC highlighted its online platforms for disseminating research findings and fostering dialogue, demonstrating expertise and dedication to advancing maritime security research.

March 2024 - Dr. (Cdr) Arnab Das and Dr. Benno Boer, Chief of Natural Sciences Unit at UNESCO New Delhi Office, engaged in fruitful discussions about potential collaborations. They explored organizing an impactful educational event at MRC in Pune.

Dr. Boer shared insights from successful initiatives, emphasizing the urgency of addressing issues like plastic pollution. Dr. Das showcased MRC's capabilities in e-learning modules on climate change. The envisioned event aims to attract UNESCO chairholders and young participants from the Indian Ocean region, advancing SDGs and fostering environmental stewardship.



Fun Fact

We understand Mars' surface better than the ocean's depths.

Despite our oceanic surroundings, NOAA reports over 80% of its depths are unmapped, unobserved, or unexplored. Remarkably, we understand Mars' surface better than our own oceans, largely due to the daunting challenges and expenses associated with exploring ocean depths, where pressures can reach 1,000 bars.

UNDERWATER DOMAIN AWARENESS (UDA) ANNUAL REPORT 2023



MRC is delighted to unveil its inaugural "Annual Report," showcasing the remarkable advancements achieved in 2023 and the continued rapid progress in the present year. This report exemplifies our excellence in talent, state-of-the-art technology, and insightful research, all of which play a pivotal role in influencing critical decision-making at the highest levels of policy.

[READ THE FULL REPORT](#)

[WATCH THE VIDEO](#)

“

Institution building is about people, process, and purpose. Without hesitation, we can say that MRC's team is its greatest accomplishment. We also strive hard to maintain, add, simplify, and improve processes, in line with our growing footprint.

With an extraordinary 2023 behind us and the rapid progress that we are making early this year, I feel incredibly optimistic about MRC. We have the talent, technology, and research insights to support the critical decision-making needed at the highest policy-making levels. And we have a unifying purpose, strategy, and culture.

- DR (CDR) ARNAB DAS

MARINE SPATIAL PLANNING POSITION PAPER

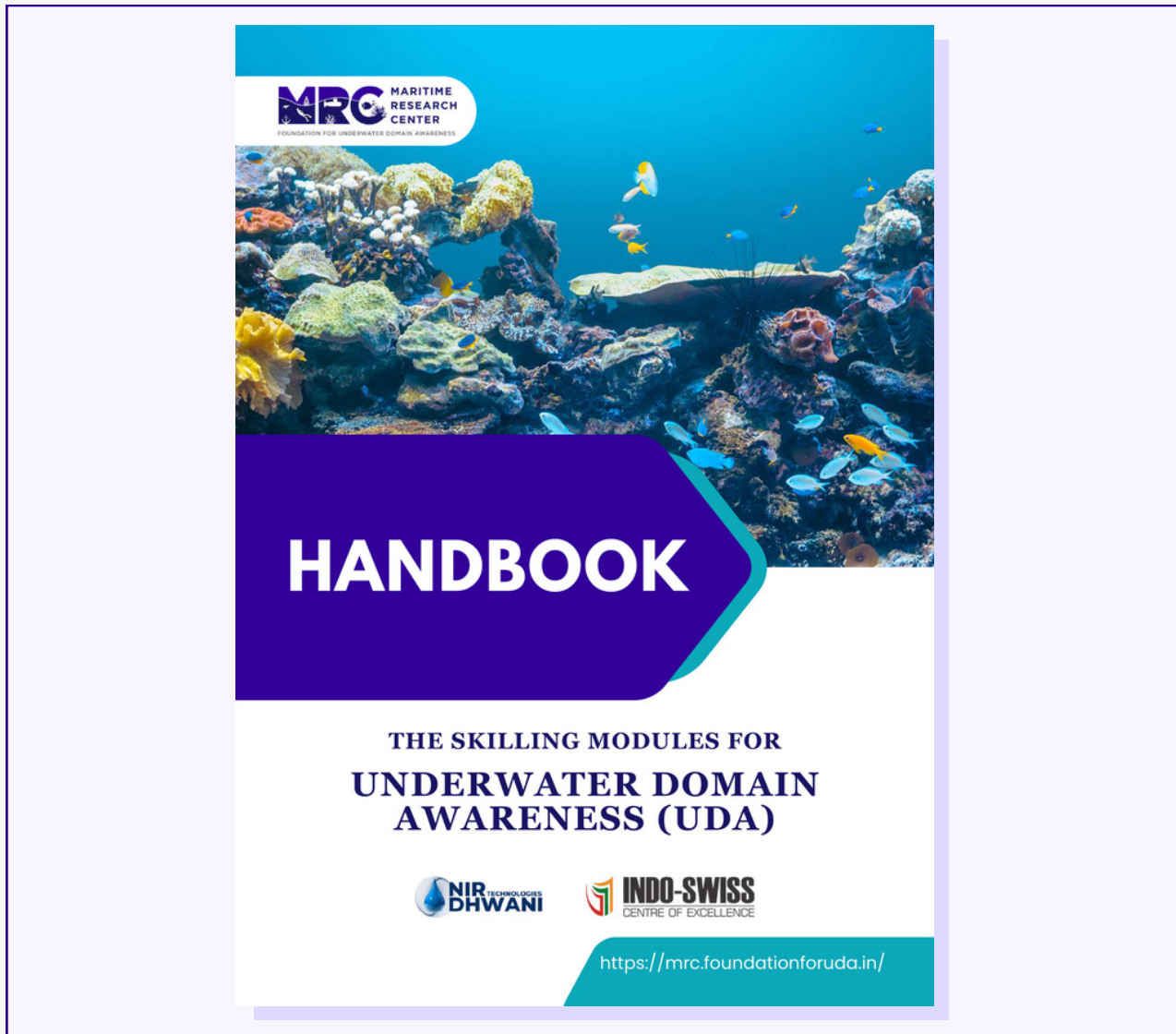


READ THE FULL PAPER

As the global population approaches 10 billion by 2050, pressures on ocean resources intensify. **Marine Spatial Planning (MSP)** emerges as a vital tool, organizing activities to preserve ecosystems and support sustainable development. MSP, integrated with **Underwater Domain Awareness (UDA)**, enhances security while promoting responsible resource use. Key recommendations include technological investment and stakeholder collaboration.

Explore the insights of the MSP Position Paper! Don't miss out on crucial recommendations for sustainable development and safeguarding marine ecosystems.

THE SKILLING MODULES FOR UNDERWATER DOMAIN AWARENESS (UDA)



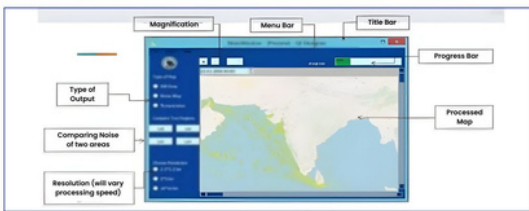
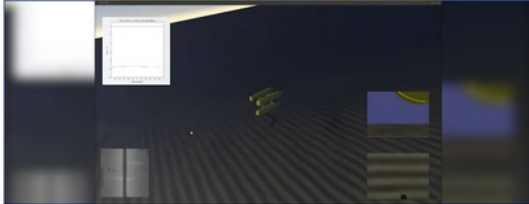
Explore the **Skilling Handbook** for a comprehensive guide to Underwater Domain Awareness (UDA). From basics to advanced concepts, it's your go-to resource for mastering this critical field. Empower yourself to make a difference in security, environmental conservation, and scientific exploration.

[READ THE FULL HANDBOOK](#)



Frontend Development Of Graphical User Interface For Passive Sonar Simulator

MRC Website



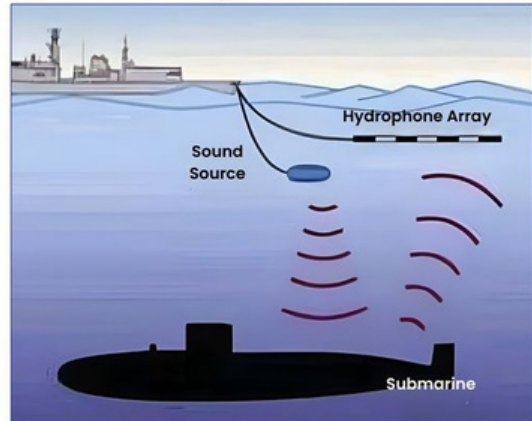
Frontend Development Of Graphical User Interface For Passive Sonar Simulator

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Effective Detection Model For Passive SONAR Simulator

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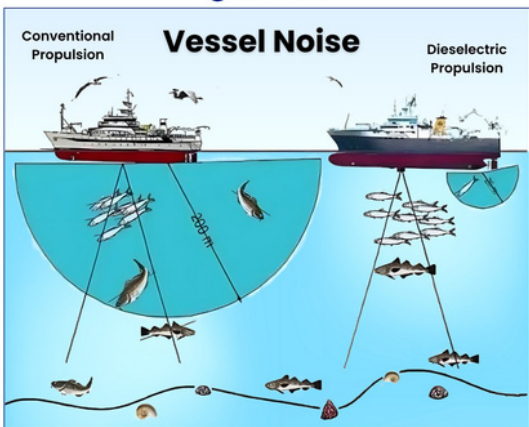
Effective Detection Model For Passive SONAR Simulator

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Duct-borne Noise & Vibration Onboard Maritime Vessels For Underwater Radiated Noise Management.

MRC Website



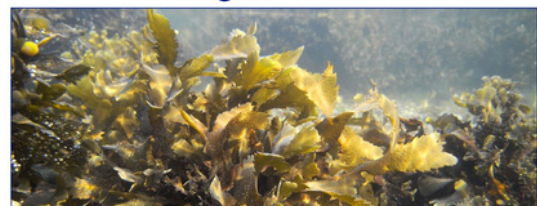
Duct-borne Noise & Vibration Onboard Maritime Vessels For Underwater Radiated Noise Management

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APY Analysis Web Tool For Seaweed Cultivation

MRC Website



APY Analysis Web Tool For Seaweed Cultivation

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Charting a Course for Climate Action: Highlights and Challenges from COP28 in Dubai

UDA Digest



"The significance of the ocean in COP28 discussions is especially relevant in the context of Underwater Domain Awareness (UDA). The ocean, capturing approximately 25% of global carbon dioxide emissions and absorbing about 90% of excess heat, acts as a crucial regulator of Earth's climate."

- Divya Rai, MRC Fellow

Charting a Course for Climate Action:
Highlights and Challenges from COP28 in
Dubai

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Short report on Sediment Classification Framework for the Indian Ocean Region

UDA Digest



Short report on Sediment Classification
Framework for the Indian Ocean Region

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Bharat @100 – A New Perspective Based on the Underwater Domain Awareness (UDA) Framework

UDA Digest



"The Indian Ocean Region (IOR), geopolitically, is extremely volatile and fragmented, so non-state actors and extra-regional powers can use the situation to their advantage. Maritime terrorism and piracy are major concerns. The nations are spending significant budgets on security at the cost of serious socio-economic requirements."

- Dr (Cdr) Arnab Das

Bharat @100 — A New Perspective Based on
the Underwater Domain Awareness (UDA)
Framework

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Unearthing the struggle: Navigating Sediment Challenges in the Tropical Landscape

UDA Digest



"Sediment significantly impacts water quality and aquatic environments, carrying harmful nutrients and pesticides that detrimentally affect water quality."

- Romit Rajendra Kaware, MRC Fellow

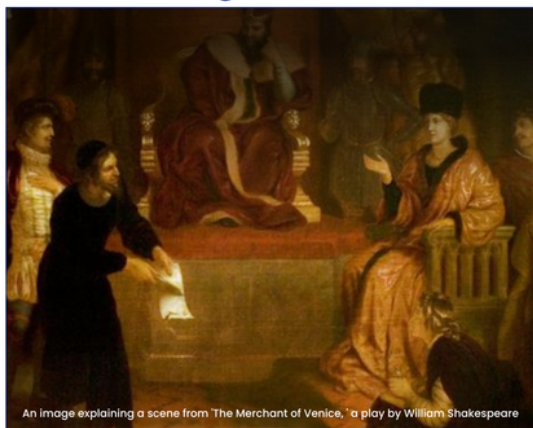
Unearthing the struggle:
Navigating Sediment Challenges in the
Tropical Landscape

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Hark! Do you hear the sea?

UDA Digest



An image explaining a scene from 'The Merchant of Venice,' a play by William Shakespeare

Hark!
Do you hear the sea?

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Advancing Water Quality in the Indus River Basin: Exploring Technological Interventions

UDA Digest



Advancing Water in the Indus River Basin:
Exploring Technological Interventions

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Fun Fact

More artifacts lie beneath the sea than in all museums worldwide.

More historic artifacts lie submerged in the world's oceans than showcased in all global museums combined. Shipwrecks such as the Titanic, ancient pottery, and sunken cities like Thonis-Heracleion contribute to this underwater treasure trove, revealing rich historical insights waiting to be explored and preserved.





DAILY NEWS

Dr. (CDR) Arnab Das participated at the Pathfinder event in Colombo, Sri Lanka. His presentation on the UDA Framework was well-received, covering essential security and economic aspects of the underwater domain. Sri Lanka's President, H.E. Ranil Wickremesinghe, emphasized the nation's dedication to Indian Ocean security and prosperity.

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THE SOUTH ASIA MONITOR

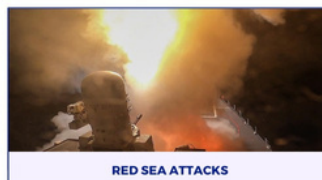
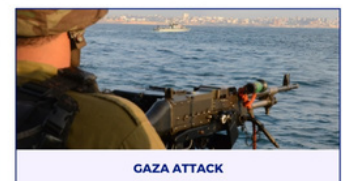
In this featured article published on the South Asia Monitor Platform, Dr. (Cdr) Arnab Das sheds light on the significance of the Underwater Domain Awareness (UDA) Framework and major challenges and opportunities in the tropical waters of the Indian Ocean Region and beyond.

[READ MORE](#)

MRC MARITIME RESEARCH CENTER
IN THE NEWS

With non-state actors altering geostrategic realities, Underwater Domain Awareness is a strategic imperative for region

South Asia Monitor



"Underwater Domain Awareness (UDA) is the key to managing the specific challenges and opportunities in the tropical waters of the IOR and beyond. The entire Indo-Pacific strategic space by definition is the tropical waters of the Indian and Pacific Oceans."

- Dr (Cdr) Arnab Das



MEDIA BOARD



NewsIn Asia

Underwater domain awareness and climate change discussed at Pathfinder Indian Ocean conference



NEWSIN.ASIA

Dr. (CDR) Arnab Das participated at the Pathfinder event in Colombo, Sri Lanka. His presentation on the UDA Framework was well-received, covering essential security and economic aspects of the underwater domain. Sri Lanka's President, H.E. Ranil Wickremesinghe, emphasized the nation's dedication to Indian Ocean security and prosperity.

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Fun Fact

The ocean serves as Earth's primary oxygen supplier.

The ocean stands as Earth's preeminent source of oxygen, playing a critical role in the planet's ecosystem and atmospheric balance. Through the intricate process of photosynthesis, marine plants and phytoplankton thriving in the vast expanses of the ocean produce a significant portion of the oxygen we breathe. This essential function underscores the ocean's immense significance in supporting life on Earth.

SKILLING ECOSYSTEM FOR UNDERWATER DOMAIN AWARENESS

WATCH THE VIDEO



MSP SERIES

MARINE SPATIAL PLANNING

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Fun Fact

Roughly 3 billion individuals depend on fisheries and various marine species as their primary protein source.

Approximately 3 billion people depend on fisheries and marine species as their primary protein source, highlighting the critical role of marine resources in global food security.



INTERNS FROM

SYMBIOSIS SCHOOL
FOR LIBERAL ARTS**Aditi Mandavgane****MRC Intern**Campaign strategy for
MRC's work on MSP and UDA**Ashwini Kakodkar****MRC Intern**Echoes of Change: Investigating
Anthropogenic Noise Pollution in
Marine Ecosystems through the
Source-Path-Receiver
Framework**Mogili Reddy****MRC Intern**The Nexus between UDA and
Multilateral Forums: India's
Role in the Indian Ocean
Region and A Rules-Based
Order**Shradha Gajavelli****MRC Intern**

Maritime Security

**Shruti Chanda****MRC Intern**Blue economy and climate
sustainable framework**Keshav Pradhan****MRC Intern**Environment Social and
Corporate Governance (ESG)
framework for realization of
Marine Spatial Planning (MSP) in
the Indian Ocean Region (IOR)**Akshita Mangal****MRC Fellow**Prediction model for Spatio-
Temporal Low Frequency
Ambient Noise Map

Join us now to embark on this enriching journey with MRC Internships. Experience a holistic approach to learning, where you'll explore UDA, shape projects, and receive invaluable mentorship. Completion of the program earns you Certificates, with top performers potentially advancing to become MRC research associates.

Moreover, dive into a dynamic blend of theoretical knowledge and practical experience, fostering collaboration and innovation. Engage in cutting-edge research methodologies within the UDA framework, gaining insights crucial for future endeavors in research and development.

Don't miss out on this opportunity to tackle real-world challenges in tropical waters through UDA-based projects. Join us now and seize the chance to make a difference.

[CLICK HERE TO REGISTER](#)

WATCH THE VIDEOS TO KNOW MORE -



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MRC is planning to organize the **UDA Summer School 2024**, as a 5-week extensive learning programme, in June-July 2024. The event will be hosted at the **Indo-Swiss Center of Excellence (ISCE) for Skilling on Underwater Studies**. The aim is to promote the concept of the **Underwater Domain Awareness (UDA)** to address the aspect of **Safe, Secure and Sustainable Growth** in the maritime region. The program encourages participation from various disciplines such as **Science, Technology, Economics and Management**. It will provide participants with an opportunity to interact with subject-matter experts from **National Security, Blue Economic entities, Environmental Regulators and Science and Technology providers**.

To know more, view our activities from the 2018 edition of the UDA Summer school-

[CLICK HERE TO KNOW MORE](#)

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UDA*

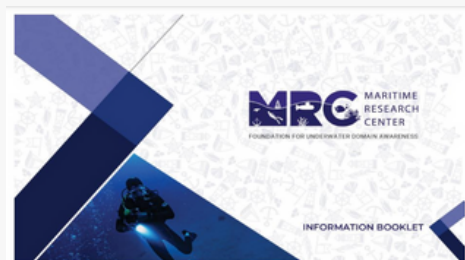
The conventional approach of each of the stakeholders pursuing their own UDA* efforts has serious limitations given the highly resource intensive field experimental research initiative required for a long period. [Click here for more](#)

Support MRC Initiatives



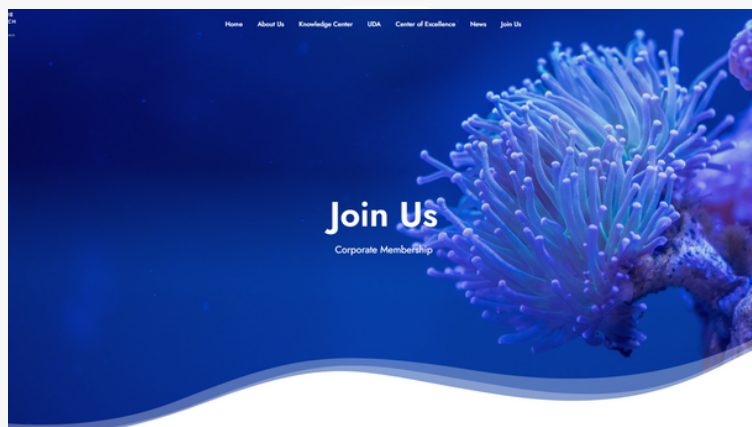
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Checkout our Digital Brochure



Digital Brochure

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