

UDA

UNDERWATER DOMAIN AWARENESS

E-NEWSLETTER



2ND QUARTER AT A GLANCE

500+
Internship
Applications
Received

270+
Social Media
postings

250+
Participants at
our Workshops

3
UDA
Workshops

2 Lakh+
Social Media
Reach



Dr. (Cdr) Arnab Das met with Mr. Bhanu Prakash Srivastava, Chairman and Managing Director of Bharat Electronics Limited, a PSU under Min of Defence, GoI (BEL). Dr. Das spearheaded discussions on advancing the concept of Underwater Domain Awareness (UDA) from a strategic security standpoint.

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Dr (Cdr) Arnab Das conducted an Underwater Domain Awareness (UDA) workshop, specific to the Indo-Pacific strategic space, for the Andaman and Nicobar Tri-services Command officers from 24 to 25 April 2024. During his two-day visit to Port Blair, Andaman and Nicobar Islands, Dr. Das interacted with their senior officers.

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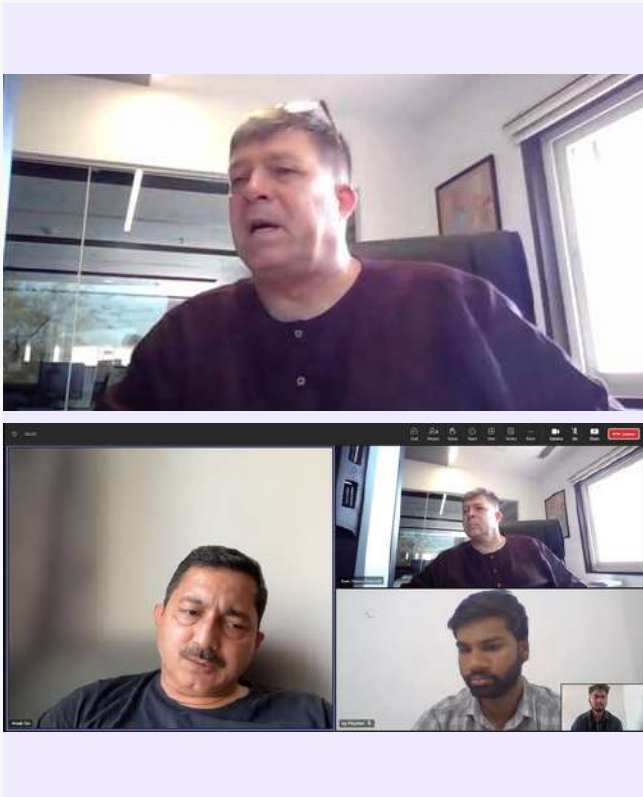
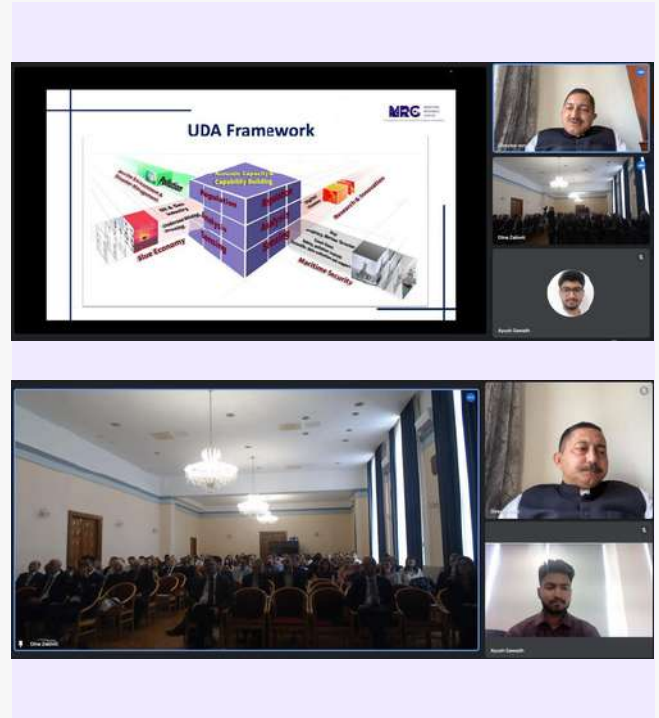
Dr. (Cdr) Arnab Das led an engaging session with officials at Vizhinjam International Seaport in Thiruvananthapuram, Kerala, on 2nd May 2024, diving deep into the implementation of the research work on the maritime domain sector at MRC.

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Dr (Cdr) Arnab Das participated in a conference entitled, **“Sustainable Blue Economy in Context of Climate Change and Biodiversity Degradation Power by Marine Technologies,”** which was organized by Digital innovation HUB Innovamare, in collaboration with the University of Zadar on 10 April 2024 in Zadar, Croatia. Dr. Das explained to the participants about the MRC–devised UDA Framework and its nuances and he also discussed the concept of Marine Spatial Planning (MSP).

[READ MORE](#)



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.

[READ MORE](#)

Dr (Cdr) Arnab Das called on Vice Admiral Vennam Srinivas, Flag Officer Commander-in-Chief (FOCinC) Southern Naval Command, at Southern Naval Command's Headquarters in Kochi, Kerala to brief him on the Underwater Domain Awareness (UDA) framework being progressed by us and NirDhwani Technology Pvt Ltd.

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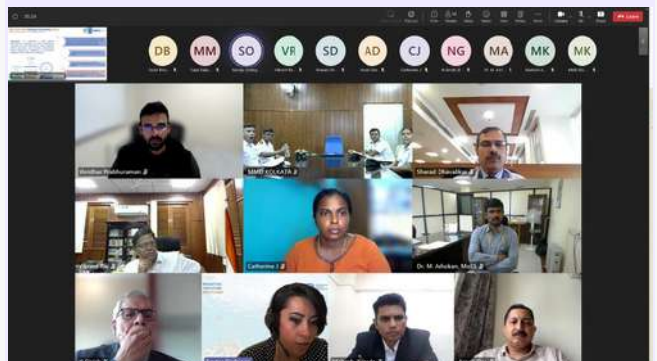


Dr. (Cdr) Arnab Das delivered an insightful lecture to the Faculty and Student Officers of the Defence Services Technical Staff Course (DSTSC), attended by nearly 150 officers from the ADGPI - Indian Army, Indian Navy, Indian Air Force, and Indian Coast Guard and friendly foreign countries.

[READ MORE](#)

Maritime Research Center (MRC) proudly participated in the introductory meeting of the International Maritime Organization - IMO 'Global Partnership for Mitigation of Underwater Noise from Shipping' project as part of the Indian National Task Force.

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MRC'S PARTICIPATION AT THE 'INDIAN OCEAN REGIONAL WORKSHOP' IN BANGKOK, THAILAND



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Maritime Research Center's participated in the 'Indian Ocean Regional Workshop,' held in Bangkok, Thailand, from 24 June to 26 June 2024. Dr. (Cdr) Arnab Das participated in the 4th Session of the Workshop, which was held on 25 June 2024, on the topic 'Views from Private Sector/ Non-traditional Stakeholder.' During this session, the panel explored perspectives on the waters of the Indian Ocean Region (IOR) and how maritime security can be advanced.



UDA FRAMEWORK FOR STRATEGIC SECURITY ARCHITECTURE & ATMANIRBHARTA

15 APRIL TO 19 APRIL 2024

DAY 1



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DAY 2



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DAY 3



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DAY 4



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DAY 5



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WORKSHOP REPORT



UDA FRAMEWORK FOR STRATEGIC SECURITY ARCHITECTURE & ATMANIRBHARTA

CLICK BELOW TO READ THE WORKSHOP REPORT -

[CLICK HERE](#)

EMINENT SPEAKERS OF THE WORKSHOP



DR. AJAY KUMAR

Former Defence Secretary, GOI

[WATCH THE KEYNOTE](#)

[Read his Opinion piece in Business Standard](#)



AMB ANUP MUDGAL

Former Diplomat, GOI

[WATCH THE KEYNOTE](#)



DR. RADHIKA SESHAN

Maritime Historian

[WATCH THE KEYNOTE](#)



AMB GAUTAM BAMBAWALE

India's Former Amb to China & Pakistan

[WATCH THE KEYNOTE](#)

WORLD ENVIRONMENT DAY 2024

UNDERWATER
DOMAIN AWARENESS
(UDA) FRAMEWORK &
THE OPPORTUNITIES
FOR YOUNG INDIA IN
THE NEW GLOBAL ERA

05 JUNE 2024

WORLD ENVIRONMENT DAY 2024
UNDERWATER DOMAIN AWARENESS (UDA) FRAMEWORK AND
THE OPPORTUNITIES FOR YOUNG INDIA IN THE NEW GLOBAL ERA
Wednesday 05 June 2024 | 1600 hrs

ESTEEMED GUESTS	LEAD SPEAKERS	INTERVENTION	HOSTS
SRI GANESH NATRAJAN Chairman, National Academy of Sciences, India	AMR ANUP K MUDGAL Ambassador, India Embassy, Paris	MR. THIBAUT FOURNOL Secretary General of Fédération Française de Recherche, Paris, France	DR (DR) ARNAB DAS President, National Academy of Sciences, India
CDR P. K. SRINIVASAYA (RETD) Commander of Military of South America	DR. BERND EGER Head of Mission, Embassy of Austria, New Delhi	MR. JOEL RUET President of the League of Nations	DR. SAVYAMPRIYAMA DAS Ambassador, India Embassy, New Delhi
			SRI PRAFUL TALERA Ambassador, India Embassy, USA

[CLICK HERE TO WATCH THE WEBINAR](#)

[CLICK HERE TO READ THE WEBINAR REPORT](#)

WORLD OCEANS DAY 2024

CELEBRATING WORLD OCEANS DAY 2024
AWAKEN NEW DEPTH
Saturday 08 June 2024 | 1600 hrs

HOSTS	PRESENTATION BY MRC INTERNS
DR (DR) ARNAB DAS President & Director, MRC India	AKASH PRASAD MRC Intern
MR. SRIDHAR PRAEELANAN MRC Deputy Director	BHAVIN JAIN MRC Intern
MS. NISHITA TISHIVAKARRA Communications and Advocacy Lead at MRC	PRACHI KUMHARE MRC Intern
	RAVESH KARBHARI MRC Intern
	S. ARJUNANAND MRC Intern
	ANUSHKA PANDIT MRC Intern
	SUSAN CHIGLIPALL MRC Intern
	SHRADHA CAJAVELLI MRC Intern
	ANALI KUMAR MRC Intern

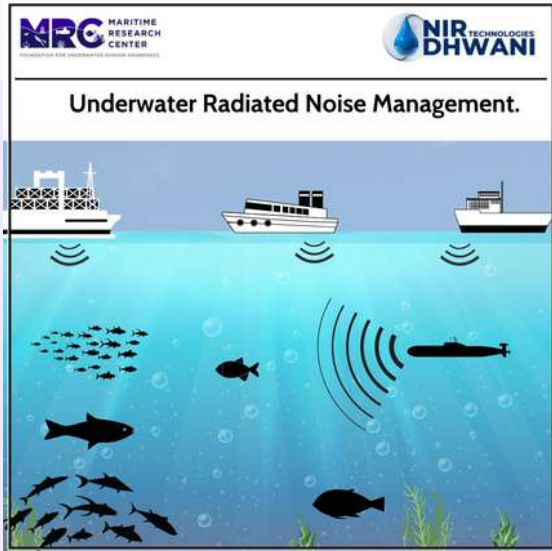
CELEBRATING
WORLD OCEAN DAY
2024

AWAKEN NEW DEPTH

08 JUNE 2024

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[CLICK HERE TO READ THE WEBINAR REPORT](#)



Underwater Radiated
Noise Management

[READ MORE](#)



Onboard Noise
Vibration Management

[READ MORE](#)



Underwater Search And Recovery: A Reference To Develop A Regulatory
Framework For The Indian Ocean Region.

[Research Publication](#)



Underwater Search And Recovery: A
Reference To Develop A Regulatory
Framework For The Indian Ocean Region.

[READ MORE](#)



Mathematical Study On Underwater Channel
Modelling In Indian Ocean Region.

[Research Publication](#)



[MORE INFO](https://nirdhwani.in/) <https://nirdhwani.in/>

Mathematical Study On Underwater
Channel Modelling In Indian Ocean Region.

[READ MORE](#)



APY Analysis Webtool for Seaweed Cultivation

Research Publication



Key Highlights

- India's extensive coastline offers significant potential for seaweed cultivation, rich in vitamins, minerals, and industrial applications like agar, carrageenan, and alginate.
- The Indian government supports seaweed farming through policies, education programs, and technology interventions to boost the blue economy and aquaculture.
- Various cultivation methods such as Single Rope Floating Raft, Tube Net, Monoline, and Pond Farming, coupled with technology like Autonomous Underwater Vehicles, enhance seaweed farming efficiency.

[MORE INFO](#) knowledge.foundationforindia.in

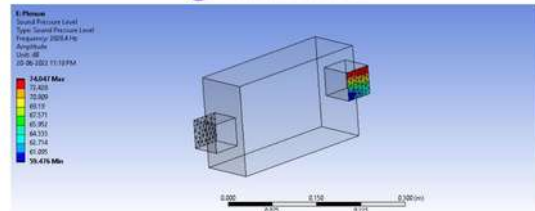
APY Analysis Web Tool For Seaweed Cultivation

[READ MORE](#)



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

Research Publication



Key Highlights

- HVAC system noise is a significant issue in ships, and current regulations lack specificity for equipment-generated noise.
- Utilizes ANSYS software for creating a harmonic acoustic model, allowing for detailed analysis of various duct components.
- Highlights the critical role of meshing in finite element analysis (FEA) for accurate simulations, discussing methods like tetrahedral and hexahedral elements.

[MORE INFO](#) knowledge.foundationforindia.in

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

[READ MORE](#)



Passive Sonar Simulator Vulnerability Assessment

Research Publication



Key Highlights

- Increased awareness and interest in marine resources necessitates security and assessment in maritime regions.
- Vulnerability assessment uses the sonar equation to determine a ship's vulnerability to detection.
- Survivability of naval ships is assessed based on susceptibility, vulnerability, and recoverability.

[MORE INFO](#) <https://nirdhwni.in/>

Passive Sonar Simulator Vulnerability Assessment

[READ MORE](#)



Effective Detection Model For Passive SONAR Simulator

Research Publication



Key Highlights

- Sonar detection range is crucial for evaluating sonar equipment, especially in passive sonar systems.
- Passive sonar detects targets amidst ambient noise and considers transmission loss in underwater sound propagation.
- Mathematical models like the passive sonar equation, transmission loss curve, noise mapping, and ROC curves are essential.

[MORE INFO](#) knowledge.foundationforindia.in

Effective Detection Model For Passive SONAR Simulator

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MRC MARITIME RESEARCH CENTER
FOUNDATION FOR UNDERWATER DOMAIN AWARENESS

Unravelling Acoustic Challenges in India Ocean Region



UDA Digest



Unravelling Acoustic Challenges in India Ocean Region

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MRC MARITIME RESEARCH CENTER
FOUNDATION FOR UNDERWATER DOMAIN AWARENESS

Battleground Waters: Unravelling the Environmental Quandary Amid the Red Sea Crisis

UDA Digest



Key Highlights

- Red Sea crisis has now transcended its immediate impact on global trade, intertwining with a broader environmental quandary
- The ongoing clashes, initiated by Houthis, have targeted several vessels, including commercial ships and U.S. Navy warships.
- The lack of maritime safety capabilities in the region amplifies the challenges associated with cleanup efforts.

[MORE INFO](https://mrc.foundationforuda.in/) <https://mrc.foundationforuda.in/>

Battleground Waters: Unravelling the Environmental Quandary Amid the Red Sea Crisis

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MRC MARITIME RESEARCH CENTER
FOUNDATION FOR UNDERWATER DOMAIN AWARENESS



Catalysing Action for Our Ocean & Climate through Underwater Domain Awareness

UDA Digest



Key Highlights

- India has an extensive coastline and rich marine biodiversity, making World Oceans Day significant for conservation efforts to maintain ecological balance and biodiversity.
- Oceans play a crucial role in India's economy through fisheries, shipping, tourism, and offshore industries, necessitating sustainable resource management to support livelihoods and economic growth.

[MORE INFO](https://digest.foundationforuda.in/) <https://digest.foundationforuda.in/>

Catalysing Action for Our Ocean & Climate through Underwater Domain Awareness

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FOUNDATION FOR UNDERWATER DOMAIN AWARENESS

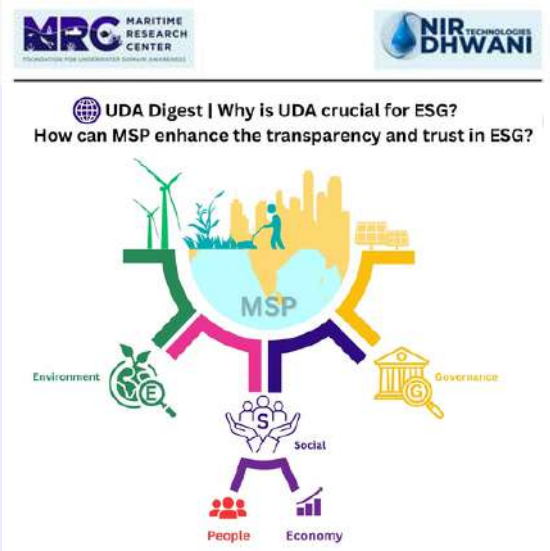
Enhancing Maritime Security and Economic Efficiency: Linking PM Gati Shakti with Underwater Domain Awareness

UDA Digest



Enhancing Maritime Security and Economic Efficiency: Linking PM Gati Shakti with Underwater Domain Awareness

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Why is UDA crucial for ESG? How can MSP enhance the transparency and trust in ESG?

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Developing a Comprehensive Handbook for Marine Spatial Planning in Tropical Waters

[READ MORE](#)



Urban Flooding and Sediment Management – A Critical Perspective for Urban Planning in Tropical Regions



Urban Flooding and Sediment Management – A Critical Perspective for Urban Planning in Tropical Regions

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INTERVIEW 2 - 24 MAY 2024

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Position Paper
Marine Spatial Planning

**MRC POSITION PAPER
MARINE SPATIAL PLANNING**

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Quarter I
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**NEWSLETTER
QUARTER I 2024**

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**Social Impact
Assesment
Report**

the 'Social Impact Assesment Report'

**SOCIAL IMPACT ASSESMENT
(SIA) REPORT**

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**MRC
5-DAY WORKSHOP WRAP-UP**

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water-related challenges

100 WATER WARRIORS

WATCH



100 RIVER WARRIORS

WATCH



Akash Prasad

IIT Bombay

Statistical Inference of
Climate Change Impact
in the IOR



Bhavin Jain

IIT Bombay

Sediment Classification
ML Model



Pradnya Kumbhare

IIT Bombay

Sediment Management
(Transport Study)



Shwetha Varshini

IIT Madras

Underwater Radiated
Noise Management



S Arulanandan

IIT Kharagpur

Sediment Management
(Focused on Dredging)



Aaryan Awadh

IIT Kharagpur

Collision Avoidance
System using AIS data



Susank Chigilipall

IIT Kharagpur

Aquaculture
Demographic Digital
Mapping



Shradha Gajavelli

Symbiosis School
of Liberal Arts

Maritime Security in the
Underwater Domain:
exploring the non-
traditional threats and
challenges



Anjali Kumari

IIT Kharagpur

Water Resource
Management

Contact Information

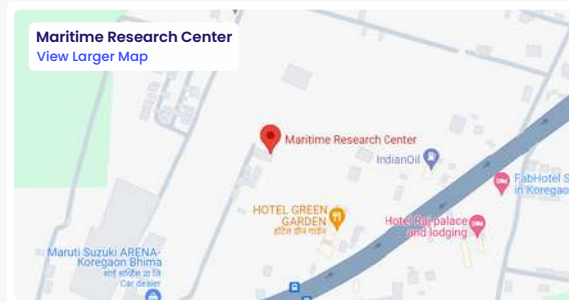
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Email: director@maritimeresearchcenter.com

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Maritime Research Center - UDA

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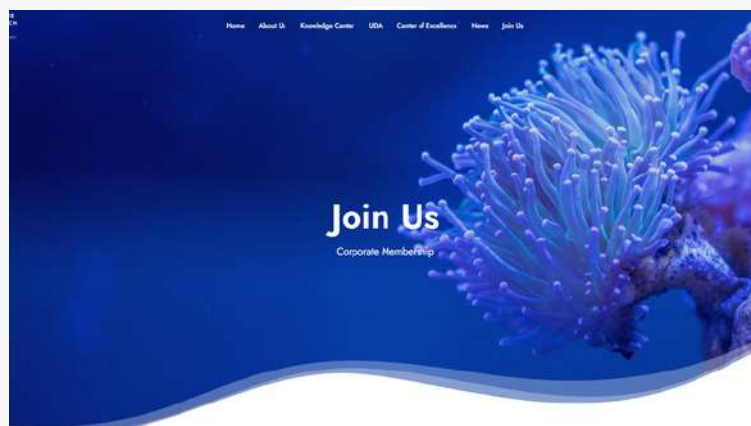
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Digital Brochure

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