



Maritime Research Centre Membership for Individuals

The Maritime Research Centre (MRC), Pune has been pursuing the Underwater Domain Awareness (UDA) Framework for facilitating Safe, Secure, Sustainable Growth for all in the Indian Ocean Region (IOR) and beyond. The details on the UDA framework and its relevance is elaborated in a detailed paper available at https://en.wikipedia.org/wiki/Underwater_domain_awareness

The Government of India (GoI) and the private sector today, have demonstrated extreme sensitivity to matters maritime and significant attention is being paid by both towards driving mega projects and capacity & capability building. Maritime Domain Awareness (MDA), has become the key focus and substantial infrastructure building has been undertaken. The 26/11 attack on our financial capital, has been a major wake-up call towards our Sea Blindness at all levels.

The MDA by its construct and realization across the stakeholders and policy makers has remained limited to the security domain, with minimal penetration across other stakeholders. The developing countries need to balance the available resources across all stakeholders, particularly for socio-economic priorities. The defence budget will always have limitations particularly given the geopolitical realities in the IOR and also the sea blindness over several decades post-Independence. A balance is required and we need to have very nuanced strategy going forward.

The 21st century has seen significant thrust on all fronts, from the maritime to the inland water bodies. However, there are gaps in taking forward these mega projects in a comprehensive manner given the unique challenges. The governance structures are not able to keep pace with the growth aspirations of the industry, international community and the domestic stakeholders. Science and Technology (S&T) has not been integrated well, with the policy framework & monitoring mechanism to build effective governance structures.

The UDA framework proposed by MRC answers multiple challenges mentioned above. The UDA framework encourages pooling of resources and synergising of efforts across the stakeholders to build a coherent strategic way ahead. It can comprehensively manage the challenges and opportunities of the undersea domain in the IOR and beyond. Maritime governance, particularly from the underwater domain perspective, requires urgent and effective fix to enable handling the geopolitical and geo-strategic realities of the IOR and beyond. A brief article enumerates the Indo-Pacific and the SAGAR perspective <http://digest.foundationforuda.in/Articles/26Jan20/UDA.html>

The UDA initiative at MRC attempts to address the maritime governance aspect from multiple fronts, namely policy, technology & innovation and human resource development. The initiative proposes a User-Academia-Industry partnership and has

been reaching out to a wide range of stakeholders to encourage participation for innovation and involvement of the young India. Policy makers have also started engaging with MRC to build effective structures both at the national and regional levels. Details of MRC efforts are attached in our newsletter <https://mrc.foundationforuda.in/documents/Newsletter%202020.pdf>

MRC is a not-for-profit entity on a self-sustaining model to undertake its mission of promoting the UDA framework. The last four years has been a very exciting journey with participation from individuals across stakeholders, policy makers, strategists and experts. We are now at a juncture, where we need to synergise and leap forward to the next level with a far more effective and efficient internal structure. We plan to formalize our partnership with our esteemed supporters and mentors.

A MRC membership drive has been planned to formalize the participation from individuals, desirous of joining us in this UDA initiative. Your participation is extremely valuable to us and we seek your involvement on multiple aspects of the UDA framework based on your interest and expertise. There are multiple opportunities for you to participate and contribute. We would like to engage with you and evolve a meaningful aspect for your valuable participation. MRC activities are attached in enclosure-1, for you to appreciate the wide range of activities being pursued by MRC and also to seek your inputs on enhancing our effectiveness.

The MRC membership for individuals has been structured in five levels for effective management of the activities and participation. The members will be eligible to be part of the activities related to the UDA initiative and also participate in shaping the UDA journey at the decision making level. There is a small membership fee as your contribution to the UDA initiative. The detailed of the activities associated with the membership is given in enclosure-2. The membership type and the three year registration amount is given below:

(a)	Student Member	-	Rs. 1,000/-
(b)	Young Professional Member	-	Rs. 2,000/-
(c)	Premium Member	-	Rs. 5,000/-
(d)	Mentors	-	Rs. 10,000/-
(e)	Patrons	-	Rs. 25,000/-



MRC Activities

The MRC activities are mainly categorized into three broad heads for clarity of purpose and effective management. In addition to these three categories, certain additional activities have also been launched to support these main functions.

Policy The UDA framework is now being recognized at the highest policy making level for national policy formulation. The following have been initiated to address the policy gaps in realizing the effective maritime governance goal in the IOR and beyond:

(a) *Draft National Policy for Acoustic Capacity and Capability Building*

The draft proposal was submitted to the NITI Aayog. On 23 Dec 2020, the Honourable Vice Chairman Dr. Rajiv Kumar, the CEO Shri Amitabh Kant and four advisers interacted with the MRC team comprising of Dr. (Cdr) Arnab Das and Amb Yogendra Kumar. The Vice Chairman NITI Aayog acknowledged the uniqueness of the UDA framework proposed by MRC, and also accepted the relevance of the same for the ongoing geopolitical and geostrategic requirements at the national and regional level. He directed the advisers to engage with the MRC team and evolve a way ahead for NITI Aayog's participation.

(b) *Draft National Policy on Security* The draft national policy on security has been drafted by MRC under the guidance of Lt Gen D B Shekatkar (Retd) for consideration by the National Security Adviser's Office. The proposal has been forwarded to all the concerned decision makers for their comments and participations. Founder and Director MRC has been invited to make detailed presentation to all the top authorities on the proposal. UDA framework has been given high priority at all levels and its alignment with the Honourable Prime Minister's SAGAR vision has been acknowledged.

(c) *National Policy on Underwater Radiated Noise Management* The DG Shipping has acknowledged the requirement of managing the Underwater Radiated Noise (URN) emitted from the merchant shipping, in line with the United Nations Sustainable Development Goals – 14 (SDG-14). MRC has submitted the draft paper for presentation as India's proposal to the Marine Environment Protection Committee at the next International Maritime Organization (IMO) meeting. The unique acoustic habitat degradation monitoring tool developed by the MRC is a high tech AI enabled tool to predict the real time URN in the IOR and beyond. It will be extremely effective in managing the marine environment against the increasing anthropogenic noise in the underwater domain due to shipping. Draft national URN policy will be the next step for effective governance of the shipping activities in the region.

(d) UDA Framework and the SAGAR Vision MRC hosted a one day seminar titled UDA framework and the SAGAR vision to discuss multiple aspects of the UDA framework and how it can contribute to the SAGAR vision of the Honourable Prime Minister. The seminar was attended by a galaxy of strategists and experts, including authorities from the government and private sector. Everyone was unanimous in acknowledging the relevance of the UDA framework to effective realization of the SAGAR vision. A resolution was passed at the end of the seminar with approval from all the senior strategists and experts declaring that the UDA framework should be given national priority.

MRC is working on multiple fronts to sensitise the parliamentarian & legislatures and the senior functionaries of the government and the corporate world. Multiple think tanks have been briefed on the UDA framework and we have received very positive response to our efforts.

Technology & Innovation

The MRC in collaboration with M/S NirDhwani Technology Pvt Ltd (NDT) has been engaged in developing innovative projects and technology solutions to ensure realistic implementation of the UDA framework on ground. These are high end state-of-the-art, science & technology based innovative solutions to enhance our UDA capabilities. The range of products and services are available on our MRC and NDT websites. The same can be accessed on <https://mrc.foundationforuda.in> & <https://www.nirdhwani.in>

The science & technology solutions range from managing the UDA requirements in the marine systems to freshwater systems. The mega projects of the GoI, namely Inland Water Transport (IWT), Sagarmala, Water Resource Management, URN Management, Deep Sea Mining, Underwater Surveillance & Classification and many more across the four stakeholders can be supported by the projects being undertaken by the solutions developed by MRC & NDT.

NDT has been taken on-board by Bharat Electronics Ltd (BEL) as a R&D partner to build innovative solutions for the security requirements within and beyond. NDT also won the Narwhal Challenge in 2019 for its Acoustic Habitat Degradation Monitoring Tool. The Narwhal Challenge is a global innovation challenge for the maritime domain to build solutions for global issues. The NDT team was among the four teams selected worldwide.

Human Resource Development

MRC has been undertaking multiple events to sensitise the young generation on the UDA framework and involve them in multi-disciplinary innovative projects. Even big corporates and stakeholders have been engaging with MRC for their capacity and capability building requirements. The following structured programs are being undertaken to build the pool of skilled human resource that will be required to take the UDA framework forward:

(a) UDA Summer School The UDA summer school is a six weeks project based internship program for students and young professionals across disciplines and organizations. The residential program allows peer learning for the young students to closely interact with the professionals from the stakeholders and also for the professionals from the stakeholders to work with the young students, well versed with the state-of-the-art tools and academic literature. Strategists and experts from academia, industry and the stakeholders interact with the participants and also discuss their project ideas. The young students get exposed to the opportunities and the professionals appreciate the tools to enhance the UDA applications in their areas of responsibilities.

(b) Acoustic Survey Skill Development Program The acoustic survey is the most critical skill to manage any underwater domain awareness requirement across stakeholders. The increasing focus on the maritime governance is generating multiple opportunities and thus, the young need to appropriately prepare themselves for the upcoming opportunities. The acoustic survey skill development modules on multiple levels have been approved under the Pradhan Mantri Kaushal Vikas Yojna (PMKVY) Skill India Program. It is being rolled-out under the Bachelor of Vocational Education (B.Voc) programs at multiple levels. The All India Council for Technical Education (AICTE) has accepted MRC proposal to include the Acoustic Survey Skill Development under their new all India course curriculum for technical education.

(c) Academic & Research Programs MRC has been supporting and guiding multiple students for their Under Graduate (UG), Post Graduate (PG) and PhD projects on the UDA framework. More than two hundred students have participated in multiple internship programs at MRC. Regular student related activities including workshops and seminars are organized to sensitize the students on the innovative ideas and career opportunities.

(d) Collaborations with Academia and Industry MRC has a structured institutional membership model for academia and industry to collaborate and initiate joint activities. Multiple organizations have collaborated with MRC to build joint programs to progress the UDA framework on all the three aspects of policy, technology & innovation and human resource development.

Associated Activities and Initiatives

The MRC and NDT have launched multiple activities and initiatives to support the UDA outreach as listed below:

(a) UDA Digest The UDA Digest, our online platform for publication of articles, videos and any other form of creative expression has been launched on 03 Feb 2021, in presence of Dr. Sanjay Baru, Dr. Tomonari Akamatsu, Shri Pratap Heblikar, Vice Admiral M P Muralidharan (Retd) and Shri Praful Talera. It provides opportunity for strategic experts, industry leaders, academics and

researchers to publish their work in the UDA Digest and been seen by the community. UDA Digest is available at <http://digest.foundationforuda.in>

(b) Webinars MRC and NDT have been hosting regular webinars on varied topics to address the multiple dimensions of the UDA framework. These webinar bring multiple senior functionaries and experts to deliberate in the specific dimension of the UDA framework and a detailed report is published to record the conclusions of the discussions. Few participants are also requested to make their points related to the topic of the webinar.

(c) Seminars and Interactions MRC and NDT have also been hosting seminars to allow intense interactions with very senior functionaries and decision makers. These events bring together multiple senior functionaries on one platform and seek their support and guidance in taking forward the UDA framework. It is also a platform for the participants to be heard and allow them access to the top decision makers on the UDA framework or related dimensions.

(d) Project Involvement There are opportunities for our members to participate in the academic and research initiatives at MRC. They could participate in the project presentation and also lectures & workshops on related topics related to their interest. The research notes and detailed reports on the projects can be accessed by the members.

(e) Project Initiation There is opportunity for initiating new projects under the UDA framework based on specific ideas from the members. MRC and NDT expertise and facilities will be extended to ensure effective realization of the project. Multi-disciplinary interns will be allocated to these projects and supported with expertise and research material.

(f) UDA Fellowships MRC and NDT have initiated multiple UDA fellowships under two categories namely UDA Project and UDA Research Fellowships to support and encourage meritorious students and young professionals to pursue their deeper involvement in this new opportunity.



Membership Structure

The membership has been structured in five categories for ease of management of the participation and the associated activities. The activities associated with the membership categories are listed below and the members may choose their membership category based on their preference.

(a) **Student Member**

- (i) Invite to participate in all webinars. Certificate of participation will be awarded to the members only.
- (ii) Invite to participate in all internships and workshops. Members will get a 10 % discount on all the registration amount. Letter of Appreciation and Recommendation letter will be awarded to members only.
- (iii) Eligible for fellowships and invite for special mentorship sessions to help in qualifying for the fellowship.
- (iv) Free access and regular updates on the UDA Digest.
- (v) Access to the multiple innovative project ideas on the UDA Framework.
- (vi) Quarterly update on MRC activities in the form of the newsletter.

(b) **Young Professional Member**

- (i) Invite to participate in all webinars. Certificate of participation will be awarded to the members only.
- (ii) Invite to participate in all internships and workshops. Members will get a 15 % discount on all the registration amount. Letter of Appreciation and Recommendation letter will be awarded to members only.
- (iii) Eligible for fellowships and invite for special mentorship sessions to help in qualifying for the fellowship.
- (iv) Free access and regular updates on the UDA Digest.
- (v) Access to the multiple innovative project ideas on the UDA Framework.
- (vi) Members desirous of higher degree may also seek mentorship to choose the appropriate program.
- (vii) Quarterly update on MRC activities in the form of the newsletter.

(c) **Premium Members**

- (i) Invite to participate in all webinars. Copy of the webinar report will be mailed to the premium members.
- (ii) Invite for project review of the MRC interns and fellows. Regular updates on the projects and progress will be provided.
- (iii) Access to all the research notes and publications will be available only to the premium members.
- (iv) Invite to participate in the seminars and opportunity to interact with the dignitaries.

- (v) Quarterly update on MRC activities in the form of the newsletter.
- (vi) Free access and regular updates on the UDA Digest.
- (vii) Invite to participate in the annual UDA strategy session and guide the MRC team in shaping the UDA initiative in future. Detailed briefing will be done on the activities and plans.

(d) **Mentors**

- (i) Invite to participate in all webinars. No registration required. Hard copy of the webinar report will be mailed to the mentors.
- (ii) Invite for project review of the MRC interns and fellows. Regular updates on the projects and progress will be provided.
- (iii) Access to all the research notes and publications will be available only to the premium members.
- (iv) Invite to participate in the seminars and opportunity to interact with the dignitaries. Special mentor interaction will be planned during these seminars.
- (v) Quarterly update on MRC activities in the form of the newsletter.
- (vi) Free access and regular updates on the UDA Digest.
- (vii) Invite to participate in the annual UDA strategy session and guide the MRC team in shaping the UDA initiative in future. A special mentors briefing will be done on the activities and plans on a half yearly basis.
- (viii) Special mention of all the mentors in the MRC website.

(e) **Patron**

- (i) Invite to participate in all webinars. No registration required. Hard copy of the webinar report will be mailed to the mentors. Patrons may initiate webinars based on the project being driven by them.
- (ii) Invite for project review of the MRC interns and fellows. Regular updates on the projects and progress will be provided.
- (iii) Patrons will be driving some projects based on their expertise or interest. They may support couple of UDA fellowships on the select projects.
- (iv) Invite to participate in the seminars and opportunity to interact with the dignitaries. Special patron interaction will be planned during these seminars. Select events may have them driving the event.
- (v) Quarterly update on MRC activities in the form of the newsletter.
- (vi) Free access and regular updates on the UDA Digest.
- (vii) Invite to participate in the annual UDA strategy session and guide the MRC team in shaping the UDA initiative in future. A special patrons briefing will be done on the activities and plans on a quarterly basis.
- (viii) Special mention of all the patrons in the MRC website.