

## [Interaction and presentation by Dr. Chaitanya Patil at the Maritime Research Centre, Pune](#)

### **India is emerging as a maritime nation in the world**

In the 21st century, India is emerging as a maritime nation with a significant strategic push for the maritime domain's capacity and capability building. There has been a significant shift towards the maritime domain in strategic security and sustainable growth, and the government is prioritizing the blue economy and maritime security. Therefore, ***India stands at the brink of a remarkable transformation today, with both global and domestic cues highly favorable and we as a nation are in a sweet spot. The country is perfectly poised to embark on a new phase of growth, owing to favorable political, economic, demographic, socio-cultural, and other circumstances.***

As the global community witnesses massive strategic deployment in the Indo-Pacific region, the tropical waters need specialized underwater capabilities to manage strategic security and blue economic objectives. ***An effective Underwater Domain Awareness (UDA) is the most critical driver for the Security And Growth for All in the Region (SAGAR) vision - an ambitious declaration to claim India's leadership in the Indian Ocean Region (IOR) and beyond.*** The demographic bulge in India can be channeled effectively to provide the talent pool across all levels to drive the global agenda.

### **Proposal by MRC**

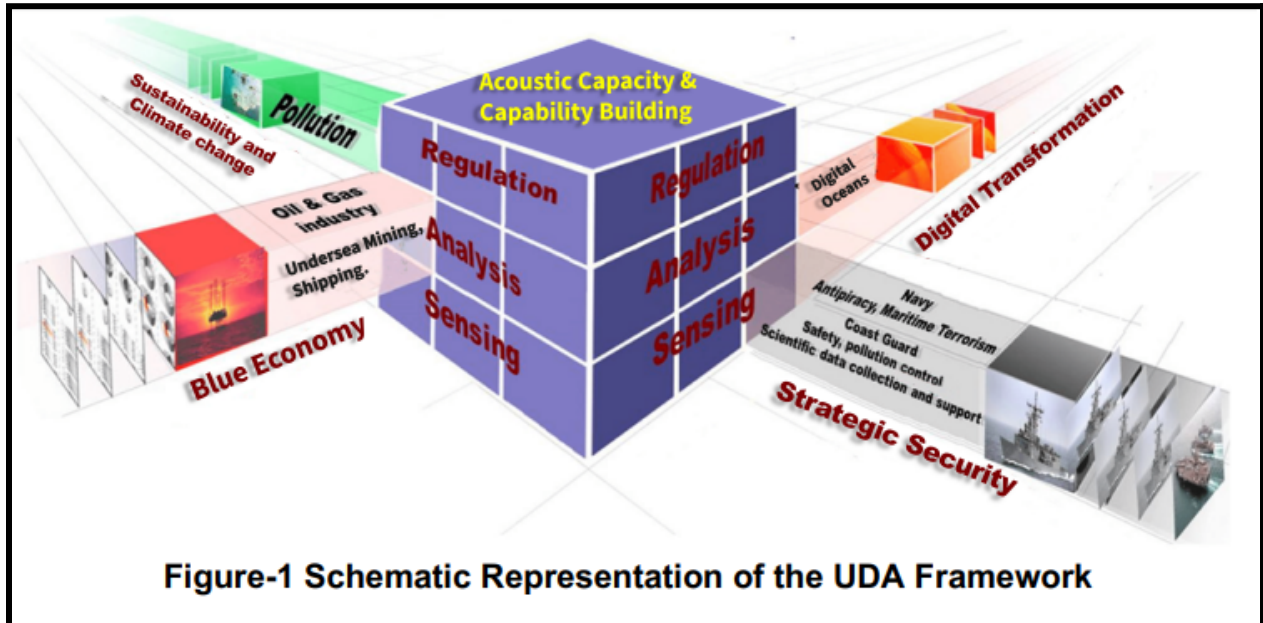
***On November 22, 2023, the Maritime Research Centre (MRC), in collaboration with NirDhwani Technologies (NDT) intends to host Dr. Chaitanya Patil from the University of Strathclyde at its Centre in Pune, Maharashtra.*** Dr. Chaitanya Patil is a lecturer at the Department of Naval Architecture, Ocean & Marine Engineering (NAOME), University of Strathclyde. One of the key highlights of the interaction would be the discussions around the Underwater Domain Awareness (UDA) Framework and its significance from the Geopolitical perspective. ***Dr. Patil is currently working on developing intelligent marine systems through models and simulations using AI techniques focussing on perception, system health assessment (diagnosis and prognosis), and decision algorithms to achieve higher autonomy levels with the aim of digitalization of maritime.*** While at the Centre, Dr. Patil will make an elaborate presentation highlighting the maritime industry's contribution to the world economy.

MRC is committed to advancing knowledge and understanding of the ocean. Through its research initiatives, MRC aims to address the challenges facing marine ecosystems, promote sustainable practices, and contribute to evidence-based decision-making for ocean management. Through this interaction and webinar, MRC intends to bring together experts from the policy and technology fields, fostering an invaluable exchange of knowledge and insights on the crucial topic of marine resource management. Through this webinar/interaction, we hope to address the complex interplay between policy frameworks and technological advancements, highlighting the need for integrated strategies that harmonize environmental conservation, socio-economic development, and technological innovation.

### **About the UDA Framework**

In a more specific sense, the Underwater Domain Awareness (UDA) describes the desire to know what is happening in the undersea parts of relevant maritime areas. The UDA framework, which was initiated and is driven by the Maritime Research Centre (MRC) in collaboration with Nirdhwani Technologies Pvt. Ltd., has received widespread recognition for promoting safe, secure, and sustainable growth in the

tropical coastal waters of the Indo-Pacific region. *It encourages the pooling of resources and synergizing of efforts across the stakeholders and has devised technology tools to support livelihood for the coastal communities.*



**About Dr Chaitanya Patil:**



Dr. Chaitanya Patil is a lecturer at the Department of Naval Architecture, Ocean & Marine Engineering (NAOME), University of Strathclyde. He graduated from *Veer mata Jijabai Technological Institute (VJTI)*, Mumbai. He has two master's degrees from France (*Polytech Orléans & ISAT*) and Spain (*Universitat Politècnica de València*) majoring in sustainable mobility and combustion engines. He obtained his Ph.D. in 2019 from *Universitat Politècnica de Valencia* in modeling and simulation of combustion engines in transient conditions. Apart from academia, Chaitanya has four years of industrial working experience in the field of digitalization and simulation of mechanical systems. His area of expertise consists of first

principal and machine learning-based (data-driven) digital twins, for power generation and transmission systems.

**Programme schedule:**

- Welcome address by ***Dr (Cdr) Arnab Das, Founder and Director at MRC***
- Detailed presentation by ***Dr Chaitanya Patil, Department of Naval Architecture, Ocean & Marine Engineering (NAOME), University of Strathclyde***
- Captain Sudhir Subedar, Former President and CEO of the Indian Coastal Conference Shipping Association (ICCSA)