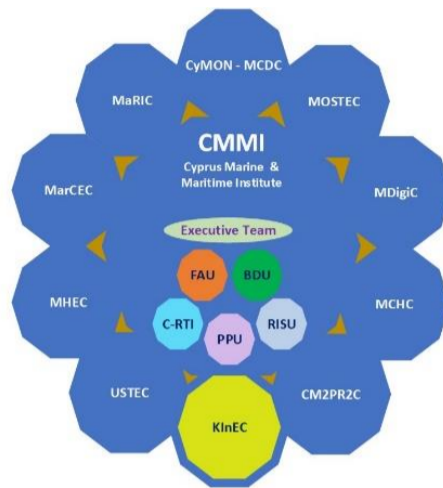


## ABOUT US

CMMI was established by the CMMI/MaRITeC-X project as a “Center of Excellence in Marine and Maritime Research, Innovation and Technology Development”. It has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement No. 857586 and matching funding from the Government of the Republic of Cyprus. After a highly competitive three-year evaluation process, comprising of approximately 200 proposals at EU level, CMMI was awarded €24 million, while significant commitments were made by partners and industry and academia stakeholders mainly as in-kind contributions. The institute’s vision is to generate sustainable Blue Growth, by building on the needs of industrial and societal blue economy players. With a local and global outlook, we aim to take advantage of the reality that, what is local in the blue economy is also global, and vice versa.

Upon its establishment, and with the aim to organize and facilitate its operations and especially the RTDI activities, CMMI created the following Research Centers and Administrative Units:

- ABBREVIATIONS**
- CyMON-MCDC = Cyprus Marine Observation Network - Mission Control & Data Center
  - MDigIC = Maritime Digitalization Center
  - MaRIC = Marine Robotics Innovation Center
  - MOSTEC = Marine & Offshore Science, Technology & Engineering Center
  - MarCEC = Marine & Coastal Ecosystems Center
  - MHEC = Maritime Human Element Center
  - MCHC = Marine Cultural Heritage Center
  - CM2PR2C = Center for Marine & Maritime Policy Research and Regional Cooperation
  - USTEC = Underwater & Seabed Technologies Center
  - KinEC = Knowledge, Innovation & Entrepreneurship Center
  - C-RTI = Conferencing - Research & Technology Infrastructures Unit
  - RISU = Research & Innovation Support Unit
  - PPU = Postgraduate Programs Unit
  - FAU = Financial & Administration Unit
  - BDU = Business Development Unit



## THE KICKOFF MEETING

The CMMI-MaRITeC-X project kicked off on 10th October 2019, in a press conference attended by several government officials, stakeholders from marine and maritime companies, scientists, researchers and the wider public. The Shipping Deputy Minister, the Chief Scientist for Research and Innovation of the Republic of Cyprus and the Mayor of Larnaca addressed the event, underlining the importance of having institutions in Cyprus that promote research and innovation especially in the marine and maritime sectors that contribute significantly to the growth of the national and regional economy. During the event, the plan for the operation of the CMMI was presented and more details were provided regarding its goals, areas of expertise, technologies that will be developed and its infrastructure.

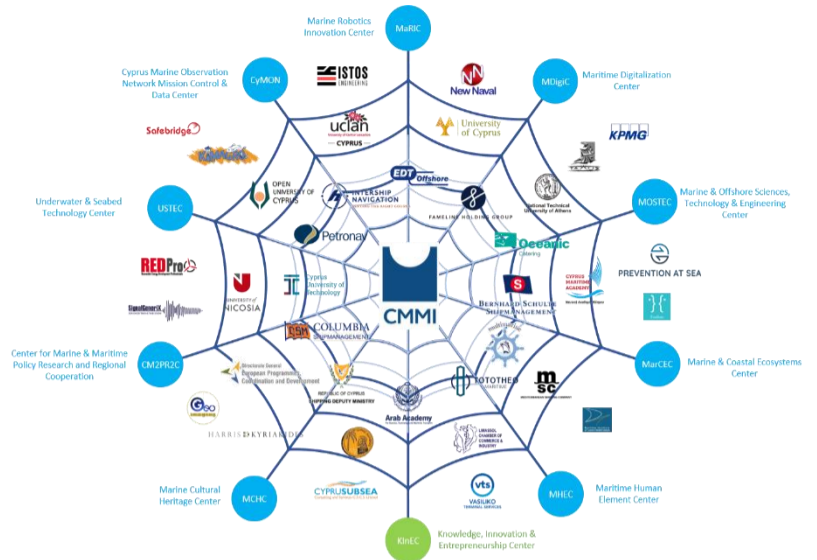


## ACTIVITIES AND MILESTONES

<p>16/07/2019 – The 1<sup>st</sup> Board of Directors meeting was held.</p>	<p>21/12/2019 – Mr. Siokouros was officially appointed as the CEO of CMMI by the Board of Directors.</p>	<p>16/03/2020 – CMMI launched its first recruitment campaign. The second followed in July. 6 Administration Officers and 12 scientists were hired in total.</p>	<p>01/11/2020 – CMMI officially acquired the “House of Arts and Literature”, provided by the Municipality of Larnaca, as temporary premises.</p>
<p>10/10/2019 – The CMMI kick-off and the 2<sup>nd</sup> Board of Directors meetings were held and the CEO of CMMI, Mr. Zacharias Siokouros was selected. The first CMMI press conference was released on the same day.</p>	<p>16/10/2020 – The Chairman of the CMMI BOD - Mayor of Larnaca, the MARITEC-X Project Coordinator and our CEO had a meeting at the Deputy Ministry of Research, Innovation and Digital Policy with Mr. Kokkinos to discuss various issues related to the project consortium.</p>	<p>04/12/2020 – CMMI’s branding met another milestone, with Pantone’s Classic Blue, colour of year 2020, becoming the institute’s official colour. This followed on from the purchase of our official online domain, cmmi.blue, in October.</p>	<p>05/01/2021 – CMMI received its first batch of scientific equipment, to be used for its scientific activities and has prepared its equipment budget for all departments for 2021.</p>
<p>15/01/2020 – Our CEO together with Prof. Makris member of CMMI’s BOD and Director of the Ocean Engineering Centre at MIT met with Ms. Natasa Pilides, Shipping Deputy Minister, to discuss how joint CMMI-MIT initiatives could support the work of the Ministry, such as joint projects and studies on the decarbonization of the shipping industry.</p>	<p>05/03/2020 – The Executive Team was formed by the Board of Directors. This date also marked the 2<sup>nd</sup> Consortium meeting.</p>	<p>27/11/2020 – CMMI participated in 2020 Researcher’s Night event, with a dedicated booth with title “Driving sustainable blue growth through knowledge and innovation”.</p>	<p>03/2021 – An official review of the project’s progress is planned to be held by European Commission representatives.</p>
<p>01/2020 - 01/2021 – In the last year CMMI signed 14 Memorandums of Understanding with Blue Economy players. CMMI aims to achieve cooperation with various Local, European and International Entities in relevant marine and maritime domains. Since January 2020 CMMI has signed 14 MoUs in total, 11 with industrial groups, 2 with academic institutions and 1 with a governing public body.</p>			

## OUR NETWORK

Since its establishment, CMMI has been receiving resounding support from key stakeholders of the public and private sectors. In particular, several industrial, academic and research institutions as well as governmental bodies committed to helping CMMI grow by providing financial and in-kind contributions. It is also noteworthy that during its first year of operation, CMMI already counts signing 14 Memorandums of Understanding with marine and maritime companies and research and academic organizations. These MOUs aim to establish a framework for enhanced cooperation in the areas of marine and maritime RTDI, training and education.



## OUR ACTIVITIES

### Sea of Experience project (SoE)

CMMI is participating in a project titled “Sea of Experience”. The project which kicked off in November 2019 is funded by the European Maritime and Fisheries Fund. It aims at establishing a training/mentoring network - the “Eastern Mediterranean Regional Network (EMReN)” - for professionals and youngsters in the maritime transport, shipbuilding and ship repair, ports, and cruise industries. It also targets to bridge the skills gap between what education offers and what labour market needs in those sectors. Last but not least, the project strengthens cooperation between industry, academia, and public authorities, encourages the mobility of students, teachers, and professionals, raises societal awareness, and provides guidance about blue professions.

Find out more information about the “Sea of experience” project [here](#).



### Hydrophone IoT and a Smart Boat project

CMMI’s MaRIC (Marine Robotics Innovation Center – MaRIC) and MDigiC (Maritime Digitalization Center) are developing together a Hydrophone IoT and a smart boat, in collaboration with local industry partners. The development of the hydrophone IoT is important as it can be used in a number of marine and maritime applications, as for example, identification of the type of noise pollution and early warning on incidents of illegal entry into marine protected and critical infrastructure areas. The smart boat is small sized, operating on electric motors that can be fitted with navigation, sensing, processing, communications, and power modules and deliver different levels of autonomy in the years to come that range from manual remote operation to full autonomy in navigation and data collection and interpretation. The smart boat will be initially equipped with hydrophones, cameras, GPS, WI-FI and LoRa (Long Range communications).



Hydrophone IoT's



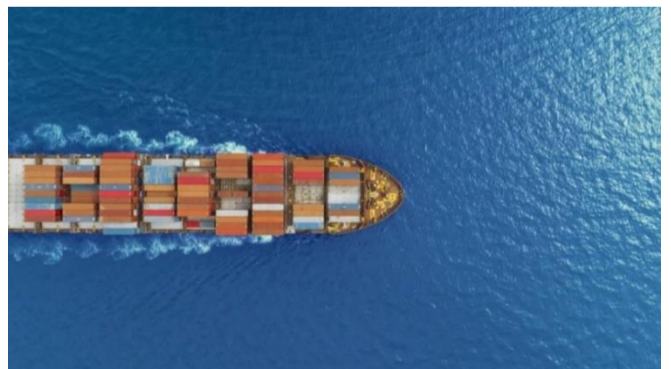
IoT control units

## OUR FUTURE PLANS

In accordance with the EU and IMO policies which set decarbonization in the shipping industry as a top priority and highlight the need for R&I advances and greener solutions, CMMI’s MOSTEC (Marine & Offshore Science, Technology & Engineering Center) plans to:

- investigate green (carbon-free produced) hydrogen applications, and sustainable energy storage technologies, as well as alternative and dual fuel solutions;
- develop intelligent monitoring tools and decision-making protocols to optimise overall ship performance and maintenance planning, to reduce life-cycle cost and environmental footprint.

MOSTEC has already started the development of a mobile unit that will be capable of monitoring the performance, health condition, and emissions of marine engines. Analysing the data gathered by its mobile monitoring unit, but also utilising the capabilities of its forthcoming laboratory, MOSTEC aims to create solutions towards green shipping. MOSTEC also plans to design and manufacture an autonomous zero-emission sea-tram (A-ZEST), that will serve for research and educational purposes.



## DID YOU KNOW THAT...

### The Lionfish invasion

Over 30 years ago, indifferent use of the aquarium trade led to the beautiful species of lionfish becoming a threat to the Caribbean waters of the Southeast USA. Since then, the species has dominated the entire Caribbean and expanded all the way down to Southern Brazil while its invasive nature has even reached the unlikely waters of the Mediterranean Sea. The latter, as a result of yet another anthropogenic activity, the Suez Channel. Biologically speaking, this invasion continues to spread due to the resilience of the species, its ability to grow and reproduce very fast, its voracious appetite and its dangerous venomous spines. In the Mediterranean, lionfish also have very few known natural predators. Amongst other issues, the uncontrolled spread of lionfish in marine habitats like ours, can significantly reduce the fecundity of marine organisms in nursery areas and can potentially result to algal proliferations and species imbalances with adverse effects; in areas identified as oligotrophic. Years worth of lionfish culling and managing from the Western Atlantic have provided examples as per the handling of similar issues elsewhere. As a result, multiple studies have shown that continuous removals and monitoring of lionfish can significantly improve the disrupted biological balance that resulted from the invasion. After all, lionfish are a known delicacy and widely used for consumption once the exogenous, venomous spines are removed, something which is easy to do. More importantly, apart from an understanding of the environmental impacts the invasion can have, there is also an expanding field for multiple alternative uses of removed lionfish (e.g. pharmaceutical). The CMMI is passionate about further understanding the mechanisms behind the successful establishment of this alien species while helping to restore biological balance in Cypriot waters through removing, monitoring and further studying the lionfish species (*Pterois miles*).



Lionfish spotted around Larnaca Bay

### Underwater gliders

An underwater glider is a type of autonomous, unmanned underwater vehicle, which is primarily used for collecting ocean data. By carrying multiple instruments at the same time, being easy to deploy and recover, as well as being able to sample large areas over several months regardless of the weather, it plays an important role in marine research and observation. Gliders are powerful sensing platforms dedicated to measuring oceanographic parameters such as temperature, salinity, oxygen, and chlorophyll levels from the sea in an autonomous, near real time, and continuous way at a high spatial resolution. A typical glider has an operational depth of up to 1000 m and speed of about 25 cm/s (half a knot), and it achieves the forward, vertical and heading motions by shifting its buoyancy (like a swim bladder) and attitude (moving internal batteries back and forth, left and right). Gliders have been employed for over twenty years, and they are of low cost with low power consumption. Advanced users have been adapting new sensor payloads for the purposes of ecosystem studies (like plankton imagers, echosounders, marine mammal recorders). Recently, gliders have officially become part of the Global Ocean Observing System (GOOS) through an organization called Ocean Gliders ([www.oceangliders.org](http://www.oceangliders.org)), where the public can see a live map of all the currently running gliders around the globe, in addition to help in accessing data and more information. Consequently, they can be considered as one of the most promising observing instruments for both the coastal and open ocean. CMMI through the research center CyMON aims to develop and implement several, similar technologies, including gliders, for the benefit of society and local authorities and industries. Photo credits: Dagmara Wojtanowicz.



A University of Cyprus sea glider on the archipelago of Svalbard

## GLANCE AT EU ISSUES: Horizon Europe, the new EU funding programme for research and innovation

Horizon Europe is the new EU research and innovation investment programme for the period 2021-2027, succeeding the Horizon 2020 programme. The programme aims at strengthening EU's scientific and technological foundations, boosting Europe's innovation capacity, competitiveness, and jobs, delivering on citizens' priorities and sustaining Europe's socioeconomic model and values. The programme will have a budget of around €95.5 billion for 2021-2027, representing a 30% increase vis-à-vis the Horizon 2020, thus making it the most ambitious research and innovation programme in the world. Around 35% of this budget is planned to go towards tackling climate change, which is directly aligned with many of CMMI's activities, especially initiatives around the decarbonization in the shipping industry. Find out more about Horizon Europe [here](#).



## KEEP IN TOUCH WITH US

### FOLLOW OUR WEBSITE AND SOCIAL MEDIA

[www.cmmi.blue](http://www.cmmi.blue)

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