A BRIEFING NOTE

The Cyprus Marine and Maritime Institute
Driven by the needs of industry and society
What is MaRITeC-X and the Cyprus Marine and Maritime Institute?

MaRITeC-X is an EU project funded by the European Commission under the HORIZON 2020 Programme (H2020-WIDESPREAD-2016-2017Call, WIDESPREAD-04-2017 Topic - Teaming Phase 1). The main objective of the project is the creation of an independent, international, scientific and business centre of excellence in marine and maritime activities: the Cyprus Marine and Maritime Institute (CMMI), driven by the needs of industry and society. The CMMI (see Figure 1 for its structure) is not just another research organization, but:

1. A global centre for knowledge, research, technology, and product development
2. A global centre for innovation and entrepreneurship
3. A global training and education centre
4. A centre for social and cultural transformation
5. A global centre for start-up businesses
6. A beta country development centre

The Institute will be based in Cyprus, in the Eastern Mediterranean, an island with a strong maritime tradition, and dynamic local industry; on the crossroads of three continents and major maritime routes. CMMI will develop globally excellent, purpose-built facilities, technological and human infrastructure, to support all blue economy actors without exception. The research and innovation activities of the Centre will be aligned with the Smart Specialization Strategy of Cyprus (S3Cy), as well as with European Union and global priorities in blue economy sectors. CMMI will promote partnerships, globally, among top academic and research institutions and businesses, helping to address the needs of businesses, countries, and regions in blue economy activities. The CMMI aims to become the partner of choice for all blue economy development activities at the local, regional, European, and global levels.

Our Vision: Ocean Space 2051 – Tackling the Threats – Exploring the Opportunities

Oceans are the key to the future of the earth. They cover more than two thirds of the surface of the earth. Millions of species call them home. They provide humans with one of their key sources of protein. The oceans are fundamental in regulating our climate. Humanity relies on them for its existence yet they are severely challenged by human activities.

Our planet, the marine and maritime industry, and society, are faced with multiple issues within five Global Challenges Clusters (GCC):

1. Maritime Trade and Transport
2. Marine Bioresources
3. Energy and Subsea Resources
4. Climate and the Environment
5. Society and Governance
We will address the challenges and opportunities presented by the Global Challenges Clusters and shape human interaction with the oceans by 2051: This is our vision – Ocean Space 2051 – Tackling the Threats – Exploring the Opportunities. CMMI will carry out research, technological development, and innovation activities (RTDI) in order to provide practical solutions that the marine and maritime industry and society face or will face in the future.

Our Missions

The CMMI will address global challenges faced by the industry, and society, by transforming them into concrete, measurable, and achievable missions. The GCC are complex. To address the issues within them requires to pay attention not only to technology but to the interaction of technology with socio-economic issues and politics. A mission driven, problem solving approach for all Institute activities is critical for the competitiveness of the CMMI and all blue economy sectors. All work produced by the CMMI will be assessed for its impact on technology, the environment, the economy, and society.

A mission has clear, and ambitious, objectives: Develop practical solutions to real industrial, and societal, needs within the appropriate time frame. These will be met by a portfolio of activities: research and technology development projects, innovation projects, and other supportive activities. Each GCC will have a number of missions, and each mission will contain multidisciplinary Research and Innovation Mission Units (RIMUs) – see Figure 2. Each RIMU will be put together with the aim of addressing a specific mission activity. RIMU personnel will be drawn from the ten key areas of expertise that will be developed by CMMI. These areas are at the core of the future of the marine and maritime sectors globally:

1. Big data and cyber security
2. Robotics and autonomous systems
3. Materials, structures, and testing
4. Environmental modelling and mapping
5. Energy and subsea resources
6. Vessel design and performance
7. Marine bioresources
8. Ports, logistics, and tourism
9. Safety, risk, and regulation
10. Cultural heritage

RIMUs will take advantage of the fundamental research that the academic institutions perform and transform it into products and solutions that the real world and society needs. The research and innovation mission units will carry out/support:

- Their own research and technology development activities
- Innovation services e.g. technology transfer and commercialisation, incubation, beta country services, IP management
- Contract research, product design and development
- Training, education, and outreach
- Consulting
- Other activities as needed
Included below is an indicative list of missions for the 5 Global Challenges Clusters of CMMI:

<table>
<thead>
<tr>
<th>GCC</th>
<th>Mission</th>
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<tbody>
<tr>
<td><strong>Maritime Trade and Transport</strong></td>
<td>The Autonomous Ship (with intermediate steps the Smarter Ship, and the Remotely Controlled Ship)</td>
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<td>The Argonauts of the Future – The operators of future ships; onboard and onshore</td>
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<td>The Port of the Future – Seamless connection to the “future ship”, and “future supply chain services”</td>
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<td><strong>Marine Bioresources</strong></td>
<td>Ocean Food – Feeding the world from the Ocean – Autonomous Offshore Fish Farming</td>
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<td>PharmaSea – Medicines from the Ocean</td>
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<td><strong>Climate and the Environment</strong></td>
<td>A Plastics Free Ocean – Tackling the threat of the plastics in our Ocean</td>
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<td>The Zero Emissions Ship (with intermediate steps the Optimized Ship, and the Low Carbon Ship)</td>
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<td>Smart Coast – Monitoring the land-ocean interface</td>
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<td><strong>Energy and Subsea Resources</strong></td>
<td>SmartInSea – Smart Design &amp; Proactive Management of Offshore and Coastal Infrastructures for Safety, Resilience and Sustainability</td>
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<td>Seanergeia – Harvesting the energy in the Ocean (hydrocarbons, wind, wave, tidal)</td>
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<td>SeaBed – Mapping the seabed</td>
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<tr>
<td><strong>Society and Governance</strong></td>
<td>Mediterranean 2051 – Turning our sea into an instrument of regional cooperation</td>
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<td></td>
<td>SeaPeoples – Building a civic relationship with the Ocean</td>
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Driven by the needs of industry and society
Physical Plant and Infrastructure
The CMMI will develop its own facilities, and infrastructure, including laboratories on:

- Robotics and autonomous systems
- Materials, structures, and testing
- Marine technology for infrastructure
- Towing tank and wind tunnel
- Human factors
- Marine biology and research aquarium
- Environmental technologies, efficiency, and emissions
- Imaging and non-destructive testing
- Marine smart systems, and networks, testing and evaluation
- Large scale computing systems

It will expand and develop its facilities as needed to better serve the needs of industry and society. It will also have access to additional research and technology development facilities, and expertise, through its strategic partners.

Political, and Industrial Agenda Setting, and Civic Engagement
The CMMI is a mission-driven transformational activity which will impact Cyprus, the EU, and the world beyond, on all issues related to the blue economy. The CMMI aims to address the real needs of the blue economy. It already enjoys the support of a wide range of Cypriot, European, and international stakeholders, active in a variety of blue economy sectors. Its establishment timeframe coincides with major institutional built-up, and other public investment initiatives, in marine and maritime affairs in Cyprus, the Mediterranean, the EU, and beyond including:

- The Sustainable Development Agenda of the UN
- The Strategic Directions and Climate Change Strategy for Shipping of the IMO
- The One Planet, One Ocean Theme of UNESCO
- The Oceans and Seas Topic of UNEP
- The Fisheries and Aquaculture Priorities of FAO
- The Maritime Transport Strategy of the EU (DG MOVE)
- The Integrated Maritime Policy of the EU (DG MARE)
- The Horizon 2020 Societal Challenges of the EU (DG RTD)
- The Priorities on the Environment, Blue Economy, Energy and Climate Action of the Union for the Mediterranean
- The Blue Charter – Blue Economy Aspirations of the Commonwealth
- The Smart Specialization Strategy Priorities of Cyprus
Benefits of the CMMI

For Cyprus

- Constant flow of knowledge into society and the real economy by aligning mature and emerging technologies with the competitive advantages of the country
- Attracting foreign investments in marine and maritime technology-related activities
- Attracting national, European, and international funding for research and technology development
- Strengthening the competitiveness of the marine and maritime sectors throughout the whole value chain
- Promoting closer cooperation between the industry and academia
- Development of the maritime education, training and research and technology development landscape in the country
- Creation of an innovation ecosystem focused on the blue economy
- Support blue entrepreneurship, the creation of new companies, and the expansion of SMEs
- Employment and economic growth
- International visibility

For the Eastern Mediterranean region, the EU, and the rest of the world

- Constant flow of knowledge into society and the real economy
- Creation of a fertile ground of equal opportunities for European and international researchers, academics and professionals
- Jobs creation for European and international researchers, scientists and professionals
- Strengthened cooperation and synergies between the marine and maritime industry and the academia worldwide
- Strengthening the competitiveness of the marine and maritime sectors globally throughout the whole value chain
- Affordable access to technology and innovation for the global marine and maritime industry
- Boosting the competitiveness of SMEs active in the blue economy
- Support blue entrepreneurship and the creation of new companies
- Creation of a regional innovation hub acting as an entry point for the EU and the MENA (Middle East, North Africa) region
- Creation of a regional and international maritime technology cluster to enhance innovation and the development of practical solutions to industrial and societal problems
The MaRITeC-X Consortium

The project consortium consists of the following members:

1. The Municipality of Larnaka, *Cyprus, Coordinator*
2. The Southampton Marine and Maritime Institute, *UK*
3. The Marine Institute, *Ireland*
4. SmartBay Ireland, *Ireland*
5. The Limassol Chamber of Commerce and Industry, *Cyprus*
6. Geomaging Ltd, *Cyprus*
7. SignalGeneriX Ltd, *Cyprus*
8. The Maritime Institute of Eastern Mediterranean, *Cyprus*

Timeline

By August 2018, the business plan of the CMMI will be submitted to the EU. This will be followed in November 2018 by a Phase 2 project proposal. Out of the 50 proposals that are expected to be submitted, 14 will be selected by the EU (by March 2019) for further funding. Successful proposals will receive up to 15 million euros from the EU as well as an equal amount of matching funds from other sources (the government of Cyprus has committed to matching EU funding with an equal amount). If the Phase 2 proposal is successful, MaRITeC-X will have 7 years to set up the CMMI and turn it into a self-sustaining entity. It is expected that the CMMI will be able to engage in income generating activities within its first year of operations.

Join Forces With the CMMI!

*The CMMI is open to all blue economy stakeholders in Cyprus, and globally.* By partnering with our new Centre of Excellence, the Cyprus Marine and Maritime Institute (CMMI), you are joining one of the most important investments in marine and maritime research, technology development, and innovation in the European Union, and have the possibility to:

- Shape the future research and technology development priorities of the Centre
- Have a say in the governance of the Centre
- Be the first to know about critical research results, new technologies, and innovation activities
- Take advantage of technology commercialisation possibilities
- Co-design, and develop, activities for mutual benefit
- Outsource solution development for your problems, products and services, by capitalising on our state-of-the-art facilities and people
- Find new partners and customers for your activities, products, and services

Contact us at admin@marinem.org and find out more on how to become part of the CMMI.
“We are all inventors, each sailing out on a voyage of discovery, guided each by a private chart, of which there is no duplicate. The world is all gates, all opportunities.”

Ralph Waldo Emerson