Further Innovation Fields in the Cluster:

DIGITAL MISSION
Digital Twins as a powerful concept for integrating scalable data platforms, AI-based analytics and simulation to support offshore missions and decision making.

SUSTAINABLE OCEAN USE
Preserve marine ecosystems, even though resources are already being used intensively – e.g. with offshore wind or production of marine biomass in aquaculture facilities.

OCEAN OPEN INNOVATION
Cross-organizational collaboration among partners, building a functioning innovation ecosystem, and improving value chains.

OCEAN TECHNOLOGY CAMPUS ROSTOCK

OUR VISION

We use the seas in harmony with ecology and economy and thus contribute to the protection of the oceans.

OUR MISSION

We want to position the Ocean Technology Campus as an international leading center for underwater technology and the sustainable use of the oceans.

„Microbes are the first to react to environmental perturbations and pollution and machine learning is our way of deciphering their reactions."

Prof. Dr. Matthias Labrenz,
Head of the Innovation Field "Ocean Lense"

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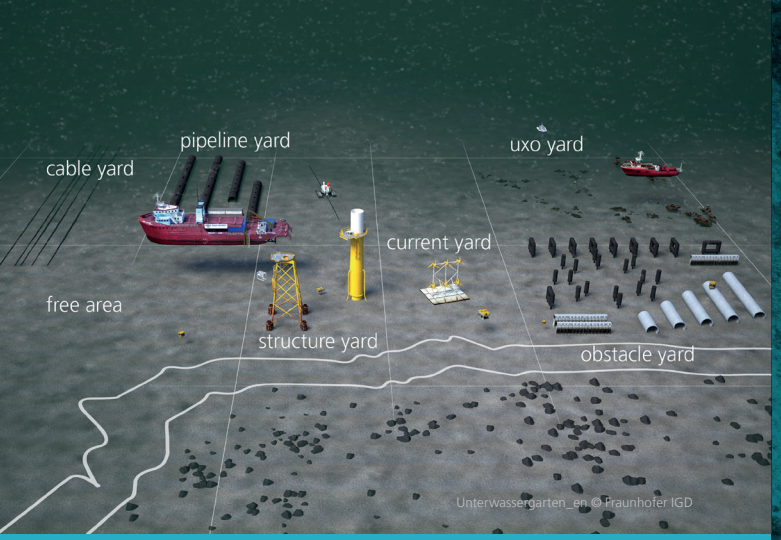
OCEAN TECHNOLOGY CAMPUS ROSTOCK

OCEAN LENSE

CLUSTERS 4 FUTURE
Innovationsnetzwerke für unsere Zukunft
GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung



THE OCEAN TECHNOLOGY CAMPUS

The Campus sets out to strengthen German marine technology by opening up important markets and setting impulses for a worldwide knowledge-based sustainable use of the oceans - and it does so at one of Germany's most traditional maritime locations, Rostock, with its exceptionally high density of marine and maritime research.

The Campus combines science, industry and unique testing sites as an innovative engine targeting renewable energies, food supply, climate change, marine pollution and others.

With the synergy of a comprehensive understanding of the ocean ecosystem through excellent research and a sustainable use of the marine habitat through innovative technologies at the highest level lies the key to reconcile ecology and economy.

OCEAN LENSE

To protect the health of the ecosystems that surrounds us, we need to be able to assess their state and understand their dynamics. Combining cutting-edge, automated instrumentation, data analysis via machine learning and artificial intelligence, and centuries of ecosystem research, Ocean Lense develops novel ways of assessing ecosystem health.

At the core of our approach lies the idea to use the ecosystem itself as a measuring device. Like a magnifying glass, the characteristic dynamics of ecosystems that are under stress will allow us to identify stressors that are easily overlooked otherwise.

Thus, Ocean Lense will provide tools and methods for impact assessment and ecosystem stewardship that take the whole ecosystem into account.

PROJECTS

OTC Genomics

Microorganisms, such as bacteria, single-celled algae and fungi, are involved in processes that are at the foundation of every ecosystem. Their small size makes microorganisms both highly susceptible to environmental change and easy to sample in large numbers.

Powered by automated sampling and Next-Generation Sequencing, we record the dynamics of the microbial community composition -- i.e., the changes in the numbers, presence and absence of tens to hundreds of thousands of microorganisms at the same time.

Using machine learning and artificial intelligence approaches in combination with this deluge of information leads to concrete, rapid and actionable insights into ecosystem health.

Fraunhofer

HYDRO-BIOS

Leibniz-Institut für Ostseeforschung Warnemünde
IOW

planet

LGC Genomics