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Official kick-off of major technology research project in Baltic Sea

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The first step on the path toward the Ocean Technology Campus in Rostock

(Rostock) As part of the Digital Ocean Convention Rostock—an international symposium on underwater technology—August 9, 2019 marked the symbolic kick-off for the start of a one-of-a-kind, large-scale project in the Baltic Sea, the grand vision of the Hanseatic city of Rostock: The Ocean Technology Campus (OTC). This flagship project has been vigorously promoted over the last six years by Fraunhofer, the Hanseatic and university city of Rostock, the state government, as well as partners in industry, and is now entering the implementation phase.

The core of the project, an underwater testing area called the Digital Ocean Lab (DOL) and the associated new onshore development together with research group, is getting underway. At the urging of the Fraunhofer Institute for Computer Graphics Research IGD, Rostock Freight and Fishing Port will also be home to a research center dedicated to developing and testing seaworthy high technology. Thanks to the firm solidarity between industry and research, local pillars and newcomers, a campus for maritime and deep-sea technology will be established here.

During the event, the president of the Fraunhofer-Gesellschaft, Prof. Reimund Neugebauer, symbolically presented the position paper “Smart Ocean Technologies: Solutions for Responsible Use of the Oceans” to the education minister of Mecklenburg-West Pomerania, Bettina Martin, as well as to the managing director of the German Association for Maritime Technology, Petra Mahnke. Prof. Neugebauer emphasized the role of science in solving current social problems: “The kick-off for the Ocean Technology Campus is a milestone along the path toward responsible, sustainable exploitation of the oceans to the benefit of all. It is also an important step in the targeted strengthening of Germany’s capability on the playing field of maritime technology as well as of the rapid transition from research to practice in order to take an active part in establishing the balance between exploitation and conservation of the oceans.”

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Underwater research off the coast of Mecklenburg-West Pomerania

The starting point of the new underwater testing area in the Baltic Sea is the artificial reef off the coast of Nienhagen constructed 16 years ago for fishery research and has since then been operated by the Mecklenburg-West Pomerania State Institute for Agricultural and Fishery Research. The reef will soon be used by Fraunhofer IGD as part of the underwater testing area (DOL), with a corresponding application for a reuse permit having already been submitted to the proper ministry in Schwerin. Starting with the existing reef, other areas—in consideration of the established fishing preserve—will be added to the new underwater testing area. What areas exactly will be determined during the approval process commencing in fall 2019. The goal is to provide a dedicated underwater area for projects: Various underwater zones will cover important application areas for underwater technology, such as cable localization, offshore installation maintenance and handling old munitions. This equally affords both research and industry the opportunity to test their developments under real ocean conditions in a structured manner. The need for such efficient, realistic testing possibilities is immense, the options are extremely limited around the world, which is why the plans in Rostock have garnered international interest.

Research site: campus at Rostock Freight and Fishing Port

Back in November 2018, the Bundestag earmarked over €15 million for the technical infrastructure and development of the DOL as well as for the onshore laboratory equipment for the operations center, from which all underwater projects will be prepared and monitored. This will take place at Fraunhofer IGD's new building on the premises of the future OTC. The Fraunhofer-Gesellschaft will invest €12 million of the federal funds in this new building. The institute will be moved entirely from its current location in the southern part of the city to the fishing port, with the state of Mecklenburg-West Pomerania contributing another €12 million. Construction is slated to begin in spring 2022.

The basis of the campus will be the stakeholders already present in this area, such as Baltic Diver, the Rostock Training & Development Center, the Thünen Institute and the Welding Technology Training & Testing Institute. Parallel to the research

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institute's development plans, Kraken Power GmbH will also implement its plans to build its new corporate headquarters on the premises of SAB Marina: Starting fall 2019, construction will begin for the first new industry partner at the Ocean Technology Campus.

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"We have been supporting and promoting the project since 2013, and are creating the basis for developing the campus together with the Hanseatic city and Rostock Freight and Fishing Port. Exciting relocation projects by high-tech companies are already underway that will produce numerous innovative jobs in Rostock," said Christian Weiss, managing director of Rostock Business.

Start of research imminent

By using the existing infrastructure on the artificial reef, the first underwater research can already begin now. Even external projects will soon be able to launch. A new research group of the Fraunhofer-Gesellschaft will be established at the fishing port in Rostock—possibly at the new offices of SAB Marina—starting the fall that will comprise around 10 scientists from different fields. Expansion of this group to over 25 members is planned over the medium term and their research will focus on multidisciplinary issues. The federal government approved €8 million in project funds for the expansion of the personnel structures for the research at the DOL, with the state granting another €5 million. The personnel expansion will be successive up until the operations center is built and ready for use.

The state also granted the University of Rostock a budget of €4 million for preliminary research on digital underwater technology.

"With the Digital Ocean Convention, it will become clear that numerous partners from science and commerce are currently writing a, in the truest sense of the word, in-depth new chapter in this city's history. It will open up a lot of new and exciting prospects for our maritime research center," said Roland Methling, mayor of the Hanseatic and university city of Rostock.

For the plans to actually bear fruit, however, higher-level coordination between the various stakeholders in the OTC is absolutely essential, as affirmed by Eva Thiede, CEO of Kraken Power GmbH: "We're all acting in concert and have

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been working toward the OTC for a long time. The next thing we need is professional campus management and we're currently looking at financing options to put the appropriate structures in place."

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More information:

Info on the event:

<https://www.igd.fraunhofer.de/en/projects/ocean-technology-campus-rostock>

Info on the OTC:

<https://www.igd.fraunhofer.de/en/veranstaltungen/digital-ocean-convention-rostock>

Additional images and videos:

<https://fh-igd.de/DOC-presse>

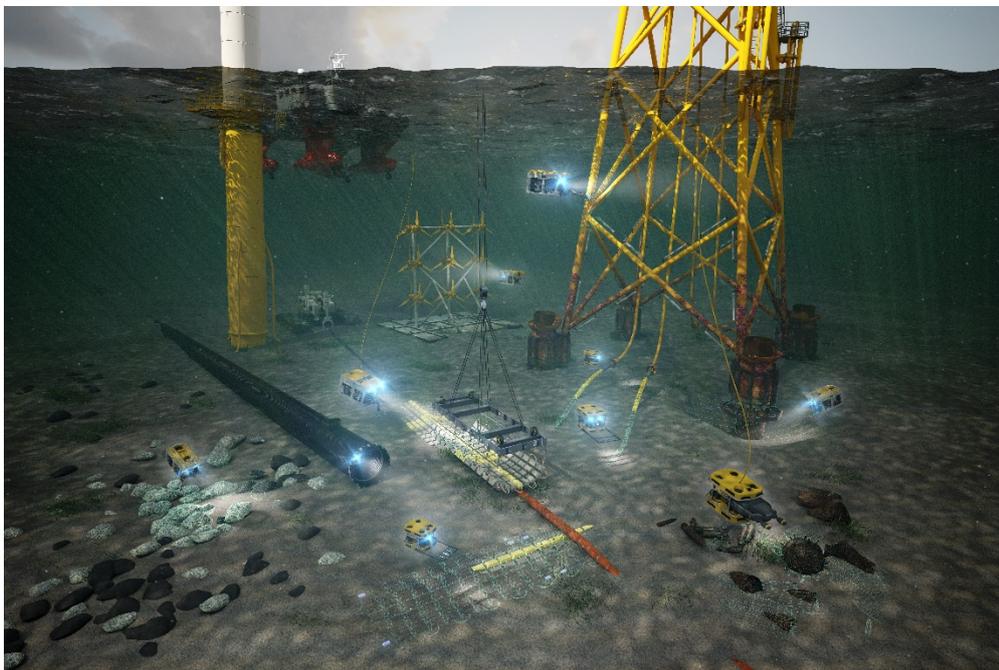


Image (M): The new offshore infrastructure of the Digital Ocean Lab (DOL) allows underwater technology to be developed and tested under real ocean conditions. Various underwater testing areas are planned that will cover the entire spectrum of underwater applications (© Fraunhofer IGD)

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Institute Profile

Founded 30 years ago, Fraunhofer IGD has become the world's leading institution for applied research in the field of visual computing. Visual computing means image and model-based IT. In simple terms, it describes the capability of transforming information into images (computer graphics) and extracting information from images (computer vision). The numerous application scenarios include human/machine interaction, interactive simulation, and modeling situations.

Our developers at the sites in Darmstadt, Rostock, Graz, and Singapore develop new technical solutions and prototypes all the way up to the market readiness stage. In collaboration with our partners, this results in application solutions that are custom-tailored to customer requirements.

Our approaches facilitate the work with computers and are efficiently used in the industry, in everyday life, and in the healthcare sector. Our research highlights includes assisting people in the Industry 4.0, the development of key technologies for the Smart City, and the use of digital solutions in the field of Individual Health.

Through applied research, we support the strategic development of the industry and economy. Especially small and medium-sized enterprises as well as service centers can benefit from this and be successful on the market with the help of our leading technologies.

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