

PRESS RELEASE

Insight into marine technology research

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Fraunhofer IGD Unveils Augmented Reality Binoculars Offering a View into the Digital Ocean Lab

The Fraunhofer Institute for Computer Graphics Research IGD today introduced next-generation augmented reality binoculars to the public at an inaugural ceremony on the cliffs of Nienhagen. Visitors enjoyed an impressive view of the Baltic Sea and took a virtual dive into one of Europe's most exciting research infrastructures, the Digital Ocean Lab.

(Ostseebad Nienhagen) The new binoculars merge the real environment with digital information about the underwater world. They reveal what lies beneath the surface of the water and provide insight into the technologies currently in use for sustainable ocean management. Complementing today's experience were virtual reality demonstrations and an interactive live dashboard that visualizes current sensor data from the Digital Ocean Lab.

"The augmented reality binoculars combine science and technology with an awe-inspiring encounter with nature. They make marine technology research accessible to everyone in an interactive, informative, and visceral way. We want to show how research can come to life and inspire wonder," said Prof. Dr. Uwe Freiherr von Lukas, Site Manager at Fraunhofer IGD in Rostock and Head of the Maritime Economics Research Division, during the opening ceremony.

Insight into the Digital Ocean Lab

Operated by Fraunhofer IGD in Rostock, the Digital Ocean Lab is a test field for underwater technologies that is one of a kind in Europe. It is located directly off the coast of Nienhagen around an artificial reef. Designed as an "open-air laboratory under water," it provides realistic conditions for testing sensor technology, robotics, underwater vehicles, and maritime communication systems.

The Digital Ocean Lab facilitates a variety of capabilities, including:

- Underwater exploration by autonomous vehicles,
- Environmental monitoring with sensors for analyzing water quality and parameters,
- as well as maritime security through radar, sonar, and positioning systems.

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The Digital Ocean Lab is a flagship project for digitalization in marine research, offering a combination of research-oriented infrastructure, industrial connectivity, and public accessibility.

“Our goal is to make research visible. With these new binoculars, we are showing how state-of-the-art technological research can be experienced right on the coast,” said Sascha Krohmann, Head of the Digital Ocean Lab.

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A place for all generations

The new installation welcomes everyone—from people out for a stroll to school groups, tourists, and anyone interested in science—to come and learn about tomorrow’s marine research. The underlying technology stems from applied research at Fraunhofer IGD and vividly demonstrates how research and digitalization can be communicated to the public.

“The inauguration of the new augmented reality binoculars provides real added value for both our residents and visitors. It’s a great opportunity to showcase our region as a hub for innovative marine research and technology. Visitors can gain exciting insights into the underwater world and experience our beautiful Baltic Sea coast in a new, interactive way,” said Mayor Peter Zemelka of the municipality of Ostseebad Nienhagen.

The AR binoculars are located on the cliffs in the Baltic Sea resort of Nienhagen, at Strandpromenade 18211. The binoculars can be used free-of-charge, and the content is fully accessible and interactive.

For more information:

<https://www.igd.fraunhofer.de/en/industries/maritime-economy/digital-ocean-lab.html>

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Photo (Martin Börner): A look through the augmented reality binoculars into the unique Digital Ocean Lab – a virtual dive beneath the water's surface (from left to right: Sascha Krohmann, Prof. Dr. Uwe Freiherr von Lukas and Peter Zemelka)

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About Fraunhofer IGD

The Fraunhofer Institute for Computer Graphics Research IGD has been setting standards in visual computing – image- and model-based informatics – for more than 30 years. Its roughly 260-strong staff support companies and institutions across the automotive industry, healthcare, bioeconomy, information technology, maritime economy, and cultural and creative economy sectors. Fraunhofer IGD provides specific technological solutions and support for strategic development. Its researchers carry out problem analyses, design hardware and software, develop prototypes, and implement interactive visual systems. The focuses are human-machine interactions, virtual and augmented reality, artificial intelligence, interactive simulation, modeling, and 3D printing and scanning. Fraunhofer IGD has been engaged in high-level research since 1987, supporting change in society and the economy with application-oriented solutions developed at its facilities in Darmstadt and Rostock. Its products acquire international relevance via ongoing collaboration with its Austrian sister institute, which operates facilities in Graz and Klagenfurt, and participation in a wide range of EU projects.

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