Digital Ocean Lab Rostock

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DIGITAL OCEAN LAB ROSTOCK
(Part of Ocean Technology Campus)

OCEAN TECHNOLOGY CAMPUS ROSTOCK

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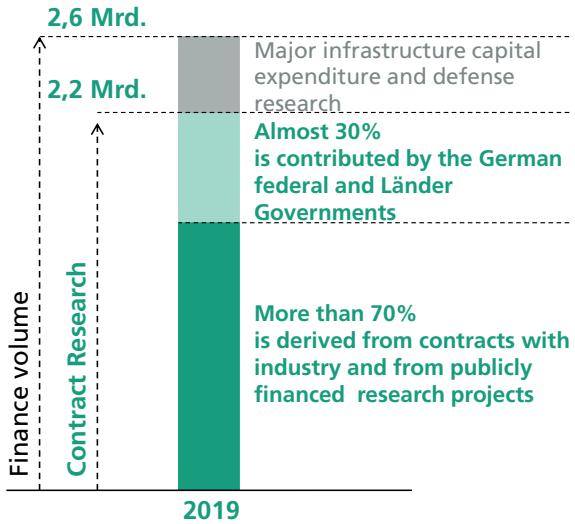
Fraunhofer IGD

Fraunhofer-Gesellschaft
At a Glance

26 600 staff

72 institutes and research units



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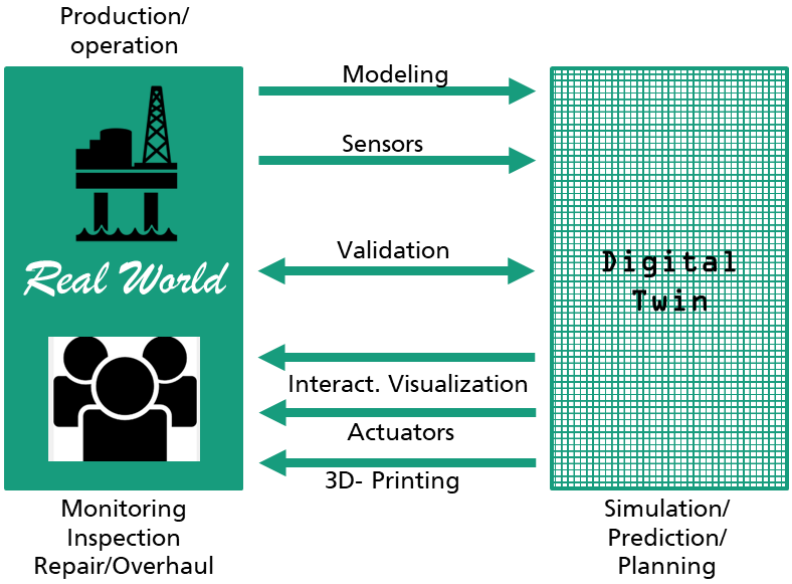
Digital Ocean Technology

Foundation for Digital Transformation of the Maritime Industry



- The Digital Twin is a concept to collect huge amounts of product-related data
  - 3D models
  - Planning data
  - Process data
  - Sensor data
- The Digital Twin is distributed over several data bases
  - PLM, ERP, MEF, …
- We need a flexible and powerful way to give users access to the Digital Twin

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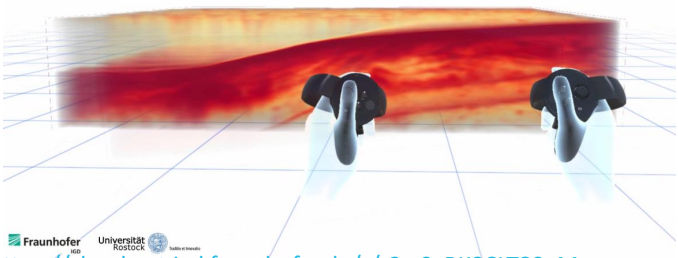
R&D at Fraunhofer IGD

Efficient Analysis of Sensor Data

Bundesministerium für Wirtschaft und Technologie



Source: Fraunhofer IGD

https://cloud-ext.igd.fraunhofer.de/s/r2w9xRK8CLT89gM

- Support the expert in working with sensor data
  - Heterogeneous data from different sources
  - Large data sets
- From mobile over desktop to head Mounted Displays (VR)
- Outlook: Immersive Analytics = Machine Learning + Virtual Reality

- Using machine learning for detection and classification
- Works in real-time (even on embedded system)
- High detection rate – even with limited quality of images

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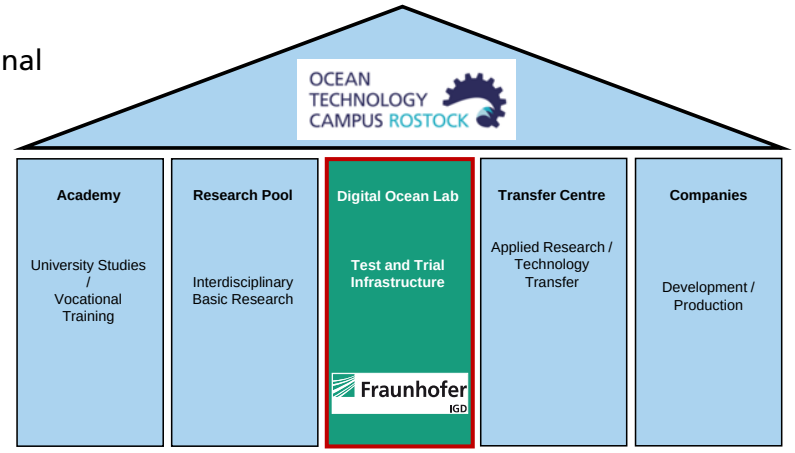
Complete Vision for the location: „Ocean Technology Campus Rostock“

- Target: Internationally leading **innovation campus for underwater technology**
- Providing optimal conditions for research and innovation ("*innovation ecosystem*")
- Broad innovation approach from education via research to production
- Fraunhofer IGD's Digital Ocean Lab as a nucleus for further supply and for the establishment of new companies
- Joint initiative of regional and trans-regional partners from:
  - Economy
  - Research
  - Politics & Administration
- Aims
  - Broader networking
  - Scientific excellence
  - Economic growth



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Vision

Download Link Video: https://cloud-ext.igd.fraunhofer.de/s/soSX7xF0N33lVhE

Januar 2019, Uvl

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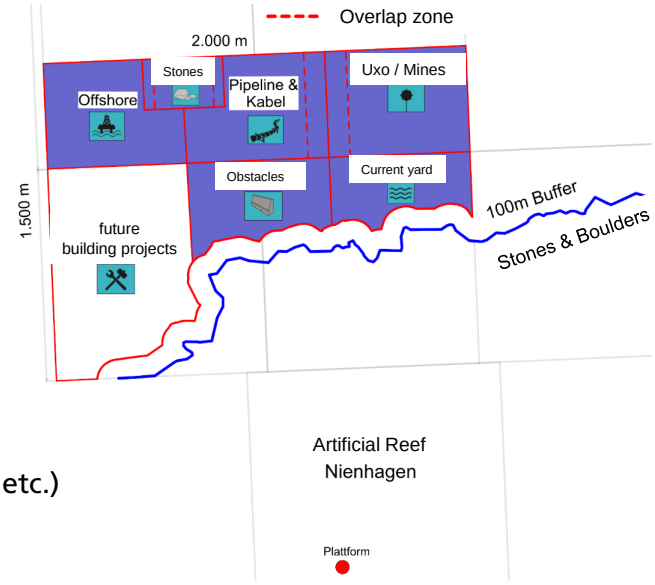
The possible design of the individual test-fields

- Area: approx. 2.000 m x 1.500 m
- Waterdepth between 3 m – 20 m
- Partially occupied by natural reef (stones) in the southeast
- Division of the available areas into "yards" to simulate industrial scenarios:
  - submarine cable (at different depths, ...)
  - uxo
  - foundation structures
  - …
- Substantial instrumentation (CTD, ADCP, Positioning etc.)
- Testing of sensors in shallow water



Outlook

- 04/20 Start of interdisciplinary Fraunhofer team „Smart Ocean Technology" at OTC Rostock
- 05/20 Opening of first test facilities in DOL still without „underwater furniture"

- 2022 Full set of yards in DOL available
- 2023 Interdiciplinary team grown to >20 researchers
- 2024 New Fraunhofer building in the Ocean Technology Campus

Download: www.innomar.com/seabed-acoustics-2019.php