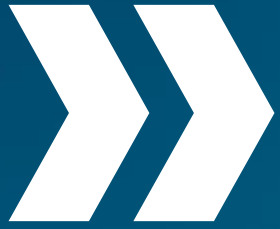




The Fraunhofer IOSB-AST

Cutting-edge technology for complex systems.



IOSB TOTAL

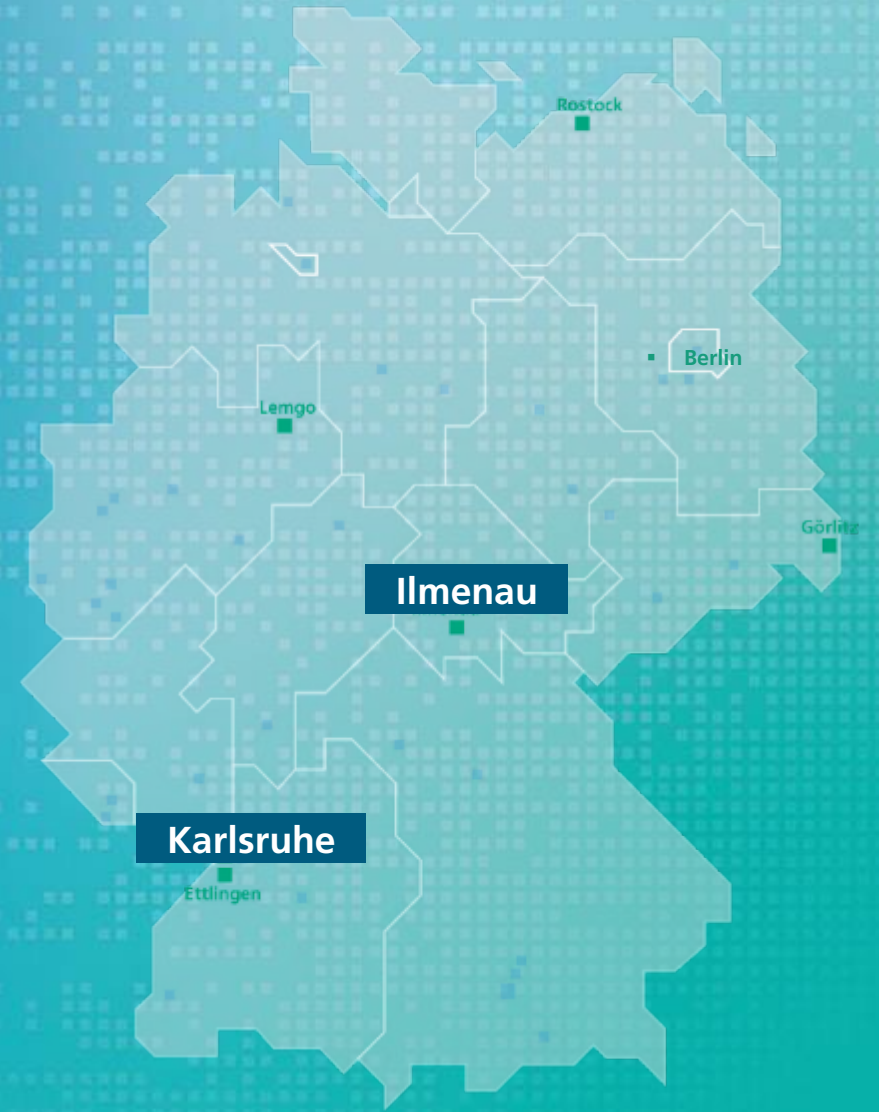
854 Employees
■ thereof approx. 223 students
■ Headquarters: Karlsruhe

69 Million euro budget
Operation and investments

17 Scientific departments

5 Business segments

8 Locations



Management Board



Prof. Dr.-Ing. habil.
Jürgen Beyerer

Institute Director

Director Karlsruhe



Prof. Dr. rer. nat. habil.
Marc Eichhorn
Defense area

Director Ettlingen



Prof. Dr.-Ing.
Jürgen Jasperneite
Institute for Industrial
Automation IOSB-INA

Director Lemgo



Prof. Dr.-Ing. habil.
Thomas Rauschenbach
Institute of Applied Systems
Engineering IOSB-AST

Directorate Ilmenau



Prof. Dr.-Ing. Peter
Bretschneider
Institute of Applied Systems
Engineering IOSB-AST

Directorate Ilmenau



Business segments



Automatisierung und Digitalisierung



Dr. Thomas Usländer



Dr. Olaf Sauer



Energie-, Umwelt- und Sicherheitssysteme



Prof. Dr. Peter Bretschneider



Dr. Jürgen Moßgraber



Inspektion und Optronische Systeme



Prof. Dr. Thomas Längle



Dipl.-Wirt.-Ing. Henning Schulte



Künstliche Intelligenz und Autonome Systeme



Dipl.-Ing. Christian Frey



Prof. Dr. Andreas Wenzel



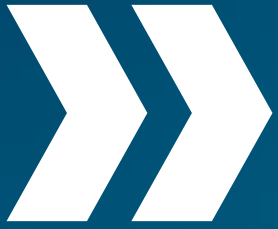
Verteidigung



Dr. Michael Arens



Dr. Jennifer Sander



IOSB-AST

129 Employees

12 Million euro budget
Operation and investments

3 Scientific departments

- Cognitive Energy Systems (KES)
- Embedded Intelligent Systems (EIS)
- Underwater Robotics (UWR)

4 Locations

- Ilmenau (headquarters)
- Goerlitz
- Rostock
- Berlin



Director:
Prof. Dr.-Ing. habil. Thomas Rauschenbach



Director:
Univ.-Prof. Dr.-Ing. Peter Bretschneider

Together with our customers, we develop tailored, resilient and future-oriented systems engineering solutions for complex, dynamic and time-varying processes in the fields of energy and water supply, cybersecurity, land and underwater robotics, data spaces and ICT ecosystems, and disinfection. Through our scientific work, we provide significant upstream research for this for the benefit of our customers and for society.



Department
Cognitive energy systems



The department "Cognitive Energy Systems" develops and researches pioneering key technologies in the field of energy systems engineering in the areas of energy technology, energy informatics, energy logistics, cyber security, cross-sectoral energy systems and cognitive assistance systems in Germany, Europe and worldwide. Through our long-standing know-how, we make essential contributions to the successful transformation of energy supply systems with our technological solutions for the benefit of our partners.



Cybersecurity learning lab

State-of-the-art research in IT cybersecurity for critical infrastructure. Extensive training portfolio. Individual customer consulting on site.



Intelligent e-mobility

Grid-serving and cost-optimal charging solutions.



Smart quarters

Cross-sectoral energy management solutions for the energy transition in the city.

EMS-EDM PROPHET®:

TÜV-certified energy and energy data management solution for digitizing energy industry processes such as forecasting, balancing group management, Redispatch 2.0, MaKo 2022 and numerous other applications.

www.edm-prophet.de



DIGITALIZATION



Strong partner for municipal utilities and network operators

The energy industry of the future is digital, automated, scalable & efficient. We help municipal utilities, network operators, energy traders, IT service providers and platform operators with this challenging transformation.

VONOVIA

Intelligent, cross-sector solutions and data rooms for neighborhoods and businesses

Nationwide district and commercial projects for cross-sectoral and climate-neutral innovation solutions within the framework of the Open District Hub (ODH). For this, we are your first point of contact at the Fraunhofer-Gesellschaft. AI real lab for mobility, energy & logistics in Erfurt/Stadtquartier Brühl. Growth core SMOOD® with representation at Expo 2020 in Dubai as well as scientific speaker role.



Intelligent & secure network management

Digital, dynamic network models that enable the data technology equipment of real distribution networks across the board with various measurement systems and modern transmission technologies such as 5G. This makes it possible to create digital twins that enable optimal, secure operation of the power grids.

The image shows a large, dark, industrial-looking quantum computing system housed in a glass-enclosed room. The system is a tall, cylindrical structure with a blue-tinted top section. The room is dimly lit, with light coming from the ceiling and the system's top section. The IBM logo is visible in the top left corner of the glass enclosure.

IBM

Quantum Computing

New approaches to energy economics calculations.

Image: IBM Quantum System One in Ehningen. © IBM Research

IBM Quantum
System One



Department Embedded Intelligent Systems

Fraunhofer
IPSS-AST



Intelligent embedded systems essentially determine today's and future technical developments. We make our contribution through industry-oriented research and development. To this end, we contribute the appropriate systems engineering expertise and are able to implement and validate rudimentary requirements in finished prototypes.



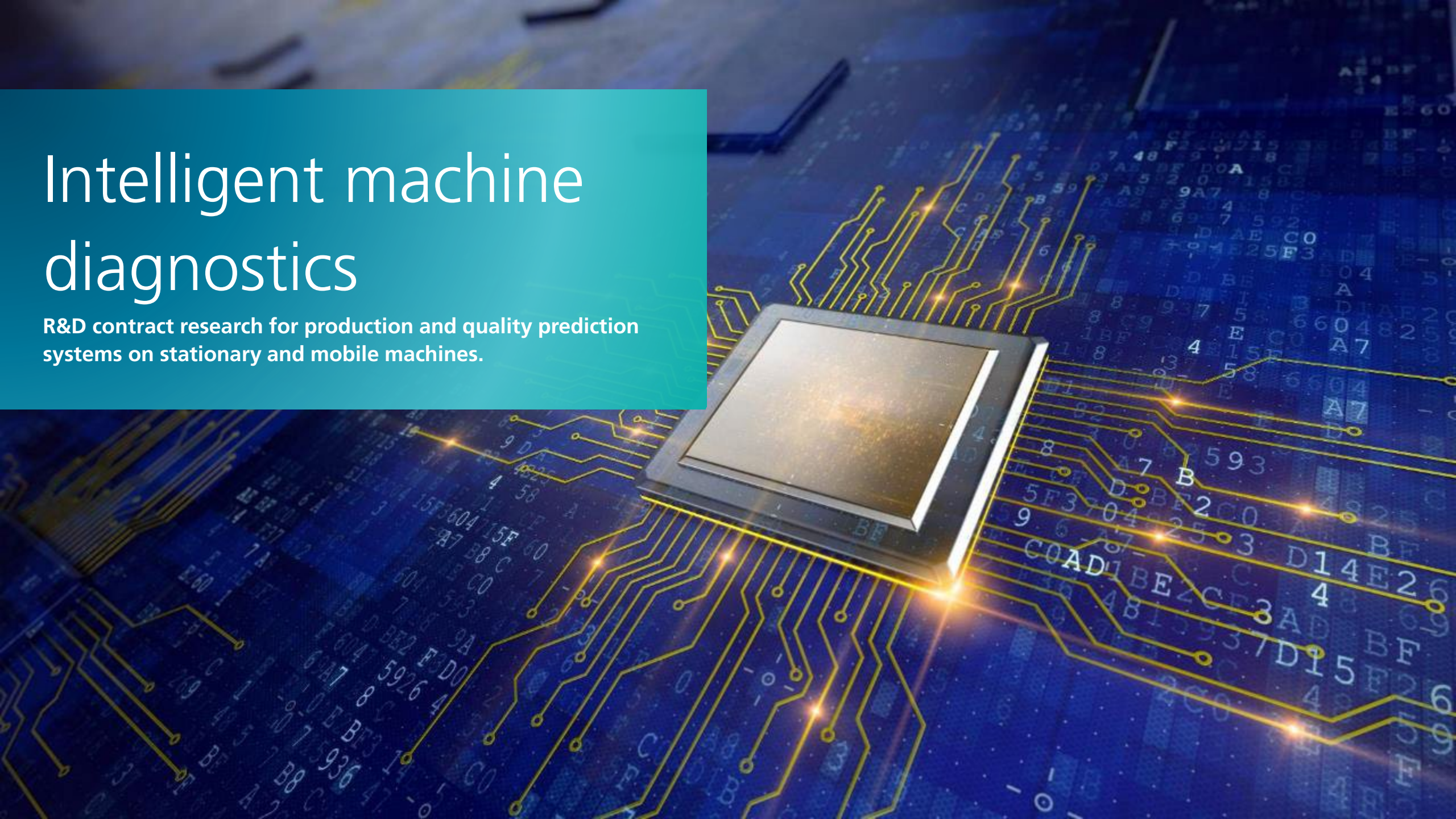
FLUGHAFEN ERFURT-WEIMAR

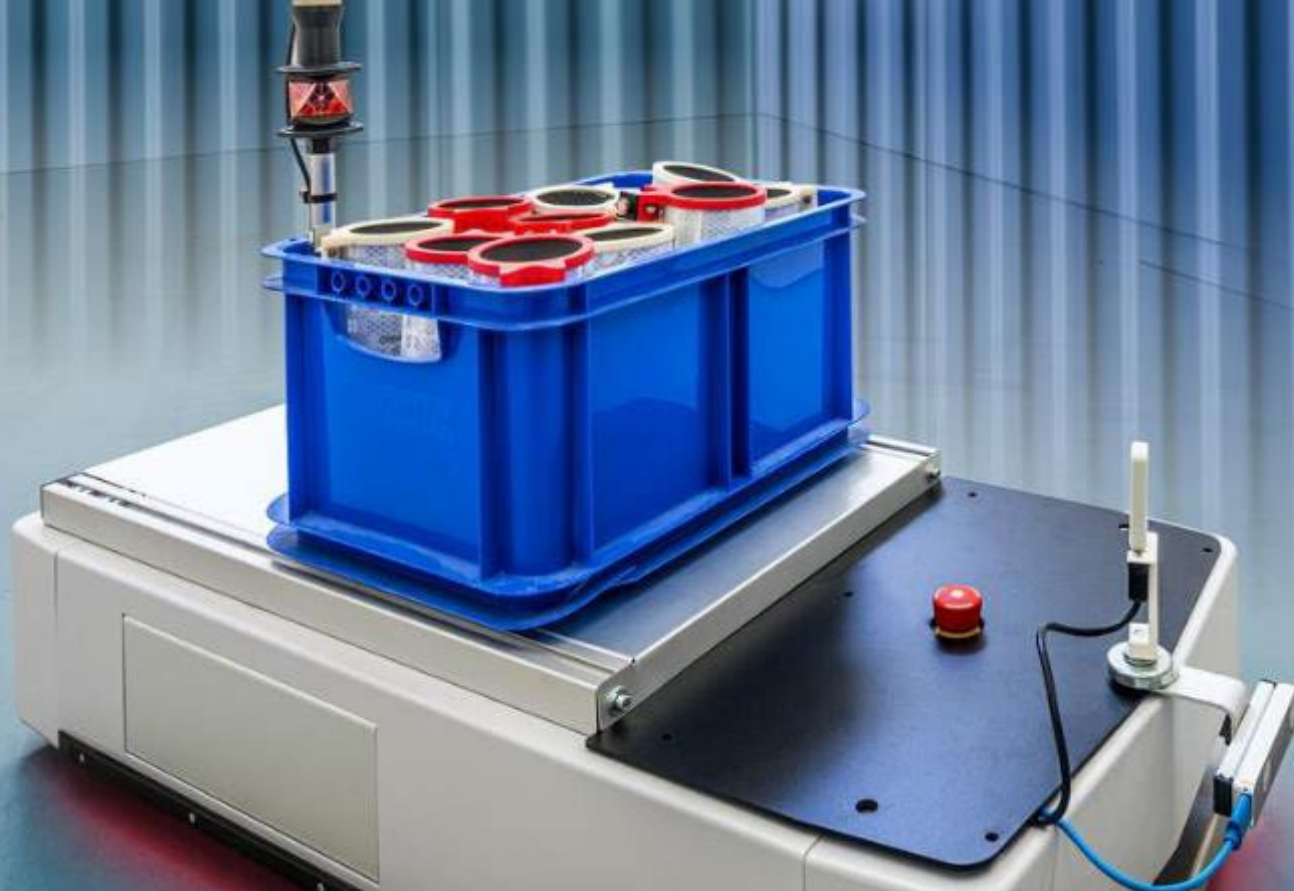
Automation solutions for mobile machinery

R&D contract research for assistance systems and autonomous add-on functions from concept development to validation in the real laboratory.

Intelligent machine diagnostics

R&D contract research for production and quality prediction systems on stationary and mobile machines.





Autonomous mobile robot systems

R&D contract research for methods and systems for localization, environment perception and mapping from consulting services for sensor concept to validation of the entire system in the operational environment.

UV disinfection

R&D contract research for efficient disinfection of surfaces, air and fluids in the medical and civil sectors as well as product testing according to DIN standards.





UV Technologies

R&D contract research for analytical solutions as well as individual, highly effective disinfection applications with state-of-the-art UV LEDs.



Department
Underwater Robotics



The department "Underwater Robotics" develops innovative underwater vehicles or robots for exploration as well as for inspection and manipulation tasks on underwater infrastructures. Our partners benefit from our many years of experience in the use of underwater systems and their transfer to industrial solutions. Our concepts contribute to the sustainable use of the oceans.



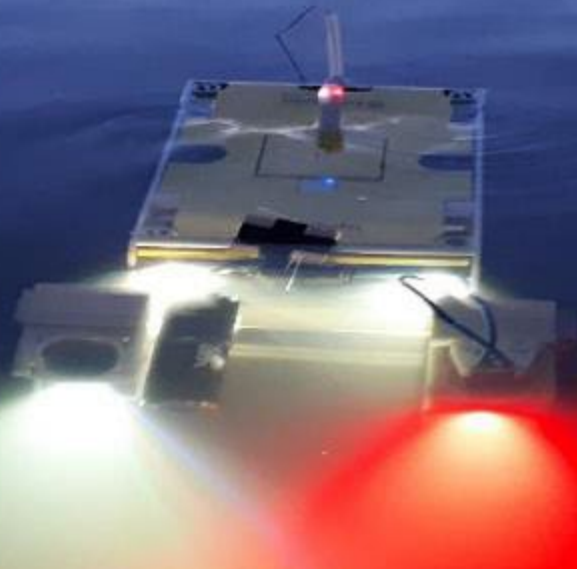
DEDAVE

Deep-sea capable autonomous underwater vehicle for a wide range of exploration and inspection tasks.



Underwater Archaeology & Underwater inspection

Research work in underwater archaeology as well as inspection of offshore and inland water infrastructure throughout Europe.



AUTOMOTIVE GOES SUBSEA

Our powerful transfer network: Growth opportunities for the automotive sector in maritime application areas.

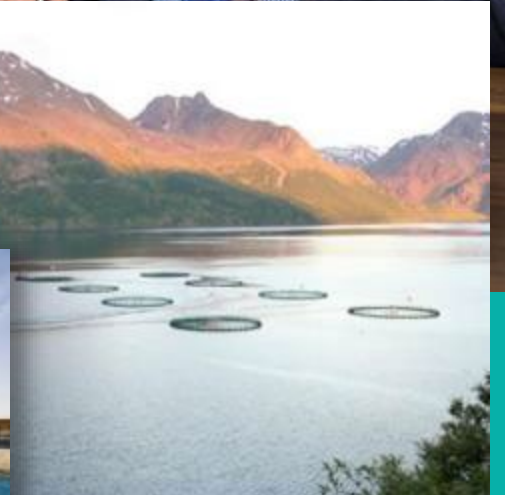
The background is a composite image. The top half shows a vast blue ocean with gentle waves under a sky with soft, wispy clouds and a warm, golden glow from the setting or rising sun. The bottom half is a dark underwater scene with numerous blue-tinted bubbles rising from the bottom, creating a sense of depth and movement.

Intelligent solutions for an innovative water supply infrastructure

Benefit from our many years of experience in modeling,
simulation and optimal control of water systems.

Solutions for global challenges

Optimal operational management for water desalination plants in South Africa. Water quality management for aquaculture in Norway. Digital decision support systems for optimized operations management in drinking water and gas supply as well as leakage detection. Reference projects in Saudi Arabia, Kuwait, United Arab Emirates, Libya and Mongolia.



Our customers (selection)

From SMEs to large corporations, from start-ups to research institutions



Networks and memberships

Benefit from our extensive, cross-industry network





"I'm proud of our work at Fraunhofer IOSB-AST because we're actively training critical infrastructure companies on cybersecurity, increasing the resilience of our society as a whole."

(Rebecca Bohn, Training Coordinator)

"As a physicist, I'm fascinated by the opportunity to combine findings from basic quantum computing research with practical applications from the energy sector in an interdisciplinary team."

(Dr. Steve Lenk, Scientist at Fraunhofer IOSB-AST)



The Fraunhofer IOSB-AST as an employer

We set standards with our research: For a successful and safe energy transition. For resilient water systems. For forward-looking autonomous driving systems. For innovative disinfection solutions. In short: cutting-edge technology for complex systems.

Shape this future with us and become part of our interdisciplinary team.



The Fraunhofer IOSB-AST as an employer

Research and application combined: At eye level with industry. Between present and future scientific excellence.



Diversity inspires: Diverse corporate culture. Freedom for creativity & innovation development. Open research landscape.

Living flexibility: New Work in the HomeOffice or Hybrid. Part-time, full-time, flexible.



The Fraunhofer IOSB-AST as an employer



Networking connects: Across institutes and internationally. Together with over 30,000 employees.

Create career paths: Excellent development opportunities in the scientific community and the possibility of a doctorate.



#4
FRAUNHOFER-GESELLSCHAFT
by Natural Sciences Students



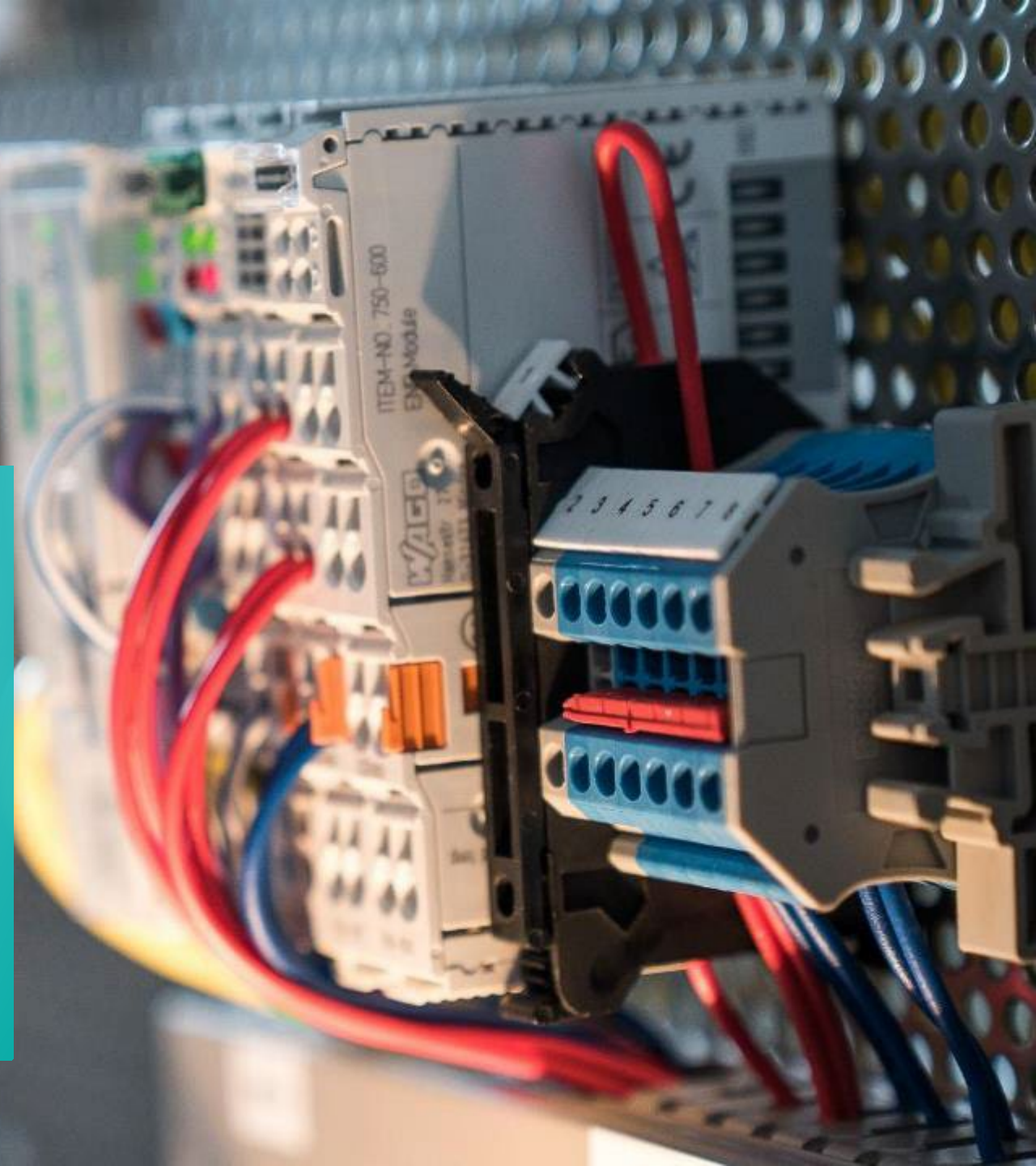
#3
FRAUNHOFER-GESELLSCHAFT
by Young Professionals in
Natural Sciences

At home in the heart of Thuringia: Modern institute building. First-class equipped laboratories, meeting points & creative areas. Lunch&Meet in our new canteen.



"The Hands-On Cybersecurity intensive training according to our specifications in close cooperation with Fraunhofer IOSB-AST is an effective addition to the employee training for active cyber defense "

(Arslan Brömme, National Information Security Officer Germany)





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twitter.com/Fraunhofer_AST



<http://s.fhg.de/aEE>

