

TEST FACILITY FOR HYDROGEN COMPONENTS AND INTEGRATED SYSTEMS



ttz Bremerhaven

The test facility for testing hydrogen components and integrated systems in 3-dimensional space ("sea state simulator") is a unique trial infrastructure that can be made available in Bremerhaven to the shipbuilding and maritime supply industry in order to test new technologies with hydrogen applications for use on seagoing vessels.

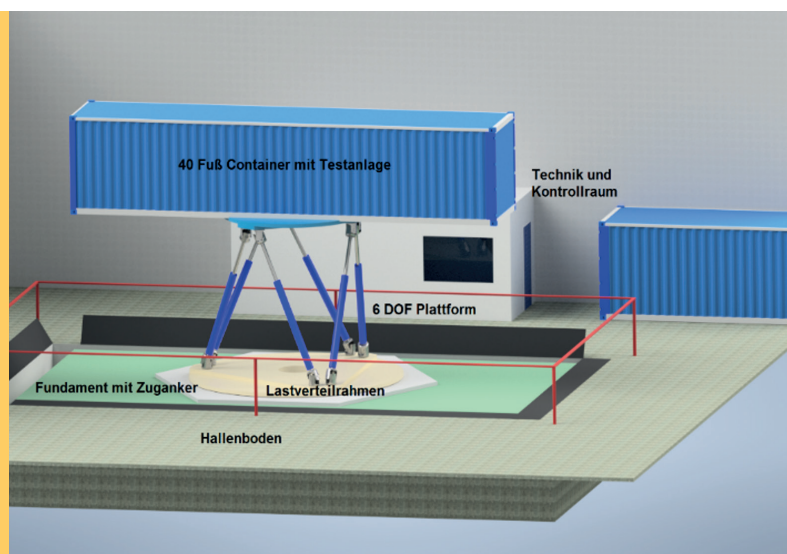
The platform can simulate all six degrees of freedom of ship movement and can accommodate payloads of up to 30,000 kg in the format of a 40-foot container in an ATEX zone 2 environment. Many new and innovative processes, plant parts and components for maritime applications cannot yet be tested for their suitability for offshore operation under realistic conditions prior installation.

In order to close this gap in development and testing and to provide significant results on the behavior of new technology developments for maritime applications, a corresponding test stand with a moving platform is to be developed and installed in Bremerhaven, as well as scientifically supervised and technically operated by ttz Bremerhaven.

The test facility will be used to mechanically simulate the three-dimensional motion of a floating body with the six degrees of freedom. Special attention is to be paid to the trials with propulsion systems for hydrogen-based ships, whereat special requirements must be placed on safety and explosion protection.

Special features for the development and implementation of maritime technologies:

- Fast and efficient market entry
- Tests under realistic conditions
- Savings in logistical, construction and personnel costs of sea trials
- Cost and time reduction of sea trials for the development of new technologies



SEE STATE SIMULATOR

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TEST INFRASTRUCTURE

HYDROGEN IN MOBILITY AND LOGISTICS

SYNTHETIC HYDROGEN-BASED FUELS

HYDROGEN APPLICATION IN INDUSTRY

Testinfrastructure for hydrogen mobility in Bremerhaven

Due to the very high technical requirements of hydrogen technologies, manufacturers and users are facing major challenges.

In order to close the gap in knowledge and experience in applying and handling new hydrogen-based technologies or to test new technologies for widespread use of hydrogen in mobile applications on land, at sea and in the air, an extensive test infrastructure and scientific-technical know-how is needed. Both can be provided to the local industry by ttz Bremerhaven.

The test stand for hydrogen components and integrated systems is expected to be located at the former "airfield Luneort" in Bremerhaven.

Not only development and testing, but also training and education

Implementing innovative technologies in industry requires new procedures for the companies and staff applying those technologies.

Personnel must be professionally trained in the correct handling of this energy source, so that it can contribute effectively to climate protection and decarbonisation. To close the gap in knowledge and experience in the use and handling of new hydrogen-based technologies, the test infrastructure is to be supplemented by a practical training and further education center for hydrogen applications.



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