

Media Release

Voith Turbo

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FernSAMS: Voith to present technology for remote-controlled tugboats at National Maritime Conference in Rostock

- More efficient vessel mooring and casting off maneuvers thanks to remote-controlled tug assistants.
- Greater safety for crews.
- Voith contributing its comprehensive expertise in eco-friendly drive concepts and tugboat technology to the project.

HEIDENHEIM/ROSTOCK, GERMANY. Voith will present the FernSAMS technology as part of a live-streamed maneuver simulation at the 12th National Maritime Conference taking place in Rostock on May 10-11, 2021. The largest gather of the German maritime sector – to be held virtually again this year due to the ongoing COVID-19 pandemic – places the future of the maritime industry in the spotlight.

The German acronym FernSAMS (**Fern**gesteuerte **S**chlepper bei **An**- und **A**blegema**n**övern großer **S**chiffe) refers to the remote-controlled tugs used during mooring and casting-off maneuvers of large ships. The objective of this collaborative project led by Voith is to make the use of tugs safer and more efficient. To realize this project, Voith assembled a consortium of industry and technology experts: the Hamburg University of Technology, the Fraunhofer Center for Maritime Logistics and Services, the Federal Office for Hydraulic Engineering, winch and crane manufacturer McGregor, the Marine Training Center (MTC) Hamburg and communication specialists from MediaMobil. The project is funded by the German Federal Ministry for Economic Affairs and Energy (BMWi).

At the conference, whose patron is Federal Chancellor Angela Merkel, around 800 representatives from industry, the research community, associations, trade unions and the political sphere will have the opportunity to learn about the benefits of the FernSAMS technology during one of the specialist forums.

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Enormous increase in efficiency

The use of tugs is crucial for successful ship assistance. Especially in the international competition of ports and shipping companies, the costs for tugs are more relevant today than ever before. It is therefore essential to find new ways to improve efficiency and increase competitiveness.

“Standardized, automated tugboat assistance will significantly reduce costs for shipping companies and port operators and increase the speed of individual ship maneuvers,” emphasizes Dr. Dirk Jürgens, Vice President Research and Development at Voith Turbo Marine and Project Manager for FernSAMS. In the global shipping environment, every minute spared represents a considerable cost reduction.

In addition, with a remotely operated tug fleet, it is possible to reduce construction and operating costs. Because most of the boats will be operated by an intelligent remote control, these tugs therefore do not need common rooms or sanitary facilities for the crew. Noise insulation and even the bridge could also be eliminated. This reduces the weight of these floating powerhouses, which makes them even more maneuverable and reduces energy consumption. The concept also opens up new options for the design of the remote-controlled vessels; for example, there is no longer a need to make provision for a deck house to accommodate towing gear.

Greater safety for crew

The second objective of FernSAMS is to substantially improve crew safety. For example, until now, tow lines have been handed over manually, requiring the tug operating at the front of the ship to navigate directly in front of the bow of the moving freighter. Harbor pilots on the bridge of the vessels, which are often well in excess of 300 meters long and 45 meters wide, coordinate these maneuvers with the tugboat captains. During this process, the tow lines are subjected to immense forces, which can reach more than 100 metric tons during dynamic maneuvers. Thanks to remote-controlled tugs, for which FernSAMS supplies the key technology, all critical maneuvers and operations can be controlled from a safe distance. This minimizes the risk of accidents for employees.

FernSAMS does not envisage a completely autonomous operation. “The basic principle is to replace one or several tugs in a team with unmanned vessels. The remote control is done on board one of the boats involved,” explains Jürgens. For this to function properly in real time, there needs to be a fast and reliable data connection between all participants, even if there is the huge mass of a ship between tug and (remote) helmsman. “The 5G mobile communications standard is a potential transmission

solution. Satellite communication is also a likely option to serve as a safety backup,” says Jürgens.

Voith is not just the leader of the project; the technology group also brings its extensive expertise in maritime propulsion concepts to bear in the development. For example, the Voith Schneider Propeller (VSP) developed by Voith decades ago is a system that has already successfully put its fast and accurate power transmission to the test in many applications worldwide. Another example is the water tractors developed by Voith that are among the safest assistance tugs ever built. With the new electric Voith Schneider Propeller (eVSP), Voith is also taking an important step towards the electrification of the drive train in marine applications and thus to a shipping environment that is even more sparing with resources.

About the Voith Group

The Voith Group is a global technology company. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets of energy, oil & gas, paper, raw materials and transport & automotive. Founded in 1867, the company today has more than 20,000 employees, sales of € 4.2 billion and locations in over 60 countries worldwide and is thus one of the larger family-owned companies in Europe.

The Group Division Voith Turbo is part of the Voith Group and a specialist for intelligent drive technology, systems as well as tailor-made services. With its innovative and smart products, Voith offers highest efficiency and reliability. Customers from highly diverse industries such as oil and gas, energy, mining and mechanical engineering, ship technology, rail and commercial vehicles rely on the advanced technologies and digital applications of Voith.



FernSAMS is designed to make tug deployments safer and more efficient.

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