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PRESS RELEASE

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Charting Its Course Toward the Future: ZF Marine to Launch Electrically Powered Innovation Boat and New Digitalization Solution

- An electrically powered innovation boat with autonomous docking function is scheduled for launch in 2019
- This prototype will give potential customers a look at the electric plug-in marine drive product line
- New auto-commissioning tool facilitates ship commissioning

Friedrichshafen/Amsterdam. The megatrends of electric mobility, digitalization and autonomous driving are not exclusive to the road. Such state-of-the-art technology also offers opportunities for the marine industry to make the shipping of tomorrow safer, more efficient and environmentally friendlier. ZF is actively driving this change. At the METSTRADE 2018 trade show, the company announced that it intends to launch an electrically powered innovation boat equipped with automated docking functions on Lake Garda next year. ZF also presents a new digitalization solution: an auto-commissioning tool to enable faster commissioning and calibration of its joystick maneuvering system (JMS).

For several years now, ZF has been focusing its corporate strategy on the global megatrends of electric mobility, digitalization and autonomous driving across the entire company. Because the company has a broad technological base, the experiences of the automotive divisions can support the innovations being developed in the marine business. ZF has proven this with two new projects.

Maiden voyage of an electric innovation boat scheduled for 2019

In light of the increasingly stricter regulations on the high seas and in ports, cleaner and more sustainable propulsion belongs to the future of shipping. Also, with stricter environmental regulations and laws for our oceans effective in 2020, ZF has been introducing an increasing number of hybrid-capable transmissions. Today the Group is going one



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step further and is envisaging a pure electric drive. ZF has scheduled the maiden voyage of an innovation boat on Lake Garda for 2019. The prototype – a sailing yacht – will be equipped with ZF's all electric and controllable ZF Sail Drive, which will facilitate an average sailing speed of almost 7 knots and a range of approx. 30 nautical miles , depending on the average speed and size of the battery ultimately installed. The new drive technology can be perfectly connected to ZF's electronic Joystick Maneuvering System (JMS) and ZF ProAI central control unit. When integrated with sensor and radar technology from ZF, the innovation boat will be able to dock autonomously in a slip.

Future E-drive technology

According to ZF's market and technology analyses, sailing yachts with an auxiliary motor are the perfect initial area of application for future plug-in electric drives. These types of ships often sail at low speeds and travel short distances before they call in at a port again. These types of voyages generate zero local emissions, are almost completely silent, and are minimally polluting to the environment. A purely electric motor also means that diverse auxiliary systems for combustion engines, like fuel pumps and lines or exhaust systems are no longer necessary. This considerably simplifies the installation in the vessel's hull and makes drive maintenance easier. ZF is working on this space-saving electric drive unit for an output range of 20 to 110 kW (25-145hp), which is suitable for installation in sailboats between 35 and 65 feet in length.

New automated tool makes ship commissioning easier

For conventionally powered vessels, ZF will stand out with its new digitalization solution. Calibrating the control unit is usually one of the most time-consuming steps necessary to commission a new ship. For its JMS maneuvering system, ZF is now also offering an AI-supported auto-commissioning tool that removes some of the workload that this step typically requires of technicians. Thanks to an intuitive and user-friendly interface, as well as a step-by-step manual, even limited experienced users can complete the process within 30 minutes during a sea trial. The system additionally generates an automated closing report. As a web-based application, the auto-commissioning tool can be



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accessed by laptop or tablet. A database and FAQ make the work easier. Users can also take photos and screenshots and attach them to the manual. For expert users, enhanced features are available.

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ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of 146,000 with approximately 230 locations in some 40 countries. In 2017, ZF achieved sales of €36.4 billion. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. The company invests more than six percent of its sales in research and development annually – in particular for the development of efficient and electric drivelines and also in striving for a world without accidents. With its broad portfolio, ZF is advancing mobility and services in the automobile, truck and industrial technology sectors.

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