



News Release

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Rolls-Royce develops new mtu energy and automation solutions for future submarines

- MTU 20V4000U83 submarine engine to meet increased power requirements of future submarines
- mtu NautIQ ship automation for integrated control of the entire submarine operation.

Rolls-Royce is developing new and advanced concepts to show navies how they can meet the growing challenges of undersea national defense. These include a significantly more powerful mtu submarine charging unit and mtu NautIQ automation systems for underwater ship control. Both will be unveiled by Rolls-Royce Power Systems at the Euronaval naval exhibition taking place from 4 to 7 November in Paris, France, underlining Rolls-Royce's role as a solutions provider in this special area of shipbuilding.

The latest and the future generations of submarines require more electrical power than its predecessors. This is due, on the one hand, to the ever more extensive electronic equipment of the submarines. On the other hand, the modern battery storage systems on the ships allow faster charging than before. At the same time, there is a need for a space-saving design. Rolls-Royce is addressing these requirements with the concept of a more powerful mtu on-board power generator driven by the future 20-cylinder version of the mtu Series 4000 submarine engine.

Like the twelve-cylinder boat engine, of which many units have already been built, it is based on the marine version of the mtu Series 4000. With eight more cylinders, the 20-cylinder version will have a correspondingly higher power output. This means that the batteries can be charged much faster, minimising the surface time for the submarine. Furthermore, the compact genset makes it possible to save space in the submarine hull, for example by having two of the 20-cylinder on-board power generators take over the tasks of the previous three smaller gensets. Compared to the surface version, the submarine variant has been modified in its charge air and combustion systems so that the boats are difficult to locate. The company has conducted a study that proves such a charging unit is suitable for integration into modern submarine designs.

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mtu NautIQ: underwater ship automation

With the mtu NautIQ Master automation system, Rolls-Royce Power Systems is extending its offering to include sophisticated, integrated control and monitoring systems for sub-surface platforms. The system, which integrates numerous standard systems, controls both the propulsion system and the power supply, monitors the condition of the units, and can be expanded with a range of modules such as damage control, on board training, alarm and monitoring, navigation, and communication systems. This means that all integrated systems can be controlled via a standardised user interface.

mtu NautIQ Master has already proven itself for naval surface vessels. Rolls-Royce is now applying this experience underwater as well. This means that Rolls-Royce is also moving up from component supplier to solution provider in the submarine market.

Press photos for download can be found at [Media Centre \(mtu-solutions.com\)](https://www.mtu-solutions.com)

About Rolls-Royce Holdings plc

1. Rolls-Royce develops and delivers complex power and propulsion solutions for safety-critical applications in the air, at sea and on land. Our products and service packages enable our customers to connect people, societies, cultures and economies together; they meet the growing need for power generation across multiple industries; and enable governments to equip their armed forces with the power to protect.
2. Rolls-Royce has a presence in 48 countries and customers in more than 150, comprising over 250 commercial large aero engine customers, 160 armed forces and navies and approximately 40,000 active Power Systems customers. We are committed to becoming a net zero company by 2050 and we support our customers to do the same.
3. Annual underlying revenue was £15.4bn in 2023, underlying operating profit was £1.6bn and free cash flow £1.3bn.
4. Rolls-Royce Holdings plc is publicly traded company (LSE: RR., ADR: RYCEY, LEI: 213800EC7997ZBLZJH69).
5. Rolls-Royce Power Systems is headquartered in Friedrichshafen in southern Germany and employs more than 10,500 people. The product portfolio includes mtu-brand high-speed engines and propulsion systems for ships, heavy land, rail and defence vehicles and for the oil and gas industry. The portfolio also includes diesel and gas systems and battery solutions for mission critical, standby and continuous power, combined generation of heat and power, and microgrids. With its climate friendly technologies, Rolls-Royce Power Systems is helping to drive the energy transition.

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