**DLR and MTU Aero Engines study fuel cell propulsion system for aviation**

Munich, August 5, 2020 – Emission-free flight is a central goal of civil aviation. Emission-free air transport could be achieved in the long term by converting hydrogen into electricity. This would enable the environment-friendly electrification of propulsion systems. The German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) and MTU Aero Engines are focusing on a fuel cell propulsion system, which they will jointly develop and validate. A Do228 will be used as the flight demonstrator. On 5 August 2020, the partners signed a Memorandum of Understanding (MoU) at the DLR site in Oberpfaffenhofen.

The MoU was signed by Prof Rolf Henke, DLR Executive Board Member for Aeronautics Research and Technology, and Lars Wagner, Chief Operating Officer at MTU Aero Engines. “Although great progress in the performance and lifespan of fuel cells has been made in recent years, there is still a considerable need for research into their use in aviation,” said Henke. “This planned joint research-industry project is the first of many steps towards emission-free aviation.” Lars Wagner adds: “As things stand today, fuel cells utilising sustainably produced hydrogen offer the greatest long-term potential for realising emissions-free aviation. We believe that they could offer sufficient performance and range for regional, short- and medium-haul aircraft.”

In order to develop and validate such technology, the partners plan to equip a Dornier 228 aircraft with a hydrogen-powered fuel cell and an electrical, single-sided propeller engine with over 500 kW shaft output, and flight test it over the coming years. Apart from water, fuel cells have no emissions and are highly efficient. The aim of the joint technology project is to develop a complete drive train suitable for aviation (power line) and its cooling (cooling line). The electrification of the powertrain is a core technology that serves to prepare a flying fuel-cell-based propulsion system. The partners are aiming for the maiden flight of the Do228 demonstrator to take place from 2026 onwards.

DLR is managing the flight project and providing and operating the research aircraft. It is also responsible for the integration and certification of the powertrain. The research institute will also offer its expertise in the fields of flight testing and aircraft aerodynamics and aeroelasticity. In its role as a partner to industry in the joint project, DLR is therefore contributing its overall system expertise. MTU is tasked with the development of the complete powertrain powered by a hydrogen fuel cell. All work and integration processes will be carried out jointly and in close coordination. Up to 80 experts will be involved.

“The flying test platform will provide important insights that we can use for the further development of electric and hybrid-electric powertrain systems and reduce the ecological footprint of aviation to zero," said Henke. On behalf of MTU, Wagner added: “The development of an airworthy fuel cell and the experience and data acquired as a result, including in the fields of aviation regulation and certification, will prove vitally important to ongoing product development.”

**About MTU Aero Engines**

MTU Aero Engines AG is Germany's leading engine manufacturer. The company is a technological leader in low-pressure turbines, high-pressure compressors, turbine center frames as well as manufacturing processes and repair techniques. In the commercial OEM business, the company plays a key role in the development, manufacturing and marketing of high-tech components together with international partners. Some 30 percent of today’s active aircraft in service worldwide have MTU components on board. In the commercial maintenance sector the company ranks among the top 3 service providers for commercial aircraft engines and industrial gas turbines. The activities are combined under the roof of MTU Maintenance. In the military arena, MTU Aero Engines is Germany's industrial lead company for practically all engines operated by the country's military. MTU operates a network of locations around the globe; Munich is home to its corporate headquarters. In fiscal 2019, the company had a workforce of more than 10,000 employees and posted consolidated sales of more than 4.6 billion euros.

Your contact:

Martina Vollmuth

Press Officer Technology

Phone: +49 (0)89 14 89-53 33

Mobile: +49 (0) 176-1001 7133

Email: Martina.Vollmuth@mtu.de

*For a full collection of press releases and photos, go to http://www.mtu.de*