News Release

Airbus and Oerlikon sign €3.8 million contract for the industrial additive manufacturing of satellite components

June 14, 2023 – Paris and Munich – Oerlikon AM and Airbus have successfully industrialized the additive manufacturing (AM) process for complex serial production of antenna clusters. These will be used in a series of communication satellites that will be orbiting earth soon. This marks an important milestone in the ten-year collaboration between both companies in an area requiring absolute accuracy and has resulted in a €3.8 million contract to additively manufacture these satellite components.

Oerlikon AM and Airbus have been working together in the field of 3D printed metal parts for space for more than ten years, developing components, several of which are already in orbit. The aluminum antenna clusters measure approximately 400x400x400 mm and are manufactured using laser powder bed fusion technology. These antennas are part of next-generation communication satellites that will transmit and receive communication and/or data signals in K-band frequency.

Advanced technologies like additive manufacturing are key in space applications to deliver benefits such as weight reduction. Moreover, satellites must meet extremely challenging mass, reliability and sustainability requirements. Thanks to AM, the production lead time for an antenna cluster could be reduced from six months to a few weeks compared to conventional manufacturing.

“To create a final product of excellent quality, technical cooperation and understanding each other’s needs and requirements is fundamental for a well-coordinated design and manufacturing process – not only in rapid prototyping, but even more so in serial production,” says Michael Kilian, R&D Manager for Additive Manufacturing of RF Space Components, Airbus.

“The key success factor is the specific AM machine setup, which allows the family of geometries to be reproduced with the required accuracy and the process to be indefinitely repeated. Thus, we met the high accuracy and quality requirements of Airbus, and consequently the specified European Space Agency (ESA) standards for satellites,” says Hendrik Alfter, Managing Director, Oerlikon AM. “We are pleased that the cooperation has resulted in a €3.8 million multi-year contract for the supply of antenna clusters.”

In addition to aluminum 3D printing, the two parties have jointly fine-tuned the post processing as a key part of the process development. As an all-round service provider, Oerlikon AM offers Airbus printing, post processing and surface finish optimization for the best possible RF (radio frequency) performance, precision CNC (computer numerical control) milling, quality assurance, ultrasonic cleaning, assembly, and wire integration, as well as customized logistics. Oerlikon AM is a registered and qualified supplier to Airbus and passes audits annually.

Visit Oerlikon at the Paris Air Show, June 19-25, Booth E157, Hall 2B! Meet the antenna developers and come by to see the antenna cluster. For interviews or more information, please contact us.

About Oerlikon Surface Solutions Division

Oerlikon is a leading global provider of surface and additive manufacturing solutions and services. The division offers an extensive portfolio of market-leading thin-film, thermal spray and additive manufacturing technologies, equipment, components and materials. Emission reduction in transportation, maximized longevity and performance of tools and components, increased efficiency and intelligent materials are hallmarks of its leadership. Pioneering technology for decades, the division serves customers with standardized and customized solutions across a worldwide network of more than 170 sites in 37 countries.

With its technology brands – Oerlikon Balzers, Oerlikon Metco and Oerlikon AM – the Oerlikon Surface Solutions division focuses on technologies and services that improve and maximize performance, function, design, reliability and sustainability, which are innovative, game-changing advantages for customers in the automotive, aviation, tooling and general industries and in the luxury, medical, semiconductors, power generation and oil & gas markets.

The division is part of the publicly listed Oerlikon Group (SIX: OERL), headquartered in Switzerland, which has 13,000 employees and generated CHF 2.9 billion in revenue in 2022.
For more information see: www.oerlikon.com/surface-solutions

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Ready for space – and ready for industrialized AM production: The 3D-printed aluminum antenna cluster for next-generation communication satellites, made to orbit the earth.