FACC AND AIRBUS DEVELOP WINGS OF THE FUTURE - WING OF TOMORROW

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The aircraft industry is considered one of the most innovative and progressive technology sectors worldwide. As a technology partner, FACC ranks among the leaders in this field with its high-performance research and development and the production of innovative products and systems. In cooperation with the European aircraft manufacturer Airbus, FACC is currently working on the “Wing of Tomorrow” program. The central goal is to start developing the wing technologies of tomorrow and make them ready for series production. With the development of an innovative flap, a subproject has now been successfully completed.

“Joint research with leading international aircraft manufacturers is an important part of our innovation work,” reports Robert Machtlinger, CEO of FACC AG. “Our development engineers are researching new technologies and products for the next aircraft generations. One lighthouse initiative in this context is the 'Wing of Tomorrow' program, which Airbus launched in 2018 in cooperation with FACC and other industry partners.”

Under the “Wing of Tomorrow” project, FACC is working on the development of innovative

manufacturing processes to be employed in the production of three essential wing components: wing box lower covers, flaps and spoiler & droop panels. The goal is to produce complex components in a faster, simpler and more cost-effective manner. The first subproject, the development of lower covers for wing boxes, was successfully completed last year. FACC has now recently constructed a flap prototype in the course of the second subproject by means of resin transfer molding. Although this technique was already introduced in previous projects, it has never before been applied on this scale and with such a high degree of complexity.
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Integral construction saves time while cutting costs

When developing the five-meter-long “multicell flap”, the focus was on sounding out technological possibilities. “With the new wing generation, Airbus is striving for a high degree of integration in order to reduce subsequent work steps as far as possible and thus become more cost-effective,” explains Patrick Petz, FACC Lead Program Engineer for Aerostructures Airbus. “Integral construction enables us to avoid subsequent high assembly costs and thus achieve a high degree of maturity in manufacturing processes along with high rates.” Apart from the complex construction method and the use of new materials, so-called multiaxial fabrics, the tool design during production also proved to be a highly innovative feat. A multifunctional team comprising employees from Research & Development, Tooling and Program Management has been tackling this challenge for about a year, and recently presented the first component to the customer Airbus. Robert Machtlinger commented on the successful completion of the project as follows: “This represents a genuine milestone in our research cooperation with Airbus. We have jointly developed an entirely novel flap system. The wing component features a highly integral design; however, thanks to sophisticated solutions in terms of materials, processes and design, we are able to offer Airbus affordable lightweight construction while ensuring high suitability for series production.”

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