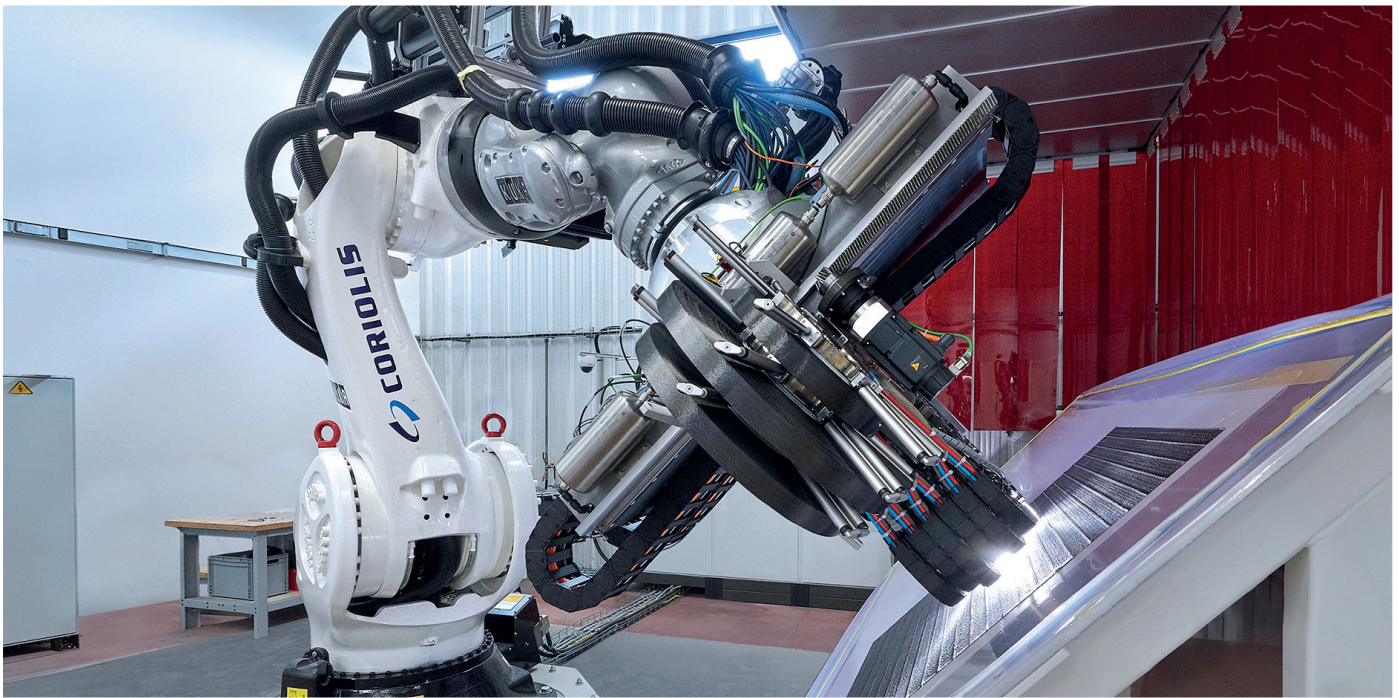


CORIOLIS COMPOSITES C5: AN INNOVATION IN GANTRY AFP



Partnership

Coriolis Composites is proud to announce the NCC as one of our first clients to purchase our new C5 AFP robotic gantry solution. Coriolis Composites is a long-standing partner of the NCC having provided the centre's original AFP solution and now the C5 joins the C1 purchased in 2018.

"The NCC has built a successful partnership with Coriolis Composites over the past six years and we are delighted to announce that we are the first customer for the new C5 machine." Richard Oldfield, CEO, National Composites Centre (NCC)

Solution

The C5 reflects an effort by Coriolis Composites to break into the large structure market where very high lay-up rates, high levels of design optimization and low material wastes are essential. Coriolis Composites' fiber placement solution enables the manufacture of highly complex parts tailored for industrial applications while remaining in the reach of research organizations. Its adaptable lay-up head ensures precision and repeatability essential to the aerospace industry.

Multiple Technologies

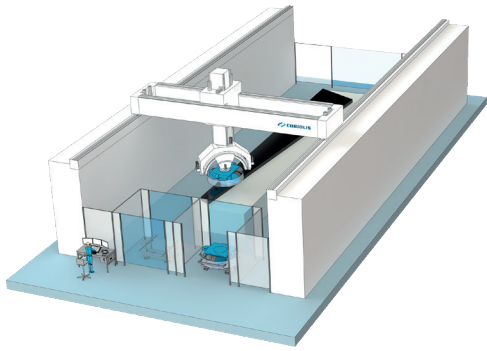
The NCC's application ensures a process combining affordability, quality, reliability and consistent productivity needed for their complex industry standards. Uniting the C5 with other industry technolo-

gies ensures the flexibility needed for the lay-up of large, complex industrial parts. Coriolis Composites has adapted its C5 technology to a newly installed NCC gantry provided by the Loop-Coriolis Composites-Güdel consortium; as part of the NCC's iCAP program. iCAP is a £36.7m investment in 10 digital manufacturing technologies tailor-made to the NCC's specifications, in order to speed the development of all forms of composite manufacturing. The iCAP program is funded by ATI, Local Enterprise Partnership and the High Value Manufacturing Catapult.

"The C5 will be one of 5 technologies we are combining in what will be the most advanced and flexible dry-fibre deposition cell in the world." Enrique J. Garcia, CTO, National Composites Centre (NCC)

Material Specifications

Material specifications for the C5 Fiber placement head with its unique modular design ensures each fiber can be individually cut and restarted providing highspeed gantry lay-up for large double-curved parts. The head has 1½" (38.1mm) thermoset, thermoplastic and dry-fiber manufacturing solutions with the latter used by the NCC. The NCC's dry fiber placement (DFP) head has 6 motorized spools with sensors that control the activation of individual spools and detection of fibre tension; the head being exchangeable using the integrated docking station.



The gantry is driven by the latest Siemens 840D controller to ensure speed and precision to ease the integration of the process.

The requirement from the NCC was a machine that can deliver high lay-up rates using dry fiber tapes for large structures, such as wing skins. In combination with the other deposition technologies included in the NCC's prototype manufacturing cell, the incorporation of the C5 AFP allows the benefits of optimal lay-up with minimal material waste to be realised for full-scale aerostructure demonstration.

The C5's multi-material capability also enables AFP technology to be used for large structures such as wind turbines, marine and civil engineering. Coriolis Composites has also developed the C3 as part of the gantry lay-up family.

“Coriolis Composites is a world-leader in Automated Fibre Placement and was able to successfully answer our challenging brief, to enable the NCC to match current industrial deposition rates for aerostructures, using next generation dry-fibre materials for out-of-autoclave processing. The C5 enables inch-and-a-half wide multi-laying AFP using dry-fibre tapes, avoiding the constraints of current prepreg tapes, which will be critical as industry transitions to manufacturing the next generation of wings.” Richard Oldfield, CEO, National Composites Centre (NCC)

About Coriolis Composites:

Coriolis Composites is a company that designs, develops and manufactures innovative equipment and software for the production of composite material structures, in particular for the aerospace market. The technology and its derivatives, protected by patents, apply to the manufacturing of aircraft fuselage made of composite materials. Coriolis Composites proven technology is qualified by major aerospace OEM for industrial production: Airbus, Safran, Premium Aero-tech, Stelia and Bombardier.

Coriolis Composites is expanding internationally and into new markets such as automotive and renewable energies, which is suitable because of its high productivity and for its capacity to handle affordable

materials: tow prep, thermoplastic, dry, glass and carbon heavy grade.

Today, in addition to its head office near Lorient (FRA), it has five other sites in Augsburg (GER), Bristol (U.K), Montreal (CAN), Seattle (U.S.A.), Shanghai (China). The company has 156 employees and achieved a turnover of € 27.7 million in 2018, of which 69% was through exports.

Coriolis Group, parent company of Coriolis Composites, announced its acquisition of a 100% stake in the French group MF TECH, a leader in composite filament winding, in July 2018. With this first external growth operation, Coriolis Composites extends its expertise in industrial robotics. The new organisation totals 177 employees.

For further information: www.coriolis-composites.com



Next events:

- Mr Justin Merotte will do a presentation on thermoplastics and Mr Yvan Blanchard on simulation and design at **CAMX (USA)** in **September**.
- Join us on our booth **HALL9 – E10** during the Composites Europe in **Stuttgart (GER)** from **10th to 12th September 2019**.

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