Getting the best in working with composites

Airbus' Nantes site, one of three specialist composite centres across EADS, has been conducting a research project to develop new composites machinery, in partnership with Forest-Liné and Coriolis.

Innovation: new fibre placement machine to be used for manufacturing complex composite parts.

The project looked to develop new technologies to answer future production needs. After two years of development, a new machine to produce complex structures such as fuselage panels for the A350 XWB and future programmes has been designed. The machine can simultaneously output 32 resin-impregnated carbon fibres, each of them 6.35mm wide. The reduced size of this composite-fibre 'tape' allows extreme precision and helps overcome potential difficulties when tackling complex parts. As well as being highly precise, this machine can now output 8kg of composite per hour.

This new system, patented by Coriolis, means a significant step forward for the technology. Carbon fibres are now driven and protected inside individual flexible tubes, which prevents them from being bent and holds them in place during manufacturing. The concept has already been used to manufacture several demonstrator fuselage panels for the A350, which proved to be of very high quality. The machinery is simpler and more compact, allowing the use of robots or gantry cranes that can be easily integrated into a lean manufacturing set up.

Gerald Lignon, head of Airbus manufacturing engineering is very impressed by the performance and capabilities of the new machine: "it more than fulfils all our industrial requirements" he says. "Something we thought would be difficult to achieve. And it is now very much under consideration for future use by Airbus." ////.