AF Aerospace
Multi-axis machining glides with CATIA V5

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– Mac Fletcher, Commercial Operations Manager, AF Aerospace Ltd.

Highlights

- *AF Aerospace Ltd. needed more powerful software to drive its new milling equipment and meet OEM requirements to work with native data*
- *The company chose CATIA Version 5 from IBM for CNC programming and to meet Airbus' requirements for collaboration*
- *By getting involved earlier in the design process, AF Aerospace offers a better value proposition to its most important customers.*

New, high-efficiency tooling solution

AF Aerospace Ltd., based in Rugby, Warwickshire, England, manufactures specialised turned parts for the aerospace industry. With 108 employees, AF Aerospace has been a prime supplier for military aircraft programs since the 1970s and has a lengthy list of quality approvals from original equipment manufacturers and Tier 1 suppliers.

Today, collaboration between aerospace OEMs and suppliers has become closer than ever, with suppliers becoming involved early in design decisions that affect ease of manufacture and product performance. AF Aerospace saw that it could use this trend to build on its existing close relationship with Airbus, which is building the A380 Freighter and the A400M.

"Over the past two years, we have been working with the design and manufacturing teams at Airbus to develop a new machining solution for complex components as part of our strategy to build on our expertise in turning," said Mac Fletcher, Commercial Operations Manager. "They were looking for a unique and economical approach to producing these parts, combining efficiency and low production costs with flexibility."

Thriving on the challenge

Achieving those goals required AF Aerospace to combine sophisticated new machining capabilities with a system capable of programming and driving the equipment. AF turned to IBM for CNC programming ability and Fredk. Pollard & Co. Ltd. of Leicester for the equipment.

Pollard recommended the MT2000, a 1 SZ integrated turnmill centre from Mori Seki machine tools. The MT2000 has two spindles, two turrets, driven tooling and nine control axes. IBM provided a CATIA V5 system capable of taking full advantage of the continuous, multi-axis machining power of the MT2000.

Pollard and IBM worked together to develop a machining process to meet AF Aerospace's needs. "Pollard and IBM thrived on the challenge we presented," Fletcher said. "The connection between them gave us confidence that there was little risk for us."

The choice of CATIA V5 to drive the MT2000 had another important advantage – CATIA V5 is the system used by Airbus to create the native design data shared with Airbus suppliers. Airbus has mandated use of CATIA V5 by all suppliers contributing to the wings and landing gear of the A380 freighter, as well as the A400M and all future development programs.

Earlier involvement means more value

Even more importantly, the move to CATIA V5 allows AF Aerospace to contribute to the Airbus design process earlier than ever before. "Early design involvement enables us to make suggestions which will reduce setting and tooling and allow operation within the machine tool's capabilities," Fletcher said. "The advantage with this new method of manufacture is the ability to achieve much closer tolerances and much thinner wall thicknesses, which has a major impact on component weight – a critical feature on the A380."

The move has helped to enhance the position of AF Aerospace in the Airbus supply chain. "We can offer a better value proposition to our customers and we have moved to being a leader in our field with the help of IBM and Pollard," Fletcher said. "The implementation has been faultless."

The project has also proved to be a boon to Pollard. CATIA V5 now enables the company to easily programme the most complex components and gain leverage from IBM's leadership in the aerospace and automotive industries. "Clients are sending us models in CATIA to develop new machining trials," said David Banham, Technical Director at Pollard. "We get a very good level of support from IBM and are working on new collaborative projects."

For more information

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IBM Product Lifecycle Management
Tour Descartes
La Defense 5
2, avenue Gambetta
92066 Paris La Defense cedex
France

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