

AEROSPACE AND DEFENSE

Fokker Services

Enterprise-wide PLM backbone transforms service business, enabling growth in new markets

Product

Teamcenter

Business challenges

Heavily regulated industry
Many engineering changes
Significant legacy data
Need to quickly turn innovations into certified products

Keys to success

PLM expansion now enterprise-wide
Application integration
Digitally managed workflows for change management and electronic sign-off

Results

35,000 engineering changes managed reliably (approximately 500 new engineering change requests issued annually)
Electronic sign-off certified
Faster product innovation and certification

Teamcenter helps speed the certification of new products and win new business by managing engineering data and processes according to aviation industry standards

More than maintenance

Fokker Services is more than just an aircraft maintenance company. As an “out-of-production” specialist, Fokker Services performs aircraft maintenance, modifications and repairs. The company is part of Fokker Technologies, which in turn is part of the holding company Stork BV, which also includes Stork Technical Services.

Fokker Technologies, which has approximately 3,700 employees, is the group name for five specialized Fokker business units: Fokker Aerostructures, Fokker Aircraft Services, Fokker Elmo, Fokker Landing Gear and Fokker Services. Fokker Technologies designs, develops and produces advanced lightweight structural components and electrical cabling systems for the aviation and defense industries, and supplies integrated services and products to aviation companies.

Fokker Services is an important partner for aircraft manufacturers. Typically manufacturers want to focus on developing new aircraft, yet existing aircraft need more attention the older they get. Fokker



Results (continued)

Paper documentation
(2.5 million pages a year)
reduced to zero

Configuration manage-
ment-based documentation

Watertight processes

First to market in a number of
product domains, including
LED lighting and Electronic
Flight Bag on iPad

Growth in the number of new
clients



Teamcenter has acquired the status of PLM backbone at Fokker Services.

Services resolves this issue by offering out-of-production expertise on aging issues, the replacement of obsolete components, remarketing on the basis of new and integrated concepts and, of course, inspection, maintenance and repairs.

Innovation and cost savings are core issues for Fokker Services clients. Historically, airplanes are one of Fokker's most important products. In addition to the Fokker platform, Fokker Services now provides services for the Bombardier Dash-8, NH-90 helicopter and F-16. Fokker Services still holds all original equipment manufacturer (OEM) approvals and certificates and can thus offer more than traditional maintenance companies can. This complete service during the entire lifecycle of an aircraft secures existing clients and ensures future revenue.

PLM footprint

"Throughout the lifecycle, the aviation authorities insist on thorough processes and documentation," explains Andries Tieleman, information communications technology (ICT) director at Fokker Services. "The only way to achieve this is to use a company-wide backbone for process and data management: PLM (product lifecycle management). The data are produced and processed in a variety of tools characteristic of the market in which we operate. That's why we need an open PLM backbone to be used from the work floor right up to and including management. Teamcenter, as a single, secure source of product and process knowledge, fulfills that need for us."

Teamcenter® software from Siemens Digital Industries Software has been used at Fokker Services for more than a decade,



having replaced a previous mainframe application. Fokker Services currently uses Teamcenter across the entire organization. "In recent years, we have carried out focused projects to make the PLM implementation completely appropriate for our functional needs," Tieleman says. "We had already achieved legacy management and had digitized many processes in such a consistent manner that the Dutch aviation authorities even decided to recognize our working method." The legacy data in Teamcenter currently comprises 300,000 digital 2D drawings. These are drawings of structural components and electronic diagrams. Another 300,000 legacy paper drawings have been scanned and added to Teamcenter.

IT award

Configuration management of an aircraft takes place entirely using Teamcenter. The configuration information controls many of the business applications Fokker Services uses. Aircraft maintenance manuals, illustrated parts catalog and wiring manuals are good examples. The authorities insist that these need to be entirely configuration-specific. In the old situation, Fokker Services used to send out 2.5 million pages of updates each year. The client had to incorporate every change into his existing documentation, which was quite a troublesome and expensive operation. Now, the client has direct access to the manuals associated with his tail numbers, via MyFokkerFleet.com.

"Manuals are generated by using the aircraft configuration from Teamcenter to guide the XML-based content management. Illustrations from Teamcenter are linked to content and are merged into one book. The openness of Teamcenter offers a distinct advantage here."

Andries Tieleman
ICT Director
Fokker Services



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ICT Director
Fokker Services



"Manuals are generated by using the aircraft configuration from Teamcenter to guide the XML-based content management," says Tieleman. "Illustrations from Teamcenter are linked to content and are merged into one book. The openness of Teamcenter offers a distinct advantage here. The manuals are published on MyFokkerFleet.com, where the modifications are also highlighted." That's significant and literally led to information technology (IT) recognition. Tieleman explains, "This development took second prize in the IT Project of the Year award, which is presented at the TITM conference every year." TITM, which stands for Tijdschrift IT Management, is a Dutch magazine for IT executives and managers in the ICT sector. "If requested, manuals are also provided on DVD. For cost reasons, all manuals are encrypted and written to a standard master DVD. The client gains access to his own manuals using a code."

Electronic sign-off

Changes are introduced to the aircraft configurations during upgrade or maintenance projects. It is vitally important to manage these changes (via the process of engineering change management) and report the changes to the aviation authorities. "Where we previously used expensive and slow paper procedures, we have now implemented all the processes in a transparent manner in Teamcenter workflows," Tieleman adds. "It's an extremely formal process. There's a change proposal, which is evaluated, and the affected components are verified. The system also records that this is being done by certification engineers." The results of analyses are recorded in reports. Signing-off the reports occurs by checking into Teamcenter. "The process is solid enough to exclude any mistakes," Tieleman notes. "The Dutch aviation authorities who have certified the working method also agree."

// Thanks to Teamcenter, we are able to introduce innovative new products to the market quickly."

Andries Tieleman
ICT Director
Fokker Services

Solutions/Services

Teamcenter
siemens.com/teamcenter

Customer's primary business

Fokker Services is a specialist in maintaining, repairing, modifying and remarketing out-of-production aircraft. Its emphasis is on quality, speed and enhancing reliability, while reducing costs. www.fokkerservices.com

Customer location

Nieuw-Vennep
Netherlands



Quick to market

Innovative LED lighting for aircraft and digital airport charts in the cockpit were rapidly produced using Teamcenter workflows. "The LED lighting weighs less than conventional lighting and it's maintenance-friendly," explains Tieleman. "We were able to develop it and have it certified very quickly. That would not have been possible in the old situation. Now we are the first to market and are reaping the benefits."

The same applies to information in the cockpit. Charts of all airports must be present in the cockpit. "That's an expensive business," Tieleman says. Fokker Services created an Electronic Flight Bag. Tieleman explains, "With the help of our partners, we have made all the charts available digitally on an iPad. It's much cheaper than having to maintain paper charts, and it is creating some enthusiasm in the market. Here too, we were early, because the product could be certified quickly thanks to our Teamcenter workflows."

To make the production of components as efficient as possible, Fokker Services made Teamcenter available to suppliers selectively. "Data security requirements are strict," says Tieleman. "With Teamcenter, we can make data available to our sister companies in the Fokker group in a secure way. This is done on an ad hoc basis for companies outside the group, which is easy to do with the technical solutions Teamcenter offers for this. In all instances, only the relevant data are made available."

Direct link to company's success – Teamcenter

Teamcenter has acquired the status of PLM backbone at Fokker Services. All processes and applications use Teamcenter to carry out critical operational tasks. "The footprint we have now achieved with Teamcenter contributes directly to our company's success," Tieleman says. "We are able to introduce innovative new products to the market quickly. Thanks to digitalization, the processes are watertight, and the integration of applications means data are stored and monitored in just one location. Success with aircraft from other OEMs is proof of the success of Teamcenter."

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25054-D14 3/23 KN