

# Connecting the World

## Trend toward more electric, composite aircraft drives growth at Souriau



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Combining its engineering prowess with a flexible production setup and decentralized management style, connector manufacturer Souriau is managing to continue expanding market share despite the economic slowdown.

Previously owned by nuclear engineering company Framatome (now Areva), Souriau withered for lack of investment until being sold to its management and AXA Private Equity in 2003. Since then, research spending has doubled, outlays for new plants have tripled, and revenues have shot up. Sales reached €240 million (\$341 million) last year, up from €135 million in 2003, and are expected to grow more than 10% again this year, says CEO Francois Calvarin.

Souriau's specialty is complex circular connectors for power and data systems used in aircraft, spacecraft and military hardware. The company says it commands half of the market and leads the industry in composite connection systems. These systems are in growing demand as plastic replaces metal and designers move toward more electric aircraft.

Souriau has made strong inroads in the commercial aerospace market, supplying high-data-rate fiber-optic and actuator power connectors for the Airbus A380, and all circular connectors on the Boeing 787. It was recently picked to supply the Airbus A350XWB as well. Both the 787 and the A350 feature composite connectors plated with black zinc nickel, which is more environmentally friendly than the cadmium plating most commonly used.

A major argument in favor of composite connectors is their light weight,

which can shave 25% or more off the connector mass budget. However, composite aircraft pose electrical continuity and grounding challenges that require a good deal of engineering expertise. "It was a major concern of Boeing's for the 787," says Calvarin. "And it will be THE issue for the A350."

Another plus for Souriau, he says, is its ability to manage the complexity of connector production, which generates large volumes but typically in very small batches. The company's experience with Airbus, which in 2007 named it supplier of the year, has proved especially valuable. The Airbus catalog lists more than 1 million connector part numbers, 80% of them involving fewer than 10 parts.

To handle such a complex work flow without impacting cost, Souriau has invested heavily in production equipment, including a new black zinc nickel plating facility. The company has 10 plants around the world, including four in North America, and today says it is the highest-performance manufacturer in the industry.

This capability proved critical for Boeing, which signed up to take \$70 million worth of connectors for the 787 in a 14-year period—not only composite models but also stainless steel connectors for high-temperature applications. Souriau has also landed high-volume awards from Bombardier and Embraer, and was picked for China's new ARJ21 regional jet as well.

Calvarin says the company's decentralized management setup, with its focus on transverse ties, coordination and brainstorming, places it in good stead in the aerospace market, particularly to

meet military demand for quick-changeout and field-repairable designs and urgent operational requirements. One example of Souriau's reactivity, he notes, was a smart-bomb jamming issue, which engineers were able to quickly resolve simply by modifying the connector axis—a fix that also reduced wear.

This has helped Souriau make strong inroads in the U.S. defense

**Boeing contracted to purchase \$70 million worth of connectors from France-based Souriau for the 787.**

market, which now accounts for more than \$100 million in annual sales—a fivefold increase since 2003. The company has placed its connectors on numerous U.S. military aircraft programs, including

the F-22, and is now seeing strong demand in ground systems, too. It recently received a U.S. military qualified product listing for the new black zinc nickel connector line, and struck a deal with TTI to distribute it in the U.S. A second growth area is Israel, where sales have gone from virtually nothing to several million euros per annum in five years.

The same strengths have also made Souriau a leading supplier in the fast-growing space market. The company is moving into industrial and ground transport applications, too.

With such a well-balanced portfolio, Souriau does not expect considerable impact from the recession hitting the airline industry. "On the contrary," says Calvarin, "the crisis is likely to reinforce our market position." However, revenues are being affected by the slowdown in big new aircraft programs like the A380, 787 and A400M, and supply-chain pressures are creating a cash squeeze, he says.

Nevertheless, management expects to continue funding investment largely out of cash flow and to refrain from adding debt or going to the market to raise fresh capital. The sale of AXA's stock to Sagard—a family-owned fund specialized in nurturing the development of high-technology companies in France, Canada and other countries where French is spoken—can provide breathing room if needed, Calvarin says.

Souriau continues to seek acquisitions, particularly in the U.S. It looked at two American candidates in 2007 but rejected them as too expensive. The aim is to add new products, such as ultra-miniature connectors. ❶