

Bombardier Aerospace

Increasing the speed of innovation with ENOVIA VPLM from Dassault Systèmes



Overview

■ Challenge

To optimize designs and reduce time to market, Bombardier Aerospace needed to facilitate collaboration, accelerate decision-making and manage change across global development and manufacturing teams.

■ Solution

Bombardier chose ENOVIA VPLM to streamline collaboration and data access, promote design reuse, and drive downstream efficiencies.

■ Benefits

By leveraging ENOVIA VPLM, Bombardier Aerospace will reduce the time needed to access information by 80%, enabling knowledge-based design and collaboration while reducing downstream errors and delays.



“ENOVIA VPLM helps us manage increasingly complex design interactions across the extended enterprise. It helps our development teams understand why changes are being proposed and what impact they will have so that our engineers can make better decisions and more quickly and accurately evolve the product definition.”

François Caza, Vice President and Chief Engineer, Bombardier Aerospace

BOMBARDIER

Innovation the key to success for aerospace manufacturer

Bombardier Aerospace is the third largest civil aircraft manufacturer in the world and a leading supplier of business, regional and amphibious aircraft, with fiscal year 2005 aerospace revenues totaling US\$8.1 billion. Bombardier Regional Aircraft leads the 50, 70, and 90-passenger regional carrier market. Bombardier Business Aircraft offers five models of narrow-body aircraft under the Learjet brand, and four models of wide-body business jets under the Challenger and Global Express brands.

Bombardier Aerospace has set the pace in the commercial and business jet industry by completing 16 major new or derivative aircraft programs in the last 16 years. Now the company faces an even greater challenge: maintaining its role as the innovation leader, while expanding to a more complex, distributed enterprise that includes global development partners and suppliers with total responsibility for design and manufacturing.

The increasing complexity of aircraft designs and their value chains means that these teams need to collaborate closely and often – despite the fact they may be separated by great distances and a diversity of systems and corporate boundaries. The collaborative challenge is increased by the fact that change is occurring more rapidly than ever before in the fiercely competitive business and commercial jet markets. For example, the test integration department faces the challenge of designing and building test rigs under rigid scheduling constraints, while the product is changing hourly.

Physically separated development teams require seamless access to design and product information to improve collaboration, facilitate design re-use, synchronize work-in-process data, and avoid rework. Access to complete product information early in development drives downstream efficiencies by providing critical product and process data needed by manufacturing, sourcing, after-sales



services, and other functions. For example, manufacturing needs to understand the impact of a change on shop floor design and planning. Likewise, after-sales must be alerted to changes in part requirements.

ENOVIA VPLM manages change to optimize global development processes

Bombardier Aerospace management selected ENOVIA VPLM to ultimately manage the design configuration of the company's many different models of business and regional aircraft. ENOVIA VPLM will be deployed on a program by program basis throughout the company. Because of its critical role on the leading edge of the design process, the test integration department was one of the first ENOVIA VPLM adopters.

Test integration engineers use ENOVIA VPLM to track changes in the product and make the necessary modifications to the test rigs. ENOVIA VPLM maintains an audit trail that makes it easy to obtain information on any change and ensure that all change orders have been accomplished. Leveraging accurate, real-time product data, the test integration group uses ENOVIA VPLM to engage in multi-discipline collaboration and decision-making with global design groups and development partners.

The Bombardier Completion Center Montreal (BCCM), which builds customer interiors for the Global Express business jet, is another early adopter. The BCCM uses ENOVIA VPLM to track the hundreds of different

components used in the luxurious interiors. With ENOVIA VPLM, it only takes seconds to determine the impact of a change made by a customer anywhere in the design cycle.

Collaborative capabilities of ENOVIA VPLM accelerate development cycles

While Bombardier Aerospace is still in the process of implementing ENOVIA VPLM throughout its organization, it has already experienced many benefits. ENOVIA VPLM facilitates the design of product families through reuse and advanced modeling. Development teams leverage the work-in-process information in ENOVIA VPLM to work concurrently, synchronize the work of physically separated groups, and identify released parts and assemblies that meet program requirements to enable design reuse.

ENOVIA VPLM reduces by 80% the amount of time required to locate product and process information. As soon as one process is completed, product information is immediately available to jumpstart concurrent or downstream processes. For example, manufacturing technicians in the BCCM and elsewhere use ENOVIA VPLM to access design geometry they can then leverage to create computerized numerical control (CNC) programs earlier on in development. The next step will be to bring the benefits of ENOVIA VPLM to the after-sales activities that are so critical to aerospace profitability.



"The only constant in the commercial and business jet market today is continual and rapid change. ENOVIA VPLM provides Bombardier Aerospace with a substantial competitive advantage by delivering the right data at the right time in the right format to the right people."

Colin Campbell, Manager PLM Business Processes, Bombardier Aerospace



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