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Dassault Systèmes, the **3DEXPERIENCE** Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 150,000 customers of all sizes, in all industries, in more than 140 countries. For more information, visit www.3ds.com.

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Oberaigner Powertrain

Aerospace & Defense Case Study



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Challenge

Oberaigner Powertrain's new business unit for aircraft design needed an integrated development environment to handle the complexities of multi-site collaboration.

Solution

The company chose Dassault Systèmes' collaborative 3DEXPERIENCE Platform for design, analysis and data management.

Benefits

Engineers at its two sites as well as suppliers can easily navigate project data, which is one single source of truth capitalized throughout the lifecycle of its products, promoting design reuse and collaboration.

Breaking into new markets with 3DEXPERIENCE technology

Wilhelm Oberaigner is passionate about flying and he is on his way to realizing a dream – to build a plane. What makes his story unique is that the expert pilot's origins were planted firmly on the ground in the automotive industry. After founding a Mercedes-Benz sales and service company in the late 1970s, he went on to produce the first differential lock for Mercedes-Benz's transporter and an all-wheel drive for its transporter T1 series a few years later. To meet international demand for its services, Oberaigner Powertrain inaugurated its new facilities in Nebelberg in 2002, equipped with state of the art technology. Now, the company is expanding to new horizons and building a business aircraft.

For the new business jet, Wilhelm Oberaigner has sustainability on his radar. "As a pilot, you quickly realize how much fuel an airplane consumes," Wilhelm Oberaigner, founder, Oberaigner Powertrain, said. "There are a number of areas where innovative solutions can save energy and make the entire craft more efficient even when carrying heavier loads," he said. In 2011, the Oberaigner Powertrain team started the development of a six-seater business jet with a combustion engine that it is manufacturing both in its new production facility at the Rostock/Laage airport in Germany and in its headquarters in Nebelberg, Austria.

And the winner is: collaboration

With teams working on two sites, it was clear from the outset that developing the aircraft would require technology that could handle multi-site collaboration and process management. Oberaigner Powertrain chose Dassault Systèmes' (3DS) 3DEXPERIENCE Platform

to do the job. "We can share information instead of having to transfer large amounts of data back and forth," Peter Stögmüller, project manager, Oberaigner Powertrain, said. According to Stögmüller, "The Rostock team can work with the PLM data stored in Nebelberg. Suppliers have also accessed our data using 3DS's Version 6 technology and the feedback has been positive," he added. "For example, the data of the components provided by one of our suppliers for the aircraft engine were easily incorporated into the overall design."

Fast and efficient rollout

Oberaigner Powertrain received support from the Infinities1st systems company, a 3DS PLM solutions partner, with facilities in both Austria and Germany. According to Stögmüller, Infinities1st has "extensive experience in implementing such integrated systems." A big advantage, in his view, was that Infinities1st and Oberaigner Powertrain have a long working relationship. "Infinities1st was, therefore, familiar with our procedures and could show us the exact processes and methods that were the most appropriate for us. They helped identify the Version 6 features we needed, with minimum customization. The result is a highly efficient system," he said.

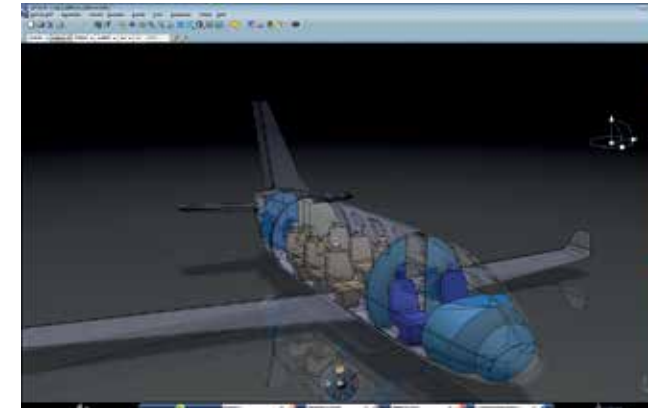
Intuitive design and data management capabilities

In general, experienced staff has no problem locating product data in a company's file-based system, according to Hubert Springer, responsible for the PLM installation at Oberaigner Powertrain. But for new employees, who do not know where to look, the search is often very tedious if they are looking for, say, a part that they want to use as the basis for a new design. "Data is managed in an intuitive way in the ENOVIA database, which is a big reason why new employees can easily locate other colleagues' models," he said. "They can easily find information that reflects the expertise of their colleagues and reuse existing designs instead of duplicating data. Moreover, the different versions of a design as well as the identity of those who are authorized to make modifications are capitalized, helping us trace the evolution of the product to the smallest detail."

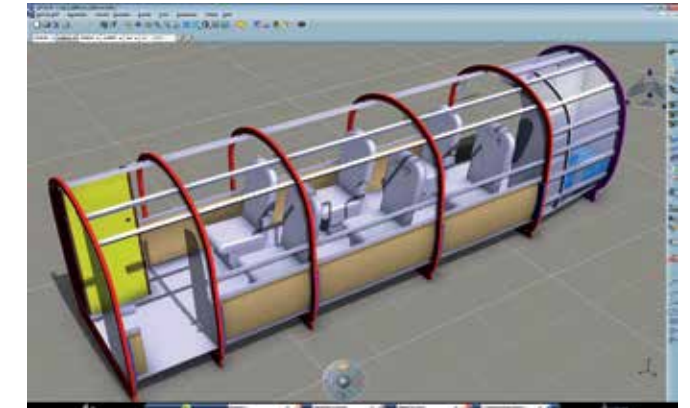


"Every day we discover new benefits associated with Version 6. With the 3DEXPERIENCE Platform, we are well prepared to develop a sustainably innovative aircraft."

**Peter Stögmüller, Project Manager,
Oberaigner Powertrain.**



Design Study



Cabin Structure

Oberaigner Powertrain uses CATIA not only for virtual design but also for its analysis capabilities. Engineers perform preliminary design verifications before submitting models to specialists who use SIMULIA's Abaqus finite element analysis (FEA) software to create higher fidelity models that fully capture the physics of the real world. "The more obvious design issues are detected and corrected in CATIA, which lightens the workload of our analysis specialists. It reduces validation iterations and avoids bottlenecks that can slow down the development process," Springer said.

High quality documentation simplified

Creating documentation is easier and Stögmüller points out that the 3DS application 3DVIA Composer plays an important role. "While it is possible to generate exploded views directly in CATIA, we used to have to recreate these views if there is a change to the reference model," he explained. "3DVIA Composer separately stores the way parts and annotations are arranged, and now the reference model can easily be replaced without affecting the layout of the exploded views. This allows us to start with the documentation work very early and concurrently with the development process. Our customers and suppliers now have presentations and animations that are of superior quality, more meaningful and that reflect the latest and most up to date designs."

Equipped to meet high demands

With the Dassault Systèmes' 3DEXPERIENCE Platform for design, analysis and data management Oberaigner has the infrastructure to pursue new ventures. "Every day we discover new benefits associated with Version 6," Stögmüller said enthusiastically. With the 3DEXPERIENCE Platform, he thinks the company is "well prepared to develop a sustainably innovative aircraft." It seems that Wilhelm Oberaigner's dream is about to come true.

Focus on Oberaigner Powertrain

Oberaigner Powertrain GmbH is world leader in transporter all-wheel drive technology (AWD) specializing in the design and production of automotive components that include complete axles, differential locks and gearboxes.

Products: Gears, axles, automobile components, systems, kits, even entire vehicles in small batch series

Headquarters: Nebelberg, Austria

For more information
www.oberaigner.com

Focus on Infinities1st

Infinities1st is a provider of PLM solutions based on the 3DEXPERIENCE applications ENOVIA, CATIA, 3DVIA, SIMULIA, and DELMIA from Dassault Systèmes. The company has extensive industry knowledge and expertise in business processes enabling it to provide the services needed to improve the performance of its customers.

For more information
www.infinities1st.com

