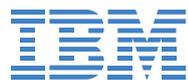


KaVo

Simplifying product illustration with 3DVIA
Composer from IBM and Dassault Systèmes



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Overview

The Challenge

- KaVo needed an automated solution for producing 3D interactive work instructions and product illustrations to provide the level of detail required for accurate product assembly and technical documentation to reduce the time to market.

The Solution

- KaVo implemented Dassault Systèmes' 3DVIA Composer and integrated the solution with its product development and engineering change processes with ENOVIA to automatically generate assembly and technical illustrations from CATIA 3D models at product release.

The Benefits

- KaVo is already realizing a 50 percent time reduction in the generation of technical documentation and expects to reduce errors and improve quality during product assembly.

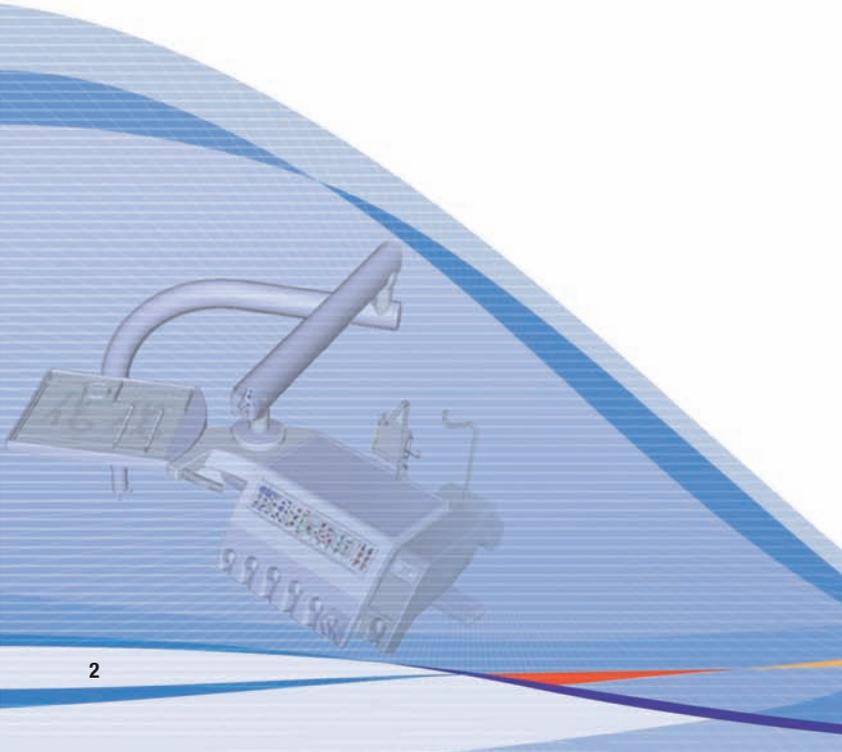
“ With 3DVIA Composer, we’ve seen a more than 50 percent reduction in the time to produce our technical documentation—and that’s a very important factor for us to reduce the time to market.”

Thomas Lippl, Continuous Engineering Manager, KaVo

Legacy of innovation

For more than 100 years, KaVo has provided top quality, innovative technology and equipment to dentists and dental technicians. With more than 3,300 employees in over 21 countries around the world, the company is one of the recognized leaders in the global dental marketplace thanks to a legacy of introducing innovative, high-tech equipment, including chairs, cabinets, imaging systems, laboratory equipment, diagnostics, lasers, instruments, and more. KaVo's more than 2,200 patents are testament to the company's relentless pursuit of innovation. And as the art, science and business of dentistry advances in complexity, KaVo is committed to continuing to focus its efforts on producing industry-leading solutions for its customers' needs.

As part of its ongoing program of continuous improvements, KaVo wanted to increase the detail and usefulness of its product assembly and technical documents. Assembly drawings were being created from KaVo's 3D CATIA models and converted to PDF files for use by workers in production. But information on the PDFs was not detailed enough to ensure high quality assembly by shop floor workers. And the company felt it simply



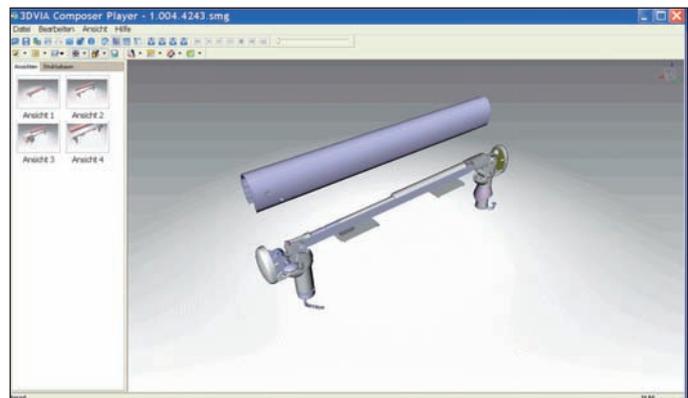
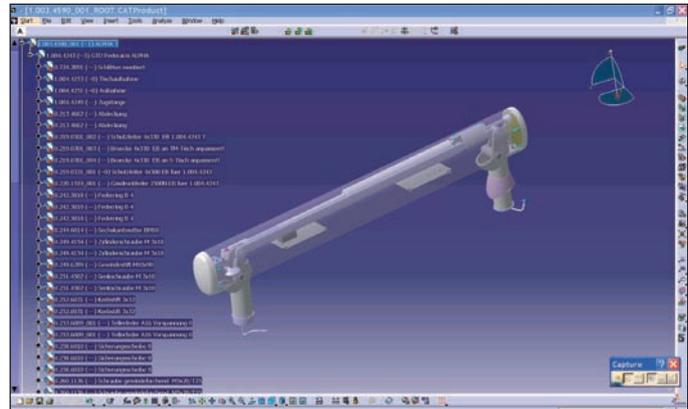
was not practical to make CATIA 3D models available directly to assembly workers. So KaVo looked for a “view” format that could be derived directly from its 3D data, says Franz Reinalter, IT Team Leader Cross Functional Application at KaVo.

Automatic drawing creation, fewer assembly errors

After examining several options, Reinalter says, KaVo chose 3DVIA Composer from IBM and Dassault Systèmes because of the ability to integrate it with the company’s existing product development and engineering change processes managed in ENOVIA LCA. “This was one of the key reasons that 3DVIA Composer was such a good choice for us,” Reinalter says. “With IBM’s assistance to create an interface between ENOVIA LCA and our ERP systems, we are able to collect the intelligence we need and automatically create the 3DVIA Composer files upon design release.”

In addition to creating a new interface, KaVo also upgraded to 64-bit hardware for creating the 3DVIA Composer illustrations for the shop floor workers to accommodate the file sizes associated with large assemblies. “We simply couldn’t do it on 32-bit machines,” Reinalter says. “Some of these CATIA files are more than five gigabytes, so we needed the same 64-bit capability that we use with our CATIA designs to handle the complexity of some of these large assemblies in 3DVIA Composer.”

But Reinalter says the work invested in creating the interface and bringing in new 64-bit hardware to convert the large CATIA files into small 3DVIA Composer files is definitely worth the effort, considering the improved quality and ease of use of KaVo’s 3DVIA Composer assembly documents. “It’s certainly easier for our workers to visualize and assemble with the 3D perspective 3DVIA Composer gives us,” he says. “And we expect to see that begin to translate to fewer mistakes in assembly and higher quality in our products.”



An example of a CATIA model and the associated 3DVIA composer image

Faster document and updates

KaVo also is using 3DVIA Composer to create its technical documentation files used by field technicians in service after sales and in customer product manuals. “We used to have to wait until a product had gone into production to obtain the necessary photos of the finished assembly to create our technical documentation or to translate the CATIA data into STEP or IGES data to send it to external service providers to create the documentation,” explains Thomas Lippl, Continuous Engineering Manager, KaVo, “But now that we can work

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directly from the 3D CATIA design data, we're able to produce all the necessary technical documentation before production even begins. With 3DVIA Composer, we've seen a more than 50 percent reduction in the time to produce our technical documentation—and that's a very important factor for us."

Lippl says it also is easier to incorporate product design changes. "You simply make the change in CATIA and the technical documentation is nearly automatically updated,"

he says. "You don't have to start from scratch; everyone has the most current version and it's all achieved far faster than we could ever dream of with our previous approaches."

KaVo also anticipates that as workers become more comfortable and familiar with using 3D interactive work instructions created by 3DVIA Composer, there will no longer be a need for printed paper instructions. They expect to see a reduction in printing costs and, subsequently, reduced environmental impacts. The company's future plans also include using 3DVIA Composer technical illustrations much more in electronic documentation for service after sales applications and in its marketing department to showcase new products to customers online.

"To achieve the kind of highly integrated solution that we've implemented takes work," Reinalter says. "But with the expert integration services provided by IBM and first-rate 3DVIA Composer software from Dassault Systèmes, we believe the outcome has certainly been worth the effort."

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