3DE

German design firm uses Adobe® Acrobat® 3D software to accelerate review cycles by 50%, saving money on CAD data interoperability

3DE

www.de-de.de

Industry

Development & Design

Challenges

- Gain ability to read 3D CAD geometry from a broad spectrum of CAD/CAM systems
- Use CAD data from customers without remodeling
- Enable technical and non-technical team members to engage with the design team

Solution

- CAD interoperability and design collaboration

  The design firm 3DE is using Adobe Acrobat 3D to convert complex CAD files to Adobe PDF and streamline collaboration without the need for expensive CAD software.

Results

- Reduced design review cycles by 50% or more
- Improved quality of designs by 200%
- Eliminated the need to purchase costly CAD and translation software
- Reduced CAD files sizes by as much as 90%

Systems At A Glance

- Adobe Acrobat 3D
- Adobe Flash® 8 Professional
- Adobe Reader®
- Platform: Microsoft® Windows® XP Professional

Maximizing 3D visualization

Developing good design for real world production depends on quality, reliable communication. Everyone—from designers, to clients, to fabricators—needs to have access to current, comprehensive design information in as much detail as possible.

At 3DE, where creative conversations are ongoing on projects ranging from precision plastics to mega-yachts, teams work extensively with Adobe Acrobat 3D software to share ideas, drawings, and technical data rapidly and accurately as 2D and 3D designs.

"Adobe Acrobat 3D is a powerful tool for efficient 3D file exchange and for streamlining collaboration," says Jess Maertterer, owner of the German design firm 3DE, a sought-after company that delivers production-ready designs for free-form architecture, industrial design, transportation, and more.

Powerful CAD data interoperability

Before adopting Adobe Acrobat 3D, translating native CAD files and sharing them among teams of designers, clients, and engineers typically meant investing in expensive translations programs. Results were often laden with errors. Without translation, stakeholders may not have been able to read CAD files for lack of native software applications, and files were too large for efficient exchange.

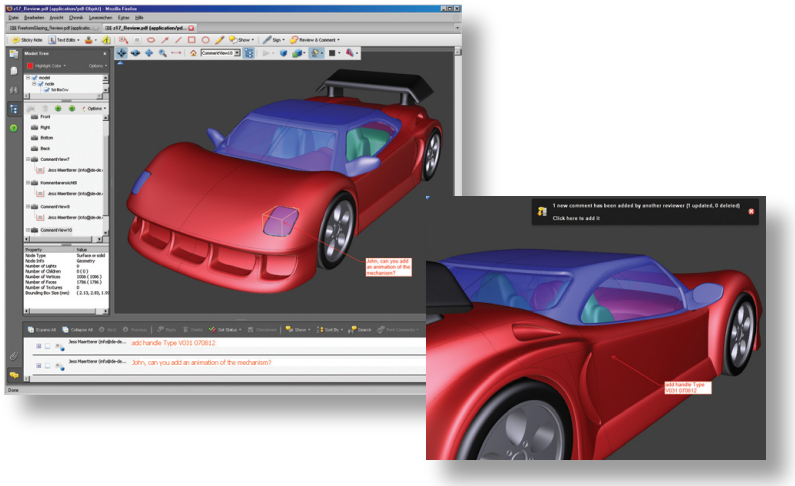
Several of 3DE's clients use CATIA for design layout; others use AutoCAD and SolidWorks. Maintaining a current software inventory to match the native applications used by clients would be cost-prohibitive for 3DE. "Using Acrobat 3D to convert CAD files to 3D models in Adobe Portable Document Format (PDF) is the perfect solution at a fraction of the costs of translation programs," says Maertterer. He added that using Acrobat 3D, he can import a 250MB CATIA V5 assembly and end up with a compact 5MB 3D Adobe PDF file that is easy to navigate with a notebook computer.

Further, Acrobat 3D reads the PMI data such as dimensions, tolerances, and annotations, as well as metadata attributes contained in the CAITA model. This provides access to critical manufacturing information in the 3D Adobe PDF file and reduces the need to receive 2D drawings from customers.

Maertterer helps bridge the gap between virtually all CAD programs by converting files to Initial Graphics Exchange Specification (IGES) format or Standard for the Exchange of Product (STEP) format to retain the accurate B-rep solid model that can be used by CAD, CAM, and CAE users for downstream manufacturing processes such as tool and mold design, CNC machining operations, or performing analysis. According to Maertterer, the quality of CAD translation with Acrobat 3D is excellent—significantly better than files exported using CATIA plug-ins.

Adobe

Using Adobe Acrobat 3D software, 3DE can share ideas, drawings, and technical data rapidly and accurately as 2D and 3D designs. By enabling the comment and annotation capabilities in Acrobat 3D, any user of the free Adobe Reader can interact with 3D assemblies and individual parts, view cross sections, measure 3D designs, or mark up the design without CAD applications or CAD viewers.



"When I convert 3D models to Adobe PDF, I get perfect solids with clean surfaces and trims, and no naked edges. Even the object attributes are still there."

Jess Maertterer,
Owner,
3DE

"When I convert 3D models to Adobe PDF, I get perfect solids with clean surfaces and trims, and no naked edges. Even the object attributes are still there," says Maertterer, who has worked with many expensive file converters, none of which comes close to the quality Acrobat 3D produces.

For instance, Maertterer may receive a CAD file created from an architectural model that shows only the surfaces of a structure. He then builds out the interior plans and sections, and uses Acrobat 3D to create presentation files showing a variety of detailed design options.

Facilitating true collaboration

Previously, 3DE used various online collaboration tools with disappointing results. The process was slow, did not easily accommodate design revisions, and required repeated, tedious access. The tools for annotations and reviewer comments were also poor. To workaround the problems, the 3DE team resorted to creating 3D Studio meshes or bitmap images to send to clients. Making viewable files that included all components was impossible. The process required a tremendous amount of work and usually resulted in a significant loss of information.

"With Adobe Acrobat 3D, we have accelerated collaboration time by 50% and improved the quality of communication by 200%," says Maertterer. "If you want to show something in 3D, Acrobat 3D is the ultimate collaboration tool to use."

To facilitate more effective communication, Maertterer enables the comment and annotation capabilities in Acrobat 3D so any user of the free Adobe Reader can interact with 3D assemblies and individual parts, view cross sections, measure 3D designs, or mark up the design without CAD applications or CAD viewers. "The browser-based review enabled through Acrobat is invaluable," he says. "All comments from dispersed review teams are instantly available through a secure web server."

Maertterer has developed an ingenious process to add an interactive multimedia layer to the collaboration process. He uses Adobe Flash Professional software to embed voice-over narration SWF files into 3D Adobe PDF documents, making it easier to communicate and interpret complex design concepts through dynamic multimedia presentations.

Maertterer believes that PDF is the common thread that eliminates barriers to communication and collaboration among designers, clients, and vendors. "By using Adobe Reader to collaborate on PDF files, people can see exactly what I am seeing. This is true collaboration," he says, grateful that he no longer has to use different forms of communication for various customers.

With Acrobat 3D, actual design data and exact geometries are exported and can be used for manufacturing. If a user publishes the 3D Adobe PDF file and turns on the ability to export data, that 3D PDF file is not simply a model for review and markup but an accurate B-rep solid model.

"Adobe Acrobat 3D offers new creative freedom and enhanced collaboration," says Maertterer. "It is revolutionary progress for any CAD or modeling company—and thanks to advanced scripting options in Acrobat 3D, we can even further expand the software's functionality to support most any collaboration task."

For More Information

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