DASSAULT SYSTEMES

SPATIAL

XEOMETRIC

XEOMETRIC develops 2D/3D construction planning and mechanical engineering software

ELITECAD XEOMETRIC

Market:
Computer-aided Design Planning

Product:
ACIS, 3D InterOp Suite

Challenges:
A high-performance geometry kernel that enables advanced functionality, such as blending and precise hidden line removal functionality, without delay.

Solutions:
- **ACIS geometry kernel for primary data representation format**
- **3D InterOp translators for high quality import of native CAD files**

Results:
XEOMETRIC intended to use Spatial's ACIS for blending and precise hidden line removal in its 3D CAD system ELITECAD Mechanics. During integration and testing, the quality and functionality turned out so rich that ACIS became the primary geometry kernel. In addition, the InterOp translators provide accurate import of file data in ELITECAD.

XEOMETRIC GmbH

Whether designing a large manufacturing plant, a special machine or a cable car and the terrain around it, mechanical designers and engineers rely on XEOMETRIC's ELITECAD to get the job done quickly. The Austrian software company develops and distributes state-of-the-art CAD software with a special emphasis on usability and connectivity.

Based on more than 35 years of experience, the flagship product ELITECAD with its industry-specific editions is one of the most efficient and yet easy-to-use 3D CAD solutions on the market. Furthermore, the high-quality products for architecture and mechanics are topped off with excellent personal service and the possibility for customising. Today, XEOMETRIC is operating worldwide with an ever-growing network of partners to ensure qualified on-site support in more than 25 countries.

XEOMETRIC's customers use ELITECAD for a range of modeling operations: they make models from scratch, use 2D drawings to make 3D models and some need several variants of the same machine. If a change is made to a 2D drawing, the 3D model is automatically modified.

ELITECAD Mechanics is used in two primary applications: construction (plant and process engineering) and mechanical (e.g., design of machines for mineral processing or waste paper/plastic/glass recycling). ELITECAD provides the plant engineering market with a streamlined solution with which to do everything from high precision design and drawings to scheduling and cost planning. The software efficiently generates 3D models from which plans, images and measurements can be taken. The 3D model delivers a range of corresponding plans and high quality presentation material for project presentations.

A two-dimensional function is also available for the finishing of plans or the reworking of detail drawings. An integrated freeform module enables an interactive method of defining complex three-dimensional elements and objects such as facades, roofs, sanitary utilities, furniture, design objects and ramps.

"Despite modern output options like 3D stereo displays or VR, generating 2D views of 3D models is still one of the most important features for our customers," says Stöger. "ACIS' hidden line removal function is stable, fast, and precise in ELITECAD."

DI Dr. Wolfgang Stöger,
Owner and CEO of XEOMETRIC GmbH

For mechanical designers, ELITECAD is a 2D and 3D CAD software solution for planning and engineering steel structures and the terrain around them.

The software is extremely flexible when it comes to multiple building structures with various floor levels. It has an efficient floor-level and structure management that allows for the planning of larger estates with multiple buildings of staggered heights.

CHALLENGE

XEOMETRIC had its own 3D CAD kernel for solid modeling but it had weak functionality for blending and precise hidden line operations. Speed is paramount to ELITECAD customers and these operations performed slowly. The company also sought file translation capabilities to address its customers' need to import 3D models from other CAD programs.

SOLUTION

XEOMETRIC selected Spatial's ACIS geometry kernel and 3D InterOp file translation suite. No other company could offer a geometry kernel with the breadth of ACIS' functionality and the InterOp translators had a reputation for excellent quality.

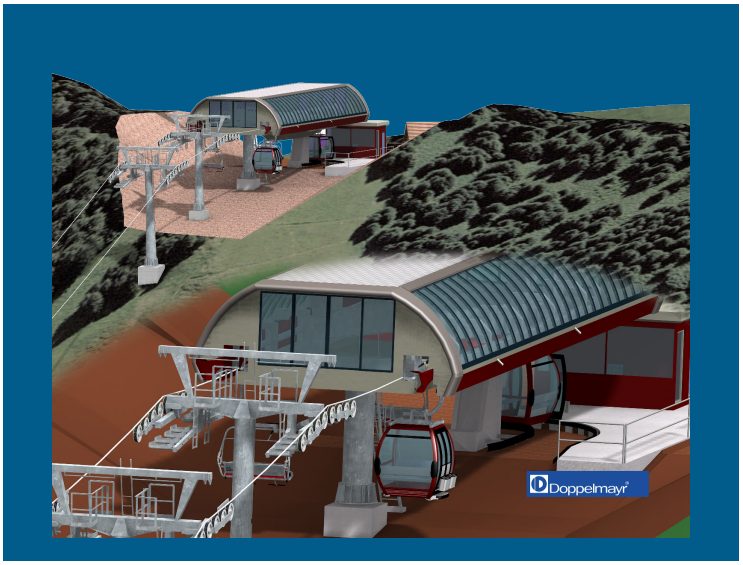
When the ACIS integration into ELITECAD Mechanics started, technical staff from Spatial worked on site at XEOMETRIC. "The excellent documentation soon allowed us to continue the development process more or less independently," says DI Dr. Wolfgang Stöger, Owner and CEO of XEOMETRIC GmbH. Within a few months, XEOMETRIC developers completed the integration of ACIS into the software.

A new release of ELITECAD Mechanics featuring the latest version of ACIS is released every two years. "The ACIS modeler offers so many capabilities, it would take too much time and resources to implement this functionality at once," notes Stöger.

Many XEOMETRIC customers import 3D models. Spatial's InterOp translators, specifically IGES, CATIA V4 and V5, PRO/E and STEP are heavily relied on to provide accurate file translation. STEP is particularly important because it is widely used in Austria. XEOMETRIC found that InterOp imports 3D objects with very high quality, enabling them to work with the model as if it was created within ELITECAD. "Because of ELITECAD's interoperability capabilities, our customers can work independently from the CAD systems of their suppliers," says Stöger.

ACIS was initially selected on the strength of its precise hidden line and blending functions. "Generating 2D views of 3D models is still one of the most important features for our customers," says Stöger. "ACIS' hidden line removal function is stable, fast and precise."

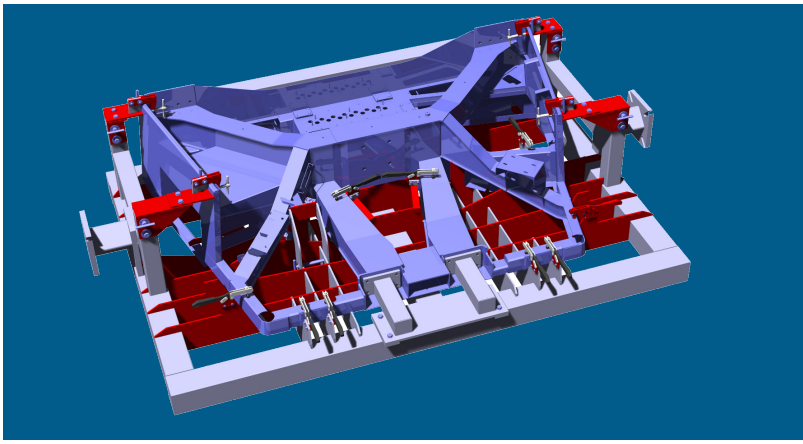
The excellent relationship XEOMETRIC has with Spatial's sales and support teams contributes to the strength of the partnership between the two companies.



RESULTS

XEOMETRIC hadn't meant to replace all of ELITECAD's 3D modeling functionality with ACIS, rather it intended to perform blending and precise hidden line operations in ACIS and then convert the model back to its own 3D data format. "We realized the ACIS toolkit had better overall functionality than our own, so we decided to forgo our own geometry kernel and use ACIS for all modeling functions," says Stöger.

Ongoing development efforts to incorporate new releases from Spatial run seamlessly. "When implementing new features it is essential to gather all relevant information quickly in order to achieve fast development cycles," says Stöger. "The Spatial documentation satisfies these requirements and provides a comprehensive overview as well as detailed technical information."



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