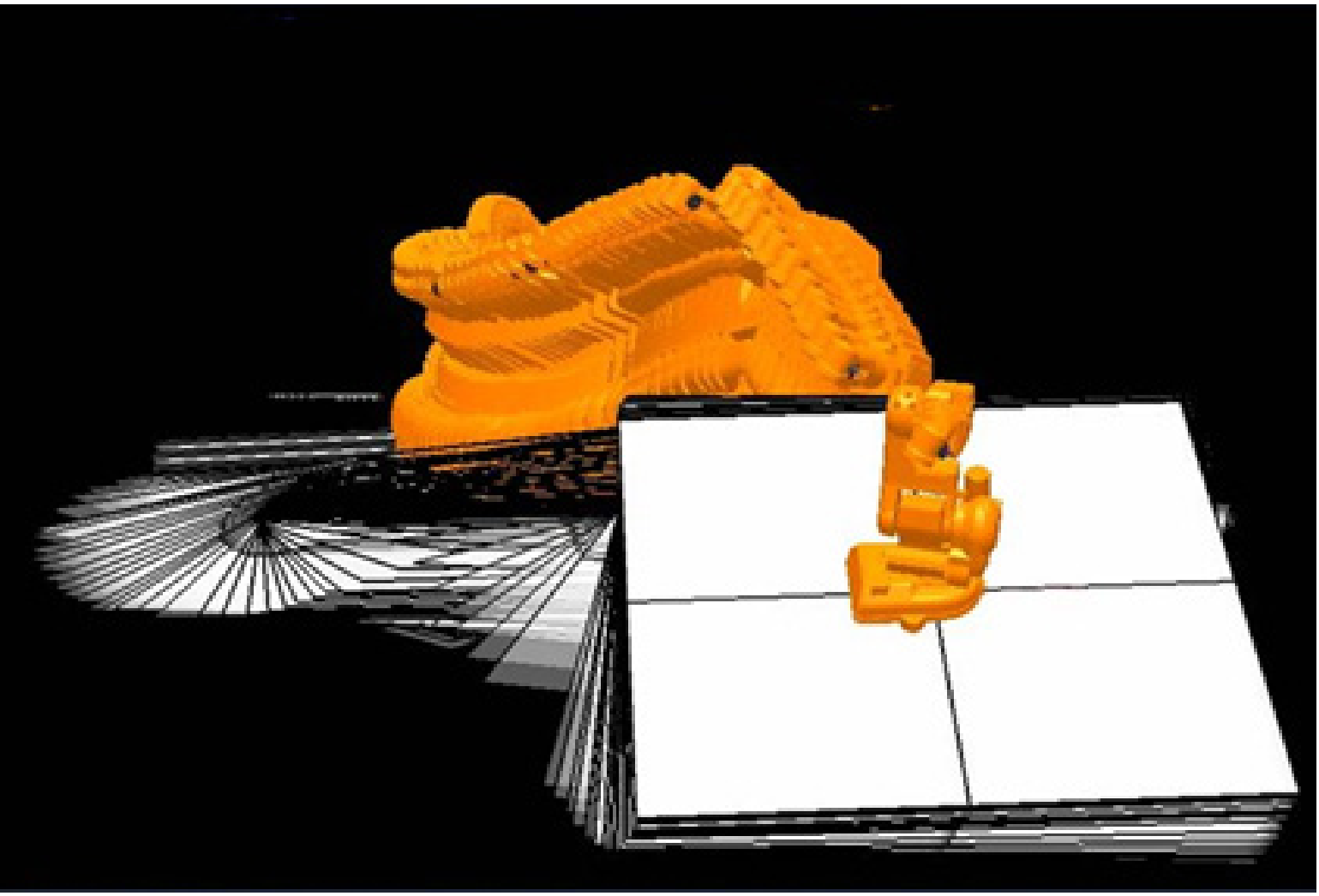
DASSAULT SYSTEMES

SPATIAL

ABB Robotics



ABB's Robotics Division markets RobotStudio simulation and offl ine programming software, allowing robot programming to be done on a PC without shutting down production and increasing overall productivity.

ABB

Market:
Robotics, CAM

Product:
3D ACIS Modeler, 3d InterOp Translators, 3D Defeaturing

CHALLENGES

To develop its own geometry engine would have been a very large project well out of the realm of ABB's core competency of robotics.

Solutions:
Spatial ACIS 3D modeling engine chosen because it's the gold standard in the industry and is very easy to integrate into ABB's RobotStudio. In addition Spatial's InterOp CAD translators make it easy for ABB to provide solutions for customers that want to convert data from their existing CAD systems into an SAT format.

Results:
Relieves the burden to implement modeling functionality and manage geometry; large savings of eff ort to license components as compared to developing it in-house. System integrators and end user customers are able to increase productivity.

COMPANY

ABB is a technology-based provider of power and automation products, systems, solutions, and services. Its Robotics Division is a leading supplier of industrial robots, robot software, peripherals and services for manufacturing. Key markets include automotive, plastics, metal fabrication, foundry, electronics, machine tools, pharmaceutical and food and beverage industries. ABB has installed more than 250,000 robots worldwide.

ABB's RobotStudio software is the primary engineering tool for robot systems in a virtual environment. RobotStudio is a .net application; using Microsoft Visual Studio Tools for Applications (VSTA) for the development environment; develop products to run on VISTA. Approximately 20 developers work to release a new version every six months.

RobotStudio is used in a wide range of functions: proposal engineers and sales people at systems integrators use it in the proposal stage to show potential customers proposed robot systems. In the end user environment, mechanical designers, robot programmers, commissioning engineers and service engineers all use RobotStudio on their PCs or laptops for a wide range of tasks related to programming and implementing new manufacturing systems to get robots into production faster. Once a system is in operation, RobotStudio is used to introduce new fi xtures and tooling into the system without having to take it offl ine for reprogramming.

"Working with Spatial has been pleasant and effortless and we've found it easy to work with their components. And we would wholeheartedly recommend Spatial for similar development efforts"

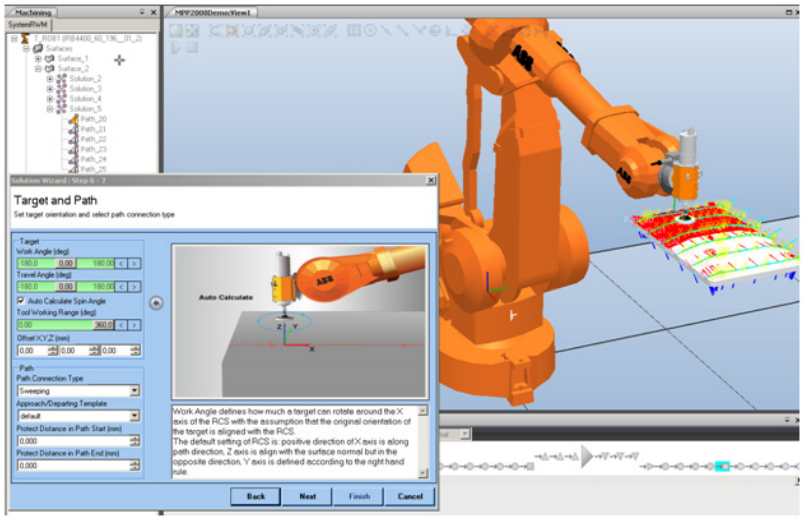
-- Bertil Thorvaldsson ,Product Manager, Software Products ABB Robotics Division

SOLUTION

ABB selected Spatial because it is the gold standard in the industry. The current release of RobotStudio is 5.11 and Spatial's 3D ACIS geometry engine has been integrated since the beginning. Bertil Thorvaldsson, ABB Product Manager, Software Products, and team view RobotStudio's 3D environment critical to the robotics software's success.

ABB had considered Parasolid and any number of other solid modeling solutions. The company chose Spatial because SAT is an industry standard that can be certifi ed; the SAT format can be generated by almost any CAD system. "In addition," says Thorvaldsson, "Spatial's CAD converters make it easy for us to provide solutions for customers that want to convert data from their existing CAD systems into the SAT format."

The fact that Spatial is primarily in the business of providing components makes it a natural complement for ABB and the RobotStudio developers. "Solid modeling is very important to us, but designing the geometry engine ourselves would not have made sense," notes Thorvaldsson.



Spatial InterOp translators enable RobotStudio to easily import data in major CAD formats, including IGES, STEP, VRML, VDAFS, ACIS and CATIA. By working with this very exact data the robot programmer is able to generate more accurate robot programs, giving higher product quality.

This is one of the most timesaving features of RobotStudio. By using a CAD model of the part to be processed it is possible to automatically generate the robot positions needed to follow the curve in just a few minutes, a task that would otherwise take hours or days.

"The fact that Spatial is in the component business make it very easy to work with them," says Thorvaldsson. "It's no problem for our developers to pick up components and use documentation to incorporate the Spatial technology into our products."

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For ABB's system integrator customers, RobotStudio and integrated Spatial technology enables them to propose a better system and achieve a higher proposal win percentage. RobotStudio provides end user manufacturing customers many cost and time saving benefi ts during design and implementation through to retooling and implementation of new fi xtures. The accuracy of the software eliminates or signifi cantly reduces the need for rework because all programming and changes are done in a virtual environment.

The software also provides the flexibility to experiment with diff erent alternatives to determine the best solution cost-eff ectively. "With a small eff ort on our part we can always provide the latest in 3d modeling," says Thorvaldsson. "We integrate the latest version of ACIS and InterOp in everything we have; Spatial makes it eff ortless for us to put state of the art technology in our product."

RESULTS

RobotStudio increases engineering productivity during the entire lifecycle of a robot system from the planning stages to design, implementation and retooling. Spatial's technology is a critical component.

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