TECH SOFT 3D

COMPANY
Proplanner

LOCATION
Ames, Iowa

SOFTWARE
Assembly Planner

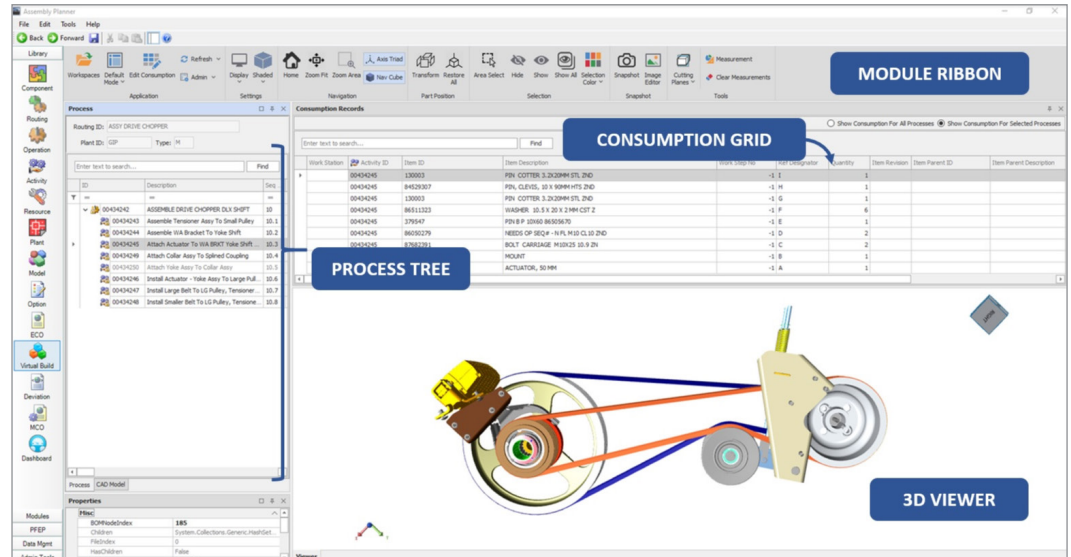**SOFTWARE DEVELOPMENT KITS**
HOOPS Native Platform

COMPANY WEBSITE
www.proplanner.com

Tech Soft 3D partner success story: Proplanner

Tech Soft 3D Helps Proplanner Solve Decades-Old Data Management Challenge for Manufacturing Customers

> "Thanks to Tech Soft 3D, we're at a point technologically now where customers can extract the data from many different CAD formats, and reconcile it against Routings and mBOMs for a specific configuration or even a range of variants. The underlying technology from Tech Soft 3D is enabling all this information to finally come together."
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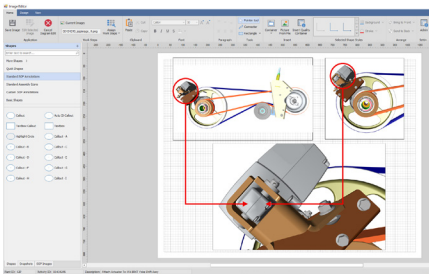> **- David Sly, President, Proplanner**

The Challenge

Proplanner is the leader in PLM-MDM (Manufacturing Data Management for the Product Lifecycle) solutions. Manufacturers around the world in the automotive, recreational vehicle, aerospace, agriculture and construction, military, white goods, highway vehicles, electrical equipment, medical device, and academic industries rely on Proplanner solutions.

Proplanner's Assembly Planner product is designed for companies producing complex assemblies that are often highly configured into customer orders. Assembly Planner encompasses a robust database where users can author and manage their manufacturing bill of materials (mBOM) and Bill of Process (BOP) routings in a collaborative secure location. Using that data, Assembly Planner helps customers perform time studies,

balance their assembly lines, auto-generate work instructions, manage their internal logistics information, and more.

"Simply put, we're the glue between product data management (PDM), product lifecycle management (PLM), and enterprise resource planning (ERP)," explained David Sly, president of Proplanner. "PDM defines what is made. ERP defines when it's made – it buys materials, schedules dates, and manages the accounting and the orders. Our value proposition for Assembly Planner is tackling how something gets made, because for the most part, people are still using disconnected Excel spreadsheets and Word documents to manage that process."

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While Proplanner had established a very sophisticated process model for Assembly Planner to handle the engineering workflows, the company wanted to further evolve the product by bringing in 3D product models.

"Linking the process model to the 3D model was the goal," said Sly. "There's a triangle of data relationships that are critical to get right. We get a 3D model from one source, we get an eBOM from another source, which is the basis of our mBOM and we generate a BOP routing which consumes parts from that mBOM while visually manipulating the 3D model. Those three elements of the triangle (mBOM, BOP routing and 3D model) have to relate – and getting them to relate is really, really difficult when all three may be authored concurrently and independently for many variants, which is why most attempts in the past haven't been successful."

Access to Critical Data, Combined with Powerful Visualization

Proplanner found an ideal solution to its challenges by partnering with Tech Soft 3D and taking advantage of several of its software development kits, including HOOPS Exchange, HOOPS Visualize, and HOOPS Communicator.

HOOPS Exchange is the fastest and most accurate CAD data translation toolkit, delivering access to over 30 CAD file formats through a single interface. On the visualization front, HOOPS Visualize is the gold standard graphics engine for developing high performance applications, and HOOPS Communicator is the simple, powerful toolkit for advanced 3D web visualization.

"We are using HOOPS Exchange primarily to do two things," said Sly. "It converts the source CAD file into PRC or HSF format, and it extracts detailed metadata. That creates a very easy workflow for bringing in CAD. As a result, our customers don't need a complex

integration with the PDM or PLM systems in order to bring in their CAD models and get started on process planning."

Sly continued, "For the visualization component, we used HOOPS Visualize for the Windows version of our product. We are also using the HOOPS Communicator toolkit for the web version of our product – the HSF streaming format provides a fast, lightweight way of viewing models."

"3D is critical," said Sly. "3D is what allows us to visually validate the process and generate shop floor instructions, but the knowledge that HOOPS Exchange is helping us extract from the CAD model is just as crucial. It helps us map the 3D model to the process, to convert the engineering change orders (ECOs) and engineering bill of materials (eBOMs) into manufacturing bill of materials (mBOMs), and associated process routings.

"Some customers have tried to get this information to match up for decades and failed," said Sly. "The problem was that there was no way to easily reconcile the variances between a CAD model that might have thousands of parts with the other documents and data sources. Thanks to Tech Soft 3D, we're at a point technologically now where customers can extract the data from many different CAD formats, and reconcile it against eBOMs and mBOMs and other data sources. The underlying technology from Tech Soft 3D is enabling all this information to finally come together."

"I think that's really what's exciting here," concluded Sly. "Working with Tech Soft 3D, Proplanner has finally figured this problem out and is actually delivering on this vision, and this capability, that customers have seen in PowerPoint presentations and sales pitches from other vendors for 20 years, but never have been able to put into production for complex highly configured products. Now they can."

Industry:
- Manufacturing

Challenge:
- Introduce new functionality to industry-leading product for companies producing complex assemblies
- Allow customers to easily bring in and visualize CAD models, and extract the underlying data
- Create linkages between process models and CAD models to ensure all the data relates properly

Solution:
- HOOPS Exchange allows development teams to easily build robust CAD data translation capabilities into their application, while HOOPS Visualize and HOOPS Communicator allow those 3D models to be visualized, on desktop and the web.

Results:
- Create a simple workflow for customers to bring in 3D CAD models without requiring complex integrations with other systems
- Extract in-depth data from CAD models, enabling easy reconciliation with BOMs and process routings
- Enable customers to easily visualize assemblies with thousands of parts
- Establish competitive advantage by being first to market with a solution that solves a data management issue that has challenged the industry for decades

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