Microsoft Office Visio 2003 Customer Solution

Case study

GE Fanuc Integrates Its Design and Sales Process with a Professional Sales Automation Tool

"With the Visio 2003 ActiveX Drawing Control, we were able to integrate an intuitive and powerful graphical environment into our own office automation solution—CNC Navigator—in record time. By using Visio technology in our solution, we have significantly increased employee productivity and the flexibility of our CNC sales organization."

Vincent de Franco
Manager of CNC Product Marketing
GE Fanuc Automation Corporation

Product manufacturers worldwide need cost-effective methods for visually conveying complex products to customers and generating sales documents from integrated diagrams and product data. GE Fanuc—a leading worldwide supplier of factory automation products—is implementing the sales automation tool, CNC Navigator, to do just that. CNC Navigator—built on the Microsoft .NET Framework and the Microsoft Office Visio 2003 ActiveX Drawing Control—enables GE Fanuc sales engineers and its customers to diagram and configure computer numerical control (CNC) systems with Visio SmartShapes symbols connected to GE Fanuc product data and configuration rules. CNC Navigator enables sales engineers to verify designs are correct, and then generate bills of materials and sales quotations from the diagrams right at customer sites. Using this tool, GE Fanuc reduces costs, increases employee productivity and diagram consistency, and delivers sales quotes 50% faster. It also increases customer satisfaction by providing GE Fanuc customers with an easy-to-use professional tool they can work with to design their own CNC solutions with GE Fanuc products.

CUSTOMER PROFILE	BUSINESS SITUATION	SOLUTION	BENEFITS
GE Fanuc, a leading, global supplier of factory automation products and solutions, specializes in computer numerical control (CNC) technology. Through its worldwide headquarters in Charlottesville, Virginia, USA, GE Fanuc serves customers in America, Europe, Africa, Asia, and the Middle East and has more than 1500 employees worldwide.	The CNC sales organization within GE Fanuc Europe needed an intuitive sales automation tool that its sales engineers and customers could use it to visualize and diagram CNC systems. From those diagrams, GE Fanuc wanted to create bills of materials for its CNC solutions that met customer specifications and generate sales quotes at customer sites.	With CNC Navigator and the underlying Microsoft® Office Visio® 2003 technology, sales engineers can easily create CNC system diagrams with Visio SmartShapes® symbols, link pricing and equipment data to the shapes in the diagrams, and then generate accurate bills of materials and sales quotations from the diagrams—all with one easy-to-use tool.	▪ Delivers sales quotations to customers 50% faster ▪ Increases employee productivity and diagram consistency ▪ Reduces costs and eliminates configuration errors ▪ Increases customer satisfaction by providing a tool that customers can use to design their own solutions using GE Fanuc products

"The Visio 2003 ActiveX Drawing Control enabled us to create the intuitive graphic module for CNC Navigator. The control combined with the Microsoft .NET Framework made this solution powerful and quick to build."

Šenaj Lelić
Managing Director
DataAssist München e.K.

Situation

GE Fanuc Automation Corporation was established in 1986 as a joint venture between General Electric Company, USA, and FANUC Ltd., Japan. General Electric Company is one of the world's largest, most diversified technology, manufacturing, and service companies. FANUC Ltd., Japan, is an automation pioneer with more than 30 years of experience in factory automation and the global leader in developing computer numerical control (CNC) technology. The joint venture—GE Fanuc—develops and manufactures products and solutions worldwide for the factory automation market. A large portion of its business involves CNC-controlled machines—complex devices comprising many parts, such as precision lathes and other industrial machinery.

One of the products the CNC Sales organization within GE Fanuc sells is CNC systems, which automate and control precision machine tools. GE Fanuc, together with its mother company, FANUC, is the worldwide leader in CNC control system sales with more than 50 percent market share.

Sales engineers within this organization used to diagram and configure those complex CNC controllers, systems, and components manually with various software tools. They used one tool to diagram systems and another to generate sales quotes. The diagrams, product data, and sales quotes weren't synchronized, and the organization lacked a consistent approach to diagramming systems.

The CNC sales organization needed an intuitive sales automation tool that its sales engineers could use to do the following:

- Visualize and diagram individual CNC controllers, components, and complete systems.
- Link diagrams to current product databases so all the documentation for a system was synchronized and accurate.
- Create bills of materials for CNC solutions that meet customer specifications.
- Generate sales quotes, which include documentation, from the diagrams at customer sites.

This tool had to integrate all of these sales engineering tasks in addition to integrating well with the GE Fanuc product database so the sales organization could simplify data maintenance. Finally, the tool had to be built on new technology that would be fully supported into the future.

Solution

GE Fanuc and DataAssist München e.K. developed CNC Navigator—a custom-made sales automation tool—to meet all of the needs of the CNC sales force at GE Fanuc, which now mandates the tool's use throughout the CNC Sales organization. Sales engineers at GE Fanuc use CNC Navigator to visualize, configure, and diagram CNC controllers, components, and complete systems including schematics and racking diagrams.

Sales engineers store product data with the diagrams, and then generate bills of materials and sales quotations from the diagrams in their own office or at a customer site. The tool is so easy that customers sometimes even use it to configure their own systems with up-to-date GE Fanuc product data. Then, the GE Fanuc sales engineer just generates the final sales quotation.

The drawing and diagramming component of CNC Navigator—built on the Microsoft .NET Framework—utilizes the Microsoft® Office Visio® 2003 ActiveX® Drawing Control. This control provides sales

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engineers with a visually-oriented, intuitive environment that's based on a user interface—Visio—that they're already familiar with. At the same time, as Chris Roth, Visio Master Consultant at DataAssist says, the control "enables DataAssist to seamlessly put a GE Fanuc face on the tool so it looks and acts like a custom GE Fanuc tool." And, as Šenaj Lelić, Managing Director at DataAssist adds, "The Visio 2003 ActiveX Drawing Control enabled us to create the intuitive graphic module for CNC Navigator. The control combined with the Microsoft .NET Framework made this solution powerful and quick to build."

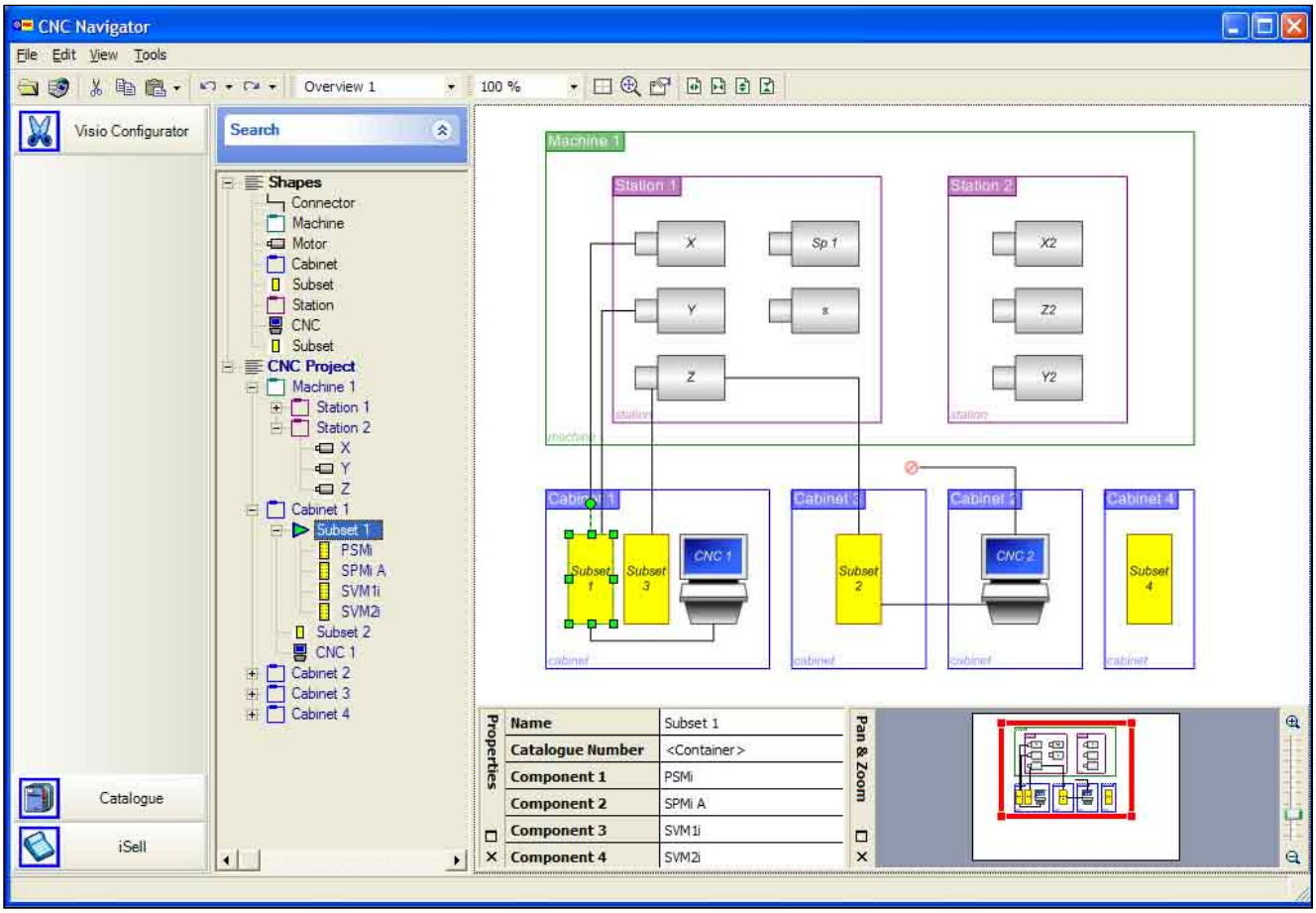
Visualize, Design, and Diagram CNC Solutions with GE Fanuc Products

Sales engineers begin a CNC solution diagram just by dragging products from the GE Fanuc product catalog (shown in a tree view) onto the drawing page. CNC Navigator places the correct Visio SmartShapes® symbol—designed specifically by DataAssist for each piece of GE Fanuc equipment—on the page. Sales engineers don't need to worry about choosing the correct shapes; CNC Navigator does that for them.

CNC Navigator also maps Visio shapes to GE Fanuc configuration rules stored in a Microsoft SQL Server™ database that force sales engineers to use only those components that fit together within viable CNC systems. CNC Navigator shows sales engineers a schema for a particular GE Fanuc system, and it won't let them assemble the system with incompatible components. For example, CNC Navigator only allows engineers to choose specific types of cables for particular motors.

If a system does include a placement error, shapes provide visual cues, such as red outlines, that tell sales engineers a diagram has errors. Chris Roth says, "This puts to use the power of Visio SmartShapes

> "Developing an entire graphical interface from scratch would be an enormous task. With the Visio 2003 ActiveX Drawing Control, we can work with a mature drawing interface that customers are comfortable with and developers can easily and extensively customize to meet the needs of their overall application. The Visio 2003 ActiveX Drawing Control enables DataAssist to seamlessly put a GE Fanuc face on the tool so it looks and acts like a custom GE Fanuc tool."
>
> ***Chris Roth***
> *Visio Master Consultant*
> *DataAssist München e.K.*



With CNC Navigator, a custom application based on the Visio 2003 drawing and diagramming environment, sales engineers can build accurate CNC systems using up-to-date GE Fanuc products and pricing information. Visio SmartShapes symbols in the system diagrams provide visual cues about shape status to help sales engineers create valid CNC systems.

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symbols to easily spot errors." Sales engineers can even pause the pointer over shapes to see error messages that tell them what action they need to take.

Shapes also know when to move together using the GE Fanuc configuration rules. When a sales engineer moves a container shape, all of the associated shapes move with it. No superfluous grouping or multiple selections are required. Sales engineers just need to move one shape and the others move with it—thanks to the flexibility and smart behavior of Visio SmartShapes.

Connectors that represent data flows also have custom smart behavior. If both ends of a connector are connected properly to both pieces of equipment that they connect, the connector provides visual validation. If they aren't, the connector generates a visual cue for the error. This behavior enables sales engineers to determine at a glance whether a CNC diagram includes errors; it also provides sales engineers with a visual to-do list.

Shapes also have attributes, or specifications, that describe how components behave with other components within a particular system. These shape attributes are mapped to GE Fanuc product data in a Microsoft SQL Server database, which is also linked to GE Fanuc content management software, facilitating data synchronization throughout the company. If a sales engineer changes an attribute or shape, CNC Navigator immediately and dynamically makes the appropriate changes to the rest of the components in the system.

Sales engineers can perform all of these configuration and diagramming tasks online or offline. If they perform the tasks online, they're connected to the GE Fanuc product and configuration databases as they work. If they perform the tasks offline, they can later synchronize the diagram with the GE Fanuc databases through the GE Fanuc intranet. Similarly, customers who design their own preliminary systems can synchronize their diagrams with GE Fanuc databases through the GE Fanuc extranet.

Automatically Generate Sales Quotations from CNC Diagrams

Using the flexible XML file format, which Visio supports, sales and application engineers can automatically generate accurate, up-to-date bills of materials from CNC diagrams. The diagrams are connected to up-to-date GE Fanuc databases, which ensure the bills of materials are technically correct. After CNC Navigator validates the CNC system configuration and the sales engineer corrects any errors in the diagram using the visual to-do list, the tool extracts the data for the bill of materials from the diagram, and then saves it in a database.

From the bill of materials, CNC Navigator can generate a sales proposal or quotation. This easy, integrated process enables GE Fanuc employees and customers at any skill or knowledge level to create technically correct bills of materials or sales quotations for CNC systems with the same tool that was used to design the system.

Benefits

GE Fanuc benefits from using CNC Navigator in the following ways.

Delivers Sales Quotations to Customers 50% Faster

CNC Navigator integrates the easy-to-use Visio 2003 drawing and diagramming environment, Visio SmartShapes symbols, and diagramming capabilities into its workflow to provide a viable alternative to expensive technical diagramming programs with steep learning curves. This simple, visual environment makes diagramming complex CNC systems less

intimidating for sales engineers and customers that design their own systems.

As a result, engineers can configure CNC systems much faster and their productivity increases. Generating technically correct bills of materials and sales quotations from those diagrams requires just a few mouse clicks.

Automating this sales quotation task saves time, increases the flexibility of the tool, and increases the productivity of the entire sales force. More specifically, sales engineers can deliver sales quotations to customers 50% faster. They can even generate preliminary quotations, along with preliminary CNC designs, right at the customer site. This complete documentation package—created with only one tool—also reduces data discrepancies, configuration errors, production disturbances, late order adjustments, and shipment delays. The ultimate outcome is increased customer satisfaction.

Reduces Operational Costs and Provides Customers with Options

Using CNC Navigator reduces operational costs at GE Fanuc in the following ways:

- **Optimizes communication process** Creating CNC diagrams and sales quotations faster decreases the amount of intensive communication usually required among departments and between the sales engineer and the customer.
- **Simplifies data maintenance** Storing all CNC configuration rules and product data in one SQL Server database drastically simplifies data maintenance and reduces redundancies.
- **Streamlines diagramming and sales process** Using one tool to design, configure, and quote CNC systems provides a consistent diagramming approach and data flow from the preliminary design all the way through to the final sales quotation. It also streamlines the entire process and reduces the manpower necessary to engineer a complete CNC solution.

Last, but not least, CNC Navigator lets customers take charge of their own CNC solutions, design systems using a database full of GE Fanuc products, and ensure the system meets their requirements—all with a visual, professional environment based on Visio 2003 that simplifies diagramming these complex systems. CNC Navigator gives everybody involved in the design and sale process, including GE Fanuc customers, speed, simplification, and more options.

Software and Services

Microsoft Office System:

- Microsoft Office Visio 2003

Other Microsoft technology and software:

- Microsoft .NET Framework
- Microsoft SQL Server

Hardware

Pentium III 600MHz desktop computers or portable computers

Partners

DataAssist München e.K.

Microsoft Office Visio 2003 is easy-to-use drawing and diagramming software that enables business and technical professionals to document, design, communicate, and improve ideas, processes, and systems. For more information about Microsoft Office Visio 2003, go to: http://www.microsoft.com/office/visio/.

For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234 in the United States or (905) 568-9641 in Canada. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to: http://www.microsoft.com/

DataAssist München e.K. is the leading provider of Visio consulting and training services in Germany and Switzerland. It has delivered solutions based on and services related to Visio since 1996. For more information about its products and services, visit the Web site at: http://www.dataassist.de/.

GE Fanuc develops products and solutions worldwide for the factory automation market. For more information about its products and services, visit the Web site at: http://www.gefanuc.com/.

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