SIEMENS

Ethos Automation

Reducing robot programming time by 25 percent

Product

Tecnomatix

Business challenges

Supply customers with a comprehensive turnkey automation solution

Introduce in-house simulation software to validate automation projects with higher accuracy

Eliminate manual robot programming and reduce time constraints on the shop floor

Keys to success

Use Process Simulate to quickly generate robot programs

Create reliable cycle times for customers

Streamline the debugging process to increase efficiency on the shop floor

Results

Reduced robot programming time by 25 percent

Delivered turnkey automation solutions to customers

Reduced robot program debugging by 20 percent

Achieved ROI in the first three months

Ethos uses Tecnomatix to deliver turnkey automation solutions to customers

Integrating simulation into robotic programming

Ethos Automation Inc (Ethos) is a systems integrator and custom machine builder in Brantford, Ontario, Canada. Ethos provides innovative solutions to design, build and integrate automated machines to deliver turnkey automated solutions to their clients.

The Ethos team was looking for a way to increase efficiency on the shop floor with simulation tools. The team previously physically programmed robots on the floor whenever needed, and they received some pushback from customers who were starting to require simulation. "Our customers were straying away from using traditional cycle times," says Calvin Kimura, cofounder of Ethos.

Ethos needed a solution to help their robot programmers simulate and generate

programs for multiple robot brands quickly and effectively. As a small company, they didn't want to buy different robot vendor software tools for specific robot brands. They were also losing time by altering robot programs after the physical workcell had already been set up.

Once Ethos decided they needed to offer simulation as an option for their customers, they began looking into various types of simulation software. They tried outsourcing this simulation to a third party, but that came with its own unique challenges. The Ethos team realized they spent too much time going back and forth with the supplier, so they decided to do the simulation in-house.
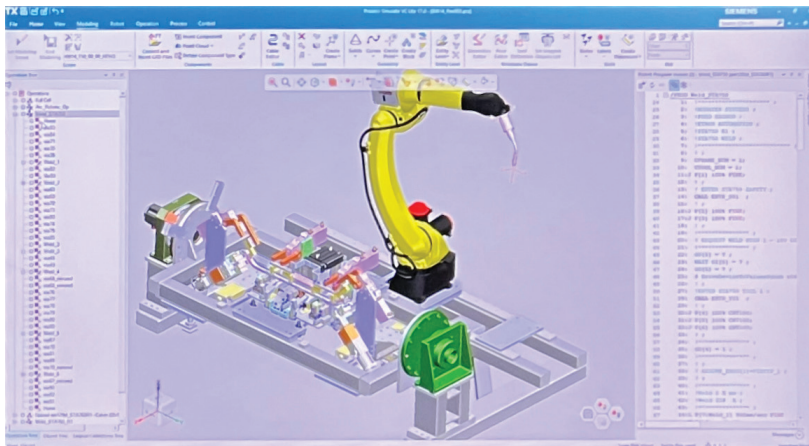
One simulation software they tried to use had a prebuilt library, but that came with limitations, including which external parts, such as end-of-arm tools, could be pulled into the software. They also faced many technical issues when running larger simulations with more robots than the previous software could handle. They were ultimately looking for software that would give them accurate answers and reliable cycle times.

"We needed software that we could have at our fingertips that would help us act quickly," says Kimura.

With the goal of expanding its processes and growing its customer base, Ethos worked with Longterm Technology Services, a Siemens Digital Industries Software Expert Partner and training provider, to implement Process Simulate in the Tecnomatix® portfolio to achieve higher level simulation tasks on the shop floor. Process Simulate is part of the Siemens Xcelerator business platform of software, hardware and services.

Supplying customers with a comprehensive solution
Once the Ethos team started using Process Simulate, they had better access to simulation data and could scale their simulation projects with more robots. "We mostly

We can use Process Simulate to help us visualize everything ahead of time."

Calvin Kimura
Cofounder
Ethos Automation Inc

specialize in MIG welding and spot welding systems," says Kimura. "We can use Process Simulate to help us visualize everything ahead of time. Aside from that, we also work in glue applications and have a new project coming up where we will be peeling plastic off of stainless steel sheets, so we will be simulating that project as well."

Using Process Simulate helped the team achieve shorter cycle times, which is important for helping their customers meet deadlines. Using Process Simulate has also helped the Ethos team communicate more effectively and efficiently with its customers by conducting design reviews during the project rather than after it was completed. They used Process Simulate to handle robot and tooling motion while providing more engineering transparency. Before using Process Simulate, the Ethos team typically had four robot programmers on the floor; for a big project, they can now preprogram

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Solutions/Services

Tecnomatix Process Simulate
siemens.com/tecnomatix

Customer's primary business

Ethos Automation is an automation systems integrator with a strong focus on building automated machinery for their clients. Ethos provides innovative, turnkey solutions for their clients, including designing, building and commissioning custom robot-based automation.
www.ethosautomation.com

Customer location

Brantford, Ontario
Canada

Solution Partner

Longterm Technology Services
www.longtermtec.com

everything and bring that number down to two programmers.

"We will also now be able to use Process Simulate to mitigate any major issues ahead of time, " says Kimura. Many of their clients are in the automotive industry but now that they have a more streamlined process, they are hoping to work with more customers in other industries. By working with Tecnomatix experts at Longterm Technology Services, Ethos was able to get a return-on-investment (ROI) within three months.

The future of simulation and robotic programming

Using Process Simulate has helped the Ethos team reduce robot programming time by 25 percent and robot program debugging during system commissioning by 20 percent.

"We can do a lot of the debugging by using Process Simulate," says Kimura. "We can actually see if there are going to be any anticipated issues and zone the robots out between each other based on these issues. We previously did a lot of those zoning tasks on the floor and now we can save a lot of time using the software." Using Process Simulate allows the engineers to alert the design team when they're having specific issues so they can use computer-aided design (CAD) to change it right away.

The Ethos team is currently looking into other functions of Tecnomatix and Process Simulate to achieve higher-level simulation and ultimately serve more customers.

"With the addition of Process Simulate to our toolbox, we can supply our customers with a complete turnkey automation solution," says Kimura. "Bringing the simulation software in-house, we can quickly validate any automation project with a high level of accuracy."

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