Press release

Flexible, Integrated Engineering Workflows thanks to Modern Plant Design Software

Smap3D and Carotek demonstrate how integrated plant design boosts efficiency in custom skid engineering. (Image: Carotek, Inc.)

Nittendorf, February 17, 2026

The collaboration between Smap3D GmbH and the U.S.-based Carotek, Inc. demonstrates how modern plant design software can support long-established process equipment providers in meeting today's engineering demands. By implementing Smap3D Plant Design, Carotek has optimized the design and fabrication of custom process automation skids, reducing engineering effort while increasing manufacturing throughput and consistency.

Carotek operates in the custom design/build market for process automation skids—modular, pre-assembled process units mounted on steel frames that enable compact layouts, fast installation, and high flexibility. Founded in 1965, the U.S.-based company provides process equipment solutions for industries including

manufacturing, food & beverage, utilities, chemicals, and water & wastewater. Each project is highly customized and must meet complex requirements.

Limits of Traditional CAD Workflows

Before implementing Smap3D Plant Design, Carotek relied on a combination of established CAD systems such as CADWorx, PTC Creo, and SOLIDWORKS. While effective individually, these tools did not provide sufficient workflow continuity across disciplines. “We wanted to explore other solutions out there that might help us reduce our design time and also provide consistency within the design product,” says Scott Rice, Director of Integration at Carotek.

An Integrated, Parametric Plant Design Platform

Carotek selected Smap3D Plant Design as a parametric, CAD-integrated solution supporting the entire workflow from P&ID creation through 3D piping, isometric generation, and structural steel design. Working in SOLIDWORKS, engineers use Smap3D P&ID as a data-driven foundation, while Smap3D Piping and Smap3D Isometric realize automated, rule-based design and the generation of consistent, fabrication-ready drawings. In parallel, Smap3D Steel enables the parametric design of skid frames and supporting structures, allowing changes to be implemented quickly and propagated throughout the model. “The Carotek project proves again that engineering workflows can be streamlined while maintaining the flexibility required in custom design/build environments,” says Maxim Lich, CEO of Smap3D. “By combining our software modules in one integrated environment, Smap3D Plant Design supports consistency, efficiency, and adaptability across projects.”

Measurable Benefits for Engineering and Fabrication

Implemented in the summer of 2024, Smap3D Plant Design is now a central component of Carotek’s engineering and fabrication workflow. The project demonstrates how integrated, parametric plant design software can help experienced process equipment providers modernize engineering workflows and establish a scalable foundation for future growth in custom skid design and fabrication.

The complete case study can be found at www.smap3d.com/en/references/carotek.

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About Smap3D GmbH

Smap3D offers turn-key software solutions for engineering and fabrication. The company covers the entire process chain, from process engineering (P&ID) through piping planning (3D Piping) and Isometric, to production planning and control. Modules for steel construction and for the conversion of point cloud data (3D Laser scanning) round out the portfolio. The solutions can be completely integrated into the most common CAD systems in use in industry, Solid Edge, SolidWorks and Inventor, enabling turn-key plant engineering. With headquarters in Germany as well as worldwide offices and partners, Smap3D has distinguished itself through many years of expertise in plant planning and construction. The team provides assistance and advice to customers and partners, from consulting and implementation to training and technical support. This continuous process in all phases of product development has been proven in companies from many different industries, including process industry (e.g. chemical, beverage, food, pharmaceutical), environment and water technology.

Website

www.smap3d.com/en

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