

PRODUCTS

Willis Custom Yachts: Manufacturing sea masterpieces with Siemens NX CAD/CAM

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Willis Custom Yachts, based in Stuart, Florida, crafts bespoke luxury sportfishing yachts, blending traditional artistry with advanced digital manufacturing. They specialize in high-performance vessels, maintaining tolerances as tight as 0.008 inches across complex components with highly curved surfaces.

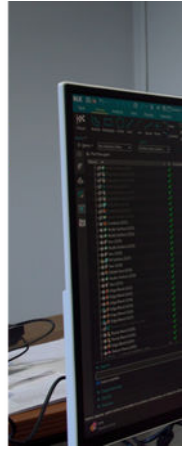
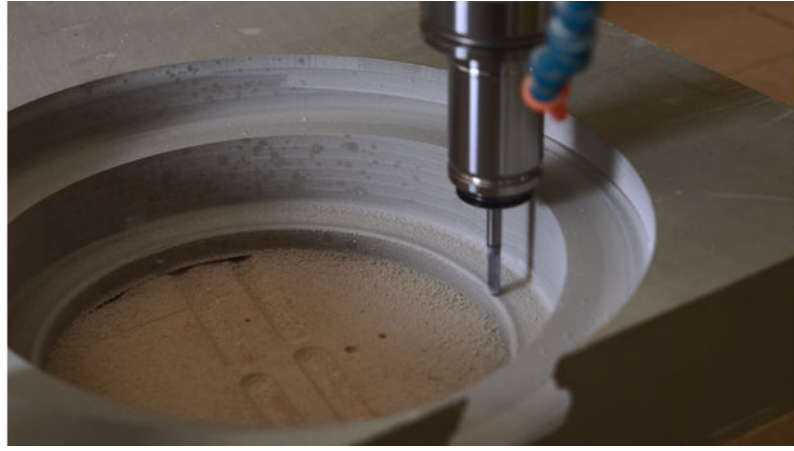
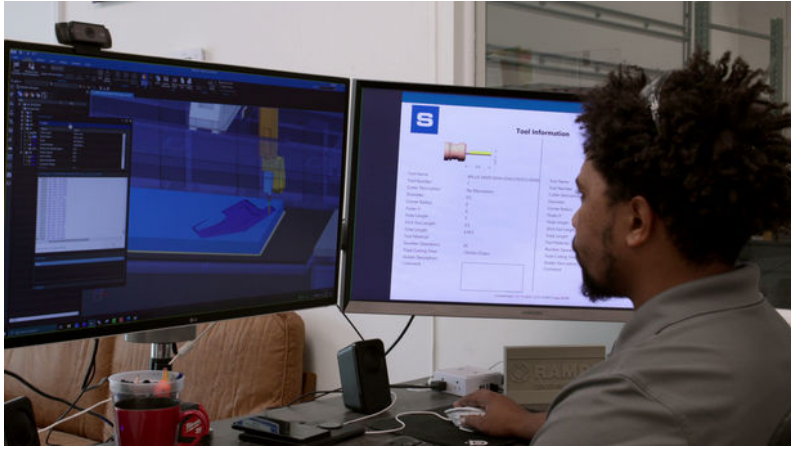
Faced with the unique challenge of producing one-of-a-kind vessels with sweeping curvatures and frequent customer-driven changes, Willis needed a unified CAD-to-CAM workflow to power their in-house CNC manufacturing processes. Their previous siloed software environment led to costly translation gaps and rework. As Bill White, Chief Financial Officer at Willis Custom Yachts, explains, “Being in the custom sport fish boat building, nothing is repetitive. Everything is custom for us. We need to be able to adapt things very fast and on the go.”

They found their answer in Siemens NX CAD/CAM software. By integrating design and manufacturing into a single, continuous digital environment, Willis Custom Yachts achieved a remarkable transformation.

Unifying the CAD/CAM environment in a complex industry

Willis Custom Yachts needed to eliminate rework, reduce scheduling uncertainty, and build a digital thread from design all the way through production. By implementing Siemens NX CAD/CAM, they unified engineering and manufacturing in a single environment. This not only closed translation gaps, but it also helped them perform machining simulations accurate enough to run unattended manufacturing with confidence.

Dominic Beaulieu, CAD Engineer at Willis Custom Yachts, highlights this, stating, “One great thing about NX is, is the fact that it’s parametric. Once you update a part, it will automatically update the assembly, and it will update the CAM file.” This associativity eliminates manual intervention and ensures manufacturing always works from the latest design intent.



Furthermore, with using NX CAM and its advanced machining capabilities, Willis built a comprehensive digital replica of their machining environment. This allowed them to validate toolpaths and forecast runtimes with high confidence, enabling “lights-out” machining overnight and on weekends. This significantly optimized throughput and reduced rework, contributing to an astounding 500% increase in productivity. This boost was driven by fewer translation-related manufacturing inaccuracies, faster response to design changes, and significantly improved machine uptime.

“We machine tens of thousands of components for our new builds. Having the digital twin and being able to run a simulation and know exactly what we’re going to

General Manager, Willis CNC Solutions

The newfound efficiency and capacity have allowed Willis to grow their business significantly. They now offer CNC solutions beyond their own yacht production, servicing other boats and even expanding into opportunities outside the marine industry.

Ready to dive deeper into how Willis Custom Yachts achieved this remarkable success and transformed their operations, turning custom complexity into predictable execution?



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