

Gunboat Enhances Yacht Design Precision with Digital Solutions



Executive Summary

Gunboat, a leader in luxury catamaran manufacturing since 2002, faced significant challenges in balancing performance, customization, and design precision.

By collaborating with 4CAD Group, a dedicated PTC Partner, Gunboat achieved streamlined processes and enhanced performance by implementing a model-based approach with PTC Creo for advanced CAD capabilities and Windchill solutions. This innovative strategy transformed Gunboat's design and development processes, resulting in enhanced design accuracy, streamlined collaboration, and reduced errors, all while maintaining their signature craftsmanship.

The results include decreased design cycle times, greater operational efficiency, and accolades for their industry-leading yachts.

About Gunboat

Founded in 2002 in the USA, Gunboat is an internationally recognized builder of high-performance luxury catamarans. Now headquartered in La Grande-Motte, France, Gunboat's legacy models, such as the Gunboat 68 and 72, have set industry benchmarks for speed, stability, and comfort. Their latest innovation, the Gunboat 80, launched in 2023, represents the next generation of cutting-edge design and engineering. Gunboat's ethos of blending traditional craftsmanship with advanced technology continues to earn them global acclaim.

The Challenge

Gunboat sought to maintain their reputation for innovation while overcoming obstacles inherent to custom yacht manufacturing, including:

- Complex Customization**
 Each yacht is uniquely customized, necessitating the integration of client-specific features without affecting structural integrity or performance standards.
- Inefficient Workflows**
 Managing large assemblies and reducing the potential for manual design errors required modernized processes.
- Disconnected Data**
 With designs developed from both within and with external partners, Gunboat needed a unified data management approach to facilitate collaboration.
- Industry Modernization Needs**
 Staying competitive meant adopting tools and workflows that aligned with sustainable, cutting-edge manufacturing trends.

These challenges underscored the necessity of adopting advanced design and data management solutions to improve precision and scalability.



The Solution

Working with PTC partner 4CAD Group, Gunboat responded to these challenges by transitioning to PTC's Creo CAD and Windchill PLM systems, equipping their design and engineering teams with robust tools to manage complexity and streamline processes.

Gunboat's multidisciplinary design approach required a highly adaptive CAD solution capable of easily integrating naval architecture, engineering, and interior design. Creo emerged as the ideal choice, offering:

- **Model-Based Design as a Core Strategy:**
With Windchill at the center of their model-based approach, Gunboat established a single source of truth for their 3D CAD models. This enabled real-time data sharing across teams, ensuring that all stakeholders worked with accurate, up-to-date information. By centralizing data, the risk of design disconnects, or miscommunication was substantially reduced.
- **Advanced Design Tools for Precision:**
Creo's parametric and surface modeling capabilities equipped Gunboat's designers to create complex, aerodynamic hulls and finely detailed yacht components. Tools such as structural simulation and validation further enhanced the accuracy and performance of the designs.
- **Streamlined Assembly Management:**
Managing complex assemblies became significantly more efficient with Creo's skeleton modeling and advanced change-tracking features. These tools allowed design changes to be integrated seamlessly, even late in the development process, without cascading errors.
- **Customized Training Programs:**
Tailored training empowered Gunboat teams to maximize the potential of their new tools, fostering a smooth transition to the model-based workflows and ensuring their long-term application.



Partner Spotlight: 4CAD Group

Driving Innovation and Efficiency Together

Gunboat collaborated with **4CAD Group**, a trusted PTC Partner, to implement cutting-edge PTC solutions. Leveraging their expertise in **PLM and CAD systems**, 4CAD Group equipped Gunboat with PTC Creo and Windchill tools, enabling streamlined design processes and improved operational performance. Together, they set a strong foundation for innovation and industrial efficiency.

Results

The shift to a model-based approach delivered game-changing outcomes for Gunboat's design and production processes:



Greater Design Accuracy:

Late-stage errors were reduced by 15%, resulting in more reliable and precise builds. Using the 3D model as a reference ensured that all teams, internal and external, worked with the same high-quality data.



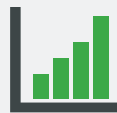
Faster Iteration and Reduced Timelines:

Enhanced workflows cut the concept-to-technical-package timeline by 15–20%. This efficiency meant projects could move from initial design to production faster, without sacrificing quality.



Improved Collaboration Across Teams:

The centralized model became a foundation for teamwork, uniting naval architects, engineers, and interior designers on a shared platform. External partners could also contribute without challenges, leading to higher-quality outcomes.



Cost Savings Through Optimization:

Streamlined processes and fewer errors resulted in significant cost reductions, particularly during hull development phases.



Recognition as an Industry Leader:

Gunboat's yachts have received widespread acclaim for their exceptional performance at international regattas, with Gunboat 72 earning the prestigious 2024 Multihull of the Year award.



The blend of precision technology and traditional craftsmanship is what makes Gunboat exceptional. Tools like Creo and Windchill enhance our ability to innovate while preserving the artistry our clients value.

Rodolphe Cadoret, Gunboat



Balancing Technology and Craftsmanship

Despite transitioning to advanced tools, Gunboat continues to emphasize the artistry behind their luxury yacht interiors. The synergy of cutting-edge technology and manual craftsmanship stays at the heart of their creations.

Charting the Path to Innovation

Building on the success of their model-based transformation, Gunboat is exploring several innovative avenues to continue advancing their design and production capabilities. Potential areas of focus include:

- **AI-Powered Generative Design:**
Investigating the use of advanced algorithms to optimize structural components and enhance design efficiency.
- **Real-Time Simulations:**
Considering the adoption of Creo Simulate Live to enable more predictive analysis during early design stages.
- **Cloud Collaboration:**
Exploring cloud-based solutions to further enhance cross-team workflows and facilitate seamless collaboration.
- **Enhanced PLM Functionality:**
Evaluating additional opportunities to refine Windchill's capabilities for improved version control, release management, and overall productivity.

These explorations represent Gunboat's commitment to staying at the forefront of innovation while maintaining their hallmark balance of technology and craftsmanship.



Conclusion

Gunboat's adoption of a model-based approach powered by PTC Creo and Windchill demonstrates how luxury manufacturers can harness digital innovation to overcome challenges and redefine industry standards. By integrating comprehensive tools and practices, Gunboat continues to deliver yachts that represent the pinnacle of performance, quality, and artistry.

Interested in transforming your workflows with cutting-edge solutions? **Contact us today!**

