SUCCESS STORY | PREDATOR CYCLING

REAL-TIME RENDERING ACCELERATES COMPOSITE BICYCLE ENGINEERING

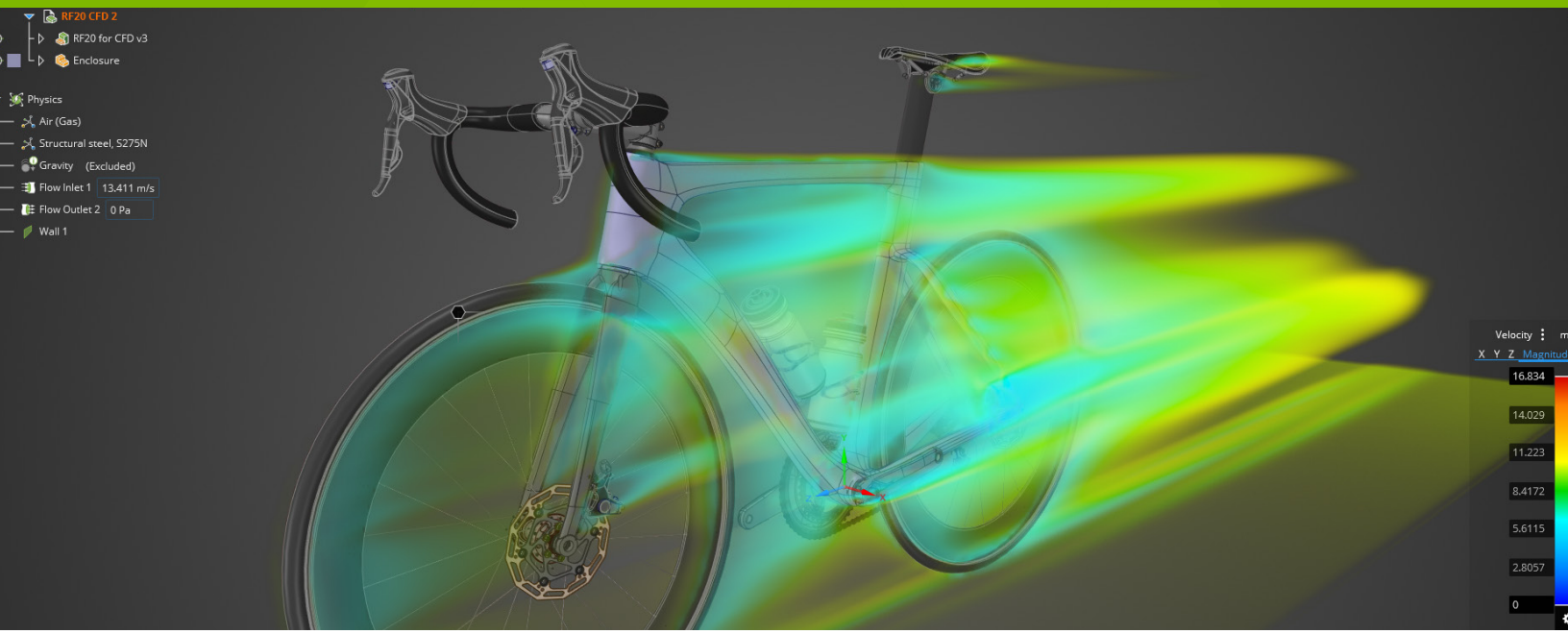

Image Courtesy of Predator Cycling.

Lenovo

NVIDIA

Predator Cycling revolutionizes their design process and shortens production timelines using the Lenovo ThinkStation P620, powered by NVIDIA RTX A6000.

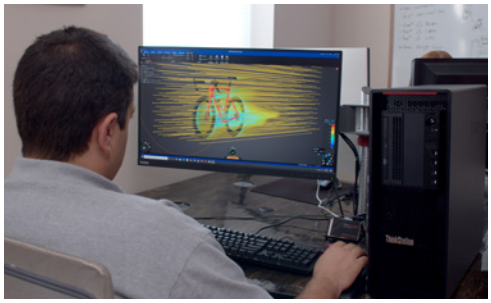

Image courtesy of Predator Cycling.

SUMMARY

- Predator Cycling sped up their time to market by 12–16 weeks for their new RF20 carbon fiber bike frame.
- The company realized performance gains of 2-6X across multiple product development software applications.
- They were able to conduct complex simulations, testing, and optimization with AI in near real time.

AT THE CUTTING-EDGE OF BICYCLE DESIGN

Predator Cycling is a designer and manufacturer of high-end, custom-built carbon fiber bicycles. For the past 15 years, the team has designed all their frames and conducted all their simulation, rendering, and manufacturing processes in-house. They also manufacture, build, and simulate all the machinery and equipment used to create bikes for customers.

UP AGAINST DESIGN AND MANUFACTURING BOTTLENECKS

The Predator Cycling team recently worked on their most innovative project to date—their new RF20 frame. The complexity of design workloads made bringing new products to market increasingly more difficult. For years, the project was stuck in research and development stages, and the team wasn't sure the new road bike would ever see the light of day. The increasing costs of materials combined with the design's complexity ultimately impacted the manufacturing and assembly of the bike.

CUSTOMER PROFILE

Organization:	Industry:	Location:	Employees:	Website:
Predator Cycling	Manufacturing	Mount Juliet, TN, United States	< 10	predatorcycling.com

Image courtesy of Predator Cycling.

HARDWARE

GPU: NVIDIA RTX™ A6000

Workstation:
Lenovo ThinkStation P620

SOFTWARE

3D Rendering:
Luxion KeyShot 10

Engineering Simulation:
Ansys Discovery Live

Fluid Simulation:
Ansys Fluent

Product Development:
Autodesk Fusion 360

REASONS FOR NVIDIA

- Process complex 3D models, render, and run simulations in real time
- Enable extreme multitasking to accelerate design workflows
- Increase efficiency of testing and validation processes

THE POWER TO DESIGN IN REAL TIME

Predator Cycling knew they needed tremendous compute performance and efficiency gains to bring the RF20 to market at a competitive price. The team found the solution they needed with Lenovo's **ThinkStation P620**, powered by the NVIDIA **RTX A6000 GPU**. The ThinkStation P620 can handle real-time computing and extreme multitasking, allowing the team to efficiently accelerate their workflows. And with the RTX A6000—the world's most powerful visual computing GPU for desktop workstations—Predator Cycling can process more complex models, render, and run simulations in real time.

The power and speed of the RTX A6000 allows the team to optimize design workflows and streamline their manufacturing processes. With the faster, more efficient workflows, they were able to bring the RF20 frame to life.

ACCELERATING CUSTOM INNOVATION

By using the RTX A6000-powered ThinkStation P620, Predator Cycling has increased efficiency, resulting in more growth and scalability for their business. Each of their bikes are custom-built, so customers need real-life representations to select their components and finishes. Previously, the Predator team built physical prototypes that took months to complete from start to finish. But with the RTX A6000, the team can show customers bike renders long before they go to production or even physical prototyping.

"The NVIDIA RTX A6000 GPU and ThinkStation P620 deliver cutting-edge performance and speed to accelerate design processes and production times. We're able to do complex wind drag simulations, mechanical and structural testing, and topology optimizations with AI in near real time—enabling us to show customers design changes with minimal delay."

Aram Goganian,
Co-founder and CEO of
Predator Cycling

Thanks to the instant feedback they receive from customers, Predator Cycling can go from prototyping straight to testing—saving an estimated 12–16 weeks in their go-to-market timelines. Predator Cycling has also drastically improved internal workflows for running simulations, as well as streamlined their validation and testing. They've seen performance gains of 2–6X across a number of key applications, including Luxion KeyShot 10, Ansys Discovery Live, Ansys Fluent, and Autodesk Fusion 360.

To learn more about NVIDIA and Lenovo solutions for manufacturing, visit:
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