



Emirates Team New Zealand Sails to America's Cup Victory Using Ansys Simulations

March 22, 2021

Ansys' state-of-the-art simulation solutions enable team engineers to create a digital prototype and slash design concept evaluation time from six months to one week

PITTSBURGH, March 22, 2021 /PRNewswire/ --

Emirates_Team_New_Zealand

/ Key Highlights

- **Using Ansys simulation solutions, Emirates Team New Zealand developed a highly advanced racing yacht to successfully defend its America's Cup title**
- **The innovation collaboration empowered team engineers to quickly design their high-performance yacht — eliminating expensive and laborious physical prototype testing**

Leveraging [Ansys](#)' (NASDAQ: ANSS) engineering simulation solutions to design and optimize its next-generation 75-foot foiling monohull racing yacht, [Emirates Team New Zealand](#) (ETNZ) retained the America's Cup. ETNZ used Ansys to engineer rapid enhancements to its yacht to remain ultra-competitive — the simulation-driven development process helped lead to a 7-3 win against its challenger in the best-of-13 competition.

ETNZ combined its proprietary velocity prediction program with Ansys models and high-performance computing to create an enhanced, real-world modeling system that powered real-time simulation of the yacht. This helped the team generate the yacht's digital prototype, which was used to test, evaluate and optimize the yacht's performance — eliminating expensive physical wind tunnel and tow tank testing.

Ansys enabled the team to improve the yacht's aerodynamics above the water and hydrodynamics below the water and measure how the vessel would behave under different sailing conditions. Simulations also validated that the yacht's carbon composite components were as light as possible and strong enough to withstand harsh loads while sailing. Additionally, Ansys empowered the team to reduce its design concept review time from six months to a single week.

"We're elated to defend the America's Cup in New Zealand against incredibly strong opposition. Ansys has been the central tool of our structural and aerodynamic development," said Steve Collie, aerodynamics coordinator, ETNZ. "Through the countless simulations carried out with Ansys, we accurately predicted the performance of these incredible sailing machines and then optimize and develop our race yacht, Te Rehutai, right down to the last race."

ETNZ used Ansys simulations early in their design cycle to significantly optimize the yacht's performance.

"With limits placed on physical testing in this campaign, ETNZ ran comprehensive simulations of fluid dynamics and composite structures using Ansys to help them rapidly, reliably and affordably test a range of design concepts," said Nick Goodall, Ansys business manager, [LEAP Australia](#), ETNZ's dedicated Ansys channel partner. "We are proud of our longstanding relationship with ETNZ, who are an inspiration to all engineers in our region. Their success is proof that simulation powers innovation and provides a competitive advantage that helps achieve our engineering goal — whether it's being first to the finish line or being first to market with a new product."

"We congratulate ETNZ on this remarkable achievement. Swiftly solving complicated structural and fluid-dynamic issues is a major challenge for designing next-gen racing yachts," said Shane Emswiler, senior vice president at Ansys. "By working closely with ETNZ, our combined resources empowered their engineers to shift from time- and cost-intensive physical trials to high-fidelity virtual testing — delivering a cutting-edge craft that logged the fastest times around the courses to outsail and outrace the competition."

/ About Ansys

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