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Press Release

Roger Frigola from Emirates Team New Zealand inspires maxon.

Roger Frigola, Optimisation Engineer at Emirates Team New Zealand, presented to the maxon Global Group at their annual management meeting in Brunnen, Switzerland on the 18 September, 2019.

maxon Group were delighted to welcome Roger Frigola (MSc Aerospace Engineering and PhD Artificial Intelligence) from Emirates Team New Zealand at their annual management meeting. In their capacity as Official Supplier to Emirates Team New Zealand, maxon Group received insight into the process and technicalities of designing the AC75 Class yacht. For the current America's Cup campaign, the design process began in 2018 with the publication of the Class Rule that states specific design parameters set out by the Deed of Gift. Roger has been involved in the America's Cup since 2014 and has experience in the McLaren F1, Ferrari F1, Porsche Le Mans and Red Bull F1 Motorsports.

Emirates Team New Zealand: Current Defenders of the America's Cup

The America's Cup is the world's oldest trophy in international sport, captivating the world since its inception in 1851. Emirates Team New Zealand are three times winner, current Defenders of the America's Cup and the first non-American competitor to successfully defend the trophy. It would appear to remain that if you won the America's Cup you would stay with the same type of boat. This isn't the case for Emirates Team New Zealand, who created a New Class of Yacht - the AC75. Innovation is key and the entire concept was proven only through use of a simulator without any prototypes. The Challengers have developed smaller boats and tested them, but Emirates Team New Zealand placed their trust in the simulation and the team of people working behind the scenes.

For the new AC75 Class of Yacht, Emirates Team New Zealand designed the system that all the teams use to raise and lower the foils. The Design & Engineering Team also work with HP using 3-D printed components for the Yacht.

The team

A support team of more than 150 people contribute expertise from across many disciplines. There is the crew of 11 sailors (8 of those are grinders) and around 25 people within the design and engineering team including naval architects, structural and mechanical engineers, simulators and software developers. Then there is the shore people, boat builders, marketing, media, lawyers, accounting, physiotherapists, trainers and cooks.

AC36: a new rule

One method of gathering data for the performance of the Yacht and the Sailors was to test through physical experiments in wind tunnels or towing tanks. However this America's Cup campaign is the first to

prohibit any experimental testing in wind tunnels or towing tanks. This new concept and Yacht design has been modelled on physics with design by optimisation. The results of the simulation data were then compared to the actual boat reactions with testing on and off the water looking closely at safety issues, strains, stress loads etc. The Computational fluid dynamics (the examination of fluid flow in accordance with its physical properties such as velocity, pressure, temperature, density and viscosity) were modelled on the conditions of a wind tunnel. The amount of data that is collected is so large it's stored across 8 HP desktop machines.

The members of the Design & Engineering Team spend the majority of their time on the Chase Boat, analysing real-time data from the AC75 yacht test runs. The thousands of gigabytes per day that are captured are compared against the computational physics from the simulation data and used in the build of the second boat that will sail in the America's Cup.

The America's Cup World Series, Sardinia, April 2020

All teams will meet for the first time between April 23-26, 2020 with the America's Cup World Series kicking off in Cagliari, Sardinia. The fearlessness with adopting innovation and confidence placed in the simulation, combined with the knowledge, skills and enthusiasm of Emirates Team New Zealand – not to mention the backing from Sponsors, Official Suppliers and Supporters – advocate strongly the retention of Current Defender of the America's Cup. The prowess of the AC75's will be on full display and we eagerly await seeing the boat racing to its full potential.

maxon Group is an Official Supplier to Emirates Team New Zealand. We follow the progress of their journey as Defender in the 36th America's Cup campaign, to be held in Auckland, New Zealand in March 2021.

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Roger Frigola with maxon Group CEO, Eugen Elmiger © maxon Group



Roger Frigola with Sailor Peter Burling and the America's Cup © Emirates Team New Zealand

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