Crunching the Numbers

Data analysis and software integration are already enhancing the way yachts are designed, operated and maintained. Big Data and AI promise to reinforce this trend BY JUSTIN RATCLIFFE

In 1987, *Wall Street* anti-hero Gordon Gekko famously said, "The most valuable commodity I know of is information." Now, in the digital age, information is data and Big Data is knowledge. Here we speak to three companies that are supplying the yachting industry with innovative tech that is accelerating the transition to data-driven platforms.

CMC Marine

TWO YEARS AGO at the Cannes Yachting Festival, CMC Marine and Sirehna (a subsidiary of the Paris-based Naval Group) announced a partnership and introduced Argo, an integrated steering and stabiliser fin control system. It has since been installed on a Mangusta Gransport 54 and the 39.37-metre *Aurelia*, the first hull in Cantiere delle Marche's Flexplorer series.

The Argo system on the 32-metre X-Treme X-105, in build at Holterman Shipyard in the Netherlands and due for delivery in 2021, will control four Stabilis Electra fins – one pair aft and another larger pair forward. Stabiliser fins work in much the same way as rudders and, in certain conditions, can interfere with the steering, increasing resistance and reducing efficiency. The Argo system integrates the steering with the stabilisers to enhance directional stability and reduce the risk of broaching.

"Argo is primarily a software integration package that relies on data from motion sensors to ensure the steering and stabilisers work in unison instead of fighting each other," says Sam Crockford, Managing Director of CMC

Marine UK. "We can always make incremental mechanical improvements, but if I look at our ongoing R&D I would say 80 percent is in software and data, because those are the areas that are improving almost on a daily basis. With four fins you can start controlling pitch as well as roll and AI is helping us understand the interaction between the fins so they can be controlled individually."

CMC already uses a degree of artificial intelligence (AI) for its Adaptive Mode, whereby the fins automatically make fine adjustments in stable conditions with regular roll periods without the operator interface. But as soon as a ship passes or a yacht comes off the plane nearby, everything changes.

"This is the next step for us: harnessing AI for automated motion control – not just in a constant sea state, but to be able to interpret what's happening on the water from one moment to the next and react predictively. That's a big challenge because you basically have to be able to read the waves. The sonar technology is out there, but is it economically viable in a yachting scenario?"