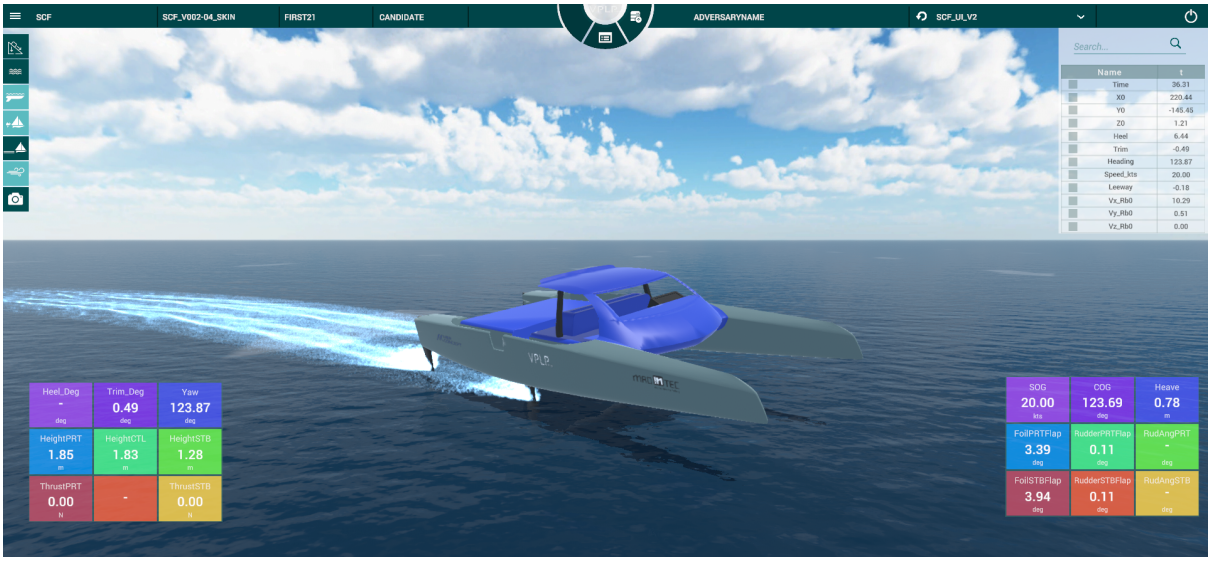
Piloting an electric hydrofoil catamaran

On the occasion of the METS (boat show) in Amsterdam, three companies in the forefront of ocean racing invite you to test an electric foil boat simulator.
This interactive terminal is the result of a close collaboration between the design offices of MerConcept, a company founded by François Gabart, the architectural firm VPLP Design, and the R&D team of the electronics company Madintec.

Simulators are a common tool in nautical design. The architecture firm VPLP Design, known for its successful yachts, uses these digital tools to design and validate its designs. Since 2017, VPLP has developed SYD (Simulation Yacht Dynamics), a new kind of simulator. SYD integrates the effects of swell in the calculation of efforts to model its sea keeping. This is an essential feature for foil boats.



For its part, Madintec, which designs electronics, also uses digital simulators to validate its steering algorithms. With the advent of foils, it has become essential to have high-level simulators. From now on, the ability and intelligence to control the flaps and all the appendages of the boat for flight stabilisation is a parameter in the design of the architectural elements. Madintec's control algorithms have therefore been connected to the VPLP simulator so that they can validate the performance of their foil designs, incorporating realistic control systems. In the same way, Madintec's design office was also able to refine its control laws as well as the integration with the hardware, electronics and software (hardware in the loop validation).

MerConcept, which initiated the project, is leading its implementation and has also made full use of the VPLP simulator connected to Madintec's algorithms. The three companies have a long history of collaboration. As early as 2015, Madintec together with MerConcept designed a new generation autopilot: the MADBrain Autopilot. A development crowned with success in numerous races, including the first two places in the last Vendée Globe. Today, MADBrain is present on a third of the boats in the Transat Jacques Vabre.

Today, MerConcept and Madintec are pleased to present the fruit of their collaboration: **the electronic steering wheel with force feedback**. This innovation, which allows to retranscribe a maximum of sensations in flight, is present for its first use on SVR-LAZARTIGUE, the Ultim trimaran helmed by François Gabart. The advantage of this technology is to limit the heaviness of the steering mechanism and to provide an assisted steering tool. With this electronic control, Madintec adds an important element to its solution for ensuring the safety of sailboats and motorboats, including anti-capsizing and obstacle avoidance.

VPLP Design, MerConcept, and Madintec, invite you to discover this technology exclusively at METS in Amsterdam, Stand Madintec 05.353.

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MerConcept presentation

Created 15 years ago by the yachtsman François Gabart, MerConcept was born from the desire to develop an ocean racing team at the cutting edge of innovation and performance.

MerConcept has become a company with a mission and is committed to innovative, high-performance and sustainable ocean racing. The latter welcomes ambitious, meaningful projects, whose outstanding innovations enable technological transfers to maritime mobility.

VPLP Design presentation

VPLP Design is a team of internationally renowned naval architects based in France, in Vannes, Nantes and Paris, designing racing, cruising and working boats.
Known for its multihull and monohull racing boats, as well as its large cruising catamarans, VPLP Design has also been involved in the production boat business with the Lagoon catamaran range since 1986.

In addition to its skills in naval architecture, it is at the cutting edge of design and innovation. Finally, through its experience for the America's Cup, the Imocas and the Ultims, the agency has and develops state-of-the-art numerical simulation tools in hydro and aerodynamics (CFD, AVL code, VPP, simulator, ...).

Madintec presentation

Madintec is specialized in the development of customized solutions for the offshore racing market. We provide R&D, consulting and development solutions. We are a team of about 10 employees based in La Rochelle and Lorient. Our core business is software and electronic development.

We have acquired a strong experience and many references with the actors of the offshore racing. This bespoke racing know-how has been concretized in 2021 by the launch of a solution adapted to the wider market of high-end yachting.
This solution, **MADBrain Autopilot**, is able to pilot the sailboat automatically, ensuring simplicity and safety.
We also bring original safety features to high-end yachts, in particular for catamarans, with an anti-capsizing system integrated into the autopilot. Moreover, we are developing an obstacle avoidance system that has no equivalent on the market today.