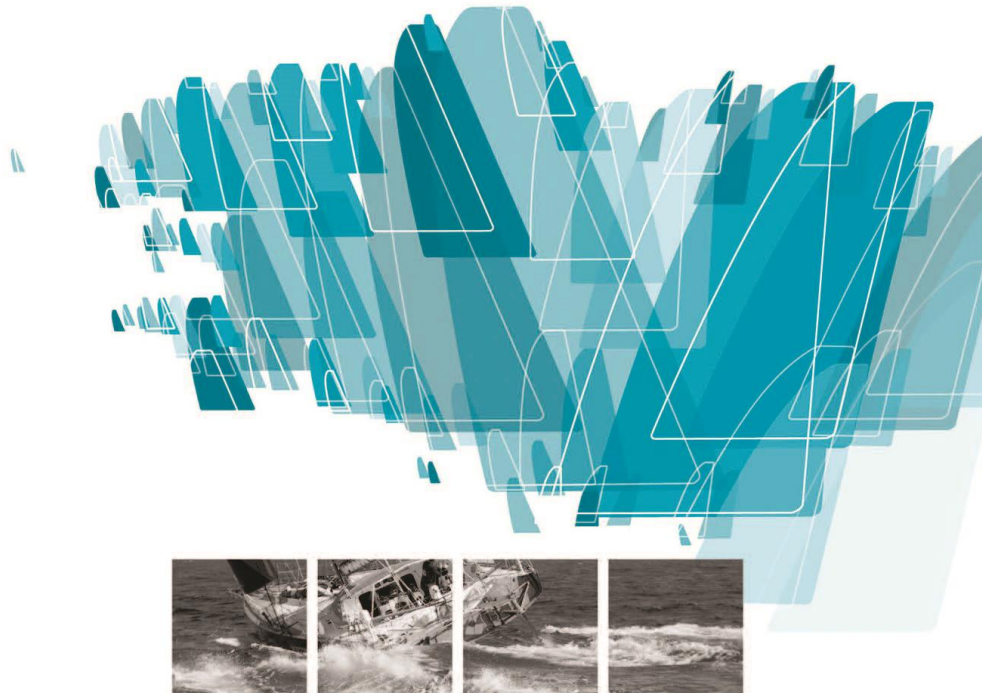


**BRETAGNE<sup>BE</sup>**  
**SAILING VALLEY**



## **BRETAGNE SAILING VALLEY® PLATFORM MEETING**

---

Breton companies involved in the construction of racing boats, in particular IMOCA.

**BRETAGNE<sup>BE</sup>**  
**DÉVELOPPEMENT**  
**INNOVATION**

**eurolarg<sup>BE</sup>**  
INNOVATION

**IMOCA**

# Contents

Bretagne Sailing Valley®: Technological Innovation Laboratory .....	p.3
Companies in Bretagne Sailing Valley ® .....	p.5
Design, Structural Calculations .....	p.5
Composite Parts.....	p.12
On-board Safety / Equipment .....	p.20
Sails and Rigging .....	p.26
Digital at the Service of Performance.....	p.30
Support and Training Organisations for Competitive Sailing in Brittany.....	p.41

## Bretagne Sailing Valley®: Technological Innovation Laboratory for Competitive Sailing

It is no accident that the most talented sailors have come from the four corners of the world to the coasts of Brittany to prepare their future victories. The region offers two major assets: an ideal maritime environment and a technological ecosystem that is unique in the world.



The most high-performance and innovative boats come to life here in Brittany (Ultim, IMOCA, Figaro, Class 40, mini) thanks to the work of 210 companies (980 jobs).

From architecture to shipbuilding and research and development, Brittany offers a range of unique know-how and cutting-edge technologies that lead to victory.

The competitive sailing sector in Brittany is also the 200 race teams and sports projects that have set up in the region, generating nearly 320 jobs.

An offshore racing network of excellence, supported by the Region of Brittany, identifies young talent (Franck Cammas, Armel Le Cleac'h, François Gabart have all come from here).

Bretagne Sailing Valley®, a brand for a unique place in the world:

Interview with Carole Bourlon in charge of the Eurolarge Innovation programme funded by Bretagne Développement Innovation (flash the QR code below to see the article and the video) or use this link to consult the article: <https://www.bdi.fr/fr/bretagne-sailing-valley/>

**BRETAGNE®**  
DÉVELOPPEMENT  
INNOVATION



Adhérer

S'inscrire à la newsletter



La Silicon Valley a ses ambassadeurs comme Steve Jobs ou Mark Zuckerberg. La Bretagne Sailing Valley aussi. Des marins d'exception comme Armel Le Cleac'h, natif de Saint-Pol-De-Léon et François Gabart qui s'est installé en Bretagne. non sans raison. Le territoire offre un incroyable terrain pour la voile de compétition en réunissant à la

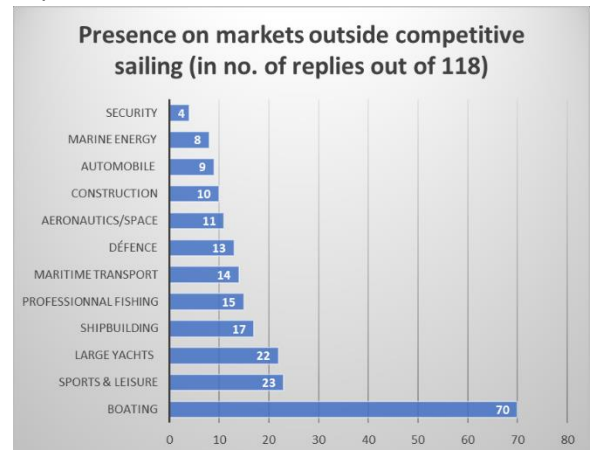
## The Economic Weight of Competitive Sailing in Brittany

### Key Figures

- **210 companies** (industry, trade and services) were identified.
- Their businesses involve **28 different professions** (architecture and shipbuilding, IT, fittings, appendages, sail making, etc.).
- In 2019, these companies generated sales of 348 million euros, of which an estimated **83.5 million euros exclusively in competition sailing** (estimated growth of 16% between 2018 and 2019).
- 2,355 employees work in this sector including **980** in competition.

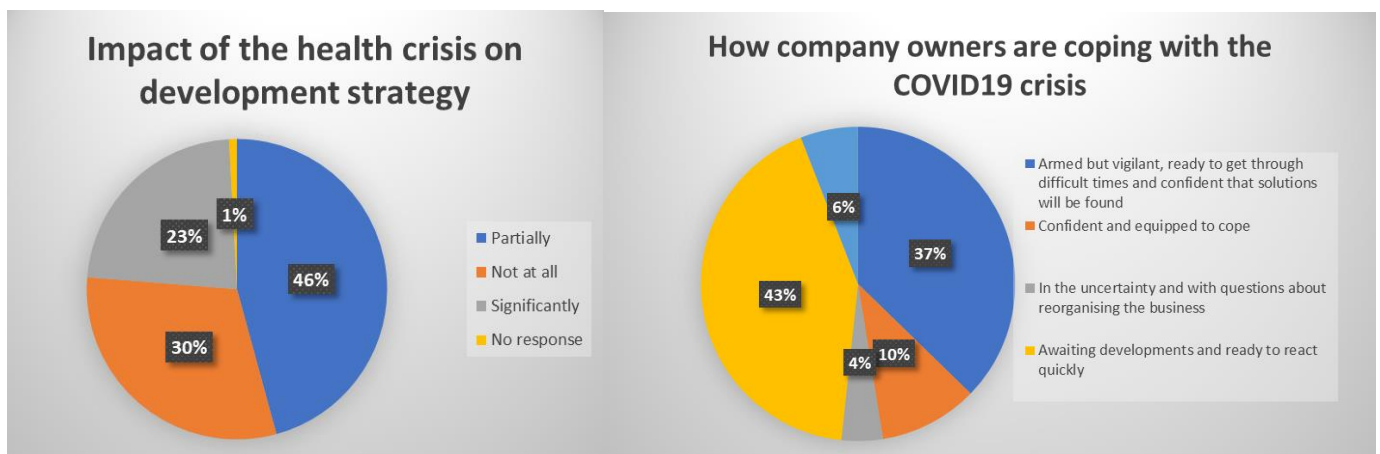
### Other business markets (panel of 118 enterprises)

The know-how and cutting-edge technologies used in competitive sailing serve as drivers of innovation in other sectors: nautical, aeronautical, naval, composite materials, defence, sail boats...



### Impact of COVID-19 on businesses (panel of 118 respondents):

- A drop in sales of 20% is expected in 2020,
- Impact on jobs in 2020: estimated at -3%, mainly on temporary jobs.



>> Source: Economic survey of businesses (2020)

### Teams and Sports Projects

**+200 teams** and competitive sailing projects are based in Brittany (including 21 in IMOCA)

- Their overall annual operating budget excluding boat construction is estimated at **€58M**.
- 85% of this budget is spent in the region of Brittany.
- This activity generates over **320 jobs, including about 120 temporary jobs**

>> Source: Additional study of racing teams (2018)



Companies in Bretagne Sailing Valley<sup>®</sup>

**Design, Structural Calculations**

## Benjamin Muyl Design

BMD is a naval architecture firm that has been involved in 5 editions of the America's Cup as well as, through cooperation with other architects, offshore racing projects (Imoca, 100 feet).

Since its creation, BMD has been developing its own performance prediction tools, known as "Meta"



*"The recent pace of innovations in competitive sailing, particularly widespread flying boats, requires us to continuously develop our knowledge, skills and tools in order to remain relevant. The support of the Eurolarge Innovation network is key in this development process."*

Through its involvement in the last three America's Cups, BMD has acquired expertise in the architecture of flying boats, and in the design of their appendages and control systems.

In cooperation with the race teams they work with, BMD engineers and architects work on the concept, architecture, shapes and structures of hulls and appendages. The necessary studies can be carried out with the simulation and performance prediction tools in the Meta Suite.

BMD can also carry out performance studies without being involved in the design of the boat.

Meta now includes a static VPP as well as tools for appendage design, section optimization, routing, etc.

The tools required to take account of the dynamics of flying yachts, developed as part of the COSME project, certified by the Brittany Sea cluster and the Image and Network cluster, in collaboration with the laboratories IRDL at south Brittany University and Lasie at the University of La Rochelle, will also be available in the first quarter of 2021. They also include a simulator, enabling sailors to get involved in the design of their boat, but also tools for optimising trajectories.

### Key Facts and Figures

- Year of creation: 2008
- Company Director: Benjamin Muyl
- Number of employees: 4 (Antoine Guillou, Nedeleg Bigi, Thomas Berrod, Benjamin Muyl)
- Revenues: €300,000
- References in competitive sailing:
  - Participation in 5 America's cup campaigns
  - 33rd America's Cup: Win (in collaboration with VPLP and Oracle Design team)
  - Little America's Cup: Victories in the 2013 and 2015 races (in collaboration with Guillaume Verdier and GMA design team)
  - 34th America's Cup: Won the Louis Vuitton Cup (in collaboration with Guillaume Verdier and ETNZ design team)
  - 35th America's Cup: Chief Designer Land Rover BAR Design team
  - Sydney Hobart wins with "Comanche" in the 2015, 2017, 2019 editions (in collaboration with VPLP and Guillaume Verdier)
  - Design, in collaboration with Guillaume Verdier and VPLP, of the Safran2 and MACIF IMOCA boats.
- National and International Awards
  - FIN High Technology Awards 2013 and 2014
- Location: Auray

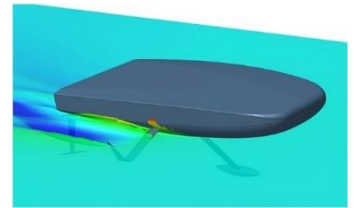
### Contact:

Benjamin Muyl  
+33 6 13 23 55 64  
[bmuy@mac.com](mailto:bmuy@mac.com)

[www.bmuy.com](http://www.bmuy.com)  
[www.metasolutions.tech](http://www.metasolutions.tech)

## Finot-Conq

One of the French pioneers in naval architecture, with more than 50 years of experience. Following 4 wins in the Vendée Globe and 6 in the Mini-Transat, Finot-Conq has always been a major player in competitive sailing.



---

*"In 2001, Finot-Conq moved to Brittany to be closer to its customers. The emulation and innovation that comes from the presence in this region of all the major players in competitive sailing is a key factor in our success."*

---

Architects, designers, engineers, Finot-Conq prides itself on its ability to create its yachts from A to Z. Whether it is a best-seller built by Beneteau or by Pogo Structures, a luxury yacht, or a competition monohull, Finot-Conq is meticulous in the design of safe, fast, elegant and easy boats. More than 45,000 Finot-Conq boats are currently navigating the world's seas.

Competition is part of Finot-Conq's DNA, along with countless victories: 4 Vendée Globe, 6 Mini-Transat, 2 Route du Rhum, etc.

Three of the 18 highly optimised IMOCA boats designed by Finot-Conq, will be on the starting line in November for their fourth Vendée Globe, thus demonstrating their outstanding reliability.

### Key Facts and Figures

- Year of creation: 1969 – 2009 (Vannes)
- Company Director: David de Prémorél
- Number of employees: 4

### References in competitive sailing: Vendée Globe 2020:

Groupe Apicil, La Fabrique, Time for Oceans

### National and International Awards

- 4 Vendée Globe, 6 Mini-Transat, 2 Routes du Rhum, etc... 8 times European Yacht of the Year, Superyacht Design Award, etc...
- Location: Vannes (56)

---

### Contact:

David de Prémorél

+ 33 6 26 92 52 94

[dpremorel@finot-conq.com](mailto:dpremorel@finot-conq.com)

[www.finot-conq.com](http://www.finot-conq.com)



## GSEA Design

### Structural Calculations

---

Innovation and excellence at GSea Design have been core beliefs spanning 3 generations of engineers. The company works on 99% of offshore races, in teams in the America's Cup, ULTIM' and IMOCA classes, etc. It was essential to set up the company in Lorient in the heart of the Sailing Valley to make the most of the ecosystem.

Originating in the company HDS, a pioneer in composite racing masts, GSea Design followed the development of composite materials in competitive sailing.

The company makes calculations to ensure it designs and manufactures reliable and innovative composite structures for its customers; fully living up to their ideas and needs, be they offshore racing yachts, cruisers or industrial projects.

The company has been growing for over twenty five years, designing masts, rudders, wings and foils for the largest racing yachts : BMW Oracle, the winner of the 35<sup>th</sup> America's Cup, the Hydropter with Eric Tabarly, the ULTIM'S seeking to beat the record of Francis Joyon, Thomas Coville, François Gabart, Armel Le Cleac'h...

GSea Design always stays one step ahead and enables its customers to simplify their strategic processes.

#### Data and key figures

- Founded : 2010
- CEO : Denis Glehen
- Employees 20
- Sales : €1,520,000

#### References in competitive sailing :

- Ultim' class :  
MACIF/BANQUE  
POPULAIRE  
9/SODEBO/IDEC
- IMOCA : official class engineering + intervention on most of the boats (mast, keel, platform, foils)
- America's Cup : involved in the latest edition of GROUPAMA TEAM FRANCE/ARTEMIS
- VOLVO OCEAN RACE : Part of the GROUPAMA
- 4 design team, winner of the 2011-12's edition

Location : LORIENT, Morbihan (56)

#### Awards won nationally and internationally

- 2014 : High Technology award from the Fédération des Industries Nautiques for the development of the foil concept
- 2016 : High Technology award from the Fédération des Industries Nautiques for SOFIA, Outil Interaction Fluide Structure for the design of appendages.

#### Contact :

Barbara BESSIERE

Tél. : +33 (0)7 69 74 74 16

[barbara@gseadesign.com](mailto:barbara@gseadesign.com)

[www.gseadesign.com](http://www.gseadesign.com)



# Guillaume Verdier Architecture Navale (GVAN) Design and Research in Naval Architecture

© Pierre Bouras



*GVAN works with many players in Bretagne Sailing Valley. The economic fabric in this region is extraordinarily rich and includes considerable know-how in competitive sailing. I know of no equivalent elsewhere in the world. Guillaume Verdier, architecte.*

GVAN mainly designs racing yachts and is diversifying into structural and fluid calculations or 3D design projects.

Since 2001 the company has designed nearly 17 Vendée Globe Challenge boats, including 2 for the last edition (**APIVIA** by Charlie Dalin and **LinkedOut** by Thomas Ruyant), 2 IMOCAs under construction for the next **Ocean Race** (Crewed Round the World Race) and the latest GITANA Ultimate (110 feet) for Edmond de Rothschild (Cammass/Caudrelier).

GVAN recently helped to design the foils for a 100-ton passenger ship connecting various sites in Norway.

The company does some of the work jointly, notably with the New Zealand-based company **PURE**. It also takes part in some exotic projects (45m Catamaran - Floating Exhibition Centre). Projects in collaboration with the **Jeanneau Groupe** for the SunFast series.

GVAN's projects involve a number of people, including : Romaric Neyhoussier; Herve Penfornis; Benjamin Muyl; Veronique Soulé; Morgane Schlumberger; Romain Garo; Loic Goepfert; Leonard Imas; Jeremy Palmer; Bobby Kleinschmit.

## Key Facts and Figures

- Year of creation: 2001
- Company Director: Guillaume Verdier
- Number of employees: 1
- Revenues: Between €1 and €1.5 M
- References in competitive sailing: Gitana Maxi -Edmond de Rothschild / APIVIA / Linked Out / Groupama C / Pogo3 and 4 / Maserati / Telecom Italia (Soldini) / PRB2 / AREVA/ Team New Zealand AC75 / Team New Zealand AC72 / Team New Zealand AC50

In collaboration with VPLP: SAFRAN 1 and 2/ Groupe BEL / H Boss 3/ Virbac Paprec 3/ Gitana 60 / PRB 3 / MACIF / Banque Populaire / Comanche (Maxi 100')

## Equipment in the races, especially the next Vendée

**Globe: Apivia:** Team VERDIER (last generation) /

**Linked Out:** Team VERDIER (last generation) /

**Initiative Coeur:** Latest generation refit of Team VERDIER

## National and International Awards:

High Technology Award (Fédération des Industries Nautiques, 2013 and 2014)

Engineer of the Year (Usine Nouvelle, 2017)

## Races and Victories:

- Victory in 3 Vendée Globe races (one with G Finot and 2 partnered with the firm VPLP),
- Participation in 4 America's Cup (1 with France + 3 with Team New Zealand; -1 ongoing),
- Victory in the Little America's cup with Franck Camas,
- Victory in the Sydney Hobart Race with the maxi Monohull Comanche (association @ VPLP),
- Victory in the Transat Jacques Vabre / Transat Anglaise / mini Transat / Route du Rhum

## Contact:

Guillaume Verdier  
+ 33 6 22 37 08 79  
gverdier@guillaumeverdier.com

[www.guillaumeverdier.com](http://www.guillaumeverdier.com)

## Isabelle Keller Design

Graphic artist ... Boat decoration / museum-scenography / design of offshore racing events and maritime universes

---

*"No blabla, just results" (extract from artistic and maritime magazine) allegory of 3 great sailors on the pontoons (Jean Maurel, Florence Arthaud and Eugène Riguidel)*

---

Her domains: Brittany (adopted), the sea & offshore racing. Isabelle is a graphic artist whose adrenaline is always flowing as she dreams up new play areas, decorates racing yachts, pastes images on city walls, or dresses up spaces to tell stories!

Working on design and art in her relationship with the world of the sea, developing a recognized graphic expertise, a curious eye and always on the lookout for creative and effective solutions.

### Key Facts and Figures

- Year of creation: 2007
- Company Director: Isabelle Keller
- Employees: 1 - independent but likes to surround myself with other professionals
- Location: Lorient

### References in competitive sailing:

- Boats: Imoca Groupe Bel, Imoca and Ultim Macif, Sodebo Ultim, Imoca Safran, Maitre Coq, MACSF, Time for Ocean, ... Figaros, 40 foot and Diam 24
- Complete event design: The Bridge, Brest Océans ...
- Creation and realisation of the Vendée Globe 2016 event: "Dans les rues du Globe" Street-art, open-air art exhibition in Les Sables d'Olonne.
- Museosecanography of exhibitions "100 years of Gitana", Decoration and design of the Sea hangar - concept / François Gabart.

---

### Contact:

Isabelle Keller

+33 6 15 79 05 10

[isakellerdesign@gmail.com](mailto:isakellerdesign@gmail.com)

<http://www.isabellekellerdesign.fr/>



---

*Bretagne Sailing Valley: the place to be for racing yacht designers.*

---

After studying at Southampton Solent University, Vincent Lauriot-Prévost and Marc Van Peteghem joined forces in 1983 to create the naval architecture agency VPLP Design.

Together, they started in multihull design. Their boats were an immediate success and since then they have held most of the records and race victories, including eight Route du Rhum races in a row since 1990, the last two Vendée Globe races and the America's Cup in 2010. Three latest-generation IMOCA boats designed by the firm will line up at the start of the next Vendée Globe.

The firm also develops yachts such as Douce France and Hémisphère which are the two largest sailing cruising catamarans ever built. VPLP design is also very active in the construction of production boats and in particular works with Lagoon, a Bénéteau Group brand, on the design of cruising catamarans, more than 5,000 units of which have been produced since 1986.

Today, VPLP design is a young team of world-renowned naval architects based in France - in Vannes and Paris - who design racing boats, pleasure craft and maritime transport.

Ayro was created in 2018 to develop and market the Oceanwings wingsail designed to equip VPLP and other marine and yachting projects.

In 2019, the naval architecture firm took a new step in its development with the design of a 121-metre long ro-ro ferry intended to transport sections of the Ariane 6 rocket from Europe to French Guiana. Equipped with four Oceanwings®, it has been designed to minimize its overall impact on the environment.

**Key Facts and Figures**

- Year of creation: 1983
- Company Director: Vincent Lauriot Prévost
- Number of employees: 9
- Revenues: €1.3 M
- References in competitive sailing:
- Location: Vannes, Morbihan (56)

**National and International Awards**

- 1 time: winner of America's cup BMW Oracle in 2010
- 2 times: winner of Vendée Globe in 2012 and 2016
- 8 times: winner in the Route du Rhum from 1990 to 2018
- 3 times: winner of Sydney Hobart and Comanche record in 2015, 2017 and 2019
- 40 days: winner of the Jules Verne Trophy with the trimaran Idec in 2016
- 42 days: winner of single-handed round the world record with the trimaran Macif in 2017
- 618 miles: Record in 24h monohull sailing with Comanche in 2015
- 537 miles: Record in 24h monohull sailing single-handed with Hugo Boss in 2015
- 908 miles: Record in 24h trimaran sailing with Maxi Banque Populaire in 2009
- 851 miles: Record in 24h trimaran single-handed with Macif Ultim in 2017
- 51 knots: Record in 1 nm in 2009 Hydrofoil

---

**Contact:**

Quentin Lucet

Tel: +33 (0)6 64 18 54 17

[lucet@vannes.vplp.fr](mailto:lucet@vannes.vplp.fr)

---

[www.vplp.fr](http://www.vplp.fr)



Companies in Bretagne Sailing Valley®

## Composite Parts

## AVEL robotics

### Automated manufacture of high-performance carbon parts

---

*The strength of the “Sailing Valley” in south Brittany lies in bringing together a set of skills around the manufacture of the most powerful yachts. AVEL robotics illustrates this positive energy using a robot designed in Lorient for the aeronautics sector and used in competitive sailing.*

---

AVEL Robotics was founded in 2017 to offer aeronautical technology to the sailing and boating world.

The company manufactures foils and rudders using an Automated Fiber Placement (AFP) machine.

Its advantages: perfect positioning, perfect control of the result and hence the mechanical performances of the final part, reproducibility, speed of execution, etc.

These assets make it the perfect tool for manufacturing parts in series.

Its strengths naturally make it attractive to boat builders and equipment manufacturers in offshore racing, who have increasingly high expectations in terms of performance.

#### **Data and key figures:**

- Founded: 2017
- CEO: Luc Talbourdet
- Employees: 15
- Sales: NC
- References in competitive sailing:
  - Manufacture Foils for the IMOCA boats APIVIA and l'Occitane
  - Appendages for the ETF26 foiling catamaran
- Location: LORIENT, Morbihan (56)

#### **Awards won nationally and internationally**

- Prize for the best START-UP at the December 2017 Paris Boat Show

---

#### **Contact:**

Luc Talbourdet, CEO

Tel.: +33 (0)2 97 87 86 05

[contact@avelrobotics.com](mailto:contact@avelrobotics.com)

[www.avelrobotics.com](http://www.avelrobotics.com)

# CDK Technologies

Construction of competitive carbon yachts / high-performance composite technical parts.



*Offshore racing has been in our DNA for more than 30 years, allowing us to work with extraordinary skippers and teams, for whom we develop leading-edge products and technologies in high-performance composites. Permanent innovation is part of our professional approach, combining exceptional manual know-how with cutting-edge industrial technologies. We are proud to fly the flag of the Bretagne Sailing Valley, this unique concentration of small and medium-sized technology companies with complementary skills.*

CDK Technologies are leading boat-builders in their market, specialized in the construction of carbon racing yachts and high-performance composite technical parts. The yard's reputation has been earned through the many victories its boats have clocked up in major offshore races, including the last 3 Vendée Globe, the Trophée Jules Verne, the Route du Rhum, the single-handed round-the-world record, etc. CDK has been building the 2 ULTIM' trimarans MACIF and BANQUE POPULAIRE IX, BANQUE POPULAIRE XI being under construction, and is the only boatyard in Europe to build 4 IMOCAs for the 2020 Vendée Globe. CDK has got a unique know-how in Europe, covering the entire construction of large-scale composite platforms for offshore racing: structural parts in its 35m oven, manufacture of masts and booms in a 50m autoclave.

Specialized in autoclave curing of high-performance carbon parts, CDK is now a lead player on the market for large-scale prototype foils (for the ULTIM' MACIF and BANQUE POPULAIRE XI and the IMOCA PRB), thanks to its unique 25 x 4 m and 10 bars autoclave.

This technological excellence in the niche market of offshore racing has enabled the company to diversify towards industrial, MRE and defense markets which currently represent 10% of its sales.

## Data and key figures

- Founded: 1984
- CEO: Philippe Facque
- Employees: 90
- Sales: 10 M€
- References in competitive sailing:
  - 11 IMOCAs manufactured to date. 4 IMOCAs under construction (CHARAL, APIVIA, ARKEA PAPREC, CORUM)
  - Manufacturer of the MOD70 trimarans,
  - Manufacturer of SPINDRIFT, the largest racing trimaran in the world
  - Manufacturer of the ULTIM', MACIF and MAXI SOLO BANQUE POPULAIRE trimarans
  - IMOCA MACIF, BPIX, SPINDRIFT masts
  - ULTIM' Trimaran MACIF, SODEBO 5 and MAXI SOLO BANQUE POPULAIRE booms
- Location: Lorient (France), Port La Forêt (France)

## Awards

- Winner of 4 Vendée Globes, including the last 3 (FONCIA, MACIF, BPVIII),
- Trophée Jules Verne (Banque Populaire V),
- Single-handed round-the-world record (Trimaran MACIF),
- Route du Rhum (FONCIA, MACIF 60, SMA...),
- Transat Jacques VABRE (Trimaran MACIF)

**Vendée Globe 2020 participation rate:** 30% of the fleet

## Contact:

Yann Dollo

Tel.: +33(0)6 32 16 26 38

[y.dollo@cdk-technologies.com](mailto:y.dollo@cdk-technologies.com)

[www.cdk-technologies.com](http://www.cdk-technologies.com)

## Gepeto Composite

Gepeto Composite, workshop specialised in the manufacture and optimisation of ocean-racing prototypes.



Located in the heart of the Sailing Valley, in collaboration with renowned architects and designers, we place our expertise at the service of the most successful skippers and race teams. Our business is highly technical, using high-tech composite materials.

We master a wide range of composite application processes, from contact lamination to prepreg draping and infusion; the know-how of our employees is our trademark.

### Key Facts and Figures

- Year of creation: 2000
- Company Director: Gautier Nollet
- Number of employees: 9 (including director)
- Revenues: €800,000
- Location: Lorient – Morbihan

**References in competitive sailing:** Gitana, Banque Populaire, Sodebo, Macif, Charal, Initiatives Cœur, Corum, La Fabrique, MACSF, Corum, Veedol – AIC, Carac...

**Equipment in the Vendée Globe:** Recent parts or optimisation for 11 of the competitors in the next Vendée Globe.

### Contact:

Gautier Nollet

Tel: +33 (0)6 64 92 19 43

contact@gepetocomposite.com

[www.gepetocomposite.com](http://www.gepetocomposite.com)



# Heol Composites

Lightweight, hollow, one-piece carbon parts



*In the Vannes countryside, HEOL Composites is proud to help to make the most beautiful boats fly around the world using our hollow structural parts technology - including foils - innovative and renowned.*

Heol Composites is an expert in the construction of hollow structural carbon fibre parts, with reinforced mechanical properties, in a single-stage process cured in an autoclave (7 bars 180°C) from pre-preg carbon/epoxy.

Offshore racing is in the DNA of Heol Composites and its employees. The parts manufactured by the company sail around the world in competitions such as the Vendée Globe, the Ocean Race or ultra-sporty regattas such as the America's Cup and Extreme Sailing. For 15 years, Heol Composites has fostered a mutual relationship of trust and respect with skippers and their technical teams who recognise the reliability of the technology used by the company and which has contributed to their greatest victories.

Spars (equipment parts such as masts, booms, poles, bowsprits, spreaders, mainsail battens), appendages (submerged elements, such as rudders, keelfins, daggerboards, and foils) and our internal structural parts (mast braces, daggerboard up structure, biconical tubes...) have mechanical specifications which are optimised for competition.

Our daggerboards with T foils and adjustable flaps, alongside our lifting rudders and our foils which could be monolithic, solid and / or hollow, in one or two pieces and with varying hydrodynamic profiles, will equally enthuse competitive sailors as well as sailors of luxury super yachts, with an incontestable increase in performance, all around the world.

## Data and key figures:

- Founded: 2002
- CEO: Jean-Paul Dufau
- Employees: 12
- Sales: €1.7M
- References in competitive sailing:
  - TF35 one-design flight control catamarans on Lake Geneva: rudder and foils with large elevators and flaps
  - Trimarans Ultim' (Sodebo, Gitana 17, Banque Populaire IX): internal structural parts to withstand XXL stresses, central daggerboard with adjustable foil, foil adjustment belt, hollow T-shaped rudders
  - Imoca 60' for the 2017 Vendée Globe (Banque Populaire VIII, Maître Coq, St Michel-Virbac, Edmond de Rothschild, No Way Back, Groupe Safran): co-design and manufacture of the first generations of ocean-going foilers
  - AC45/50 for Groupama Team France Franck Cammas: foils and foil rudders for the 35th edition of the Americas' Cup in the Bermudas
  - Ultra-sporty GC 32 Catamarans for the Extreme Sailing series: all the generations of foils and rudders with one-design elevator
- Location: Trefflean, Morbihan (56)

Equipment provided for the races: very large majority of mini 6.50 masts, 6 Imocas out of 7 fitted with foils for the last Vendée Globe, many main sails equipped with our autoclaved battens at variable inertia.

## Contact:

Jean-Paul Dufau

Tel.: +33 (0)6 63 09 92 94

[jp.dufau@heol-composites.com](mailto:jp.dufau@heol-composites.com)

[www.heol-composites.com](http://www.heol-composites.com)



# Lorima

World Leader in Carbon Masts

Crédit : Samelicklack



Located in Lorient, the cradle of offshore racing in France, LORIMA is a world leader in the manufacture of carbon masts for racing or cruising yachts. From racing yachts for development to luxury superyachts for brand image, all our customers, be they the owners of a 35-footer or a 145-footer, can make use of LORIMA technology, innovation for the construction of carbon fibre masts and spars. LORIMA masts are “one shot” built in carbon fibre in the 38m long autoclave. Light, aesthetic but able to withstand extreme loads, our products are manufactured using top-of-the-range technology, by a team that is devoted to meeting the exacting standards of its customers. This excellence also allows access to industrial markets (wind turbines, aeronautics, automobile, etc.).

## Data and key figures

- Founded: 2001
- Managing Director: Vincent Marsaudon
- Employees: 50
- Sales: €8 million in 2019
- References in competitive sailing: Official supplier to IMOCA, Banque Populaire, Actual, Idec, Sodebo, Macif, Gitana, Spindrift, Multi50, MOD70, Figaro 3, TF35...
- **Vendée Globe 2020 participation rate:** 66% of the fleet
- Location: LORIENT, Morbihan (56)

## Contact:

Vincent Marsaudon

Tel.: +33 (0)6 12 28 92 09

[marsaudon@lorima-carbon-mast.com](mailto:marsaudon@lorima-carbon-mast.com)

[www.lorima-carbon-mast.com/fr/index/](http://www.lorima-carbon-mast.com/fr/index/)

# Multiplast – Groupe Carboman

Composite Materials  
and Construction of Carbon Racing Yachts



*Competitive sailing is in the DNA of Multiplast.*

Located in Vannes since 1981 in the heart of the Sailing Valley, Multiplast is also close to the Airbus factories in Nantes and Saint-Nazaire. This location enables the company to remain close to its customers in offshore racing and to the aeronautics industry. A considerable advantage to reply as effectively as possible to its nautical and industrial challenges.

Research centres such as Compositic in Lorient and the EMC2 cluster in Nantes are also huge assets for Multiplast in its R&D policies.

Finally, its facilities located on the edge of the Golfe du Morbihan allow the company to host offshore racing teams in excellent conditions, in offices located on the same site as yacht construction. Proximity is a factor of efficiency and ensures perfect transfer of information between designers and the Multiplast teams in charge of building the racing yachts.

## Data and key figures:

- Founded: 1981
- CEO: Yann Penfornis
- Employees: 110
- Sales: €14M
- References in competitive sailing:
  - 6 Trophies Jules Verne
  - 1 Single-handed round-the-world record
  - 1 Whitbread
  - 2 Volvo Ocean Race
  - 1 Imoca World Championship
  - 6 Atlantic Records
  - 2 Class C World Championships
  - and numerous Transatlantic races...
- Location: Vannes, Morbihan (56)

## Awards won nationally and internationally:

Boat of the year - Mestrade

Equipment provided for the races:

- 100% of the French challengers for the America's Cup
- 70% of the Ultim' trimaran fleet
- 50% of the Volvo 65' fleet
- 4 boats in the Vendée Globe 2020-2021

## Contact:

Yann PENFORNIS

[y.penfornis@multiplast.eu](mailto:y.penfornis@multiplast.eu)

[www.multiplast.eu](http://www.multiplast.eu)



## SNA by Guardtex

**Design and manufacture of custom textile equipment and protections.**

SNA, Guardtex's sailing brand, has worked with Teams and leading offshore racing sailors since 2015. It brings new and efficient solutions to meet the supreme objective of the offshore racing sailor: to finish first.

**Our most popular service is cutting the carbon folds needed to make foils in just 3 days, with only the 3D shape as the starting file.** When François Gabard lost a foil in 2018 during the Route du Rhum, we cut him a new one in just one week!

Teams use our products because they know it will be designed and manufactured to meet their weight gain, safety, strength, innovation and speed goals.

Our most popular product is the lazy bag, recognised to withstand all conditions and which is the result of SNA's know-how.

The latest innovation for the Vendée Globe, tested by Thomas Ruyant: the strongest inflatable fender on the market, and the only transportable one made of hypalon.

Offshore racing offers an unlimited field for experimentation, and SNA, thanks to its technological prowess, stands out from its competitors for the benefit of its customers.

### Key Facts and Figures

Year of creation: 2012

Company Director: Thierry

Plagué Number of employees: 11

Revenues: 0

References in competitive sailing: Imoca:

- LinkedOut
- Banque Populaire
- Corum
- Apivia
- La Fabrique
- L'Occitane
- Newrest Art and Class

40:

- Crédit Mutuel

Ultime:

- Sodebo
- Idec
- Gitana
- Macif

Figaro 3:

- Tanguy Le Turquais

North Sails

And many others.

### National and International Awards

- Crisalide Prize awarded by the CCI Brittany in 2015 for the digital transformation of SNA's overall process
- Special Mention 2017 Dame Awards for the 1<sup>st</sup> textile light, marketed in the USA by Guardtex Inc: [www.kanvaslight.com](http://www.kanvaslight.com)

### Contact:

Laurence Plagué

Tel: +33 (0)6 40 93 08 18

[lp@guardtex.eu](mailto:lp@guardtex.eu)

[www.sellerie-nautique.fr](http://www.sellerie-nautique.fr)



Companies in Bretagne Sailing Valley®

**On-board Safety / Equipment**

## GUELT NAUTIC

Expert in the machining of high-tech keels, bulbs, foils and mechanical parts for competitive sailing.



©Guelt Nautic

Bretagne Sailing Valley offers fabulous opportunities for networking, cooperation and emulation to provide increasingly high-tech solutions to racing boats but also to open up internationally.

Guelt, a designer and manufacturer of machinery for the food industry for 4 decades, created Guelt Nautic more than 25 years ago to place its expertise in precision machining at the service of another demanding sector: performance boating.

Close to Bretagne Sailing Valley© in Lorient and the Port-la-Forêt offshore racing centre, today, Guelt Nautic is company player recognised by competitive sailing teams for the production of highly technical mechanical parts.

Significant production resources combined with complementary skills within the company (design office, boiler-making, mechanics, conventional and CNC machining, electricity, automation) means that the Guelt Nautic team can respond rapidly and expertly to large, demanding projects.

Driven by innovation and challenge, our technicians are in tune with the challenges of the sailing world: attentiveness and tailor-made advice, thorough knowledge of materials and their machining, and great flexibility enable us to respond quickly and efficiently to the requests of skippers and their teams.

Our know-how: production of prototypes, mechanically welded or machined parts, ability to work on large parts (keels, bulbs, etc.), grinding on conventional or digital machines, surface treatment, quality control, renovation.

### Key Facts and Figures

- Year of creation: 1978
- Company Director: Yves Guelt
- Number of employees: 235
- Revenues: €23 M
- References in competitive sailing: the major offshore racing teams regularly entrust us with machining of high-tech parts (new or retrofit): sails and keel bearings, bulbs, chocks and mechanical parts of foils, rudder bearings, mast feet, specific parts.
- Equipment in the races, especially the next Vendée Globe: 100% of the ULTIME, 90% of the IMOCA boats, a majority of the MULTI 50s and some 40-footers trust us.
- National and International Awards
- Location: Quimperlé (Finistère, 29)

### Contact:

Rémy Le Roux

Tel: +33 (0)6 74 59 85 26

[remy.leroux@guelt.com](mailto:remy.leroux@guelt.com)

[www.guelt-nautic.com](http://www.guelt-nautic.com)





# LYOPHILISE

Food for Offshore Racing and Recreational Sailing

*We have a strong relationship with offshore racing. Lyophilise & Co is present in all races, supplying both local and foreign skippers and crews. Our goal is to continue our growth within the Lorient offshore racing cluster, even though the company is going international with the slogan "Tasty Meals Anytime Anywhere". Our proximity to and exchanges with sailors contributes to the development of our range. Bretagne Sailing Valley contains all the various and complementary actors in sailing, it is a place of possibility, of challenges and innovation.*

Lyophilise & Co supplies skippers of Vendée Globe, Route du Rhum, Ocean Race... Founded in 2010, the company offers the largest catalogue of freeze-dried meals in Europe on its website [lyophilise.fr](http://lyophilise.fr) and in its store at Lorient.

Easy to stack, these light meals come from all over the world and their manufacturing process (freeze drying) means they can be conserved for a long time. To complete the offer, Ariane Pehrson has also selected French artisan producers and international manufacturers who develop sterilised recipes (heat conservation, like cans), but also references in sports nutrition: energy bars, dried meat, energy drinks, etc.

Diet is a key factor in the success of a race. Tasty, varied flavours, quality raw materials, the right nutritional balance; a subtle combination to boost morale and energise the body. The Lorient company has understood this, and its experienced team listens closely to skippers and their nutritionists to meet their requirements and constraints; respecting energy values, dietary preferences and intolerances.

Lyophilise & Co also provides expertise in food supply optimisation; weight carried, repackaging for crews, worldwide supply chain, customs certificates.

## Data and Key Figures

- Founded: 2010
- CEO: Ariane Pehrson
  - Employees: 8 permanent and 2 temporary employees, 1 apprentice
  - Turnover: € 2,4 million
- References in competitive sailing:
  - Supplies:
    - Numerous editions of La Route du Rhum, the Transat Jacques Vabre, the Jules Verne Trophy, the Golden Globe Race
    - Vendée Globe 2016/17: 27 out of 29 participants
    - Volvo Ocean Race 2014/15 and 2017/18: the whole fleet
    - Solitaire du Figaro
    - Mini Transat 6.50
  - Location: Lorient, Morbihan

## Awards won nationally and internationally:

- Trophée Femmes de l'Economie en Bretagne 2014
- Nominated Morbihan Woman of the Year 2014
- Prix Jeunes Entreprise Femmes Entrepreneurs en Bretagne 2013
- 2012 Winner of Réseau Entreprendre Bretagne

**Equipment provided for the races:** from 70 to 100% of food supplies.

## Contact:

Ariane Pehrson, CEO  
Tel.: + 33 (0)2 97 87 23 73  
[team@lyophilise.com](mailto:team@lyophilise.com)

**French website:** [www.lyophilise.fr](http://www.lyophilise.fr)

**International website:**  
[www.freezedriedandco.com](http://www.freezedriedandco.com)





## Nautix

Leading French Manufacture of Marine Paints

*Our expertise: Protecting a yacht against marine fouling and moisture  
impregnating the composites targeting glide, weight and performance.*

Nautix is recognised as a leader in marine paints for ocean racing, thanks to its flagship products: A4T.Speed antifouling, NX194 and White T.Speed marine finishing paints, as well as Impregard, a carbon impregnation and protection resin.

Formulated and manufactured in France, these paint systems guarantee optimum protection and a smooth hull.

The Nautix R&D department works in collaboration with the racing teams to adapt paint systems to their technical requirements.

This search for performance is then declined in the amateur product ranges traded in shipchandlers and shipyards.

### Data and key figures

- Founded : 1980
- CEO : Maxime DELBURY et Matthieu TABURET
- Employees : 25
- Sales : 4.3 K€
- Location : GUIDEL, Morbihan (56)
- Official partner of the Figaro class
- Equipment provided for 2020 Vendée Globe : 80%
- 100% Vendée Globe winners since 1992 using Nautix products
- Formulation of fluorescent paints for foils and rudders (pink, yellow, orange)

### Contact:

Matthieu TABURET, joint CEO

Tél. : +33 (0)2 97 65 32 69

[m.taburet@nautix.com](mailto:m.taburet@nautix.com)

[www.nautix.com](http://www.nautix.com)

# Outils Océans

Recognized know-how in the study, design and manufacture of textile and semi-rigid equipment designed to store and protect objects or documents.



*“Bretagne Sailing Valley brings together renowned sailors and their teams, companies and training centres. All this is conducive to collaboration and partnerships such as we have with the Finistère Offshore racing Pole, the Figaro Bénéteau class, French Touch Ocean Club...”*

Outils Océans is specialised in the production of prototypes, mechanically welded or machined parts, large parts (keels, bulbs, etc.), grinding on conventional or digital machines, surface treatment, quality control, renovation.

It has been involved in competitive sailing since the company was founded in 1987 by an experienced sailor. The team designs and manufactures equipment in close collaboration with the sailors who test and approve it. Competitive sailing is important for innovation in the company as it provides feedback about products in extreme conditions and keeps a close eye on technological advances. The company is present in many Mini, Figaro, Diam 24, Class 40, Imoca, Ultimate classes.

Outils Océans offers concrete solutions for amateur and professional sailors to:

- tidy up the lines and halyards so they are not cluttering up the deck,
- Store bottles and winch handles so that they do not roll around in the cockpit,
- Store and organise tools to optimize and storage and protect them from the harsh environment,
- Protect the boat on the pontoon or at sea, hull, appendage, deck fittings...
- Climb on board alone in the event of a fall overboard with the Magic-Reboard® emergency ladder.

## Key Facts and Figures

- Year of creation: 1987
- Company Director: Tristan Poder
- Number of employees: 30
- Revenues: €3,8 M
- References in competitive sailing: Classe Figaro Bénéteau 3, Groupe Macif, Charal, Corum epargne, PRB, Arkéa, Prysmian Group, Newrest, Initiatives Coeur, la Fabrique, Sodebo, Actual, Solidaire en peloton, Ciela Village...
- **Equipment in races, especially the next Vendée Globe:** 80% of the Minis, 65% of the Class 40, 99% of the boats at the start of the Vendée Globe have an Outils Océans product on board, 85% of which have new or recent products (since 2017) and 14% were already equipped in the 2016/2017 Vendée Globe.
- Location: Saint-Evarzec (Finistère, 29)

## Contact:

Tristan Poder

Tel: +33 (0)2 98 94 87 64

[tristan.poder@outils-oceans.com](mailto:tristan.poder@outils-oceans.com)

[www.outils-oceans.com](http://www.outils-oceans.com)

# Plastimo

Safety and Anchoring Devices, Compasses  
and navigation instruments, bridge and deck fittings.



François Gabart – ©Vincent Curutchet – Aléa-MACIF

*Amateur sailor, offshore racer, professional fisherman,  
member of the Special Forces...Your safety is our Mission.*

Anchored in Lorient-La Base for nearly 60 years, Plastimo designs and manufactures safety, anchoring and navigation equipment for pleasure boating, offshore racing, the professional navy and the special forces. Compasses, lifejackets and life rafts “Made in Lorient”, sail across the seas of the world (46% export sales), and proximity to the offshore racing hub in the Lorient Sailing Valley has a lot to do with this: working with the sailing elite means you are always up to date with their latest requirements and new practices, to share and support their need for innovation and performance. As well as its own ranges, Plastimo selects the best specialist brands to offer a “one-stop-shop” of 11,000 products to its racing, yachting and professional marine customers.

## Key Facts and Figures

- Year of creation: 1963
- Company Director: Yann Cornec
- Number of employees: 102
- Revenues: €25 M
- Location: Lorient – 56100

## Equipment in the races

Safety “made in Lorient” on:

- 100% of the Ultim
- 75% of the Imoca
- 70 % of the Multi 50
- 100 % of the Figaro
- 60% of the Class 40
- 60 % of the Mini Class

## Verbatim:

*“At Lorient-LaBase, Plastimo is at the heart of the reactor: proximity to the sailing elite enables us to exchange and challenge ourselves thanks to a panel of experts who are an additional source of inspiration and innovation for our R&D and Marketing teams.”* **Yann Cornec - Directeur Général**

## Contact:

Cathy MILLIEN

Tel: +33 (0)6 21 09 71 55

Cathy.millien@plastimo.com

[www.plastimo.com](http://www.plastimo.com)



Companies in Bretagne Sailing Valley®

## Sails and Rigging

## Ino-Rope

High Tech fibers at the core of our innovations.



*Our expertise: to innovate by designing light, resistant and reliable products and solutions, for your performance. Our project was developed 100% from the Mini 6.50 class, by a former skipper with over 35,000 miles of racing to his name! Competitive sailing is a wonderful showcase, but also represents a perfect laboratory! Our location in the heart of the Sailing Valley enables us to be where all the best projects are happening.*

Made up of an energetic and close-knit crew of 10 people, our Breton company is firmly implanted in the nautical world. New ideas seasoned with a spark of audacity, developed with quality materials and renowned expertise: this is our secret recipe to create rigging products and solutions designed to be used in sailing and the maritime sector. Each idea that is validated with our R&D office then goes through an industrialisation process using local sub-contractors working in close proximity.

Offshore racing where the company started, can be used to test prototypes rapidly in the harshest conditions. Born on the seas, the Ino-Rope company is now setting off on land to conquer the industrial sector. Our expertise in the demanding field of open sea racing allows us to meet the needs of industries such as maritime sector with our innovative mooring lines.

### Data and key figures:

- Founded: 2013
- CEO: Thibault Reinhart
- Employees: 10
- Sales: €550,000
- References in competitive sailing: Vendée Globe, Class 40, Mini 6,50, figaro, Nacra 17
- Location: Concarneau, Finistère (29)

### Awards won nationally and internationally:

- Nomination Dame Award, 2017
- Winch Pitch (twice)
- Special Mention price, Dame Award 2019 with the Ino-Padeye aluminium

### Contact:

Thibault Reinhart  
Tel.: +33 (0)6 30 46 65 65  
[contact@ino-rope.com](mailto:contact@ino-rope.com)

<https://inorope.com/>

## Karver

**Major supplier to Class Imoca, Karver designs fittings with its own DNA: Performance - Innovation - Design**

*“Karver set up in the heart of the Sailing Valley to give even more meaning to the service we hold so dear. All our executives, engineers and salesmen are passionate sailors. The involvement and enthusiasm of the team is unique. This geographical and human proximity is precious and I believe it is our true guarantee of quality. Marin CLAUSIN, creator and CEO.*

<p>For more than 15 years, Karver has been designing and selling fittings exclusively according to its values: Performance – Innovation - Design. This niche position matches the technical requirements of offshore racing yachts, cruising and Super Yachts. 60% of its revenue is generated internationally. We are recognised as a major supplier to the Imoca class.</p> <p>Our products are divided into 6 main families</p> <ul style="list-style-type: none"><li>▪ Furling gear,</li><li>▪ Hooks,</li><li>▪ Pulleys,</li><li>▪ Blockers,</li><li>▪ Winches,</li><li>▪ Rails &amp; mast trolleys.</li></ul> <p>30% of our products are customised to our customers' specifications. We work with a network of loyal and responsive subcontractors. This deliberate choice enables us to focus on the development and support of our customers. Ours is a human-sized team of enthusiasts enabling us to work fast and responsively. After 17 years with offshore racing teams and yacht manufacturers, we are still delighted to be able to satisfy our customers whatever their expectations.</p>	<p><b>Key Facts and Figures</b></p> <ul style="list-style-type: none"><li>▪ Year of creation: 2003</li><li>▪ Company directors: Marin Clausin / Tanguy de Larminat</li><li>▪ Number of employees: 15</li><li>▪ Revenues: €3 000 000</li><li>▪ References in competitive sailing: Imocas, Classe 40, Figaro 3, Ultims, Minis, America's Cup, Volvo, ...</li><li>▪ Equipment in the races, especially the next Vendée Globe: 90 %</li><li>▪ National and International Awards Dame Awards,</li><li>▪ Location : Lorient La Base (Morbihan, 56)</li></ul>
---	--

**Contact:**

Tanguy de Larminat

[tanguy@karver-systems.com](mailto:tanguy@karver-systems.com)

Tel.: +33 (0)6 71 64 51 15

[www.karver-systems.com](http://www.karver-systems.com)





## North Sails

R&D Centre for Sail Design and Production



*North Sails France developed at the same time as the Sailing Valley, characteristically of Brittany. Excellence in offshore racing, however, the equipment or class is considered, is now recognized worldwide. Being part of the Sailing Valley is both a driving force and a daily opportunity.*

North Sails was founded by Lowell NORTH in 1957. The company's DNA has always been to innovate both in the tools used (first computer-designed sails, first sailmakers using CFD, etc.) and in the development of new products such as 3DL (first 3D molded membrane sails) or more recently 3Di (first and only sails made of flexible molded filament composite).

North Sails France is a team of 35 to 40 people (design office, production, service, sales, administration) spread over three sites : Vannes (main production site), Lorient (new service loft opened in 2019) and Mouans-Sartoux in the south of France.

For many years, the company has enjoyed a great reputation in the field of offshore racing. It has recently developed cruise products based on the same technologies. Today, its turnover is between 10 and 12 million euros.

Part of the North Sails Group, North Sails France is recognized by the latter as an R&D center and a specialized site for the production and design of Offshore sails (ULTIM, IMOCA, VOR, Class 40, etc.). North Sails offers products designed for every type of practice, from cruising to regattas and for every type of support, from Optimist to Ultim.

North Sails equips to date all Ultim multihulls (Actual, Banque Populaire, Gitana, IDEC, Macif, Sodebo...) and equipped 5 of the first 6 IMOCA during the last two Vendée Globe.

### Data and key figures:

- Founded: 2000
- CEO: Gautier Sergent
- Number of employees: 37
- Turnover : 10.5 million euros
- References in competitive sailing:  
100% of Ultim – IMOCA (Winners of the 2012/2013 and 2016/2017 Vendée Globe)
- Single-handed, crewed, monohull and multihull round the world records
- Official Supplier of the Ocean Race (ex Volvo Ocean Race)
- R&D Center for the North Sails Group
- Design office dedicated to supporting the design and performance analysis of sailing boats
- Location: VANNES and LORIENT, Morbihan (56)

### Awards won nationally and internationally

- Prize for the best START-UP at the December 2017 Paris Boat Show

### Contact:

Philippe Touet  
Tel.: +33 (0)7 85 00 90 77  
philippe.touet@northsails.com

[www.northsails.com](http://www.northsails.com)





Companies in Bretagne Sailing Valley®

Digital at the Service of Performance

# AIM45

Let your data speak for the collective success of your project!

*Bretagne Sailing Valley is an environment where tomorrow's innovative solutions for competitive sailing can emerge.*

The wonderful images of foilers speeding above the waves is a reminder that sailing is entering a new sporting and technological era. But behind the revolution of flight, there is another paradigm shift: **big data**.

AIM45 transforms data flows into objective information, immediately accessible and easily exploitable by the whole team. This source of information feeds collective intelligence to optimize any IoT object (boat, foil, wind turbine...).

### ***AIM45 connects humans and technology!***

To do so, AIM45 is developing a **collaborative data analysis platform**. Innovative and powerful, it is the result of Olivier Douillard's expertise in the world of competitive sailing (constrained environment, high technology, competition) for more than 25 years.

Whether in IRC, Figaro Bénéteau, Class40, IMOCA or Ultime, AIM45 will help you find performance and achieve safety, as Olivier Douillard explains: ***"For Vendée Globe competitors, knowing the precise history of loads on their foils and setting their alarms accordingly, will enable them to avoid the stressful times that await them in the South. If the alarms don't ring, it means the boat's been through worse! The data recorded by the tool means we can objectify sensations."***

Finally, AIM45 has the power to analyse a whole tour of the world.

AIM45 is also a distributor of Adrena and SailingPerformance solutions.

AIM45 is designed for any "objects" that require control and optimization: cargo ships, wind turbines, bridges, digital machines...

### **Key Facts and Figures**

- Year of creation: 2014
- Company Director: Olivier Douillard
- Number of employees: 5
- *Data: A "simple" boat generates around thirty items of data; **an Ultim**, which takes on board around 120 measurement points thanks to fibre optics, **produces 750 different items of data*** On a round-the-world trip, this amounts to 37 billion pieces of data compared to just 8 million for a leg of the Solitaire du Figaro!
- References in competitive sailing:
  - Gitana (MOD, IMOCA, Maxi-Trimaran),
  - Dongfeng (winner Volvo Ocean Race),
  - IMOCA CORUM L'Epargne, DMG Mori, MACSF
  - Figaros Bénéteau
  - IRC
  - Wally "Ryokan",
  - Maxi Yacht "Aragon"
- Location: Fouesnant (29 – Finistère)

### **Contact**

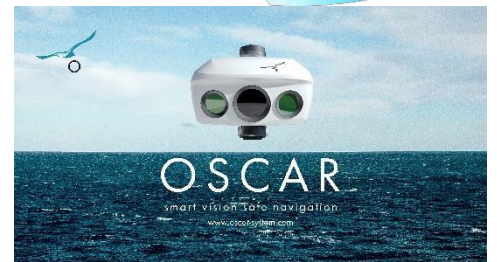
Olivier Douillard  
[olivier.douillard@aim45.fr](mailto:olivier.douillard@aim45.fr)  
Tel: + 33(0)6 64 13 96 47

[www.aim45.fr](http://www.aim45.fr)

Presentation of AIM45: <https://youtu.be/Rg2ozAUPoFM>

## BSB Marine

**Based on artificial vision, the OSCAR system detects floating objects in the ship's path for added vigilance and safety.**



*"For forty years I've seen techniques related to boat building and navigation born and developed in our Region. Brittany is at the leading edge of new technologies and our skippers, the fastest on the planet, are our ambassadors around the world. This experience, skill and regional cooperation lead me to believe that OSCAR's Artificial Intelligence will develop quickly. Although OSCAR's roots are Austrian, it is indeed the fertile soil of Brittany that is helping it grow."*

*Gaëtan Gouérou - President - BSB Marine*

Created in 2018 and based in Port La Forêt, BSB Marine develops and markets the first navigational aid system based on vision and artificial intelligence.

Developed and tested with the support of the biggest offshore racing teams in Bretagne Sailing Valley, this new system, called OSCAR, is inspired by the latest technological innovations developed in the field of driverless cars.

OSCAR detects floating objects, identified or otherwise (UFOs), on the ship's course to reduce the risk of collision. It increases crew alertness and offers heightened safety during the day but especially at night when the human eye is unable to see obstacles.

OSCAR's artificial intelligence is based on deep learning, which relies on a network of artificial neurons inspired by the human brain. Its database is enriched by its users' navigations which enable it to continuously improve its detection performance.

The ultimate goal of OSCAR is to automatically avoid imminent collisions by connecting to the autopilot. Today the autopilot steers the boat taking account of the course, and for yachts, wind direction. Tomorrow, OSCAR will enable it to take account of any obstacles detected on the course.

### Key Facts and Figures

- Year of creation: 2018
- Company Director: Gaëtan Gouérou
- Number of employees: 4
- Revenues: €235,000
- References in competitive sailing:  
More than 20 IMOCA and ULTIM boats are equipped with OSCAR
- Equipment in the races particularly the next Vendée Globe: 60%

### Contact:

Solenn Gouérou

[solenn.gouerou@bsb-marine.com](mailto:solenn.gouerou@bsb-marine.com)

Tel: +33 (0)2 98 51 40 00 / +33 (0)6.31.29.83.61

[www.oscar-system.com](http://www.oscar-system.com)

# EKTACOM

**EKTACOM sells live video transmission systems for use in harsh conditions. The NOMADE SAILS range was designed for and with skippers to offer the simplest possible solution for media transmission to organisations, teams, sponsors and partners.**

Since 2000, EKTACOM has been providing custom digital video solutions, historically in the broadcast sector for large television and institutional groups such as the European Parliament and the Ministry of Finance.

In 2015, EKTACOM launched NOMADE SAILS, a range which makes it as easy as possible for skippers to shoot live video. The solution was used for the Jules Vernes Trophy, then the Transat Jacques Vabre, Route du Rhum and Vendée Globe, and is recommended by the race organisation.

Today NOMADE includes smartphone and PC/Mac applications for live interviews, high-quality video replay, photo/video upload to shore... Multi-camera management can easily vary viewing angles. Developed for and with skippers, NOMADE was designed to make media obligations as simple as possible during major races.

The EKTACOM team is available for support and can facilitate contact with Organisations, Teams, Sponsors, Partners or TV channels in France and abroad (more than 25 channels equipped with NOMADE Player in 10 countries).

## Key Facts and Figures

- Year of creation: 2000
- Company Director: Olivier Caillet
- Staff: 12 people
- Revenues: €1m
- References in competitive sailing: More than 35 boats equipped with the NOMADE range participated in the Vendée Globe, Transat Jacques Vabre, Route Du Rhum, Jules Verne Trophy. During the last Vendée Globe, NOMADE enabled more than 400 live broadcasts, equipped more than 20 TV channels and numerous sponsors in France, Belgium, Monaco, Germany, UK, Japan, USA.
- Equipment in the races, especially the next Vendée Globe: 31 IMOCA's out of the 33 participants in the last Vendée Globe, and a target of 100% for the next edition.
- National and International Awards: Maybe soon.
- Location: city + department: Saint Renan, Finistère
- Website: [www.ektacom.com](http://www.ektacom.com)

## Contact:

Erwann Renan  
+33 (0)6 13 57 04 36  
[erenan@ektacom.com](mailto:erenan@ektacom.com)

[www.ektacom.net](http://www.ektacom.net)

## Madintec

Madintec, electronics designed to fly fast solo!

---

*"The Sailing Valley is a fabulous incubator. Madintec owes much of its success to this environment where we have been able to develop and work closely with many teams."*

---

Madintec is a company specializing in electronics and computers for the boating industry. We have considerable expertise in control systems such as autopilots and flight control for hydrofoil boats.

Madintec products are recognized in the world of offshore racing as **efficient** and highly **reliable**. Madintec is fitted in three Ultim trimarans and one third of the Imocas, which will be setting out on the next Vendée Globe.

The sailors we equip are right at the front of all races and records. We are delighted to have been working closely with François Gabart since 2014.

In 2018, we introduced a new-generation autopilot. This was clearly a game changer. Opinions are unanimous.

"We have an incredible pilot on board, it's almost annoying, it can steer better than you." Yves LeBlevec (skipper Ultim Actual)

"We broke the 24-hour record on autopilot! This third man is clearly a decisive factor in this performance" Ian Lipinski (skipper class40 Crédit Mutuel) following his victory in the last Transat Jacques Vabre.

Madintec is a design office of 8 engineers with a strong focus on research and development. We conduct research work on many subjects: flight stabilization, energy management, fault detection, obstacle avoidance, etc. The future will see the launch of many particularly innovative and resilient products.

### Key Facts and Figures

- Year of creation: 2011
- Company Director: Matthieu Robert
- Number of employees: 10
- Revenues: €600,000
- References in competitive sailing: 3 Ultim, 10 Imoca, 3 Multi50, class40, ...
- Equipment in the races, especially the next Vendée Globe: 30%
- Prizes obtained nationally and internationally Round the World Record (Macif), Transat JV, Rhum,
- Location: Lorient

---

### Contact:

Matthieu Robert  
+33(0)633213308  
[infos@madintec.com](mailto:infos@madintec.com)  
[m](http://www.madintec.com)

[www.madintec.com](http://www.madintec.com)

## Mer Agitée – TrimControl

The Race Team of Michel Desjoyeaux / Electronic Telltale



*"With the brand TrimControl®, we are making our experience in offshore racing, our culture of performance and innovation available to the sailing and wind energy sectors."*

Mer Agitée is the offshore race team of Michel Desjoyeaux. Its main business is preparing boats for major offshore races including the Vendée Globe and the Route du Rhum for sponsors (FONCIA, MACIF, SMA, etc.). Sailing is seen as a test bed for industrial applications which can also benefit from innovations developed in different arena, but that deal with similar issues.

The electronic telltale (ePenon) is part of Mer Agitée's diversification strategy. The goal is to bring developments made in the world of motor sports and offshore racing to the industrial sector (wind energy, merchant marine, etc.), through the brand TrimControl®.

The eTellTale is a sensor that measures the airflow across a sail or wind turbine blade allowing constant monitoring in real-time of aerodynamic performance. Currently, the eTellTale is a breakthrough that has no competition.

The obvious goal of the eTellTale is energy efficiency. The challenge is to adjust the same wind turbine blade or boat sail better.

Mer Agitée's ambition is to become a major player in real-time aerodynamic adjustment, based on its experience and expertise in competitive offshore racing. There are considerable economic issues in the wind energy sector but also in sailing.

### Data and key figures:

- Founded: 1999
- CEO: Michel Desjoyeaux
- Employees: 15 (May 2018)
- Sales: €3,249,213 (April 2017)
- References in competitive sailing:
  - Vendée Globe including 4 wins
  - More than 25 racing transats, with many podiums and wins in the Route du Rhum, the Transat Jacques Vabre, The Transat, etc.
  - 5 Solitaires du Figaro including 2 podiums and one win.
  - Sport, technical, administrative and logistics management of over 50 Grands Prix, double or crewed regattas on monohulls and multihulls
- Location: La Forêt Fouesnant, Finistère (29)

### Awards won nationally and internationally

- Feb 2016: Accreditation of the eTellTale project by S2E2 and Pôle Mer Bretagne Atlantique
- Sep 2016: eTellTale project winner of Initiative PME – Renewable Energies
- Nov 2016: Trim Control nominated for the Dame Award (MetsTrade 2016)
- Dec 2016: Trim Control "The TellTale of the Future", High Technology Prize (Fédération des industries nautiques)

### Equipment provided for the races

- Route du Rhum 2018
  - 1 Imoca = SMA
  - 1 Ultim' = Trimaran MACIF

### Contact:

Dimitri Voisin, R&D Manager

Tel.: +33(0)6 27 60 37 10

[dvoisin@meragitee.com](mailto:dvoisin@meragitee.com)

[www.meragitee.com](http://www.meragitee.com)



# NKE Marine Electronics

Instruments and Autopilots for Competitive and Leisure Sailing



Copyright: Yvan Zedda

*Innovation drives our development and helps us take our place on the market with major groups. Developing our business in the Bretagne Sailing Valley is a strength; closeness to race teams, to other companies working in the competitive field are factors of success.*

For 30 years, NKE Marine Electronics has been developing, producing and marketing a range of instruments and autopilots for competitive yachts and offshore cruisers.

NKE's reputation is based on its strong commitment to technological innovation.

This has enabled NKE to remain at the forefront of the international sector, for its sensors fitted to Cup boats or for its autopilots fitted to most of the single-handed or crewed racing yachts.

The engineering department is constantly in research mode to offer efficient and robust solutions to Race Teams. One of the major avenues of development is the new, round-the-world Ultim' flying project.

## Data and key figures

- Founded: 1984
- CEO: Paul Fraisse
- Employees: 15
- Sales: €2 M
- References in competitive sailing: SODEBO, Meragitée, Class Figaro, class 40, class MINI, Flotte IRC
- Location: Hennebont, Morbihan (56)

## Awards won nationally and internationally

- Competitive sailing innovation award for the HR autopilot

## Equipment provided for the races:

- 94% class Mini 6.50
- 76% Class 40
- 35 % (Autopilot) 90% (Masthead unit) Imoca
- 100% Class BENETEAU Figaro
- 100% association L30
- 94% IRC Transquadra fleet
- I Ultim'Sodebo exclusive agreement.

## Contact:

Stéphane Siohan

Tel.: +33 (0)6 28 45 25 86

[ssiohan@nke.fr](mailto:ssiohan@nke.fr)

[www.nke-marine-electronics.com](http://www.nke-marine-electronics.com)



# Ocean Data System

Innovative electronic and mechatronic solutions for offshore racing, yachting and shipbuilding.



*Innovation and competitive sailing have been in the DNA of Ocean Data System since its inception.*

A company specialising in the development of specific innovative electronic and mechatronic solutions (safety, monitoring, control, instrumentation...) for racing, yachting and shipbuilding.

The founding director Christophe Lassegue participated in top-level competitive sailing projects as a navigator responsible for onboard electronics: Admiral's cup, America's cup, Whitbread, 60' ORMA, Decision35....

The Ocean Data System team is fully committed and involved, constantly innovating and improving state-of-the-art technologies specifically designed for hostile marine environments and demanding projects.

Ocean Data System offers solutions that are unrivalled on the market.

- Sale and installation of on-board electronic navigation equipment
- Consulting and project management for offshore racing electronics/computing
- Development of electronic and mechatronic solutions
  - Lights and LED lighting: **ODLight – ODSpot**
  - Canting keel management system: **CKM**
  - Data Logger - Black Box: **NDR**
  - Multifunctional safety solution: **UpSideUp**
  - Actuators: Electrocam - **BCam – TEPSS – ECB**
  - Supervision - Control: **Sail'In Control**
  - Instrumentation: Sensors - Fibre optics
  - Telemetry: **TenSeaZy**

## Key Facts and Figures

- Year of creation: 2001
- Company Director: Christophe Lassegue
- References in competitive sailing:
  - America's Cup
  - Whitbread/Volvo Ocean Race
  - Trimarans 60' ORMA
  - Multi One Design 70' ○ IMOCA Vendée Globe
  - Ultim' 32/23: Macif – Banque Populaire – Sodebo – Gitana
  - Trimaran Spindrift 2
- Equipment in the races particularly the next Vendée Globe:
  - 70% of the IMOCA fleet carries ODS equipment,
  - 4 Ultim 32/23 out of 6 equipped with UpSideUp and/or ODS sensors or actuators.
- National and International Awards
- Location: Lorient (56 – Morbihan)

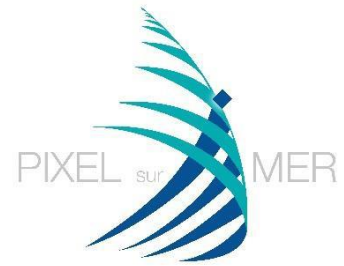
## Contact:

Carole de Larminat / Christophe Lassegue

[info@oceandatasystem.com](mailto:info@oceandatasystem.com)

Tel: +33(0)2 97 87 92 65

[www.oceandatasystem.com](http://www.oceandatasystem.com)



## PIXEL sur MER

HIGH TECHNOLOGY FOR NAVIGATION

Electronic systems, fibre optics, EXOCET innovations for boats all around the world

*Yacht racing, Innovation, Challenges... PIXEL sur MER accompanies all types of boats around the world.*

To meet the new technological challenges of high-performance boats, PIXEL sur MER has developed a range of innovative products: **EXOCET** - data acquisition and supervision, advanced calculations for navigation, command and control of appendages, 2D and 3D piloting solutions, etc. Moreover, *EXOCET* and our fibre optic measurement technology form a complete solution for measuring structural deformations and stresses.

### Key Facts and Figures

- Year of creation: 2008
- Company Director: Jean-François Cuzon
- Number of employees: 18
- Rate of equipment in races, in particular the next Vendée Globe: 24% for fibre optics, 27% for the Exocet system on board and 30% for advice, sales of electronic equipment and engineering. Detail:
  - Fibre optics (8 of the 33 competing boats): Charal, Apivia, PRB, Malizia, Arkéa, Hugo Boss, L'occitane, Corum
  - EXOCET on-board system (9 out of the 33 competing boats): Charal, Banque Populaire, PRB, Malizia, Yes We Cam, Arkéa, Hugo Boss, L'Occitane, Corum
  - Advice: 10 out of the 33 competing boats.
- Location: Lorient

### Contact:

Jean-François Cuzon

+33 634 874 162

[jfcuzon@pixelsurmer.com](mailto:jfcuzon@pixelsurmer.com)

[www.pixelsurmer.com](http://www.pixelsurmer.com)

## ROM-arrangé

ROM-arrange company supplies, implements and maintains end to end onboard computing equipment, navigation software and satellite communication solutions for cruisers and ocean racers.



*« Dedicated to competitive sailing activities, Bretagne Sailing Valley is a unique ecosystem gathering innovative and performance-driven actors. ».*

ROM-arrange company supplies, implements and maintains end to end onboard computing equipment, navigation software and satellite communication solutions for cruisers and ocean racers.

The company provides optimized solutions to fit any type of sailing – cruising and offshore racing alike. ROM-arrange team is dedicated to customer satisfaction and develops customized and innovative navigation systems to fit the specific needs of navigation and offshore sailing.

### Data and key figures

- Founded: 2004
- CEO: Benoit MARSILLE
- Employees: 6
- Sales: €900 000
- References in competitive sailing: 80% of Vendée Globe 2020-2021 IMOCA (Charal, Maitre Coq, L'Occitane, Initiatives Cœur, MACSF, etc.), 80% of Multi 50, 80% of Class40.
- Equipment in the races, especially the next Vendée Globe : 80%
- Location : Lorient, Morbihan

### Contact presse :

Mme Sophie Marmié  
T. +33 (0)9.80.55.30.03  
sophie@romarrange.com

[www.romarrange.com](http://www.romarrange.com)

# Thalos

Creator of satellite communication solutions - Iridium / Inmarsat- and innovative tools for the marine sector.



We develop and deploy communication services on board boats, in particular with our OceanBox solution, which enables skippers to:

- Communicate: exchange data with shore, simplify sending of photo and video files...
- Manage and optimize data exchanges: file compression, cost control, data flow management, etc.
- Control data flow remotely: communication monitoring, service management, etc.

## Data and key figures

- Year of creation: 2001
- Company Director: Pierre Monfort
- Number of employees: 32
- Revenues: €8.54 m
- References in competitive sailing:
  - 22 IMOCAs out of the 33 in the 2020-2021 Vendée Globe equipped by THALOS (including 11 in the top 15)
  - The entire fleet in the 2021 Double-handed Transat equipped by THALOS
  - Yoann Richomme on the 2019 Route du Rhum equipped by THALOS
  - Various Multi 50 and Ultims equipped by THALOS
- Equipment in the races, especially the next Vendée Globe: in progress
- National and International Awards Innovation award received by the Tribune Space Forum in 2020
- Location: Ploemeur / Morbihan (56)

## Contact:

Delphine Robinet  
+33 (0)2 97 88 18 00  
[drobinet@thalos.fr](mailto:drobinet@thalos.fr)

[www.thalos.fr](http://www.thalos.fr)



## Support and Training Organisations for Competitive Sailing in Brittany

# Class IMOCA

**International Monohull Open Class Association  
& the Championship IMOCA Globe  
Series International Offshore Racing  
Circuit**



Antoine MERMOD / IMOCA  
Copyright Vincent Curutchet

*"We offer the best programme there is with all the major international offshore racing events in one calendar. IMOCA yachts are competitive, innovative, spectacular and skippered by highly skilled sailors who remain accessible and close to the public. They're also increasingly committed to the evolution of our sport and its role in society."*

**Antoine Mermoud, President of Class IMOCA.**

Founded in 1991 and recognised by World Sailing (International Sailing Federation) since 1998, the International Monohull Open Class Association manages the class of 60-foot (18.28 metre) Open monohulls, today the fastest boats around the world. IMOCA defines the rules guaranteeing sporting equity by developing the innovation and safety of the boats.

The aim of the Class is to develop the fleet of monohulls and offer its skippers an attractive and coherent sports programme. It contributes to the internationalisation of offshore racing and combines the notions of competition, innovation, human adventure and safety on a day-to-day basis.

As it develops, IMOCA is constantly striving to encourage collective thinking and innovation around environmental issues to adapt its rules and practices in favour of ever more sustainable performance.

- Class IMOCA has a board of directors made up of skippers and three commissions: sports, technical and recently sustainable development.
- In 2018, the Class launched the IMOCA Globe Series: its four-year championship that includes the two 'star' round-the-world races, the Vendée Globe and The Ocean Race, as well as the Route du Rhum, the Transat Jacques Vabre and the Défi Azimut (Lorient). The races are part of skippers' qualification for the Vendée Globe and at the end of each cycle, an IMOCA Champion is crowned.
- After the 2020-21 Vendée Globe, a new cycle will begin until the beginning of 2025 with, on the schedule, 18 races, two round-the-world trips and 14 countries visited (a record)!

The IMOCA office is based in Lorient La Base, in the heart of the Sailing Valley and close to most of the teams as well as the main engineering and industrial offices linked to the fleet.

The Vendée Globe in IMOCA:

- 8 new IMOCA hydrofoils built for this edition: Apivia (Charlie Dalin), ARKEA PAPREC (Sébastien Simon), Charal (Jérémy Beyou), CORUM L'Épargne (Nicolas Troussel), DMG MORI Global One (Kojiro Shiraishi), HUGO BOSS (Alex Thomson), LINKEDOUT (Thomas Ruyant), L'Occitane en Provence (Armel Tripon).
- 5 of the 8 new IMOCA were built in Brittany (Apivia, ARKEA PAPREC, Charal, CORUM L'Épargne, DMG MORI Global One)
- 19 of the 33 IMOCA boats at the start of the Vendée Globe are foilers
- 22 of the 33 IMOCA boats at the start of the Vendée Globe have been preparing in Brittany.
- The 33 skippers are backed by a total of more than 130 private companies and local authorities.

Over the years, IMOCA boats have undergone several technological revolutions (carbon construction, canting keel, wing mast, etc.), always with the aim of achieving dual gains in speed and safety. This constant development in IMOCA boats has seen another good thing with the arrival of foils on boats. In 1990, Titouan Lamazou completed the Vendée Globe in 109 days and Armel Le Cléac'h took 74 days in 2016. Observers say the event record could well be broken in the 2020 edition... A round-the-world trip in less than 70 days perhaps?

## Contact:

Julia Huvé

[julia.huve@imoca.org](mailto:julia.huve@imoca.org)

Tel.: +33(0)6 63 28 81 48

[www.imoca.org](http://www.imoca.org)



### **Business Support programme: EUROLARGE INNOVATION**

Eurolarge Innovation is a support programme for organisations in the competitive sailing sector (companies, institutions and research centres) to support economic development and promote the influence of the regional sector.

Funded and supported by the Region of Brittany and piloted by Bretagne Développement Innovation, the regional economic development agency, the scheme offers meetings and exchanges between stakeholders.

It supports companies in their innovation, internationalisation and diversification projects.

Finally, it contributes to developing skills by organizing regular technical days.

*"Our goal is to compile the skills needed to meet the challenges of the sector, such as the emergence of sustainable innovations, opening up to international markets and transfer of technologies to other industrial sectors,"*

Carole Bournon, head of the Eurolarge Innovation programme, based in Lorient.



### **Contacts**

#### **Carole BOURLON,**

Head of the competitive sailing and composites sectors at Bretagne Développement Innovation  
Tel: +33 (0)6 33 72 13 66  
[c.bourlon@bdi.fr](mailto:c.bourlon@bdi.fr)

#### **Marjorie JOURDAIN,**

Communication Officer at Bretagne Développement Innovation  
Tel: +33 (0)6 60 20 74 50  
[m.jourdain@bdi.fr](mailto:m.jourdain@bdi.fr)

