

Polar POD: The project is officially launched!

Ifremer, Jean-Louis Etienne and the entire Polar POD team are pleased to announce its construction by the Piriou shipyards in association with 3C Metal, under the direction of the project owner, Ifremer. The scientific program of this international oceanographic "station" is being overseen by the French National Centre for Scientific Research (Centre national de la recherche scientifique, CNRS), in partnership with the French National Centre for Space Studies (Centre National d'Études Spatiales, CNES) and Ifremer.

Illustration Polar POD © N. Gagnon



Several years of work have been required following Ifremer's appointment as the authority in charge of the construction of the Polar POD in late 2016. Time was spent completing the preliminary design studies with the French marine engineering firm, Ship-ST, to verify the technical and operational feasibility to public investors. Time was also required to develop a scientific program under the



leadership of the CNRS, clearly define the specifications of the instrumentation to be integrated on the Polar POD, start the bidding process for potential shipyards and to seek funding.

On August 5, 2022, it was decided that the Piriou/ 3C Metal joint venture had been selected - Piriou shipyards for the construction of the main deck in Brittany, France, and 3C Metal for the construction of the truss, the torus, the bottom box and final assembly in Cape Town, South Africa.

Jean-Louis Etienne: “Polar POD is certainly the most ambitious expedition that I have worked on since 2010. I am not afraid to say that it is my masterpiece. Therefore, the launch of the construction process of this "vertical ship" is a great moment in my life as a polar explorer; it is the fruit of perseverance, nourished by the enthusiasm of the scientific community and the naval engineering office Ship-ST who have accompanied me on this bold project. To dare is to engage your imagination beyond certainties.”

François Houllier, Chairman and CEO of Ifremer: “The project management for the construction of the manned, drifting, oceanographic platform, Polar POD, has been entrusted to Ifremer; it is unquestionably a key step in the overall project which aims to improve knowledge of the Southern Ocean and its ocean-atmosphere interactions. In a relatively unknown area of the planet, this unique platform will enable the collection of valuable scientific information that will complement and enrich the existing range of spatial data and in-situ data.”

Vincent Faujour, President of Piriou Group: “We are very happy to take part in this audacious adventure and to take up a technological challenge that is perfectly in line with Piriou's innovation strategy and its commitment to decarbonizing maritime transport.”

Philippe Boy, President of 3C Metal: “The award of this project to 3C Metal in joint venture with Piriou shipyards is the perfect illustration of our diversification strategy for the company's activities. All 3C Metal teams are on board to make this unique and ambitious project a true success.”

AN OUTSTANDING TECHNOLOGICAL CHALLENGE

A cross between an oceanographic platform and a drifting lighthouse, Polar POD is one of a kind. It is designed to face the "furious fifties" and the highest waves on the planet. It will sail for three consecutive years with no planned return to land, which will require equipment that is easy to use, robust and tested. Environmentally sustainable, the platform will produce all the energy it needs using wind turbines, which will require very strict management of the vessel's energy expenditure.

The construction process started on September 1, 2022, and will continue for a period of 2 years. Several sea trials off the coast of South Africa will be required before the scheduled departure of the expedition from Port Elizabeth in South Africa in the last quarter of 2024.



FOUR MAJOR SCIENTIFIC OBJECTIVES

Due to the distance, its immensity and its limited accessibility, little is known about the Antarctic Ocean. The scientific community is unanimous; we need long-term, in-situ measurements. Driven by the Antarctic Circumpolar Current (ACC), the Polar POD will circumnavigate the Antarctic Circle twice, making it three years of an uninterrupted campaign with the following main objectives:

- **Continuous measurement of atmosphere/ocean exchanges**, in particular the CO₂ absorption capacity of the planet's main ocean carbon sink.
- **Recording marine biodiversity by acoustics**, from krill to whales.
- **Calibration of measurements made by satellites**: weather conditions, sea states, ocean color, measurement of phytoplankton for spatial monitoring of biological activity.
- **Assessment of current pollution of the ocean**: microplastics, organic pollutants, heavy metals and aerosols.

The construction of the Polar POD has received funding from the French government under the management of the National Research Agency (Agence Nationale de la Recherche) under the future investment program integrated into France 2030 (reference ANR-20-EQPX-001) (France 2030 is France's investment plan which focuses on sectors of France's industrial future by the year 2030). This symbolic scientific research project will position France among the leading nations in the field of ocean sciences, and will demonstrate its ability to build equipment at the cutting edge of new technologies. It is part of the deep seabed exploration (grands fonds marins) objective of France 2030.

ABOUT:

The Polar POD is an international oceanographic station. The French National Centre for Scientific Research (CNRS) will be in charge of the scientific coordination in partnership with France's National Centre for Space Studies (Centre National d'Études Spatiales, CNES). Ifremer's role is to carry out the project management for the construction of the platform. The research program involves the work of researchers from 43 institutions and universities in 12 countries. The data and observations will be available to the entire international scientific community. The Polar POD's scientific findings will be essential to the United Nations Decade of Ocean Science for Sustainable Development program. Latest news about the Polar POD can be found on the official website: www.polarpod.fr

Ifremer

Recognized throughout the world as one of the very first institutes in marine science and technology, Ifremer promotes sustainable development and open science. It conducts research, innovates and produces expertise to protect and restore the ocean. Ifremer makes use of the ocean's resources responsibly and shares marine knowledge and data to create new opportunities for economic growth that respects the marine environment. Present on all the coastlines of France and overseas, its laboratories are located at around twenty sites in the three great oceans: the Indian, Atlantic and Pacific oceans. On behalf of the nation, it operates the French oceanographic fleet. Its 1500 researchers, engineers and technicians advance knowledge on one of the last unexplored frontiers of our planet. www.ifremer.fr

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Piriu

Founded in 1965 and specializing in construction, repair, naval engineering and related services, Piriu builds vessels that measure up to 120 meters in length with high added value thanks to high-performance integrated engineering and facilities in Europe, Africa and Asia. With more than 520 vessels built and delivered all over the world, Piriu offers personalized solutions as well as a complete range of vessels meeting the needs of international private and public, civil and military shipowners. Through its latest developments, Piriu demonstrates its ability to innovate and contribute to the decarbonization requirements of transport with sail propulsion, fuel cells and hybrid ships. www.piriu.com

3C Metal

Founded in 1995, 3C Metal is a French company specializing in engineering, manufacturing and installation of steel structures, piping assemblies, pressure equipment, repairs and modifications of various structures. Originally providing services primarily to the oil and gas industry, 3C Metal's services now extend to other areas of the energy sector and heavy industries such as renewable energy (solar thermal, wind, hydrogen), nuclear energy, the marine industry and mining industry. 3C Metal's head office and workshop are located in the South West of France with subsidiaries and workshop facilities in South Africa, the UAE, Malaysia, Namibia, Mozambique and the USA. The strategic location of its subsidiaries across four continents allows 3C Metal to perfectly meet the needs of its customers and provide them with support as close as possible to their operations. www.3cmetal.com

CNRS

The French National Centre for Scientific Research (Centre national de la recherche scientifique, CNRS) is one of the most recognized and renowned public research institutions in the world. For more than 80 years, it has met the need for excellence in terms of its recruitment and has developed multidisciplinary and interdisciplinary research throughout the country, throughout Europe and internationally. It contributes to the scientific, economic, social and cultural progress of France. The CNRS is made up of 32,000 men and women holding 200 professions in 1000 laboratories. www.cnrs.fr

CNES

The French National Centre for Space Studies (Centre National d'Études Spatiales, CNES) is the public institution that guides the French government's space policy and its implementation within Europe. It designs and puts satellites into orbit and invents the space systems of tomorrow. It promotes the emergence of new services that are useful for daily life. CNES, created in 1961, is at the center of major space projects, space launch systems and satellites and is the natural interlocutor of industry to push for innovation. CNES has nearly 2400 employees; men and women who are passionate about space. CNES opens up infinite, innovative fields of application and operates in five areas of intervention: Ariane (launch vehicle), science, observation, telecommunications and defense. CNES is a major player in technological innovation, economic development and industrial policy in France. It also establishes scientific partnerships and is involved in numerous international cooperations. France, represented by CNES, is one of the main contributors to the European Space Agency (ESA). <https://cn.es.fr>

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