

An underwater photograph featuring a large grey hammerhead shark swimming towards the right. Several smaller fish with prominent black and white vertical stripes are swimming around the shark. In the upper left corner, a large school of small, silvery fish is visible. The water is a clear, deep blue.

eur@cean

The European Centre  
for Information on Marine  
Science and Technology

2021

ANNUAL  
REPORT



# INFORMATION INTERACTION INNOVATION

## The European broker for Ocean Science and Technology

EurOcean is an independent, non-profit, scientific organization with the mission to support advances in European marine science and technology, by fostering information exchange, interaction and innovation among its network members, the ocean community and broader society.

Founded in 2002, through the collaboration of the Portuguese Foundation for Science and Technology (FCT), and the French Research Institute for Exploitation of the Sea (IFREMER), EurOcean has a Europe-wide network of 19 organisations, accounting for 12 full members and seven cooperating members. Full members are European marine research, innovation and entrepreneurship, funding and outreach organisations. Cooperating members are organisations with a regional or global reach involved in activities complementary to those of EurOcean.



**CARLOS  
GARCIA-SOTO**  
President

**It is very important that all ocean stakeholders work together to address the challenges we are all facing, and in which EurOcean is connecting the dots.**

Dear colleagues and friends,

EurOcean, our network, is evolving and responding to the new paradigms of science. Many steps have been taken during the last year to modernize the organization and to increase its added value to its stakeholders. Never before has the organisation been so appealing for new members, and partnerships, and never before has joining forces with organisations like this been so important.

I do hope that, in 2022, EurOcean manages to expand, further the network and partnerships, and become even more relevant, for which i has worked so hard in the last few years. It is very important that all ocean stakeholders work together to address the challenges we are all facing, and in which EurOcean is connecting the dots.

As the UN Secretary-General said, there is no planet B. Despite the ongoing pandemic, we cannot forget that the threat posed to our civilization by climate change has not paused. We need to continue working hard towards the Paris Agreement objectives and the Sustainable Development Goals objectives in this new Decade of Ocean Science. There is no science without networking and there is no change without increasing environmental literacy and awareness at large, which is the cornerstone for the much-needed sustainable behaviours, technology and economics.

The essence of EurOcean is to develop a network of excellence and to promote cooperation, collaboration and information sharing among its members – research institutions, governmental organizations, industry – and with society in general. Therefore, EurOcean’s role is more important than ever before, that all of us, members and staff, will take to the future together.



**SÉRGIO  
BRYTON**  
Executive Director

**Our continuous improvement mindset led us to enhance some of our processes and tools, which will make us even more efficient and effective. We are ready to grow.**

Another year has passed, highly influenced by COVID. Working from home has become the norm, to protect our families, loved ones and ourselves. Although expected, cancelled and postponed activities are always tough news. The integration of new team members is harder, and high-tech will never replace human interaction. Without the need to commute we gained time tie for our families, for ourselves, and for work too. But it became harder to separate personal and professional lives now that they share the same space. Things will never be the same again. But do we really want that? EurOcean is not only exploiting a new working paradigm, but also new ways of networking and doing science communication. Something good will come out of this. No doubt about it.

Despite the circumstances, we managed to continue adding value for our members, developing our network, and increasing our visibility and relevance. Financially, EurOcean achieved unprecedented results, which will largely contribute to our sustainability and mission. Our continuous improvement mindset led us to enhance some of our processes and tools, which will make us even more efficient and effective. We are ready to grow. Last, but not least, two new staff members have joined our team. Welcome aboard, Sara and Francisco. We are going from strength to strength.

All in all, EurOcean has adapted and is overcoming the challenges of the dire moments we are all going through. By only looking at the numbers, we would never say this was a pandemic year. But this is just another example of what a highly motivated, competent, focused and determined team can achieve. Looking forward for 2022, and particularly for the much expected UN Decade Ocean Conference in Lisbon. May this “tsunami” of ocean science “wash away” the pandemic.

# AT A GLANCE



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**The Centre**

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**Membership**

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**Full Members**

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**Cooperating Members**

# THE CENTRE

# MAIN AREAS OF EXPERTISE



- Information Management
- Science Communication
- Knowledge Transfer
- Project Management
- Costal Zone Management
- Research Expeditions
- Naval Military Sciences
- Geology
- Environmental Sciences
- Marine and Naval Radioelectronics
- Proposal Writing
- Ocean Governance
- Funding Mechanisms
- Strategy and Decision Support
- Marine Biology
- Ocean Literacy
- Nautical Engineering
- Information Technologies
- Research Funds
- Organisational Management



3

Nationalities



6

Experts



7

Projects (\*)

(\*) Marine science and technology research projects in 2021, as a partner

# MEMBERSHIP

## France

-  Nausicaá Centre National de la Mer
-  Ifremer French Research Institute for Exploitation of the Sea
-  CAMPUS MONDIAL DE LA MER Campus Mondial de la Mer

-  unesco Intergovernmental Oceanographic Commission

## Portugal

-  FRCT Azores Regional Fund of Science and Technology
-  CESAM Centre for Environmental and Marine Studies
-  FCT Fundação para a Ciência e a Tecnologia Foundation for Science and Technology

## Belgium

-  VLIZ Flanders Marine Institute
-  CPMR CRPM Conference of Peripheral Maritime Regions

## Ireland

-  Foras na Mara Marine Institute

## Norway

-  Institute of Marine Research

## Germany

-  PlaMoWa Network for Plastics Monitoring in Waters
-  SUBMARINER NETWORK SUBMARINER Network for Blue Growth EEIG

## Poland

-  Institute of Oceanology of the Polish Academy of Sciences

## Spain

-  Spanish Institute of Oceanography

## Malta

-  International Ocean Institute
-  Fondation de Malte

## Italy

-  Consiglio Nazionale delle Ricerche National Research Council

## Romania

-  GeoEcoMar National Institute of Marine Geology and Geo-ecology

-  FULL MEMBERS
-  COOPERATING MEMBERS

# FULL MEMBERS



**11**

Countries



**+150**

Infrastructures <sup>(1)</sup>



**+3,150**

Researchers <sup>(2)</sup>



**+400**

Projects <sup>(3)</sup>

(1) Marine science and technology research infrastructures owned or supported.

(2) Researchers employed or supported involved in marine science and technology initiatives.

(3) Marine science and technology research projects in the last 5 years (2015 - 2020) as partner or funder.

# MAIN AREAS OF EXPERTISE



Blue Biotechnology



Noise and Plastics Pollution



Sensors and Sensing



Big Data



Alternative Resources



Ocean Monitoring



Research Vessels and Observatories



Multi-uses of the Sea



Artificial Intelligence



Circular Economy



Autonomous Vehicles



Youth Engagement



Acoustic Telemetry and Animal Tracking



Underwater Munition



Human and Ocean Health



Tsunami Prediction



Vessel Energy Efficiency



Ecological Risk Assessment



Ecosystem Services



Biodiversity and Environmental Stressors



History and Cultural Heritage in Coastal and Maritime Regions



Marine Spatial Planning



Cumulative Effects and Impact Assessment



Blue Economy



Fisheries Sustainability and Seafood Value Chain



Aquaculture



Citizen Science



Marine Renewable Energy



Climate Change

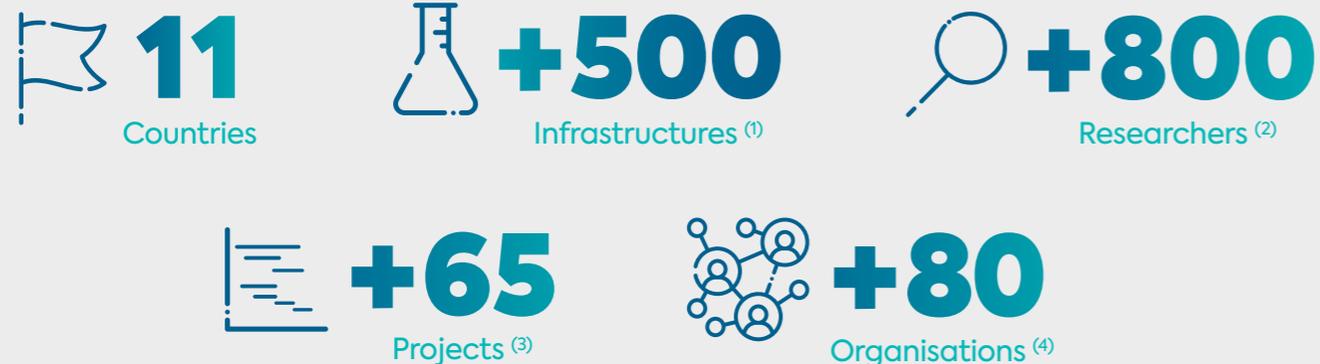


Polar Research



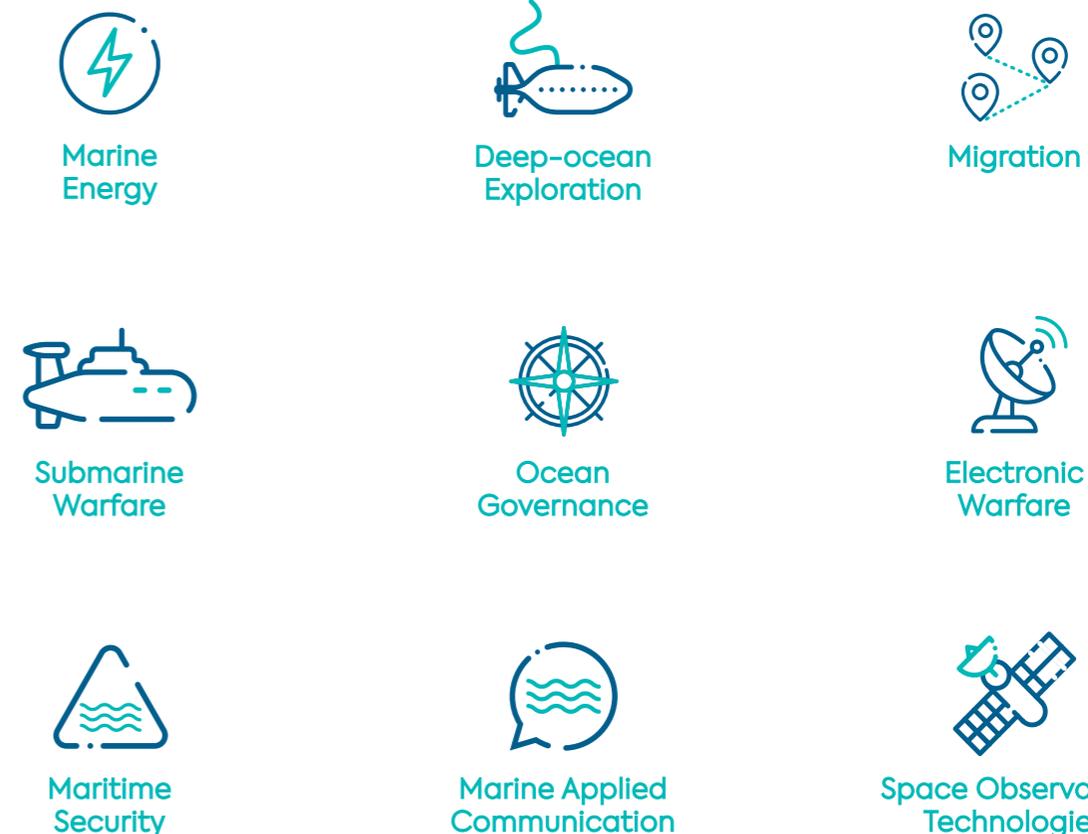
Geo-archaeology

# COOPERATING MEMBERS



(1) Marine science and technology research infrastructures owned or supported.  
 (2) Researchers employed or supported involved in marine science and technology initiatives.  
 (3) Marine science and technology research projects in the last 5 years (2015 - 2020) as partner or funder.  
 (4) Associated organisations (i.e. network members).

## MAIN AREAS OF EXPERTISE



# CENTRE RESULTS



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**Membership  
and Collaboration**

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**Information Management**

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**Communication  
and Networking**

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**Projects**

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**Services**

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**Finances**



# MEMBERSHIP AND COLLABORATION



## Activities and opportunities for members

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Provision of bespoke information

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Up to 20 research and development opportunities

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Development of GREENAGERS H2020 proposal lead by EurOcean and involving several EurOcean's Members, including CESAM, CNR, IEO, IOPAN, SUBMARINER Network



## Dissemination and promotion of Members

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Promotion of Member's activities through website, social media and newsletter

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Organisation and promotion of the "I live by the Sea" contest in direct collaboration with IOPAN



## Partnerships and Collaborations

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Collaboration with Ocean InfoHub on the submission of a workshop for the "European Maritime Day" and of an abstract for "International Ocean Data Conference 2022"

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Collaboration with DG Mare based on the provision of information from KG and RID

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Participation in European Maritime Day 2021 through EU4Ocean coalition

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Collaboration with ATIN-BLUECO under the participation in the stakeholders group

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Partnership with TRANSITION2BIO on the development of a workshop on Blue Economy to be hosted by EurOcean in 2022.

# INFORMATION MANAGEMENT

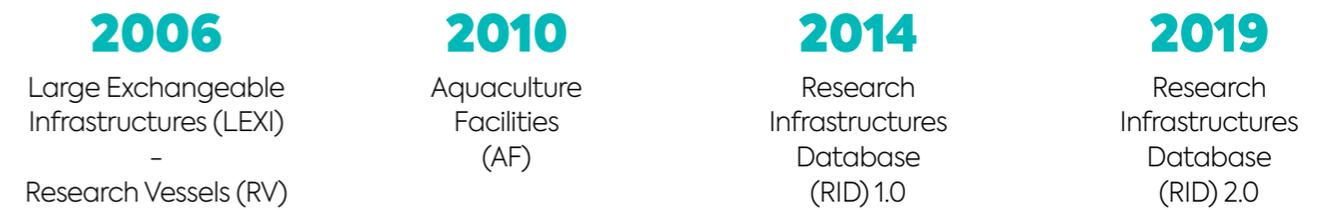
## Knowledge Gate

A repository of information about marine science and technology research and innovation projects funded by the European Union and the Member States programmes (FP7, H2020, INTERREG IV, INTERREG V, LIFE, FP6, INTERREG III).



## Research Infrastructures Database

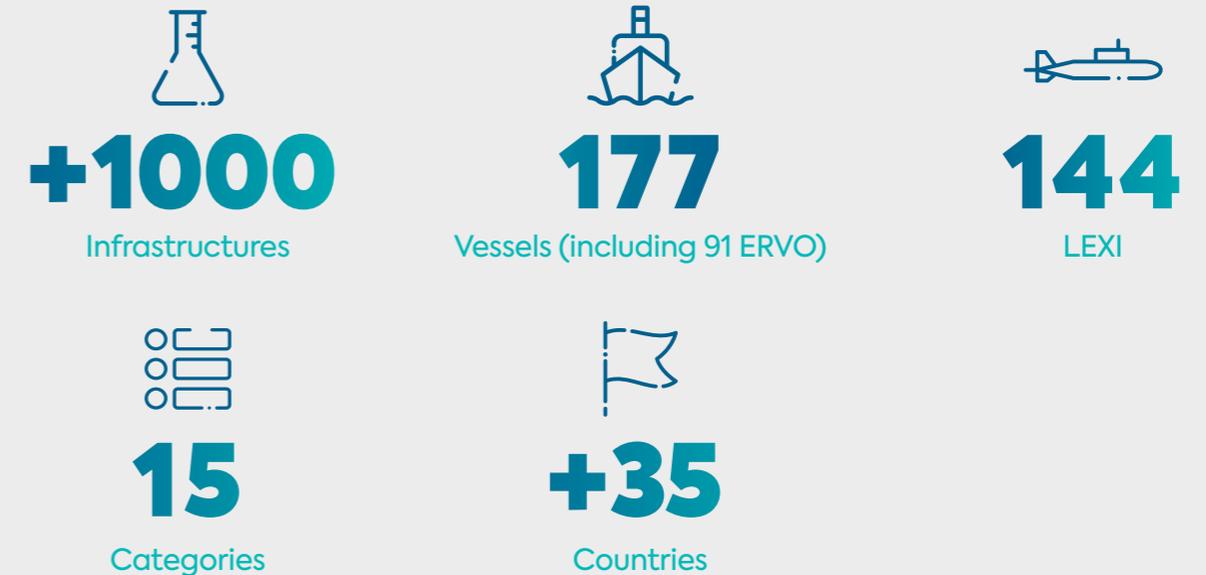
A repository of information (technical, scientific and operational) about European marine science and technology research infrastructures (research vessels, underwater vehicles and large equipment, mobile ocean observatories, satellites for sea and ocean observation, flumes and test labs for ocean engineering, marine biology stations, fixed point open ocean observatories, aquaculture research facilities, marine neocosms facilities, in situ tests for ocean renewable energy, deep ocean drilling research facilities, marine data providers, basins, coastal observatories).



### 2021

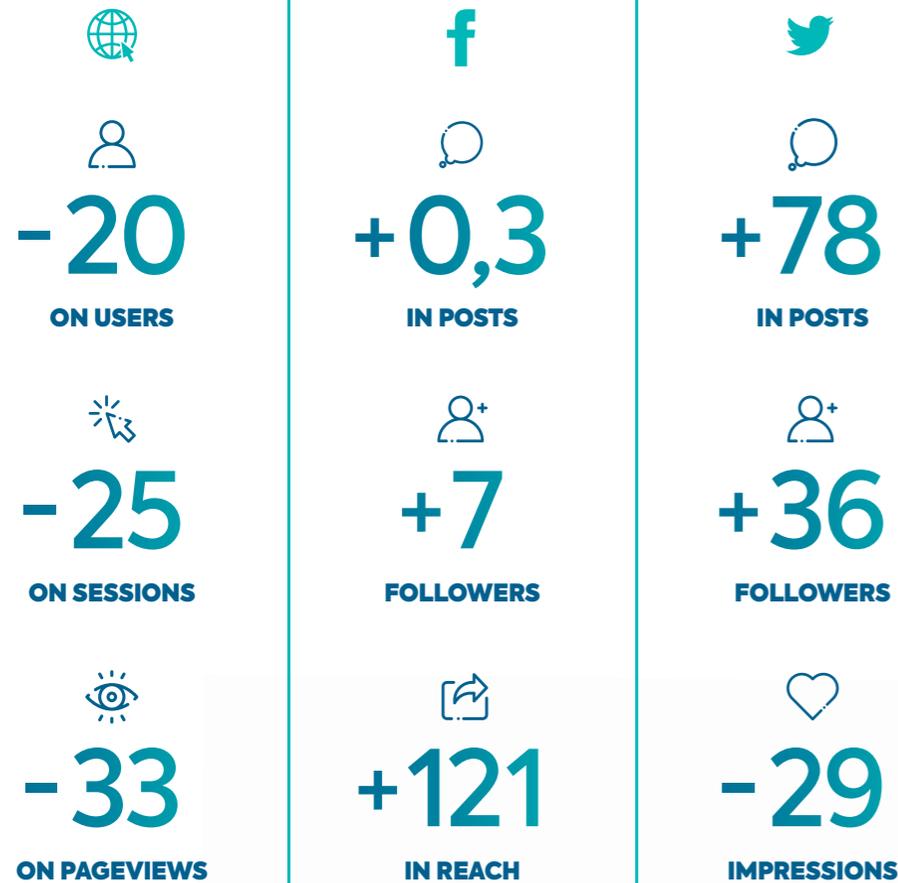


### 2021



# COMMUNICATION AND NETWORKING

## Website & Social Media reach (%)



Participation in 2021 European Maritime Day through EU4Ocean Coalition

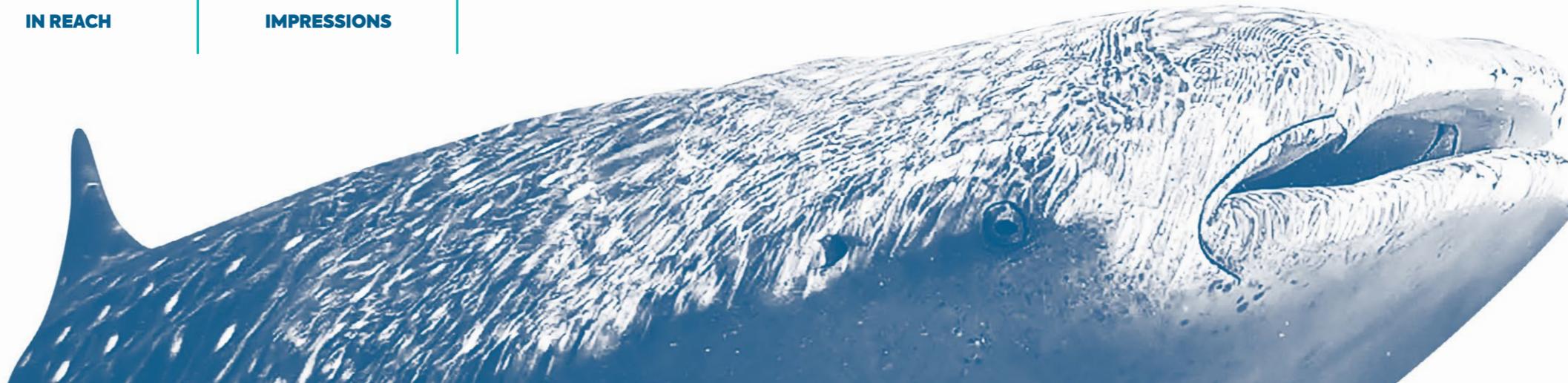
Provision of authoritative advice to ATIN-BLUECO through the participation in the stakeholders group

Co-organisation of the 2021 "I Live By the Sea" photo and video contest

Publication of an article in ECO Magazine Special Issue, about Ocean Literacy and the EU4Ocean contribution to the Ocean Decade

Participation as speaker on the III Belgian – Portuguese Routes for Blue Economy

RID presentation at EMODNET, EUROGOOS and ERVO



# PROJECTS



BUILDING AN ALL ATLANTIC OCEAN COMMUNITY implementing the Belém Statement

## AANCHOR

### ALL-ATLANTIC COOPERATION FOR OCEAN RESEARCH AND INNOVATION

**Aim:** To support the implementation of the Belém Statement by building the All-Atlantic Ocean Research Community and to identify concrete collaborative research and innovation activities across the whole Atlantic basin, from pole to pole.

**Roles:** WP 9 leader - Communication and dissemination.

#### Major Achievements:

- Development of three-month communication strategy and implementation of revised communication strategy
- Development of six videos on All-Atlantic Pilot Join Actions

[allatlanticocean.org](http://allatlanticocean.org)



INTAROS

## INTAROS

### INTEGRATED ARCTIC OBSERVATION SYSTEM

**Aim:** To develop an efficient integrated Arctic Observation System by extending, improving and unifying existing and evolving systems in the different regions of the Arctic.

#### Roles:

- WP 7 co-leader - Communication and dissemination.
- Task 1.3 leader: Collaboration development and establishment of Pan-Arctic Observing Forum.

#### Major Achievements:

- Coordination of the development of e-learning modules
- Participation in EU Polar Cluster Meetings

[intaros.eu](http://intaros.eu)



CatRIS

## CATRIS

### CATALOGUE OF RESEARCH INFRASTRUCTURE SERVICES

**Aim:** To develop an open, trusted and user-friendly portal to a harmonised and aggregated catalogue of services and resources provided by Research Infrastructures (RI) and Core Facilities (CF) across Europe.

#### Roles:

WP 6 leader: Communication, dissemination and exploitation

#### Major Achievements:

- Organisation of the CatRIS Official Portal Launch event
- Development of a final legacy report "CatRIS Outlook"

[project.catris.eu](http://project.catris.eu)



## EUROFLEETS PLUS

### AN ALLIANCE OF EUROPEAN MARINE RESEARCH INFRASTRUCTURE TO MEET THE EVOLVING NEEDS OF THE RESEARCH AND INDUSTRIAL COMMUNITIES

**Aim:** At facilitating open access to an integrated and advanced research vessel fleet, designed to meet the evolving and challenging needs of the user community.

#### Major Achievements:

- Support to the development of the common HBR Policy brief
- Upgrade of the Eurofleets+ website

[eurofleets.eu](http://eurofleets.eu)



## MARINET 2

### MARINE RENEWABLE INFRASTRUCTURE NETWORK FOR ENHANCING TECHNOLOGIES 2

**Aim:** This project builds upon the achievements of the advanced community created in MaRINET FP7. MaRINET 2 will ensure the continued integration and enhancement of all leading European research infrastructure and facilities specialising in research, development and testing of off shore renewable energy systems including electrical sub systems and grid integration through a range of TRLs (1 - 7).

**Role:** EurOcean is deploying its Marine Research Infrastructures Database (RID) as part of this Infrastructure.

#### Major Achievement:

Continuous support on the maintenance of RID - Support on the dissemination of the last call and training opportunity

[marinet2.eu](http://marinet2.eu)



ECFAS  
European Coastal Flood Awareness System

## ECFAS

### EUROPEAN COASTAL FLOOD AWARENESS SYSTEM

**Aim:** Develop a European Coastal Flood Awareness System, in the first instance as a proof-of-concept, with the aim of becoming one of Copernicus' core Emergency Management Services. This project evaluates coastal flood risk contributing to a fully integrated risk cycle monitoring service.

**Role:** WP 7 Leader - Communication, dissemination, and exploitation

#### Major Achievements:

- Project kick off
- Development of the ECFAS visual identity, website
- Launch of social media and development of ECFAS video and brochure/infographic

[ecfas.eu](http://ecfas.eu)



## NAUTILOS

### NEW APPROACH TO UNDERWATER TECHNOLOGIES FOR INNOVATIVE, LOW-COST OCEAN OBSERVATION

**Aim:** To unlock the critical knowledge contained in the ocean over the coming decades, and to realize the mutual benefits of marine observation for all elements of a sustainable ocean.

**Role:** WP 10 leader - Outreach, communication and dissemination.

#### Major Achievements:

- Support to the development of the common HBR Policy brief
- Development of the first project video and infographic

[nautilus-h2020.eu](http://nautilus-h2020.eu)

# SERVICES

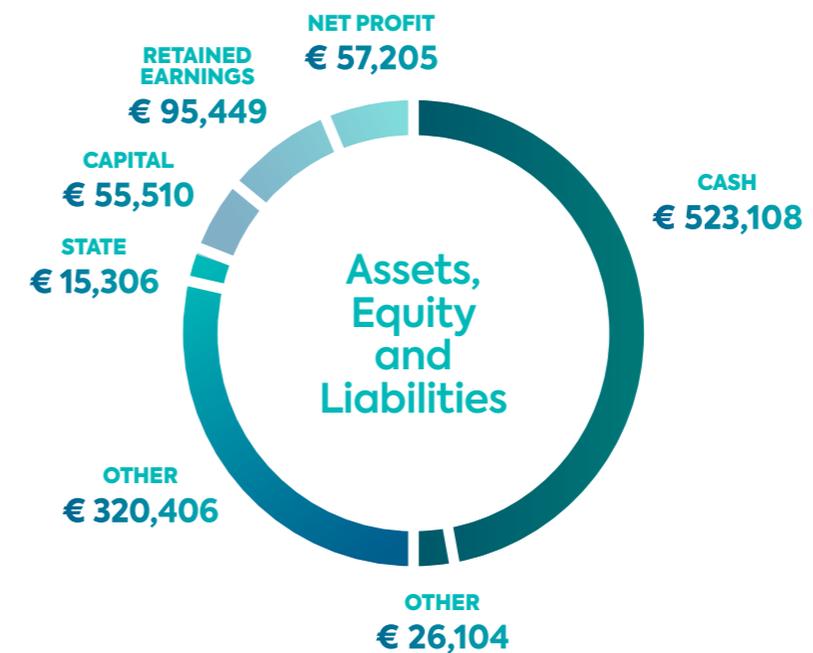
## Ongoing



# FINANCES



Revenue	499 507,56 €
Expenses	437 537,65 €
Profit	57 205,10 €



Assets	549 211,96 €
Liabilities	219 163,89 €
Equity	335 712,15 €

# MEMBERS RESULTS



—  
**Full Members**

# FULL MEMBERS



## CESAM

CESAM science-based knowledge contributed to the Decade of Ocean Sciences for Sustainable Development 2021-2030 through the participation of its members in Committees and Management Boards of different institutions and consortia. Some relevant examples are:

Participation in the DOSI Minerals Working Group (WG), as co-Lead, that constitutes a broad spectrum of scientific, industry, economic, conservation, legal and policy expertise, providing expert opinion on deep-seabed mining related concerns.

Participation at the International CORDEX (Coordinated Regional Downscaling Experiment) initiative, for Arctic and Antarctic domains, and belongs to the Scientific Committee on Antarctic Research Scientific Research Programme.

Participation as Lead Author in the Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report WG 1: 'Climate Change 2021: The Physical Science Basis'.

Integration of an international team that took a major step in deep-sea exploration by sampling and filming one of the last truly remote and inaccessible environments on Earth, in the Arctic Ocean.

A CESAM member was appointed by the National General Directorate for Natural Resources, Safety and Maritime Services (DGRM) as expert for the 'WG on Monitoring, Trends and Effects of Substances in the Marine Environment' - WG MIME - of the OSPAR Commission. Another member was appointed as Focal Point for the National Committee for the Decade of Ocean Sciences for Sustainable Development 2021-2030.



## FCT

"Considering the field of Ocean Sciences in the year of 2021, five main achievements can be highlighted:

Support to the first stages of implementation of six All-Atlantic Joint Actions contributing to the All-Atlantic Ocean Research priorities, through the coordination of the CSA-AANChOR Project;

Co-organization of the All-Atlantic2021 Conference, Azores, 2-4 June 2021, together with its side events and All-Atlantic Pledging Campaign;

Involvement and support in the co-design of the Horizon Europe partnership "A climate neutral sustainable and productive Blue Economy" together with 19 other Portuguese public entities. FCT will be supporting FRCT coordination of the Joint transnational calls management;

Contribution, with the Directorate General for Maritime Policy – DGPM, to an OECD survey to understand the marine data value chain in Portugal in scope of the OECD Working Group on Ocean Economy;

Support of nominated national experts' participation in international working groups as for example in scope of JPI Oceans Action Working Group on "Ocean Carbon Capacities" and of the European Marine Board Workings Groups on "Ocean Oxygen" and "Marine Habitat Mapping".



## FRCT

In 2021, FRCT embraced a new challenge of coordinating the All-Atlantic2021 H2020 CSA project that led to the All-Atlantic R&I for a Sustainable Ocean: Ministerial High-level & Stakeholders Conference, 2-4 June, Azores, under the Portuguese Presidency of the European Union Council and the European Commission.

The All-Atlantic2021 conference contributed to leveraging the All-Atlantic R&I Cooperation through two main legacy outputs: All-Atlantic Pledging platform and the Azores Declaration on All-Atlantic Research & Innovation for a Sustainable Ocean.

Also in that year, FRCT marked the end of a 6-years (2015-2021) EU project, MISTIC SEAS, financed by EMFF. The project valued strong cooperation and coordination between Portugal and Spain to support the implementation of the Marine Strategy Framework Directive in the Macaronesia European Regions- Azores, Madeira, and the Canary Islands.



## IEO

In 2021-22 IEO become a new National Centre of the Spanish National Research Council (CSIC) that now leads the marine research in Spain with 13 coastal research units, 5 aquaculture plants, 12 tidal stations and a fleet of 5 research vessels. The Spanish National Research Council (CSIC) has a multidisciplinary character and conducts advanced research in all scientific areas. It has a staff of more than 11,000 people in 6 National Centres and 121 Institutes, and represents according to the 2022 SCIMAGO research ranking 2022 the 8th research institution of the world.

# FULL MEMBERS



## IFREMER

In 2021, Ifremer launched its first Research « Blue Chair » to achieve excellence in ocean science. The aim is to accelerate the implementation of its strategic plan up to 2030 and to contribute to the objectives of the UN Decade of Ocean Sciences for Sustainable Development.

Also launched in 2021, the “Ocean and climate” priority research program brings together the French scientific community around key ocean issues. With a budget of €40 million over 6 years, it offers researchers the opportunity to take up 7 major interdisciplinary challenges focused on the understanding, protection and sustainable use of marine environments.

A new alliance AFD (French Development Agency) – Ifremer dedicated to the production of knowledge and tools for the protection and management of marine resources has entered into an operational phase. Eight scientific projects have been initiated for the benefit of developing countries. Spread over the three oceans of the globe and in the Mediterranean, they deal with major issues: climate change, biodiversity, environmental monitoring and management, etc.

On October 25, Ifremer, the CNRS and the IRD, with support from the Ocean & Climate Platform and ESA astronaut Thomas Pesquet, launched a digital world tour of ocean and climate sciences, christened “OneOceanScience”. 37 scientists from 33 countries took the floor through a series of short videos (interactive site [oneoceanscience.com](http://oneoceanscience.com)), in order to alert the public and COP 26 delegations to the crucial importance of the ocean in the fight against climate change.



## IMR

In 2021 the Institute of Marine Research (IMR) in Norway has delivered advice and statistics on stock estimates to facilitate for the authorities to set quotas and regulations for the industry, both offshore, in coastal waters as well as for the fish farming industry. Among scientific achievements is the publication of a study examining the effects on fish stocks important to Norway of climate changes worth mentioning.

The IMR received two autonomous underwater vehicles in the fall of 2021 and is about to start operational use. Also, the building of one new coastal research vessel was started, due for delivery in November 2022. In late 2021 an unexpected situation occurred in the Antarctic, hampering the planned logistics for the Troll station, prompting a swift re-prioritization of the ice breaker Kronprins Haakon to support resupply of the research station at the ice shelf during Christmas time.



## MARINE INSTITUTE

The Marine Institute 2021 work programmes were undertaken, once again, under challenging conditions posed by Covid-19 restrictions. The breadth and quality of activities are a testament to the commitment and innovation of our people as we work to realise our vision of the Marine Institute as a global leader in ocean knowledge, empowering Ireland and its people to safeguard and harness our ocean wealth.

Providing scientific advice and services to the Department of Agriculture, Food and the Marine (DAFM) and other government departments, agencies and stakeholders is essential to achieving a sustainable ocean economy, protecting and managing our marine ecosystems, and meeting EU obligations.

Fisheries Ecosystems Advisory Services (FEAS) provided detailed scientific data and analysis to support DAFM, particularly with regard to fisheries management. This included the publication of the annual Stock Book with the latest scientific advice on 74 key fish stocks of interest to Ireland.

The RV Celtic Voyager, RV Celtic Explorer and ROV Holland I delivered busy schedules in 2021 despite additional pressures created by Covid. Some 6,152 km<sup>2</sup> of the Celtic Sea seabed was surveyed by Advanced Mapping Services, with its partner Geological Survey Ireland.

Ireland’s new multipurpose marine research vessel, RV Tom Crean, reached a key milestone in November when the hull was completed. The build process continues on schedule under the direction of Ocean Climate and Information Services (OCIS), with the vessel due to come into service in 2022.



## VLIZ

After a year of evaluation by a consultant and an international panel of experts, on 17 December 2021, the Flemish Government approved a new agreement with the VLIZ for the period 2022-2026. In the coming management period, VLIZ will continue its current activities and focus more on research at the interface of climate, ocean and biodiversity.

In addition, many achievements were recorded in 2021. For example, the World Register of Marine Species (WoRMS) became the first VLIZ initiative to be received formal recognition as an ‘Ocean Decade’ action. Secondly, together with the Flemish government (Department of EWI) and The Blue Cluster, VLIZ launched the publication ‘Gearing up our blue knowledge’ which demonstrates the strength, diversity and potential of the Flemish innovation landscape and documents how Flanders is using the sea to achieve its sustainability goals.

Other achievements of the past year include an international calibration exercise led by VLIZ in the framework of the ‘Integrated Carbon Observation System’ (ICOS) as well as a large number of policy informing briefs that target research results to marine and coastal policy issues (e.g. concerning climate mitigation, recreational fishing and plastic litter).

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