

THE AMBASSADORS



CAMPUS
MONDIAL
DE LA MER

9TH EDITION

OCEAN HACKATHON®

17-19 OCTOBER 2025

PRESS KIT



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Ocean Hackathon® is coordinated by the Campus mondial de la mer, which brings together the first French community dedicated to the knowledge and development of marine resources. The Campus is located at the tip of Brittany (France).

THE CONCEPT

Ocean Hackathon® is a non-stop, 48-hour event during which teams develop a prototype to tackle specific, sea-related challenges. This must be based on marine data made available by local, national and international providers. Ocean Hackathon® takes place simultaneously in different locations.

Ocean Hackathon® is an initiative by Campus mondial de la mer which encourages sharing, the use of new digital technologies, and an entrepreneurial spirit. The concept originated in Brest in 2016, and was tested and optimised there before being extended to other towns and cities from 2019.

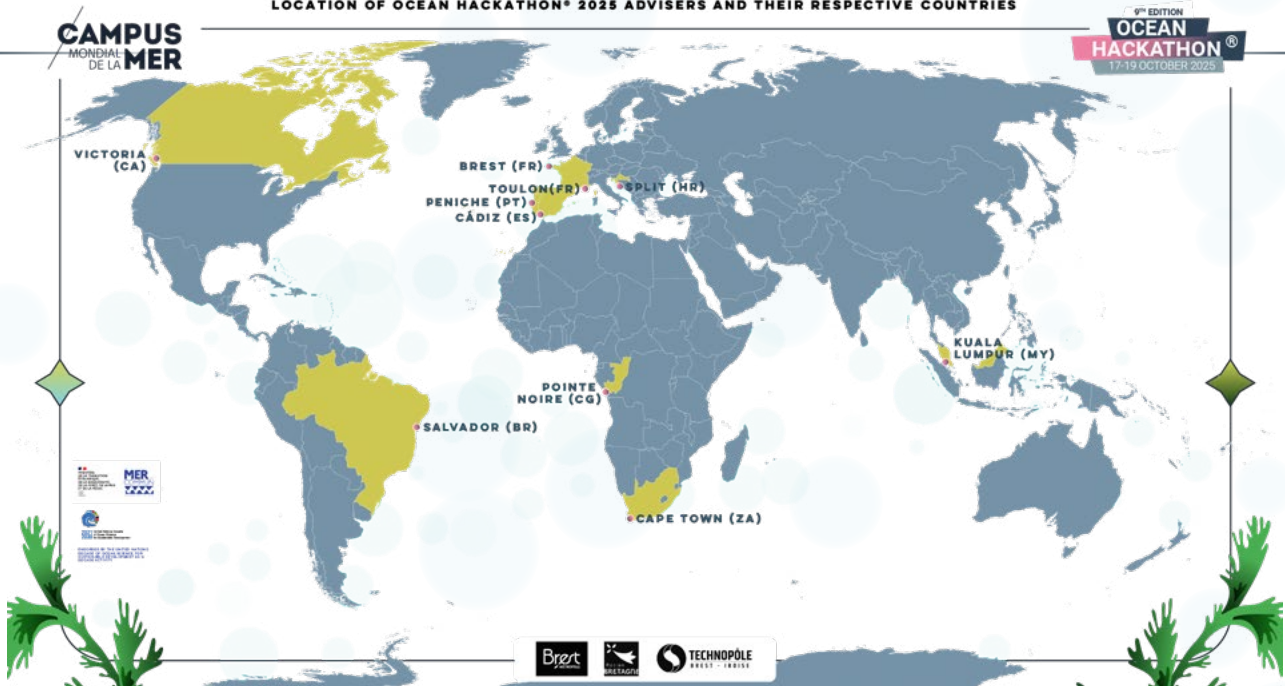
OCEAN HACKATHON® 9, A 5 STEP ORGANISATION

- 1** Call to host Ocean Hackathon® in your town or city
- 2** Call for challenges in your town or city, to identify the project that a team will tackle, as well as the challenge owner
- 3** Registration to set up teams of participants
- 4** Ocean Hackathon® local event (17-18 October 2025) in the 10 towns or cities
- 5** The International Grand finale (2 december 2025, in Brest and remote – 10 towns or cities participated)

OCEAN HACKATHON®

City	Country	Number of challenges
Brest	France	9
Cape Town	South Africa	3
Cadiz	Spain	6
Kuala Lumpur	Malaysia	7
Peniche	Portugal	5
Pointe Noire	Republic of Congo	4
Salvador	Brazil	6
Split	Croatia	5
Toulon	France	5
Victoria	Canada	4

LOCATION OF OCEAN HACKATHON® 2025 ADVISERS AND THEIR RESPECTIVE COUNTRIES



In 2025, Ocean Hackathon® relied on its 5 Ambassadors, who contributed to the success of the national and international scale-up of the event. The Ambassadors rewarded the 3 winning teams of the International Grand Finale.



9TH EDITION

FACTS & FIGURES

650
participants

10
towns and cities

54
challenges

130+
dataset

114+
data and project
coaches

17
global data partners
and many local
data providers

THE REACTION CORE

THE DATA

Research organizations and administrations gather extensive datasets to enhance understanding and support public policy. Ocean Hackathon® is an opportunity to explore the vast potential of these datasets in addressing social, economic and environmental challenges. In order to enrich the prototypes and allow the teams to develop their challenges, the identification and provision of data for the challenges is carried out by the local organisation teams and by many global data partners. The data collected may be public or private and cover small-scale, global and regional contexts. It can be in situ data, satellite data or data from oceanographic campaigns and numerical models.

THE GLOBAL DATA PROVIDERS IN 2025

Research and administrative organisations:

Cerema, French Office of Biodiversity, French Centre of expertise and data on nature (UMS PatriNat), Ifremer, Météo-France, ODATIS Ocean Cluster, Shom, University of Le Havre

European and international organisations:

European organisation for the exploitation of Meteorological Satellites (EUMETSAT), Copernicus Marine Service, European's reference service for Copernicus DIAS (WEKEO), European Marine Observation and Data Network (EMODnet), Mercator Ocean International, Global Fishing Watch, Ocean Data Sharing, European Marine Biological Resource Centre (EMBRC)

THE TYPOLOGY OF DATA

- Nautical and coastal charts; chart backgrounds; maritime and surveillance boundaries; aerial photos; coastline; toponymy; electronic navigational charts
- Seabed (lidar and bathymetric surveys); sedimentological nature of the seabed; location of cables, pipes, wrecks, obstructions, buoys and floating markers
- Tide prediction; water height; ocean forecasts; circulation; waves
- Physico-chemical parameters (temperature, salinity, O₂, chlorophyll, etc.)
- Biology and ecology; habitats (birds, marine mammals, fish, algae, etc.); ecological and biological state of environments
- Microbiology; contaminants; water quality; macro-waste

In order to facilitate data access for the teams, the metadata of the datasets selected by the Ocean Hackathon® data providers are mainly gathered in a Data Catalogue. This catalogue is operated by Sextant, the geospatial data infrastructure managed by Ifremer.

In 2025 it contained 130 records. Part of the data is stored on Datarmor, a high-performance shared supercomputer for scientific computing and data management hosted by Ifremer.

In addition to data, global data partners also provide data processing tools and services to support all teams. Data coaches also mobilize their expertise in a wide range of marine and technical areas during the event.



BREST

We organised the Brest edition of the Ocean Hackathon® to bring together local actors around ocean-related challenges and showcase Brest's maritime ecosystem.

The event fostered collaboration between students, professionals and organisations. It also helped reveal new ideas and talents committed to innovation for the ocean.

Technopôle Brest-Iroise, Campus mondial de la mer, Brest



THE CHALLENGES

BRE02 - BALISAGE

led by CEREMA

'Behind every beacon is data, behind every piece of data is a decision.' A navigation assistance application.

BRE04 - Voice in the blue

led by ISEN

The eyes and voices of amateur divers, serving participatory science

BRE05 - FishOp

led by Pôle Mer Bretagne Atlantique

Operational tool designed for and with fishermen, for sustainable fishing

BRE06 - GoulouNoz « who left the light on ?»

led by ADEUPa

Develop a reproducible method to assess the impact of tourism-related light pollution in coastal areas using satellite data.

BRE09 - MWI Cruising «plan your cruise, sail safe, protect the sea»

led by Marine Weather Intelligence

Tool for planning your trip as a skipper

BRE10 – «Clean water isn't free!»

led by An Dour

Develop a digital tool to model microbiological pollution in coastal waters and support health risk management.

BRE14 - Recharge your beach

led by CEREMA

Mapping artificial sand replenishment on beaches to understand and anticipate.

BRE15 - The ocean holds the solutions to the greatest challenges of our century

led by Bubble Robotics

Autonomous robotics for modelling the underwater environment in 3D



THE WINNER OF THE LOCAL EDITION:

BRE01 - LIAttoral (Yohan Cobac, Drone and observation technology project manager)

led by CEREMA

The project to digitise the coastal path using artificial intelligence arose from the observation that the existing data was out of date and that updating it would be a time-consuming task. It was therefore only natural that we turned to artificial intelligence technologies to remedy this. Over the weekend, two approaches were explored: the first was based on OpenStreetMap data, allowing the route to be automatically retrieved via a code; the second aimed to fill in the gaps, using artificial intelligence to digitise the trail from orthophotographs. These two complementary approaches thus provide more complete and consistent data .



© Technopôle Brest-Iroise

"Manual digitalization took too much time, so we decided to reinvent the whole process."



© Technopôle Brest-Iroise

CAPE TOWN

Local edition organised by OceanHub Africa – South Africa



THE CHALLENGES

CAP02 - LoCo for Ocean Impact! led by OceanHub Africa

Develop a low-cost, data-driven prototype using ROV/AUV tools to collect underwater data (video, depth, temperature, salinity) and transform it into actionable insights—empowering coastal communities with independent environmental monitoring, livelihood planning, or early warnings. Your task is to build an intuitive interface or service that processes and visualizes this data, turning raw inputs into practical solutions for local users—while addressing social/environmental challenges and fostering maritime innovation.

CAP03 - Where's my MPA? Building awareness and ownership of marine conservation areas in the WIO led by Western Indian Ocean Marine Science Association

Develop a low-cost, data-driven prototype using ROV/AUV tools to collect underwater data (video, depth, temperature, salinity) and transform it into actionable insights—empowering coastal communities with independent environmental monitoring, livelihood planning, or early warnings. Your task is to build an intuitive interface or service that processes and visualizes this data, turning raw inputs into practical solutions for local users—while addressing social/environmental challenges and fostering maritime innovation.



© Technopôle Brest-Iroise



THE WINNER OF THE LOCAL EDITION:

CAP01 - PLASTIC2PURPOSE - Turn Waste into Insight & Opportunity led by IUCN Eastern and Southern Africa Regional Office (ESARO)

Islands are overwhelmed by plastic pollution—but what if that waste could reveal its origins, pathways, and potential solutions?

Your challenge is to map plastic hotspots, predict future leaks, and transform data into actionable insights—even turning waste into sustainable products or community-driven solutions for local governments, NGOs, and businesses.



"We turned everyone's ideas into one, and it became something bigger than we expected."

CADIZ

We decided to organise our third edition of the Ocean Hackathon to reaffirm our long-term commitment to blue innovation in the Bay of Cadiz and address the specific environmental and logistical challenges of our coastline.

This ongoing effort has allowed us to consolidate a solid local ecosystem, bringing together institutions, companies, academic centres and multidisciplinary profiles around sustainable marine solutions.

The event has become a key annual gathering for generating tangible, data-driven projects and is a clear sign of our dedication to continuing to build a sustainable and innovative future for our coastal community.

CEEI Bahía de Cádiz – Cádiz, Spain



THE CHALLENGES

CAD01 – Preventive Solution for the Management of Tourist Waste in Coastal Areas led by WECCO Association

Coastal tourism generates waste that damages marine ecosystems and the environment, requiring a practical and preventive solution that acts before the waste reaches nature. This proposal should focus on changing behaviours, integrating technology and design, and being adaptable with technical tools and awareness strategies.

CAD02 – Sal Watch: Smart Conservation of the Salt Flats of the Bay of Cádiz led by CTAQUA – Andalusian Aquaculture Technology Centre

The traditional salt flats of the Bay of Cádiz, a valuable heritage site, are deteriorating. This challenge proposes the creation of a predictive tool using geospatial data to assess their condition and enable preventive and efficient conservation.

CAD03 – Prevention and Response to Oil Spills in the Bay of Cádiz led by Laura Durán Suja

The Bay of Cádiz, which is at high risk of pollution from oil spills, requires a predictive system and a comprehensive response plan.

The solution must combine technological tools and action protocols to anticipate impacts, protect the environment and coordinate an effective response to maritime emergencies.

CAD05 – Smart Gate 360: Intelligent Access Control in Ports led by Surcontrol Academy

Ports require an intelligent access control system that combines automation and machine learning. The solution must optimise entry and exit flows in real time, using a scalable prototype with sensors and predictive algorithms.

CAD06 – Inclusive Platform for Marine Environmental Monitoring with Artificial Intelligence led by Fran Almagro

The marine environment requires an artificial intelligence platform to monitor its environmental status in an advanced and accessible manner. The proposal should include intuitive data visualisation, citizen participation, and smart beacons that issue understandable environmental alerts in real time.



THE WINNER OF THE LOCAL EDITION:

CAD04 - Biofuels from MARPOL Waste: Circular Economy in European Ports

led by Santiago Miranda y David Pinto

Oily waste generated by port activity, especially that classified as MARPOL, poses a persistent environmental threat in ports and coastal areas. Although there is favourable legislation for its proper management, in practice its use is minimal, and its impact remains high.

This challenge proposes a comprehensive solution based on the principles of the circular economy, with the aim of cleaning up oil spills on land and at sea and transforming them into biofuels through the use of natural absorbents and thermal recovery processes.

The proposal seeks to demonstrate that it is possible to increase the recovery efficiency of this waste from the current 15% to 75%, thus promoting innovative, sustainable management that can be replicated in other ports in the European Union.

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© CEEI Bahía de Cádiz – Cádiz, Spain

KUALA LUMPUR

In 2025, the Embassy of France in Malaysia continued its support for Ocean Hackathon® Kuala Lumpur as part of its commitment to promoting ocean sustainability, scientific cooperation, and innovation. The event was organised in close collaboration with Asia Pacific University (APU), Universiti Sains Malaysia (USM), and Universiti Malaysia Terengganu (UMT), which acted as institutional advisers for this edition. By bringing together students, researchers, and experts from multiple disciplines, Ocean Hackathon® Kuala Lumpur contributes to strengthening Franco–Malaysian partnerships and to positioning Malaysia within the global Ocean Hackathon® network.

Asia Pacific University, en collaboration étroite avec l'Ambassade de France – Kuala Lumpur, Malasya



THE CHALLENGES

KUL01- IslandEnergyAI - Federated Generative AI-based Electricity Forecasting with Data Security for Islands

led by **S. Rayhan Kabir**

The team developed a secure, AI-powered digital framework to forecast electricity demand for isolated island microgrids. The prototype combined generative AI, federated learning, and cryptographic methods to ensure accurate forecasting while preserving data privacy and system resilience

KUL04 - AI-Powered Microplastics Scanner for Food, Cosmetics, and Consumer Safety

led by **Peng Teck Tan**

The team developed a concept prototype for a smartphone-based AI tool to assess microplastic risks in food, water, and cosmetic products. The solution integrated image recognition, OCR, and environmental datasets to support consumer awareness and safety monitoring.

KUL05 - reefSpark - Data- and AI-Driven Reef Monitoring for Early Warning Signals

led by **Krishnar Ram Murugan**

This project proposed a low-power reef monitoring system combining environmental sensor data, satellite imagery, and AI analytics. The team built a simulated dashboard to visualise reef health indicators and provide early alerts for climate and pollution-related stress.

KUL06 - AI-Powered Fish Detection Tool Using the MaxN Method

led by **Syafruddin Rahman Syahputra**

The team developed a prototype software tool to automatically detect, identify, and count reef fish species from underwater video footage. Using computer vision and ecological analysis, the solution aimed to streamline the calculation of relative abundance using the MaxN method.

KUL07W - Sea 'Tong' Smart Seabin System for Marine Pollution Tracking

led by Justina Ng Ke Yu

This project designed an AI-integrated Seabin concept to detect and classify floating marine litter. The team developed a real-time dashboard to visualise pollution data collected from coastal areas, supporting improved monitoring and environmental management

KUL08 - Corallius - Autonomous Coral Planting and Monitoring Drone

led by Riteikes Prakash

Project Description : The team proposed an autonomous underwater drone capable of assisting coral restoration through fragment planting and environmental monitoring. A supporting digital interface was developed to display collected data such as temperature, pH levels, and visual reef observations.



THE WINNER OF THE LOCAL EDITION:

KUL03 - FeedRight

led by Chai Hong Jie

«Know your fish before you feed» - A real time AI «translator» that shows your fish's appetite, helps you stop overfeeding or underfeeding.



© Asia Pacific University - Kuala Lumpur, Malaysia

"Three universities, one collaboration we wanted to try something new."

PENICHE

Portugal is a maritime nation with one of the world's largest Exclusive Economic Zones (EEZ), covering 1.7 million km² and offering vast yet underexplored potential. The co-organization by HUB BLUE SMARTOCEAN and the Blue Bio Techpreneurs European project seeks to address this gap by fostering an ecosystem that integrates science, technology, innovation, and entrepreneurship. Hosting the Ocean Hackathon in Peniche provided a dynamic platform to develop data-based solutions for ocean and biodiversity protection, aquaculture, seafood safety, and the circular economy, while also promoting the creation of new collaborative networks. This event strengthened Peniche's growing blue innovation ecosystem and inspired a new generation of blue entrepreneurs committed to sustainable ocean development.

Universit  Polytechnique de Leiria (PUL), Smart Ocean (SO) et Blue Bio Techpreneurs (BBT)

– Peniche, Portugal



THE CHALLENGES

PEN02 - Detecting Microplastics in Food and Water: A Smart Monitoring Challenge

led by AmpliAqua

Development of a digital or data-driven prototype to support microplastic detection and monitoring, with a focus on food and agricultural water in regions like the Azores.

PEN03 - Tracking Marine Biodiversity: An Interactive Genomics Explorer for Europe

led by EMBRC/ Arctic University of Norway

Development of an interactive web tool that visualizes marine species, biodiversity trends, and environmental data across Europe using EMO BON, EMODnet, and Global Fishing Watch.

PEN04 - From Sea to Dish - Intelligent Traceability for a Sustainable Ocean

led by B2E - Blue Bioeconomy CoLAB

Design an intuitive digital prototype (app, website, QR code system, or similar) that reveals the full journey of seafood from harvest to table.

PEN05 - Let's improve aquaculture in Portugal?

led by Associa o Portuguesa de Aquicultores

Development of an AI-powered mobile app that provides real-time monitoring and early warnings of sea temperature changes and harmful algal blooms, helping bivalve aquaculture producers respond proactively to biotoxin risks.



THE WINNER OF THE LOCAL EDITION:

PEN01 - Sustainable upcycling of aquaculture nutrients into circular bio-based solutions led by AmpliAqua

Circularponic is a digital tool that helps manage aquaponic systems. It calculates the nutrients produced by Recirculating Aquaculture Systems (RAS) and helps users understand how much is available for plant growth.



POINTE NOIRE

Local edition organised by Yamify – Pointe-Noire, Republic of Congo



THE CHALLENGES

PTN01: Whale Tail Identifier
led by Renatura Congo

The project focuses on creating an app designed to assist in identifying whale tails.

PTN02: Plastic and Net Debris Locator
led by Institut pour la Recherche et le Développement (IRD)

Develop innovative tools (such as games or apps) to raise awareness about ocean preservation

PTN03: Low-Cost Sensor Monitoring
led by SCAC de l'Ambassade de France au Congo

Develop an affordable sensor monitoring solution to enable community-driven scientific research



THE WINNER OF THE LOCAL EDITION:

PTN04 - EROSTOP Smart Monitoring of Coastal Erosion
led by Yamify

Pointe-Noire's coastal erosion is escalating, endangering homes, infrastructure, and ecosystems, yet monitoring remains limited and reactive. The mission is to design a digital tool, such as a live map, prediction model, community reporting app, or early warning system—to track shoreline changes in real time, alert stakeholders, and support sustainable coastal management.



© Pointe-Noire, Republic of Congo





SALVADOR

We decided to organize the Ocean Hackathon® in Salvador to empower our local community with the same high-level innovation tools that launched our own journey as NASA award winners. Hosting this 48-hour physical event allowed us to prove that Salvador possesses world-class technical talent capable of solving global marine challenges when provided with the right data and environment. The event served as the technological innovation engine for Oxean Week 2025, a festival celebrating ocean culture and sustainability. It brought us professional recognition, strengthened our network with local universities, and solidified our mission to bridge the gap between global technology and local coastal resilience.»

Oxean Hub – Salvador, Brazil



THE CHALLENGES

SAL01 - O CRIPA

led by Miguel Rebouças

This project utilizes NASADEM data and intelligent analysis to monitor coastal erosion, aiming to predict environmental risks and protect the livelihoods of coastal fishing communities.

SAL03 - AlkaBlue

led by Max Rocha Figueiroa

A proactive solution for monitoring and mitigating ocean acidification through an IoT-integrated dashboard and controlled limestone dispersion strategies.

SAL04 - MarineLens

led by José Carlos

An AI-driven predictive platform that crosses environmental metadata with maritime activity to create ecological route panels for protecting endangered marine species.

SAL05 - Trilha Maré sem Plástico

led by Lilian Farias

A hybrid educational ecosystem consisting of a physical game and a digital module designed to engage society in combating plastic pollution and restoring the relationship with the ocean.

SAL06 - Corrente Verde

led by Viviane Bispo.

A digital platform focused on social and economic gamification to engage riverine communities in sustainable waste management and urban cleaning.



THE WINNER OF THE LOCAL EDITION:

SAL02 - Nautilus
led by Marcelle Lins

The Nautilus team developed a pioneering regenerative financing platform aimed at the Blue Carbon market. By leveraging Blockchain-based Smart Contracts, the solution ensures that every investment in mangrove restoration is fully traceable and transparent. The project evolved during the weekend into a robust digital ecosystem that addresses the «trust gap» in environmental credits, facilitating direct connections between global investors and local ecological restoration projects with verifiable impacts.



© Oxean Hub – Salvador, Brazil



© Technopôle Brest-Iroise

"It was midnight, we were exhausted and suddenly it clicked: this is the problem we HAVE to solve."

"I've always loved the ocean and sustainability, from beach cleanups to hackathons, this was the perfect mix of both worlds I enjoy so much."

SPLIT

Local edition organised by the University of Split – Split, Croatia



THE CHALLENGES

SPL01: Blue Vis à Vis You – A Playful Response to Environmental and Social Challenges for Protecting Joyful Blue Life

The Vis Archipelago, a UNESCO Global Geopark since 2019, is a Mediterranean paradise renowned for its unique geological formations, rich marine biodiversity, and exceptional natural and cultural heritage. However, rising tourism and climate change threaten its ecosystems, prompting initiatives like the interactive «Blue Vis-a-Vis You» to engage communities in protecting marine resources globally.

SPL02: Regeneration of sea, analysis of data for absorption of CO2 led by Gm turbo d.o.o

Regenero aims to build a «Marine Restoration Site-Selection & Monitoring Dashboard» prototype at the Ocean Hackathon, featuring a data-driven decision matrix, real-time monitoring visualization, and adaptive management triggers for scientifically rigorous habitat restoration.

SPL05: Application to aid sea rescue operations led by Gm turbo d.o.o

The proposed app aims to accelerate and optimize sea rescues, boosting survival odds for both victims and rescuers by combining a phone SOS button (sending real-time coordinates) with a computer monitoring tool (simulating drift and tracking rescue vessels).

This dual-system approach leverages real-time data and predictive modeling to streamline emergency response and improve outcomes.

SPL07: Underwater monitoring and networking such as internet of things underwater led by University department for professional studies

The Internet of Underwater Things (IoUT) is an emerging IoT network connecting smart underwater objects, enabling applications like environmental monitoring, exploration, and disaster prevention—key to advancing smart cities.

However, it faces challenges such as long delays, narrow bandwidth (often using ultrasound), and low reliability, with high-bandwidth solutions relying on laser or visible light communication.



THE WINNER OF THE LOCAL EDITION:

SPL06: Development of a system for collecting waste from fishing vessels led by RIBARSKA ZADRUGA FRIŠKA RIBA

This project focuses on developing solar-powered floating stations to collect and sort fishing vessel waste (plastic, metals, paper, glass, and mixed) with a 15m³ capacity, offering free and accessible disposal. Fishermen can locate and dock easily at these stations using a dedicated mobile app, promoting sustainable waste management at sea.



© University of Split – Split, Croatia

“By throwing waste back into the sea, fishermen are actually harming themselves, their catches are dropping, and their jobs are disappearing.”

“I wanted to help. It was last minute, actually. And it was really fun for me to do this. I love these things.”



© Technopôle Brest-Iroise

TOULON

The Ocean Hackathon brings together our structure's primary target audiences: innovative companies, research laboratories, students, and local authorities. It provides an opportunity for sharing knowledge and networking that significantly strengthens the digital and maritime ecosystem of the Southern region and, more broadly, the French Mediterranean arc. Through intensive collaboration, the Ocean Hackathon fosters innovative technological solutions to address maritime and environmental challenges that affect everyone

TVT Innovation – Toulon, France



THE CHALLENGES

TOU01 - NEREI

Tool for identifying pollution to facilitate its treatment in ports and along coastlines

TOU02 - Not found

Informative tool for avoided air pollution via QR code on bus shelters or display panels

TOU04 - Nautery

Tool capable of modeling and predicting contaminant dispersion and alerting aquaculture farmers

TOU06 - Drescue

Algorithm that enables localization of an individual at sea in a geographic area by minimizing search time via a drone swarm



THE WINNER OF THE LOCAL EDITION:

TOU08 - Whalze

Whalze, a project aimed at reducing collisions between vessels and cetaceans by providing a tool that predicts shipping routes while avoiding areas of whale and dolphin presence, also focuses on raising awareness among maritime stakeholders. The team worked on precisely defining user needs, cost structures, and potential partnerships to validate their solution and business model. They placed particular emphasis on the communication strategy, developing targeted messaging to engage ship operators and the broader maritime community in adopting whale-safe navigation practices.



"I watched a documentary on whales and thought: 'Nothing changing... So let's do something.'"

VICTORIA

COAST and Ocean Networks Canada (ONC) were proud to co-host the first British Columbia edition of the Ocean Hackathon in Victoria, an initiative driven by a shared commitment to advancing ocean innovation and turning ocean data into actionable solutions for a sustainable blue economy. By bringing this international event to British Columbia - a province with a coastline stretching over 25,000 km, rich in biodiversity and economic opportunity - we aimed to leverage our unique local assets on a global stage. The hackathon provided the perfect platform to channel ONC's world-class data into the hands of a diverse community of solvers and enable them to address urgent ocean challenges right here on the Pacific coast.

Bringing together a diverse group of students, researchers, entrepreneurs, and professionals, the hackathon generated a pipeline of tangible projects and identified promising local talent. The event was hosted at the perfect space for this: the COAST Ocean Innovation Hub, a coworking space designed to provide collaboration and inspiration to Victoria-based ocean workers. Ultimately, the event positioned Victoria and British Columbia as a hub for the ocean sector, raising the profile of our regional capabilities and contributing directly to the growth of the ocean innovation ecosystem that COAST and ONC are dedicated to supporting.

COAST, Centre for Ocean Applied Sustainable Technologies – Victoria, Canada



THE CHALLENGES

VIC01- What's that ship?

Starting with a dataset of hydrophone recordings that identify different types of ships, this challenge aimed to develop a model that can classify ships based on unlabeled hydrophone recordings with four different identified types of ships (tug, cargo, tanker, passenger).

VIC02 - Ocean Acidification Prediction Model

This challenge was about developing a model to predict very low pH events at 40m depth, based on a time series of related and co-located variables: CO₂, temperature, salinity, density, oxygen, and various weather conditions. Low pH is a significant challenge for shellfish growers, and being able to predict low-pH events will be helpful to their planning and operations.

VIC03 - Image Analysis of Boat Traffic

This challenge aimed at developing an AI/ML system that can detect and quantify boat traffic from thousands of still images captured every 5 minutes by a shore camera. This kind of quantitative analysis can be of great interest to indigenous communities and fisheries management organizations. A system for quantifying boat traffic from timelapse imagery can also have many commercial and industrial applications.

VIC04 - Surface Current Drivers in the Strait of Georgia

This challenge was about predicting surface currents in the dynamic and narrow Strait of Georgia, where complex interactions between wind, tides, and river outflow make drift behavior highly unpredictable. They developed a machine learning system capable of categorizing plots of surface currents measured by a coastal radar array into the 3 dominant modes (tides, river flow and wind/storms).



THE WINNER OF THE LOCAL EDITION:

VIC04 : Surface Current Drivers in the Strait of Georgia (Ocean Drift)

led by Dwight Owens, Impact & Capacity Development Manager at Ocean Networks Canada

Their project is called Ocean Drift, a data-driven AI system that helps save lives at sea. The team built an AI model that analyzes real-time HF radar and oceanographic data to understand how winds, tides, and river outflow shape the surface currents of the Strait of Georgia (Canada). By predicting drift with high accuracy, the tool drastically reduces search areas, giving rescuers a vital advantage in finding people faster. Beyond search and rescue, the system holds exciting potential for marine navigation, environmental monitoring, and coastal safety—turning data into decisions that can bring people home.



© COAST, Centre for Ocean Applied Sustainable Technologies – Victoria, Canada

“This hackathon showed how our technical skills can impact an entire ecosystem.”



© Technopôle Brest-Iroise

THE INTERNATIONAL GRAND FINALE

On 2 December 2025, the Ocean Hackathon® International Grand Finale 2025 took place, organised by the Campus mondial de la mer. Ten winning teams of the local October editions pitched the outcomes of their 48-hour non-stop hackathon. Nine finalists attended the event in Brest while one team participated remotely. Each team was given 6 minutes to pitch its project followed by 5 minutes of questions from the jury. Beyond being an international pitch competition, the Ocean Hackathon® Grand Finale is above all a flagship event that brings together languages and cultures, with a strong and shared commitment to ocean preservation.

THE JURY

The jury consisted of representatives of the Ambassadors and the organisers of the local editions (the latter could not vote for their own team). The criteria: clarity of the pitch, expression of the problem to be solved, dynamism and originality of the pitch, respect for the time limit, involvement of the whole team in the project.

REPRESENTATIVES OF THE LOCAL ORGANISERS

- DUPRAT Françoise (Brest)
- ALMAGRO Miriam (Cádiz)
- REYNOLDS Ashley (Cape Town)
- FONTES Sergio (Peniche)
- ROJE Petar (Split)
- APPALASAMY Tulasi (Kuala Lumpur)
- MEYER Clara (Toulon)
- RUEST Camille (Victoria)
- MOBOULA MOKOTY Bertrand Gildas (Pointe Noire)
- NORONHA DANTAS Pedro Gabriel (Salvador)

KEYNOTE SPEAKER

Fabrice Messal, UX & Capacity Development Manager at Mercator Ocean International, presented the mission of Mercator Ocean International and the services offered by Copernicus Marine Service, emphasizing both the importance of marine data for science and innovation, and the relevance of digital twins.

«For 30 years, Mercator Ocean has been providing oceanographic services of public interest to support the conservation and sustainable use of the oceans. As the operator of the European Copernicus Marine Service, Mercator Ocean is contributing, together with its partners, to the development of the Digital Twin of the Ocean, offering transparent access to marine data and advanced simulations to support sustainable management and science-based ocean governance.» - Fabrice Messal

REPRESENTATIVES OF THE AMBASSADORS AND PARTNERS

- HARSCOAT Valérie (Ifremer)
- TANGUY Yves-Marie (Shom)
- JORDAN Julia (Cerema)
- MESSENGER Christophe (Météo-France)
- MESSAL Fabrice (Mercator Ocean International)

FEEDBACK FROM THE 2023 WINNER

Édouard Vallet, CEO of Vaiata Dynamics and winner of the 2023 Ocean Hackathon® International Edition, reflected on his journey since the event and presented the development of his company. The young start-up is developing a solution capable of transcribing and analysing emergency communications in real time.



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WINNERS



© Technopôle Brest-Iroise

1ST PLACE : KUALA LUMPUR

The winners of the local edition presented their application "Know Your Fish Before You Feed It", a real-time AI-based translator that indicates a fish's appetite and helps prevent overfeeding or underfeeding.



© Technopôle Brest-Iroise

2ND PLACE : VICTORIA

The Victoria team focused on using artificial intelligence to determine whether surface currents in the Strait of Georgia are primarily influenced by tides, wind, or river discharge. This approach enables better prediction of currents to improve maritime rescue operations.



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3RD PLACE : BREST

Their project aimed to improve the mapping of coastal trails through AI-driven digitalization, taking into account the effects of climate change



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Ocean Hackathon® is one of the actions coordinated by the Campus mondial de la mer, driven by Technopôle Brest-Iroise and funded by Brest métropole and the Brittany Region. Ocean Hackathon® is also supported by its Ambassadors and rely on the local advisers, which organise the event in their city.

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