

Robotics in Marine & Maritime Environmental Monitoring

Piraeus Business Center - April 29, 2022



STRATEGIS
maritime center of excellence

www.strategis-cluster.net



blueroses.eu



STRATEGIS

Maritime ICT Cluster Piraeus, Greece

A Catalyst of Regional Growth



Established, Feb. 2016 www.strategis-cluster.net

STRATEGIS – Vision

To become a world-class
Maritime ICT Cluster &
Technology Flagship of
the Greek Shipping
Industry in the Digital Age





STRATEGIS - Maritime ICT Cluster



Maritime Technology
Innovative Solutions



Hellenic Radio Services S.A.
Group of Companies

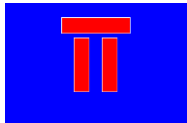
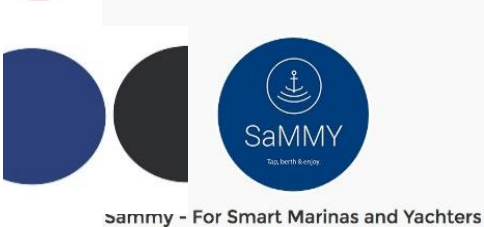


SIGMA

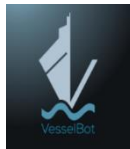
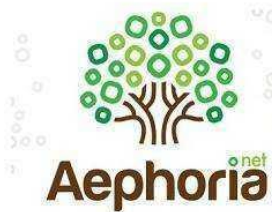
PROFESSIONAL SERVICES ON RISK CHALLENGES



Empire Chemical Tankers



Remi Maritime Co.



VesselBot



Openlchnos



HELLAS

NIKOLINAKOS - LARDAS & PARTNERS
LAW FIRM



UNIVERSITY OF THE AEGEAN
Department of Shipping
Trade and Transport



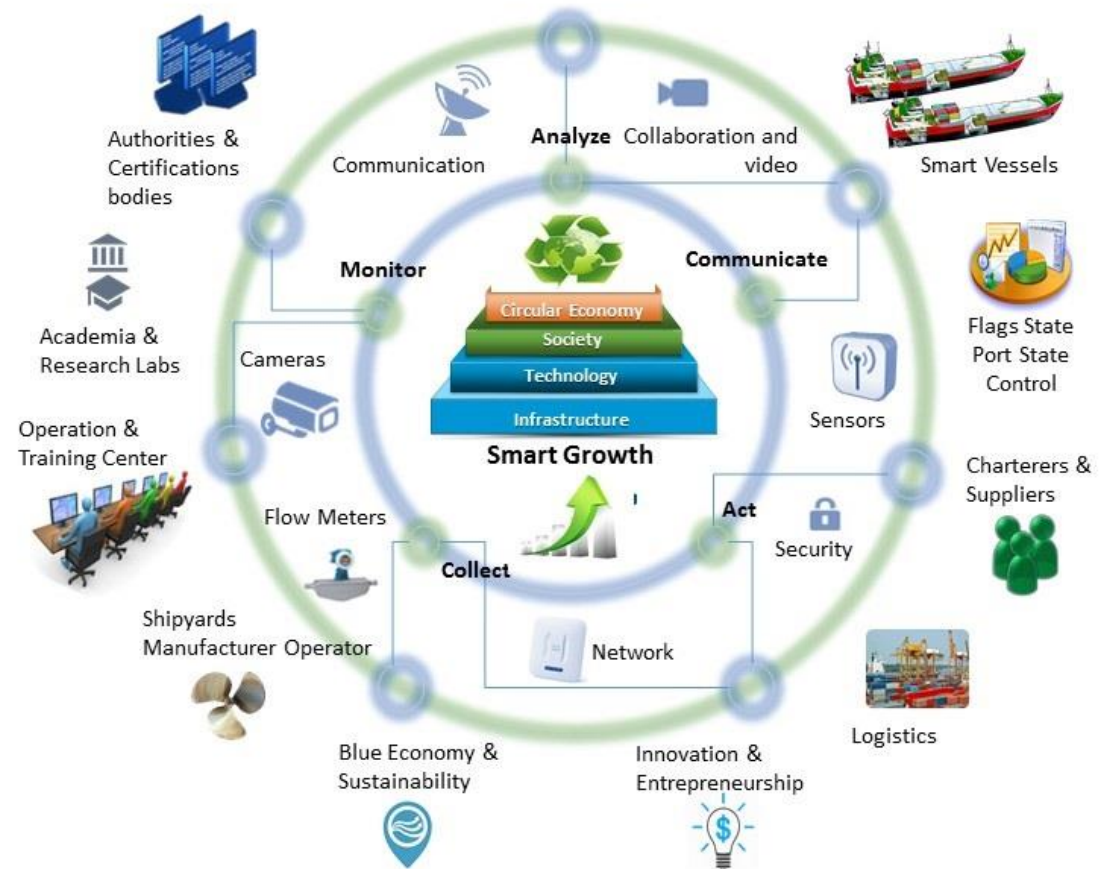
Contributing to Piraeus BG- DIH

Piraeus Blue Growth Digital Innovation Hub (BG-DIH)

- **BG-DIH** is a regional multi-partner cooperation serving as one stop-shop that helps Blue Economy companies to become more competitive with regard to their business/production processes, products or services using **digital technologies**

- <http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool/-/dih/2491/view>

Maritime Digitalization



STRATEGIS - Extended Network



Business Support on Your Doorstep



Strategic Partnerships/Collaborations

- Maritime Surveillance
 - [PROTeus](#) project & Cluster
- Blue Energy
 - [PELAGOS](#) Cluster Affiliation
- Blue Biotechnology
 - MoU with [BIONIAN](#) Cluster (July 4, 2017)
- Defence & Dual-Use Technologies
 - MoU with [AUG Signals Hellas](#) (Feb. 22, 2019)
- Marine & Maritime
 - MoU with [MARE Technology Cluster](#), FVG (Feb. 19, 2021)
- Blue Technologies
 - MoU with [Blue Italian Growth TC](#) (BiG Cluster) (Sep. 28, 2021)



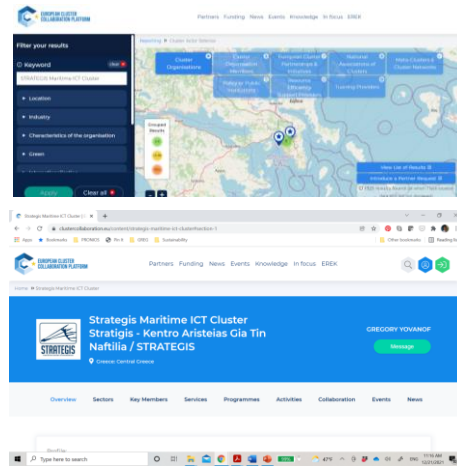
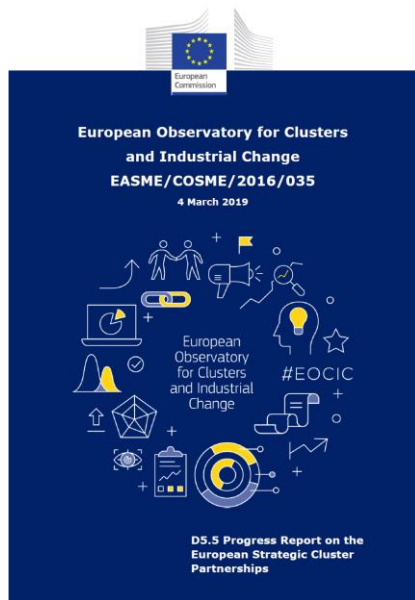
MoU with BIG - Blue Italian Growth Technology Cluster [Sep. 28, 2021]

- On [Sep. 28, 2021](#) at the SEAFUTURE 2021 Exhibition & Business Convention, Strategis Maritime ICT Cluster & Cluster BIG [signed](#) a MoU for a strategic cooperation agreement on board the “Amerigo Vespucci” tall ship of the Italian Navy at the La Spezia Naval Base
- The Blue Italian Growth National Technological Cluster ([CTN BIG Cluster](#)) is one of 12 Italian National Technological Clusters (Cluster Tecnologici Nazionali)
 - This MoU marks the beginning of an ambitious international partnership in maritime global trade, investment & finance, research and technology development, Blue Economy innovation, education, and training



La Spezia, 28th September 2021

EU Cluster Collaboration Platform



<https://www.clustercollaboration.eu/cluster-organisations/>

- [Nov. 2021] STRATEGIS was officially listed on the ECCP Platform
 - <https://clustercollaboration.eu/content/strategis-maritime-ict-cluster>
- It was included in the “European Cluster Panorama 2021”
 - <https://clustercollaboration.eu/knowledge-sharing/publications/european-cluster-panorama>
 - <https://strategis-cluster.net/2022/01/17/strategis-is-part-of-the-eccp-cluster-panorama-2021/>





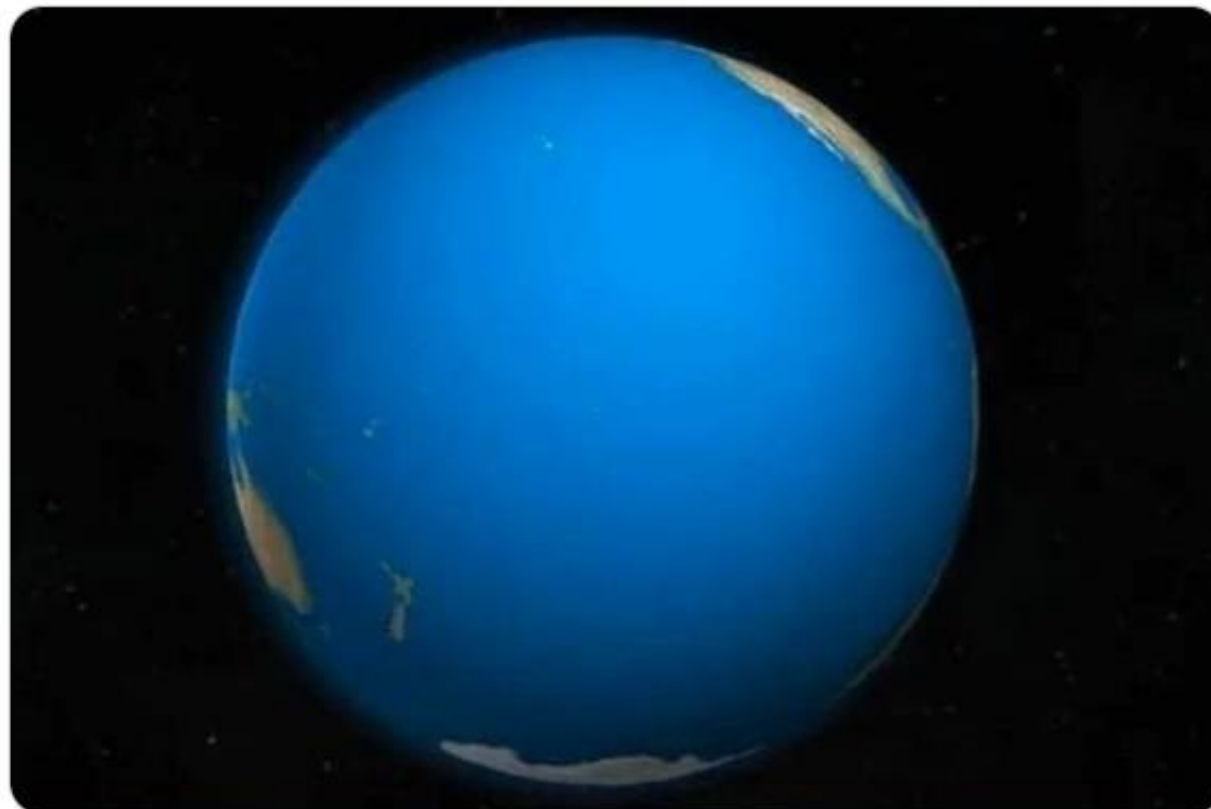
← Tweet



#TakingActionOnline for the #SDGs
@AdamRogers2030

...

The Earth is rarely shown from this angle, directly above the Pacific Ocean. It puts [#SDG14](#), Life under Water, into proper perspective.



1:32 AM · Apr 9, 2022 · Twitter for Android

IEEE ASI@ICIP2018 - Headline Talk

- G.S. Yovanof, [Headline Talk](#),
“Autonomous Marine Systems – A Driver for Sustainable Growth in the Ocean Economy”
– [ICIP2018](#) The 25th IEEE Int’l Conf. on Image Processing, “*Imaging beyond imagination*” Oct 7-10, 2018 • Athens, Greece
 - ICIP is the world's largest and most comprehensive technical conference focused on image & video processing and computer vision



ASI@ICIP2018 Program

- The [Autonomous Systems Initiative \(ASI\)](#) is a recently established initiative that aims to promote research and education in the challenging but highly rewarding area of autonomous systems.

The OCEAN Economy in 2030

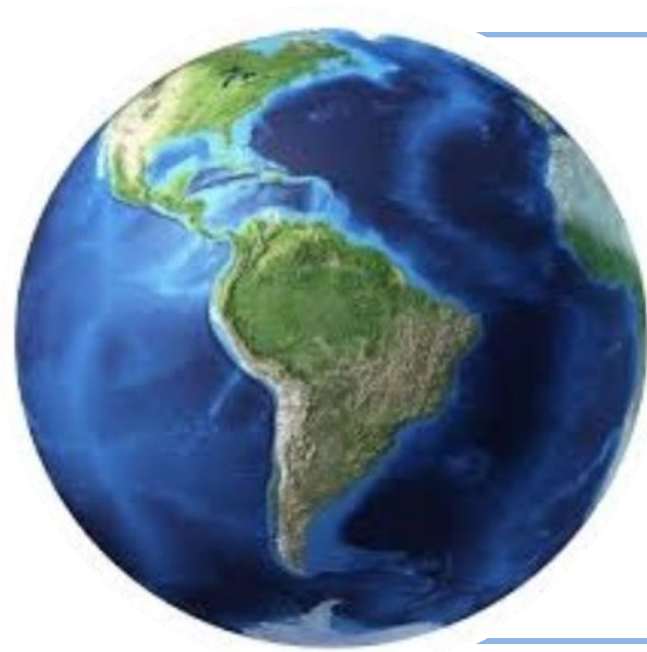
(OECD, 2016)

OECD's flagship report on “The Ocean Economy in 2030” explores

- the **growth** prospects for the ocean economy to 2030 & beyond
- its capacity for **future employment** creation and innovation
- its role in addressing **global challenges** such as **energy security**, **environment**, **climate change** & **food security**



How Big is the Ocean Economy?



Annual “Gross Marine Product” (GMP) is evaluated at least **US\$2.5 trillion***



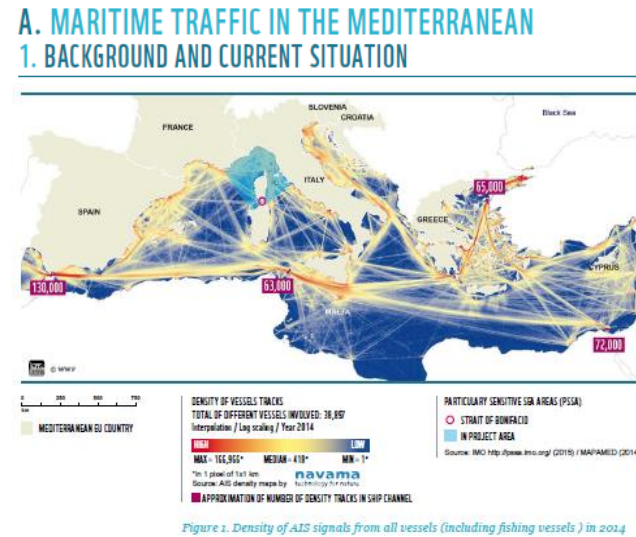
Direct employment **35 million**, **90%** of the people who derive livelihoods from fishing live in developing countries



Global Asset Value of Ocean estimated at **USD 24 trillion***

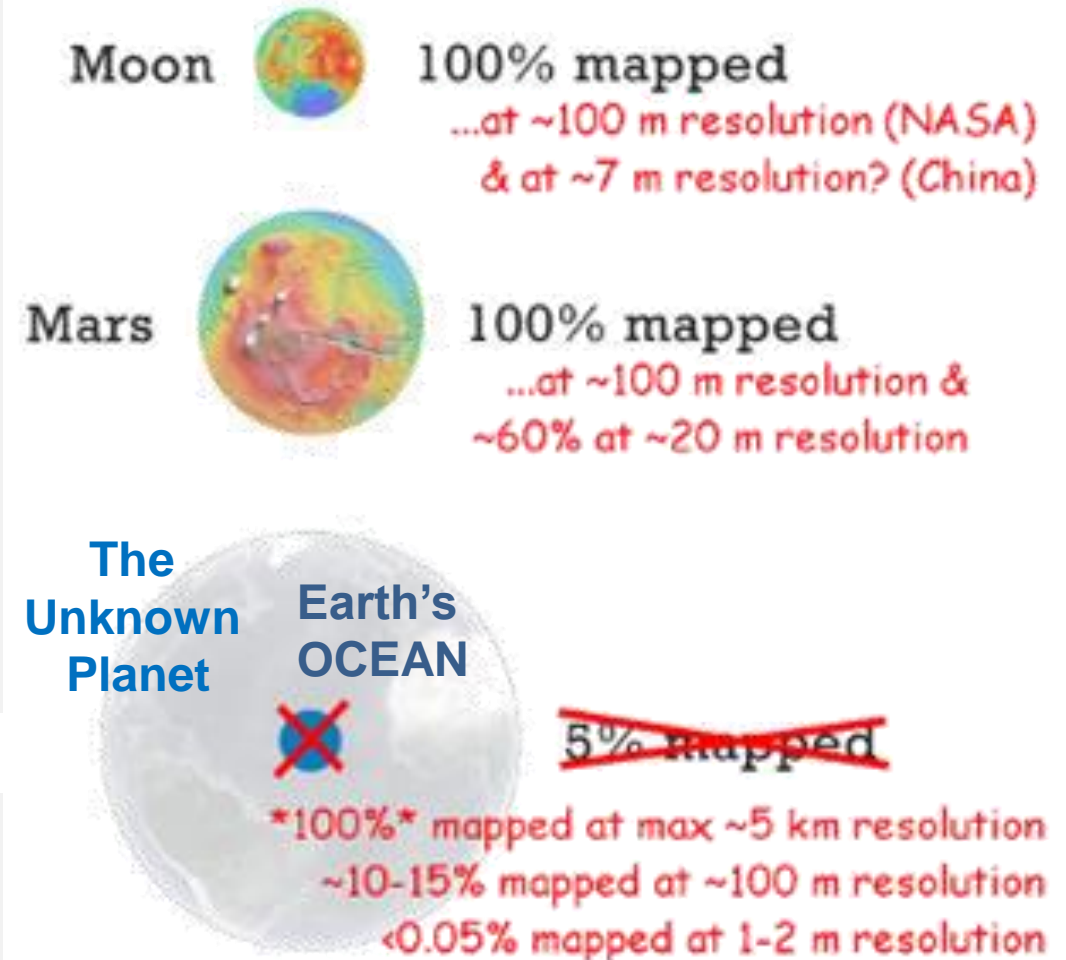


Major source of protein for **1 billion people**



Earth's Ocean is Vastly Unexplored

- Scientists have mapped more terrain on the surface of the **Moon, Mars & Venus** than they have of Earth's ocean floor
 - The entire ocean is mapped, it's just at a much lower resolution (5km) than the **Moon (7m)**, **Mars (20m)** or **Venus (100m)**
 - It is actually more difficult to map the surface of the ocean floor, which requires using **sonar at close ranges**, than the surface of a nearby moon or planet, which can be done by **radar** from a satellite

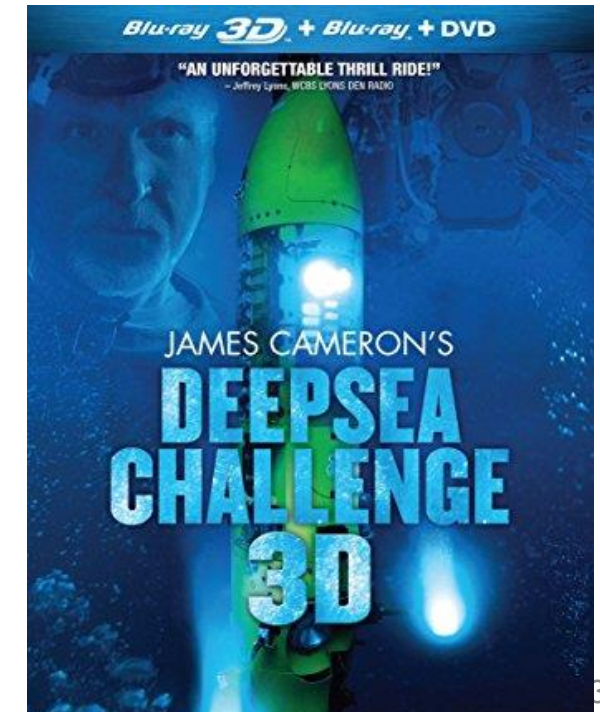


Have Humans Been To the Ocean's Deepest Point?

- On March 25, 2012, filmmaker (and National Geographic Explorer) James Cameron became the first person to make a **solo voyage** to the deepest point on Earth
 - His 24-foot tall submersible, the **Deepsea Challenger**, reached 35,756 feet (10,898 meters) after an approximately 2.5-hour descent



A curious mind!



United Nations Decade of Ocean Science for Sustainable Development (2021-2030)



Proposal for an International Decade of Ocean Science for Sustainable Development (2021-2030)



The International Decade of Ocean Science for Sustainable Development 2021-2030

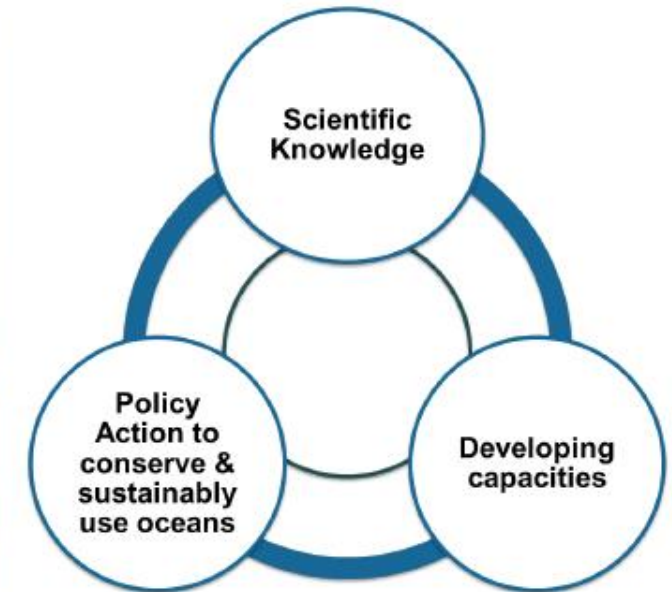
Status:
The proposal is being considered by the UN General Assembly p.t.



Proposal for an International Decade of Ocean Science for Sustainable Development (2021-2030)



Baseline information to support :



SDG2030 #14 Life Below Water



Goal #14: Conserve and sustainably use the oceans, seas and marine resources



Goal 14: Conserve and sustainably use the oceans, seas and marine resources

The world's oceans – their temperature, chemistry, currents and life – drive global systems that make the Earth habitable for humankind.

Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Throughout history, oceans and seas have been vital conduits for trade and transportation.

Careful management of this essential global resource is a key feature of a sustainable future.

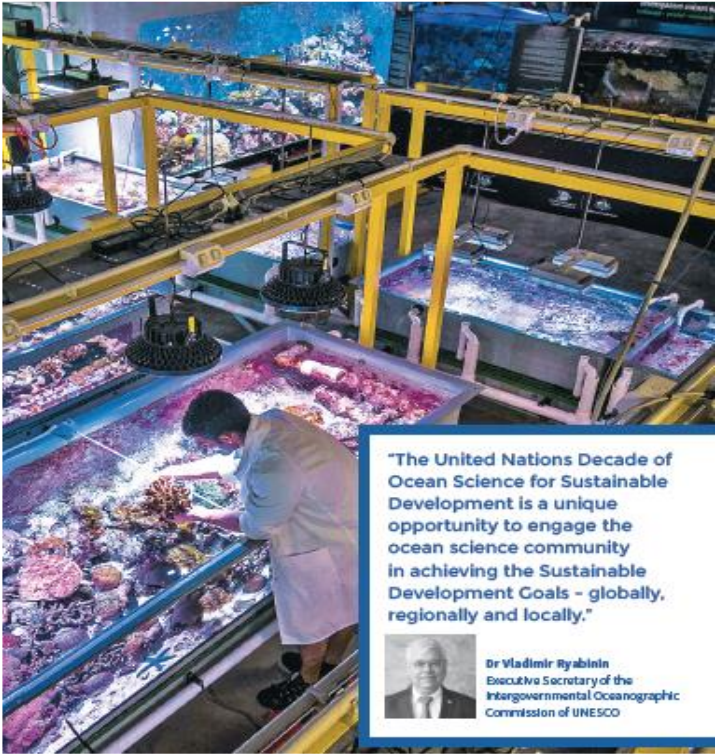
 **Richard Branson**
@richardbranson

Following

The ocean is our most powerful ally in the fight against climate change. Without the ocean absorbing 26% of our carbon emissions, and 90% of the extra heat they have generated, our planet would already be uninhabitable. It's time to protect the ocean: virg.in/3dc



11:50 PM - 3 Sep 2018



Global Ocean Observing Systems (GOOS)

OceanObs19
@OceanObs19

Following

Ocean observing systems are essential to understanding the impacts of a changing climate on our ocean. @gc_un @goosocean #oceanobs19

Observing our ocean helps us predict **extreme weather**, manage **fisheries** & protect marine assets such as **coral reefs**

<https://twitter.com/OceanObs19/st>



Did you know that **ocean observations** are critical for understanding **climate change**?

Why?

The ocean absorbs about

93%

of the **excess heat** in the earth system

30%

of the **carbon emissions**

and is a **major driver of our climate**.

Observing our ocean helps us **predict extreme weather**, **manage fisheries** and **protect marine assets** such as **coral reefs**.

Which ocean properties are measured and why?

Temperature

Salinity

Carbon

Currents

Sea level

help us track changes in ocean heat, carbon and freshwater content and their influence on regional climate patterns, sea level rise and ocean acidification

Ocean surface stress

Heat fluxes

Sea state

Sea ice

determine how energy, water, oxygen, CO2 and other gases circulate between the atmosphere and ocean.

What are the challenges and opportunities?

The ocean belongs to us all
International agreements and voluntary commitments deliver systematic observations of the ocean

Measurements of ocean chemistry and biology
have been improved by advances in sensor technology to complement traditional ship observations

Much of the ocean is remote and extreme
Advances in equipment and communications are leading to improved observations under the ice and in the deep ocean

55 Essential Climate Variables

are vital for understanding the climate, including **22 ocean ones**.

Oxygen

Nutrients

Plankton

Marine habitat

measurements are needed to understand how ocean changes impact on marine life, carbon uptake and coastal protection

GCOS
GLOBAL CLIMATE OBSERVING SYSTEM

Learn more at gcos.wmo.int

The Shell Ocean Discovery XPRIZE

Getting to the Bottom of Our Ocean (2016)

- In 2016, the XPRIZE organization launched the [Shell Ocean Discovery XPRIZE](http://oceandiscovery.xprize.org/) competition, with the goal to encourage innovation in automated ocean exploration & bathymetric mapping



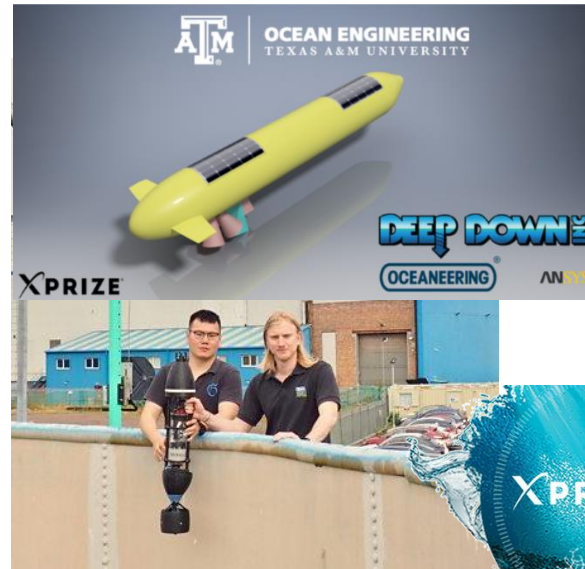
The targets for the 1st round of the Shell Ocean Discovery competition:

- create a bathymetric map of a **500 km²** target area up to **2000m** deep
 - the map must have **5m** horizontal accuracy and **0.5m** depth accuracy
- find and image a **target object** at the **2000 m** depth
- complete above tasks within **16 hours** using an automated solution with only shore based control

Ocean mappers line up for Shell Ocean Discovery XPRIZE final [March, 2018]

- The nine Shell Ocean Discovery XPRIZE finalists

- ARGGONAUTS (Karlsruhe, Germany)
- Blue Devil Ocean Engineering (Duke University, US)
- CFIS (Arnex-sur-Nyon, Switzerland)
- GEBCO-NF Alumni (International)
- KUROSHIO (Yokosuka, Japan)
- PISCES (Portugal)
- Team Tao (Newcastle, UK)
- Texas A&M Ocean Engineering (College Station, US)
- Virginia DEEP-X (Virginia, US)



Team Tao will use a swarm of robots to map the sea floor



Japan's Kuroshio team brings together technologies from universities, institutes & companies



The Int'l Gebco-NF Alumni team uses a UK-built USV to deploy an underwater robot

Engineering for the Digital Ocean



Sonardyne's technology is widely used in ocean science operations, including seabed monitoring, coastal science applications, ocean observations and aquaculture.

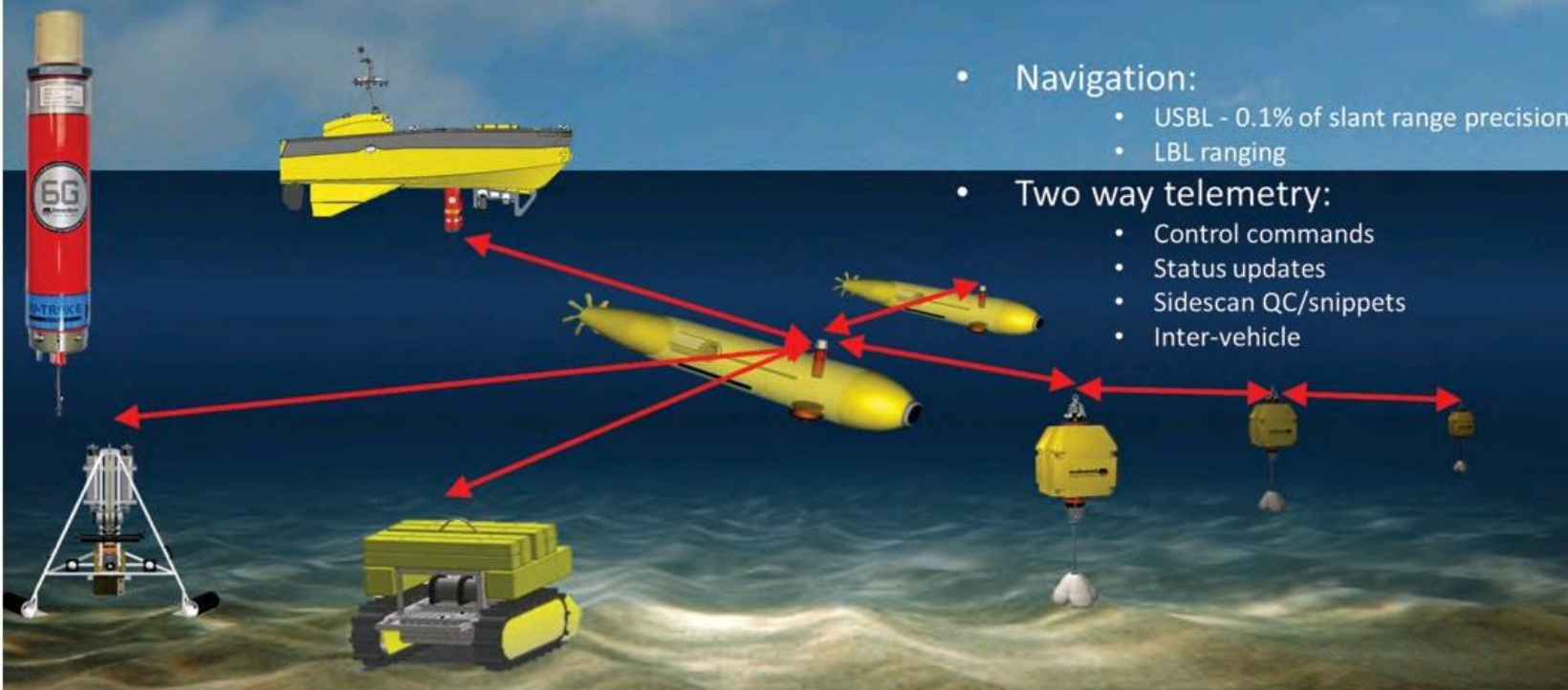
Courtesy Sonardyne International

Engineering for the Digital Ocean

Engineering for the Digital Ocean

Acoustic positioning & telemetry for autonomous systems

Sonardyne
SOUND IN DEPTH



- Navigation:
 - USBL - 0.1% of slant range precision
 - LBL ranging
- Two way telemetry:
 - Control commands
 - Status updates
 - Sidescan QC/snippets
 - Inter-vehicle

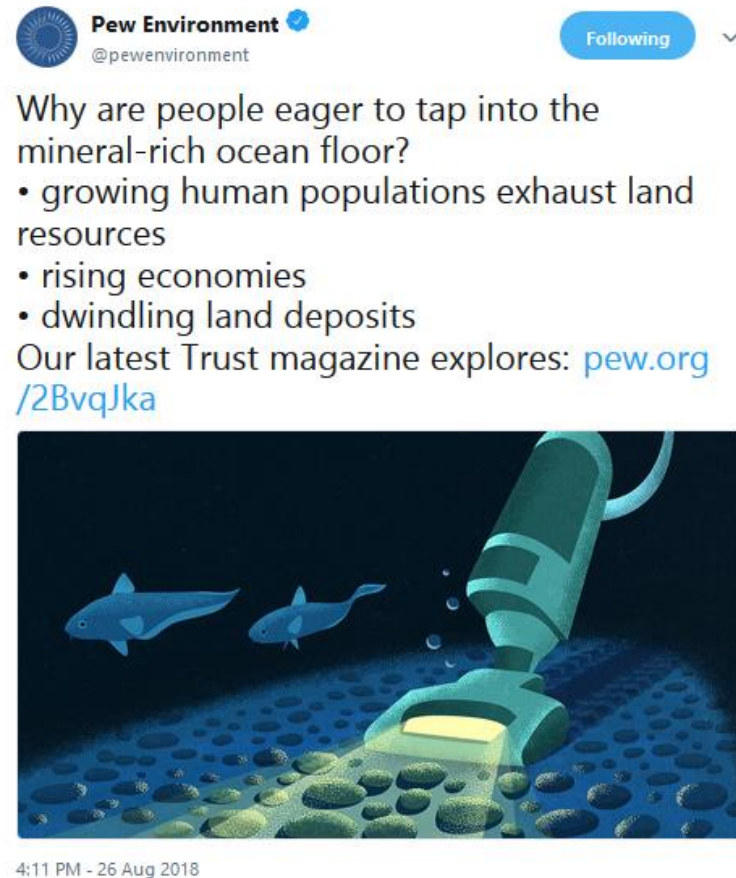
Courtesy Sonardyne International

Sonardyne's AvTrak6 instrument provides **AUVs with positioning, communications and emergency location beacon capability** in one self-contained unit.

Deep Sea Mining

Why are people eager to tap into the mineral-rich ocean floor?

- Growing human populations exhaust land resources
- Rising economies
- Dwindling land deposits
 - [The PEW Charitable Trusts Media, June 2018](#)



polymetallic nodule



Deep sea mining Bill
receives UK government
support
By Edd Gent
E&T, Published Friday,
September 6, 2013

Exploration of underwater life with an acoustically controlled soft robotic fish

- Close-up exploration of underwater life requires new forms of interaction, using **biomimetic creatures** that are capable of **agile swimming maneuvers**, equipped with cameras, and supported by remote human operation.
 - Katzschmann *et al.*, *Sci. Robot.* **3**, [eaar3449](#) (2018) 21 March 2018

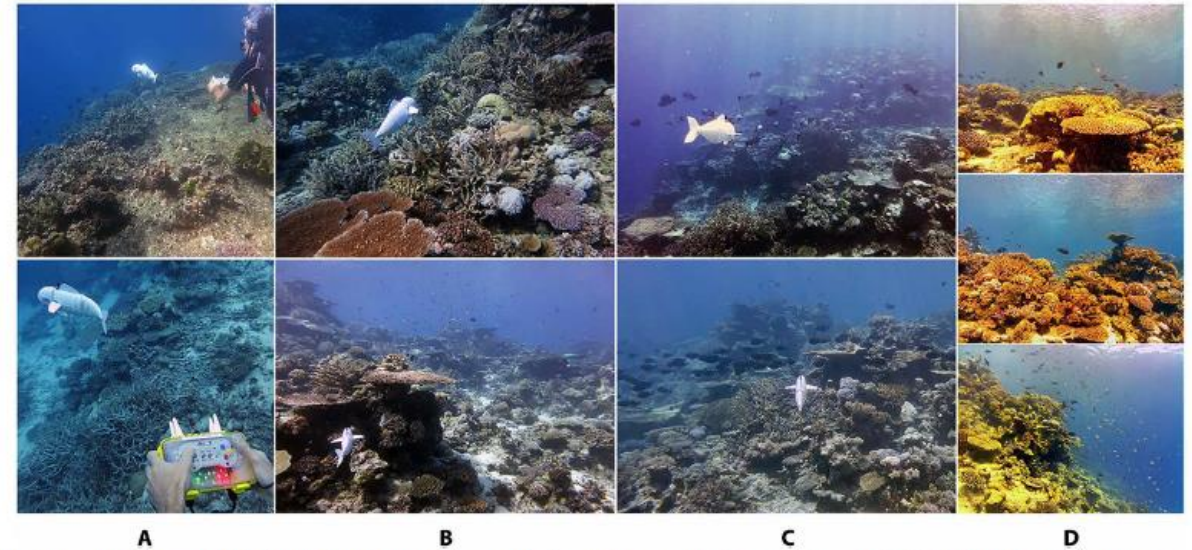


Fig. 4. Underwater observatory. (A) A diver using the acoustic communication modem to remotely control the robotic fish. (B) The fish exploring complex coral reef environments. (C) The robotic fish among marine life. (D) Pictures captured by the fish's onboard camera.

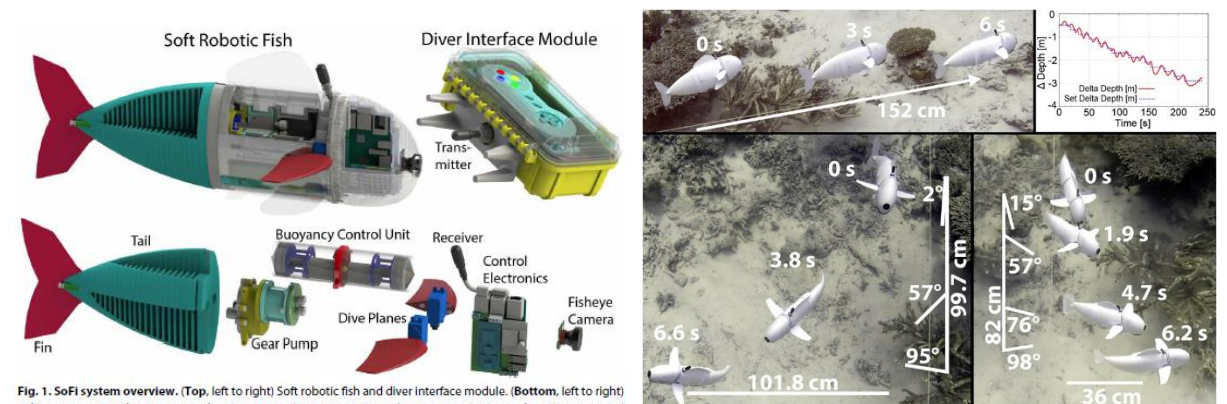


Fig. 1. SoFI system overview. (Top, left to right) Soft robotic fish and diver interface module. (Bottom, left to right) Subcomponents of the system are the elastomer tail (cut view), external gear pump, BCU, two dive planes, control electronics including acoustic receiver, and fisheye camera.

Ocean Tech isn't Just for Scientists Anymore

- NOAA's Office of Exploration has teamed with scientists to explore the deep sea using ROVs and live streams all of their scientific dives for viewers to watch.
 - You can tune in to the live feeds of the [Okeanos Explorer](#) and [Nautilus](#) to see science happening in real time.
- For a more hands-on approach, there are several organizations working on [deep-sea ecotourism, taking people down in submersibles to witness the wonders of the deep for themselves.](#)
- Finally, while you may not be able to go into the deep-sea, several companies (such as [Open ROV](#) and [GNOM](#)) market smaller ROVs that you can take out on a lake or with your kayak to explore on your own!



Autonomous Ships Are Almost Here!

- Oskar Levander, SVP Concepts & Innovation, Rolls-Royce, “Forget Autonomous Cars—Autonomous Ships Are Almost Here”
Jan. 28, 2017
 - IEEE Spectrum, “Autonomous Ships on the High Seas”, Feb. 2017
- Although robotic ships are some ways off in the future, it’s not a question of *if* they will happen but *when*



Autonomous, Unmanned Ship of the Future - MUNIN

- EU-funded project **MUNIN**
 - Maritime Unmanned Navigation through Intelligence in Networks
 - Concept study of a fully unmanned **handymax dry bulk** carrier on intercontinental voyage
 - The MUNIN project relies on an advanced sensor system that gathers information from **onboard**, **ashore** and **offshore** to enable vessels to act autonomously



<http://www.unmanned-ship.org/munin/>



MUNIN – FP7 GA-No 314286
Sep 1, 2012 – Aug 31, 2015
Budget: 3.8 million EUR

Autonomous Zero Emissions Container Ship (Yara & Kongsberg, May 2017)

- The world's first autonomous, zero emission container ship
 - Operation is planned to start in the latter half of 2018, shipping products from YARA's **Porsgrunn** production plant to **Brevik** and **Larvik** in Norway
 - Announced: May 9, 2017

YARA and KONGSBERG enter into partnership to build world's first autonomous and zero emissions ship



Knowledge grows



Autonomous and 100% electric, 'YARA Birkeland' will be the world's most advanced container feeder ship.

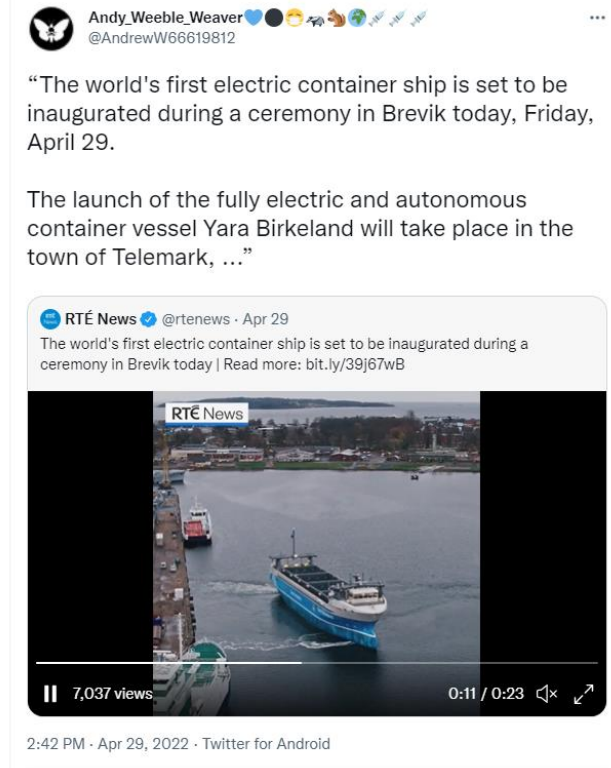


<https://youtu.be/5VBD7hVRhx0>

The christening of Yara Birkeland

[Apr. 29, 2022]

- RTE News: “The world's first electric container ship is set to be inaugurated during a ceremony in Brevik today, Friday, April 29.
- The launch of the fully electric and autonomous container vessel Yara Birkeland will take place in the town of Telemark, ...”



‘Sea-Hunter’ a drone ship with no crew, just joined the U.S. Navy fleet *

- DARPA hands autonomous sub-hunter prototype over to the US Navy *(Feb. 2018)
 - “This is an inflection point. It is the first time we’ve ever had a **totally robotic, trans-oceanic-capable ship.**”
 - former Deputy Defense Secretary **Robert Work** said in an interview with Reuters in 2016



Following the successful completion of its Anti-Submarine Warfare (ASW) Continuous Trail Unmanned Vessel (ACTUV) program, DARPA has officially transferred the technology demonstration vessel, christened Sea Hunter, to the Office of Naval Research (ONR) (Credit: DARPA)

[VIDEO](#)

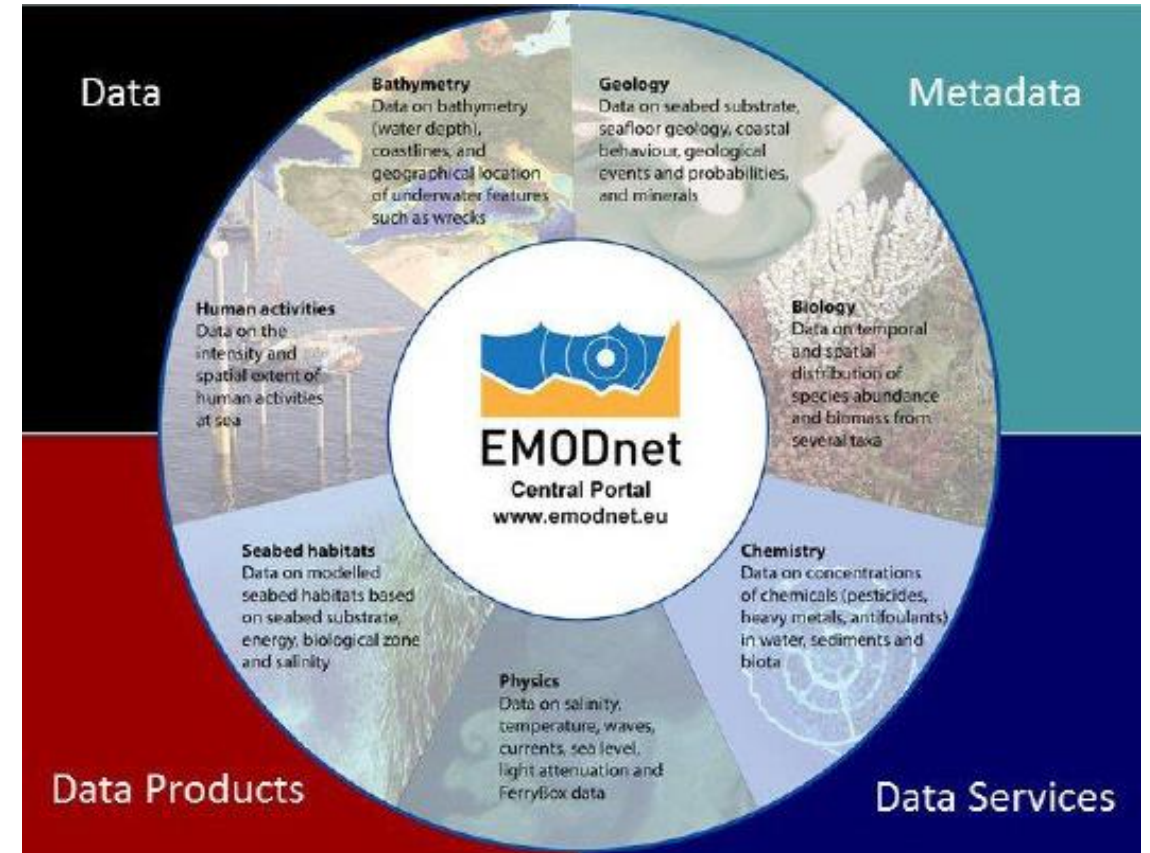
* <https://www.digitaltrends.com/cool-tech/darpa-sea-hunter-joins-navy-fleet/>

#OceanAction20820

by EuroGOOS, European Global
Ocean Observing System (Non-
governmental organization
(NGO))



A “Street View” of the Seabed

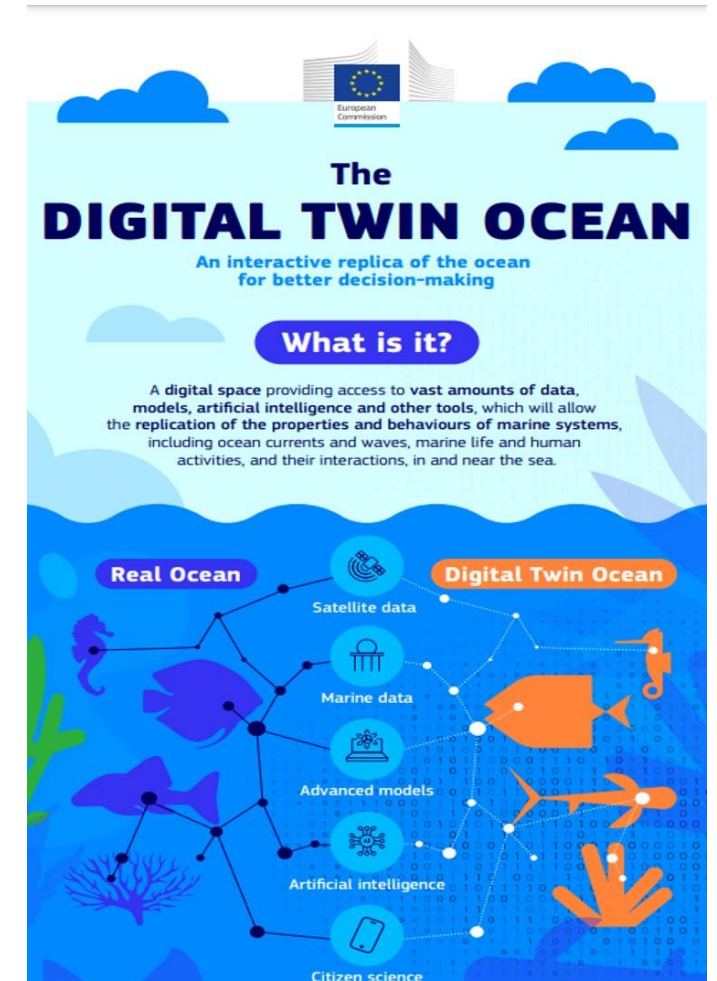


EMODNET: Developing & providing a harmonized Digital Terrain Model (DTM) for the European Sea Regions

<http://www.emodnet-bathymetry.eu>

EU - Digital Twin of the Ocean (DTO)

- Jan. 2022, EU Awards €17 million to [ILIAD PROJECT](#) to Launch an Innovative Digital Twin of The Ocean
 - The ILIAD consortium, which includes 56 international partners, will develop virtual representations of the sea that will integrate and extend existing EU earth observing, modelling digital infrastructures and computing facilities to provide highly accurate predictions of future developments.
- OCEAN Twin: <https://ocean-twin.eu/>



- <https://marine.copernicus.eu/news/ocean-and-its-digital-twin-whats-copernicus-marine>

The STRATEGIS Activities in BLUE ROBOTICS

BLU RoSES - EMFF Project

Member of the Advisory Board

- **BlueRoSES project, Grant Agreement 863619**
 - Blue Robotics for Sustainable Eco-friendly Services for Innovative Marinas and leisure boats
 - European Commission Executive Agency for Small and Medium-sized Enterprises (EASME) in the frame of the EMFF fund for the EU's maritime and fisheries policies for 2014-2020.
- Dr. Yovanof - STRATEGIS, has joined the Advisory Board of the Blu RoSES project
 - Kick-off Meeting, Malaga, Spain, Dec. 19-20, 2019.
 - 2nd Annual Project & Stakeholder meeting (Lisboa, Dec 6-7, 2021)
- STRATEGIS to be part of the Stakeholders Group



MSc in Marine & Maritime Intelligent Robotics (MIR), STRATEGIS An Associate Partner of the MIR Program

Co-funded by the Erasmus+ Programme of the European Union

MIR | MARINE & MARITIME INTELLIGENT ROBOTICS

The MIR Master's programme innovatively combines Robotics & Artificial Intelligence in the context of advancing Marine & Maritime Science & their Technological Applications.

- ➔ DOUBLE MASTER'S DEGREE
- ➔ INDUSTRY EXPERIENCES
- ➔ ERASMUS MUNDUS SCHOLARSHIPS
- ➔ RESEARCH EXCELLENCE
- ➔ EMPLOYMENT OPPORTUNITIES
- ➔ GLOBAL NETWORK OF 50+ INDUSTRY AND RESEARCH PARTNERS

S1 S2 IN FRANCE
S3 IN SPAIN, NORWAY OR PORTUGAL
S4 IN COMPANY OR RESEARCH CENTER THESIS

www.master-mir.eu



	Study track 1: Applied robotics for underwater intervention missions	Study track 2: Safe autonomous subsea operations	Study track 3: Cooperative marine robotics for scientific & commercial applications
Semester 1 30 ECTS	Induction weeks (2-week induction with joint industry introduction days) UTLN 4 ECTS Induction week & transversal skills (scientific English, Innovation management, etc.) 8 ECTS Marine science and environment 9 ECTS Artificial intelligence 9 ECTS Robotics		
Semester 2 30 ECTS	UTLN 4 ECTS Transversal skills (reliability and risk assessment, AI fairness & transparency, etc.) 14 ECTS AI & robotics, and its applications taught by UTLN and guest lecturers 4.5 ECTS Joint introduction to study track specialisations (UJI, NTNU, IST) 9 ECTS Industry led seminars (options) 2.5 ECTS Entrepreneurship industry & research project MIR Joint Annual Symposium & Championship (1 week to be held at different partner each year)		
Semester 3 30 ECTS	UJI # underwater interventions	NTNU # deep sea operations	IST # cooperative robotics
Semester 4* 30 ECTS	Thesis with principal supervision at UJI	Thesis with principal supervision at NTNU or UTLN	Thesis with principal supervision at IST
	<i>*Thesis can also jointly be carried out at any associated partner</i> MIR Joint Annual Symposium & Championship (1 week to be held at different partner each year)		

MIR - EMJMD IN MARINE AND MARITIME INTELLIGENT ROBOTICS

Erasmus Mundus joint Master's Degree

<https://www.monaco-tribune.com/en/2019/11/a-new-international-masters-degree-in-marine-and-maritime-robotics-at-the-university-of-toulon/>

Member of the EDSP

European Defence Skills Partnership

- Strategis became a member of the **European Defence Skills Partnership - EDSP** [Sep. 2018] participating in the project on
 - "Defence-related skills: Building evidence on skills shortages, gaps and mismatches and defining the sector's strategy on skills",
 - led by RAND Europe
 - Focus on Dual-use Technologies [Big Data, AI, Robotics, Autonomous systems, Blockchain, ...]



The way forward in implementing solutions on skills in defence

Launch of the European Defence Skills Partnership - EDSP
Brussels – 19 June 2018

Elektra Tsigaridas
European Commission, DG GROW

GROW 1.4

www.eudsp.eu



BLUEPRINT FOR SECTORAL COOPERATION ON SKILLS
Defence

Responding to skills mismatches at sectoral level
A key pillar of the New Skills Agenda for Europe



EDSP
EUROPEAN DEFENCE SKILLS PARTNERSHIP

Defence related skills

5th EDSP workshop
15 January 2018 | Brussels

The EDSP is financed by the COSME programme

MaQuaM - ERASMUS Project for Nautical & Coastal Tourism



ERASMUS+
MAQUAM
International Qualification on
Marine and Tourism for the
Mediterranean harbours

 Co-funded by the
Erasmus+ Programme
of the European Union



- [MaQuaM](#) - “International Qualification on Marine and Tourism for the Mediterranean Harbors”
 - ERASMUS+ project: 2020-10-01 to 2023-04-30
n. 2020-1-IT01-KA202-008459
 - Aim: human resource development in the nautical sector favoring the integration between shipbuilding production chains and the growing importance of port and tourist services
- Training course developing the professional profile of “*Manager of integrated services for boating and coastal tourism*”

Partners

- [Provincia di Livorno Sviluppo](#) srl
 - Economic development & training
- [NAVIGO](#)
 - company for the innovation and development of yachting
- [Strategis](#) - Maritime Center of Excellence (Nautical Cluster, Greece)
- [Mediterranean Tourism Foundation](#) (Malta)
- [IBIS](#) Foundation (Albania)

Research Proposals [2022]

- **IKAT Tourism PLUS**, EU Call: [SMP-COSME-2021-TOURSME-01](#) Type of action: COVID-19 Recovery through sustainable Tourism Growth and SME Support. Coordinator contact: Yolanda Piedra, Clúster Marítimo de las Islas Baleares (CMIB). [Submitted March 2, 2022. Status: in review.](#)
- **Green-MED** project: “Mediterranean communities upskilling for plastic marine litter prevention, collection and recycling” Action: Cooperation partnerships in adult education. Call for proposals: 2022. National Agency: IT02 - Agenzia Nazionale Erasmus+ INDIRE. [Submitted Mar. 23, 2022. Status: in review.](#)
- **BLUE-CEA** project: “Applying Circular Economy Principles in Cruise Ships”. Action: Cooperation partnerships in vocational education and training. Call for proposals: 2022. National Agency: EL01 - Greek State Scholarship's Foundation (IKY). [Submitted Mar. 23, 2022. Status: in review.](#)
- **MarMED** project: “MARitime cluster Management Education Development”. Action: Cooperation partnerships in vocational education and training. Call for proposals: 2022. National Agency: IT01 - Agenzia Nazionale Erasmus+ INAPP. [Submitted Mar. 23, 2022. Status: in review.](#)

MedBAN

- MedBAN - Mediterranean Blue Accelerator Network #101074763
- SMP - Single Market Programme
- SMP-COSME-2021-CLUSTER-01 Joint Cluster Initiatives (EUROCLUSTERS) for Europe's recovery

Project Title
Mediterranean Blue Accelerator Network

Acronym
MedBAN

Programme
Single Market Programme

Call
SMP-COSME-2021-CLUSTER
Joint Cluster Initiatives (EUROCLUSTERS) for Europe's recovery

Topic
SMP-COSME-2021-CLUSTER-01
Euroclusters for Europe's recovery

Contact list

Partner details

PARTNER DETAILS

PIC Number	Short name	Full name
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EUSAIR WAI-TP Project [06/2022]

- EUSAIR “**WAI-TP** | *Waterborne Adriatic-Ionian Technology Platform*” June 2022 - Oct. 2023.
 - WAI-TP aims to implement a transnational hub to support the Adriatic Ionian macro-regional ecosystem within the broad blue economy field, focused on enhancing innovation also in the context of digital and green transition in the maritime technologies sector (mainly **ship & boat building, boating, maritime transport -freight and passengers, offshore, logistics, marine robotics**).
- The EUSAIR WAI-TP project is led by the Mare Technology FVG Cluster in collaboration with the Italian FVG Regional Government. Strategis is a partner of WAI-TP.
 - This financial instrument will **NOT directly benefit project partners** but will support an external expert to define a roadmap for implementing WAI-TP Proposal and project partners will be asked to collaborate with the selected expert.

HIAS - A vision for the Hellenic Robotics Initiative

- Hellenic Institute of Advanced Studies (HIAS): “A vision for the Hellenic Robotics Initiative” May 2021
- The Hellenic Institute of Advanced Study (HIAS) is a non-profit, private foundation, established as a US 501 (c)(3), initiated by the Hellenic diaspora in order to:
 - Create bridges and serve as a hub for scientific exchanges between the Hellenic diaspora and their peers in Greece;
 - Foster the development of international, transdisciplinary collaborations on problems of societal relevance including Energy, Health, Education, AI, Environment, Transport, Maritime, Agrifood, Inequality.

Hellenic Institute for Advanced Studies

**Robotics in the AI era:
A vision for a Hellenic Robotics Initiative**

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May 2021

Robotics in Marine & Maritime Environmental Monitoring

Piraeus Business Center - April 29, 2022



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Thank You!

