



**NAUTILOS**

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

# THE PROJECT

**NAUTILOS**, a **Horizon 2020** Innovation Action project funded under EU's the Future of Seas and Oceans Flagship Initiative, aims to fill in marine observation and modelling gaps for biogeochemical, biological and deep ocean physics essential ocean variables and micro-/nano-plastics, by developing a new generation of cost-effective sensors and samplers, their integration within observing platforms and deployment in large-scale demonstrations in European seas.

The principles underlying **NAUTILOS** will be those of the development, integration, validation and demonstration of new cutting-edge technologies with regards to sensors, interoperability and embedding skills. The development will always be guided by the objectives of scalability, modularity, cost-effectiveness, and open-source availability of software products produced.

# ACTIVITIES



Technological development of sensing and sampling marine instrumentation



Integration



Calval and Scenario Testing



Demonstrations of sensing and sampling technologies in operational environment



Data Management



Data Modelling



Dissemination, awareness raising and knowledge-transfer



Exploitation and Impact



Citizen Science Experiments



Synergies with ESPCE

# NAUTILOS' solutions

GAPS & NEEDS

Need for preservation & sustainable exploitation of our ocean & seas

REQUIREMENTS

INTEGRATION

CALIBRATION, VALIDATION & SCENARIO TESTING

8  
MSFD  
descriptors



Biodiversity



Populations of commercial species



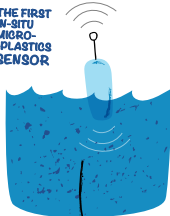
Food web structure



Eutrophication

NOVEL, COST-EFFECTIVE DEPLOYMENTS

THE FIRST  
IN-SITU  
MICRO-  
PLASTICS  
SENSOR



CITIZEN SCIENCE



Demonstrations

Data Management

Achieve TRL 6  
for ocean observations  
systems & tools

13 types of cost-effective sensors & samples

70% biological & biogeochemical EOVs (Essential Ocean Variables) covered



Contaminants



Sea-food contaminants

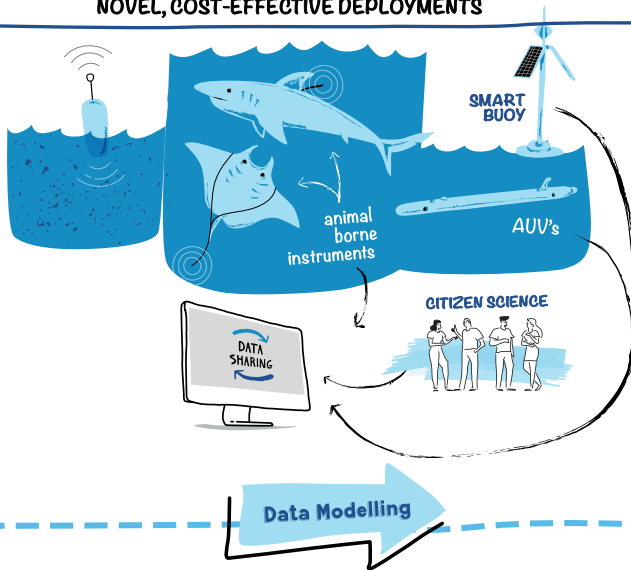


Marine litter



Energy and noise

### NOVEL, COST-EFFECTIVE DEPLOYMENTS



## IMPACTS

Healthier



Oceans & seas



Enhanced European capacities for observations

Generated economic & social value for the blue economy



ESPCE synergies



Capacity Building



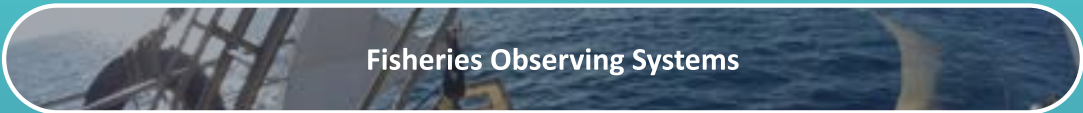
Policy

&

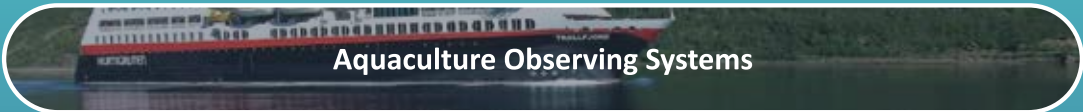


Citizen Engagement

# DEMONSTRATIONS



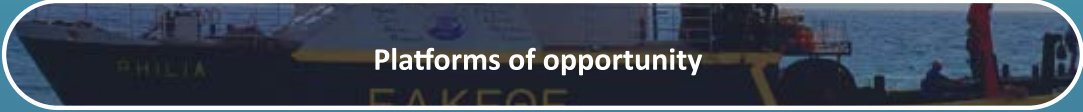
Fisheries Observing Systems



Aquaculture Observing Systems



Acoustic Marine Mammal Monitoring System



Platforms of opportunity



Augmented Observing Systems



ARGO Platform



Animal-borne instruments

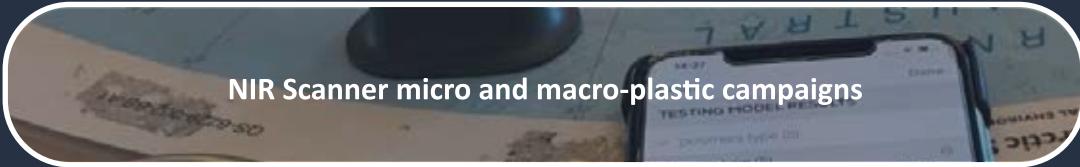
# CITIZEN SCIENCE




Crowd-sourcing for visual marine image annotations



Creation of Diving Associations Network



NIR Scanner micro and macro-plastic campaigns



Citizen Science Plastics-Related Campaigns



Italian Marine Protected Areas Campaign

# Connect with us!



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



[nautilus](https://www.linkedin.com/company/nautilus)



[NAUTILOS\\_H2020](https://twitter.com/NAUTILOS_H2020)

## PROJECT PARTNERS



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000825 (NAUTILOS).