



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

BEYOND CLIMATE CHANGE:
SUSTAINED OBSERVATION
IN SUPPORT OF THE BLUE
ECONOMY

As part of the Ocean Decade Week (8-12 April 2024)

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)



NAUTILOS

New technology for improving our understanding
of the marine environment

Gabriele Pieri

Institute of Information Science and Technologies (ISTI)
National Research Council of Italy (CNR)



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development



Consiglio Nazionale
delle **Ricerche**



ISTITUTO DI SCIENZA E TECNOLOGIE
DELL'INFORMAZIONE "A. FAEDO"



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

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

BEYOND CLIMATE CHANGE: SUSTAINED OBSERVATION IN SUPPORT OF THE BLUE ECONOMY

Ocean observation is crucial in supporting economic activities related to the ocean, such as providing valuable data on resources like food, minerals, and energy

This data can support sustainable management practices and ensure the continued availability of these resources for future generations.

The development of new technologies and industries related to ocean monitoring and energy, like wave and tidal energy, can be driven by sustained observation, which provides a comprehensive understanding of ocean conditions and processes



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

BEYOND CLIMATE CHANGE: SUSTAINED OBSERVATION IN SUPPORT OF THE BLUE ECONOMY

Projects like **NAUTILOS** help address the impact of climate change on the ocean, marine resources and linked economic activities

The impact of climate change on coastal communities and ocean infrastructure can be mitigated by providing data and information on the effects of climate change, enabling informed decision-making and the development of strategies to address the impact

At the same time, the blue economy sectors suffer from data limitations that are needed for marine spatial planning and sustainable management of ocean resources



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

Recommendations

Promote the **integration of ocean observation data into decision-making processes** to support the sustainable management of ocean resources and the Blue Economy

Encourage **public-private partnerships** to support sustained ocean observation efforts and the Blue Growth

Foster **international collaboration and coordination** to support long-term ocean observation efforts, sharing best practices and technology developments



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

New technology and data collection for improving our understanding of the marine environment

Filling the observational gaps of European Seas
(Chem/Bio/DeepOcean Phy EOVs)

- By means of a new generation of cost-effective sensors and samplers
- To be integrated within observing platforms
- Long-term deployment in large-scale demonstrations in European seas

Goals & achievements:

- ✓ complement and expand current EU observation tools and services
- ✓ obtain a collection of data at a much higher spatial resolution, temporal regularity and length than currently available at the EU scale
- ✓ to further enable and democratise the monitoring of the marine environment to both traditional and non-traditional data users

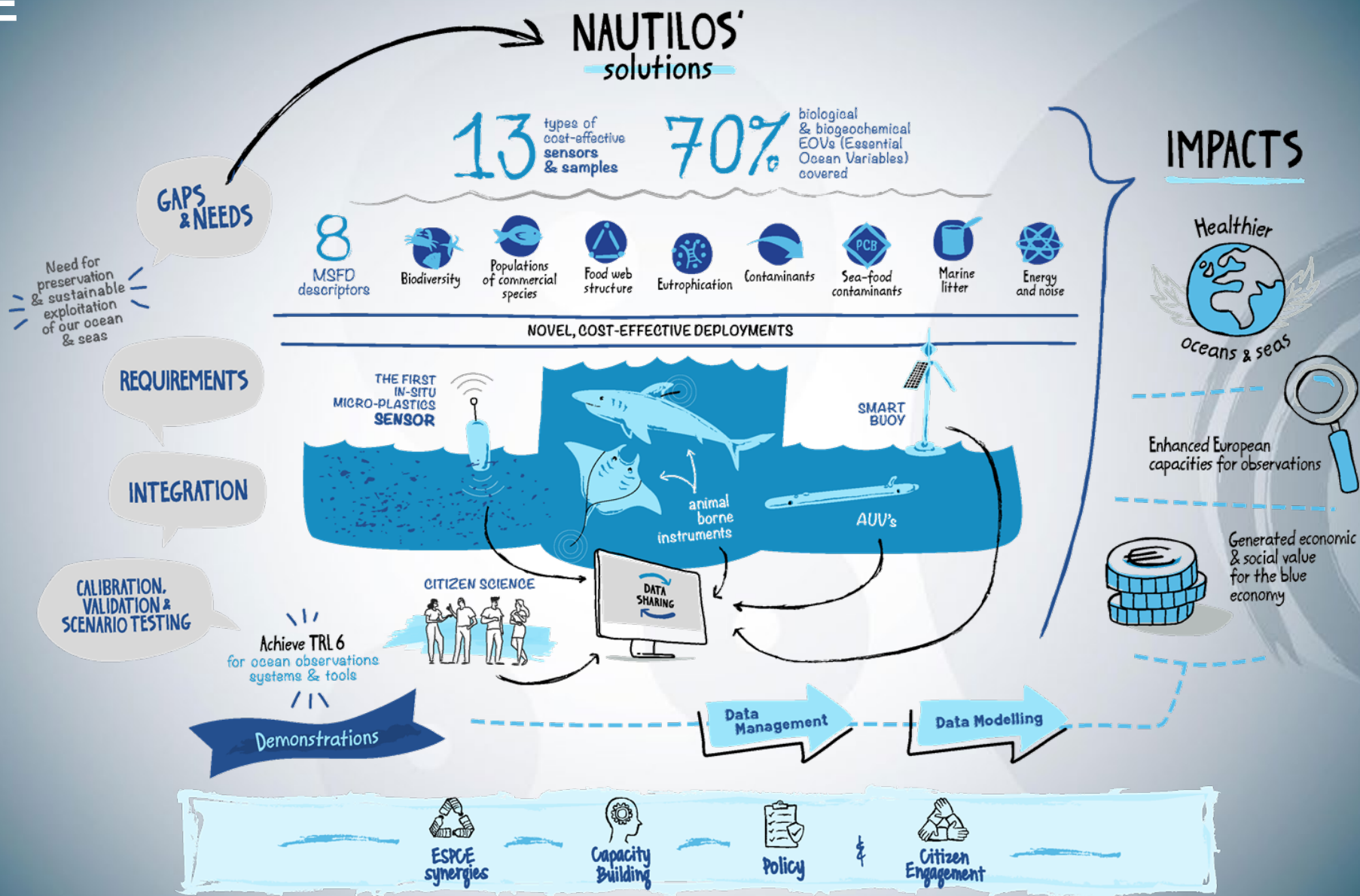


2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)



2024 OCEAN DECADE CONFERENCE

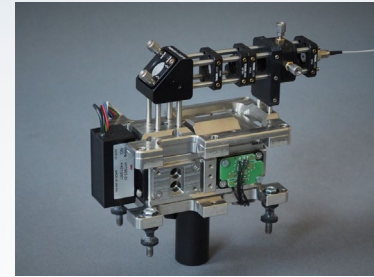
DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

Novel NAUTILOS Technologies



Chl-a sensor



Micro-plastic
detector-sensing



Micro-plastic sampler



Micro-plastic
flow-through unit



Silicate Electro-
Chemical sensor



Fluorometric Oxygen sensor



Oxygen sensors



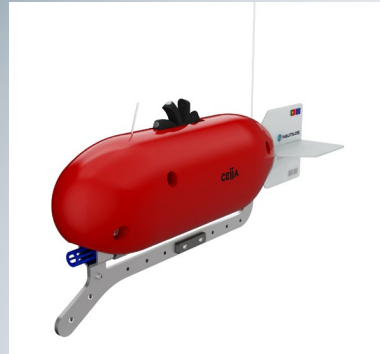
2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

Novel NAUTILOS Technologies



Animal-borne tracking device
for ocean data monitoring



Carbonate Sensor



Deep-Ocean cost-effective CTD



Downward looking sensors



AQUAclick acoustic sensor



Deep-Ocean low-level radioactivity sensor



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

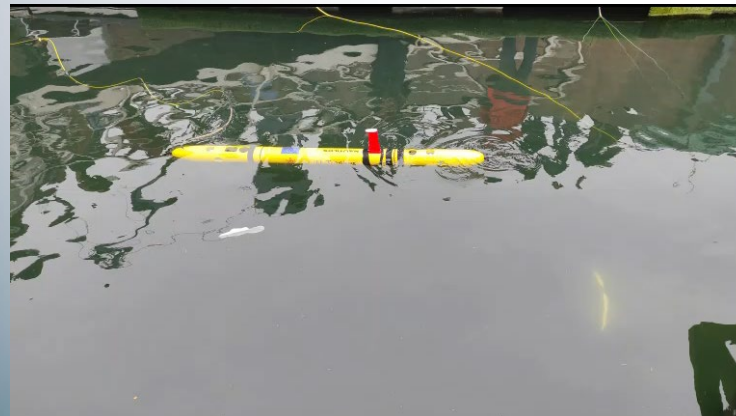
DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

NAUTILOS Demonstrations (ongoing)



Porto cal&val campaign: AUV harvesting
data from underwater Lander equipped with
CTD sensor via acoustic modem



Crete cal&val campaign: ASV equipped with
multibeam sonar, pH sensor and passive
acoustic sensor

Oslo calibration week activities



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

NAUILOS Demonstrations (ongoing)



Beach cleaning campaigns and micro-plastic



Engagement of Citizens and activities with schools



NAUILOS First Summer School – Oslo



Synergies activities



2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development



Consiglio Nazionale delle Ricerche



EuroGOOS
European Global Ocean
Observing System



www.nautilus-h2020.eu



[/nautilus.h2020](https://www.facebook.com/nautilus.h2020)



[/NAUTILOS_H2020](https://twitter.com/NAUTILOS_H2020)



[@NAUTILOSHProject](https://www.youtube.com/@NAUTILOSHProject)

THANK YOU!