

European Pavilion
**Digital
Ocean**
Nice | France
2 - 13 JUNE 2025

**NAUTILOS: innovating
ocean sensing for a
sustainable future**



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How to monitor the Ocean?



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How to monitor the Ocean?



Novellino Antonio

ETT (Deda.Group)





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How to monitor the Ocean?



- ✓ **filling in marine observation and modelling gaps for chemical, biological and deep ocean physics variables**
- ✓ **developing a new generation of cost-effective sensors and samplers**
- ✓ **integrated within observing platforms**
- ✓ **Long-term deployment in large-scale demonstrations in European seas**



Consiglio Nazionale delle Ricerche



Finnish Environment Institute



University of Ljubljana
Faculty of Electrical Engineering



Norwegian Institute for Water Research



DIPARTIMENTO DI INGEGNERIA
DELL'AMBIENTE



NAUTILOS' solutions

13

types of cost-effective sensors & samples

70%

biological & biogeochemical EOVS (Essential Ocean Variables) covered

GAPS & NEEDS

Need for preservation & sustainable exploitation of our ocean & seas

REQUIREMENTS

INTEGRATION

CALIBRATION, VALIDATION & SCENARIO TESTING

Achieve TRL 6 for ocean observations systems & tools

Demonstrations

8 MSFD descriptors



Biodiversity



Populations of commercial species



Food web structure



Eutrophication



Contaminants



Sea-food contaminants

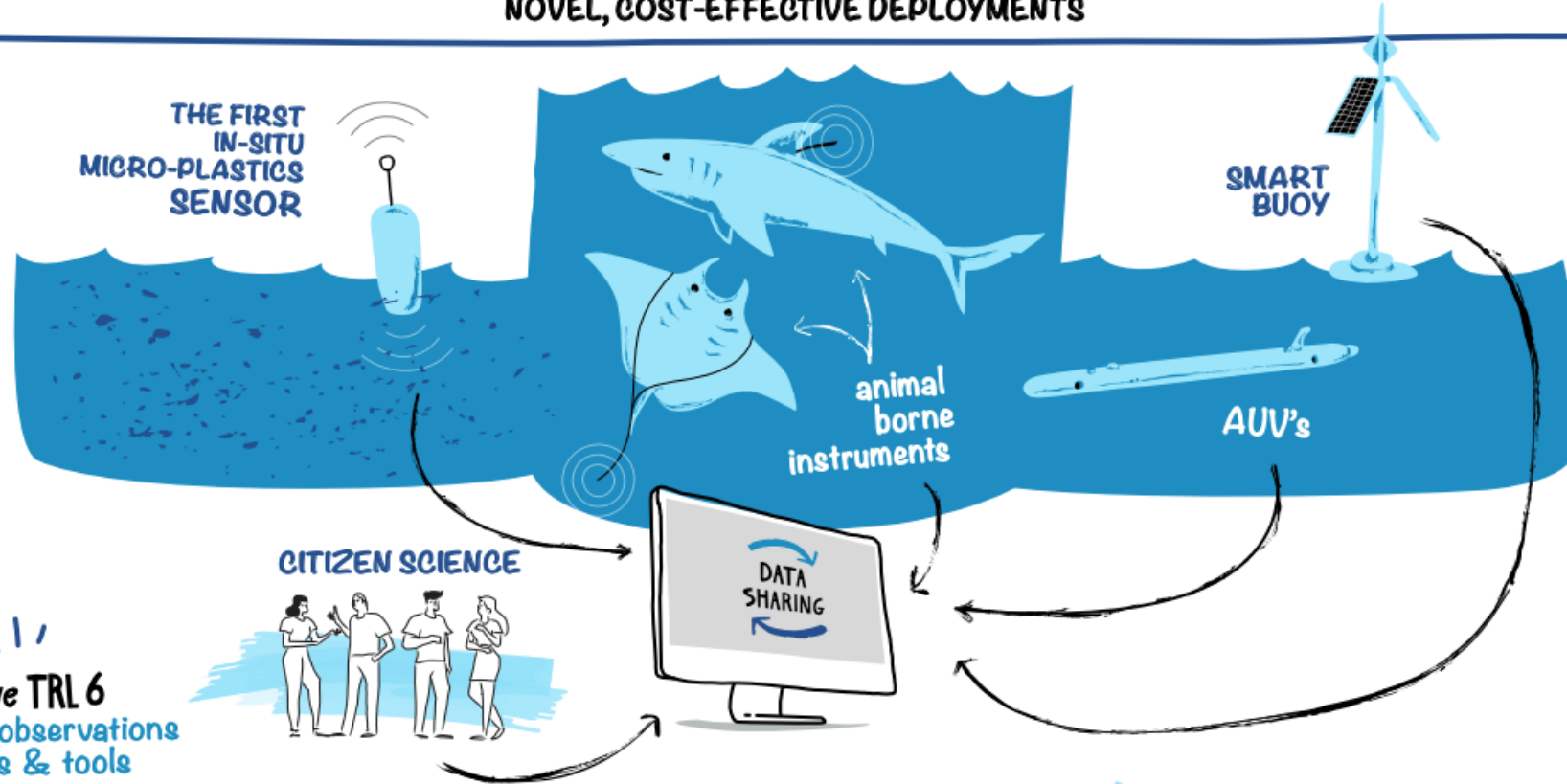


Marine litter



Energy and noise

NOVEL, COST-EFFECTIVE DEPLOYMENTS



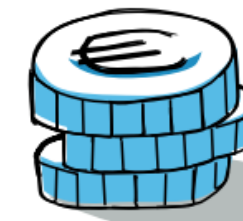
Data Management

Data Modelling

IMPACTS



Enhanced European capacities for observations



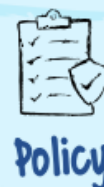
Generated economic & social value for the blue economy



ESPCE synergies



Capacity Building



Policy



Citizen Engagement

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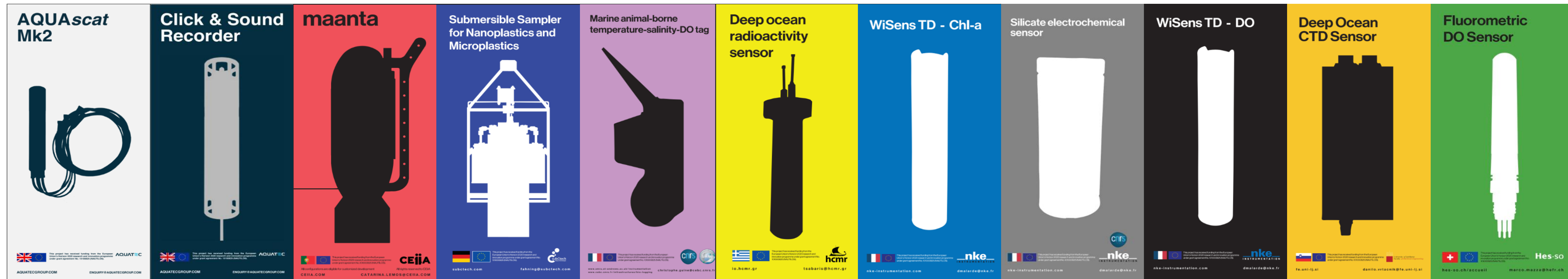
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11 commercial products (business model and commercial partner) - 2 NEW TO MARKET

**100% of NAUTILOS technologies offer benefits for ocean monitoring market
75% of them less expensive than comparable competitors (while the remaining
25% offering substantial improvements for ocean monitoring)**

**All products presented in 9 brokerage opportunities (8 different countries),
with over 200 recorded interactions expressing interest**

Early sales of NAUTILOS products - NKE WiSens TD Chl-a & NKE WiSens TD DO



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find more at:

<https://nautilus-h2020.eu/>

contact

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Spoke 3 of the RAISE project (Robotics and AI for Socio-Economic Empowerment)



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RAISE SPOKE 3 the SEA PILLAR

**new integrated system that
combines single-point and diffused
monitoring through the
development of hardware and
software modules that integrate
traditional in-situ measurements
with adaptive monitoring managed
by AI solutions**

14 projects

50 partners



2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development

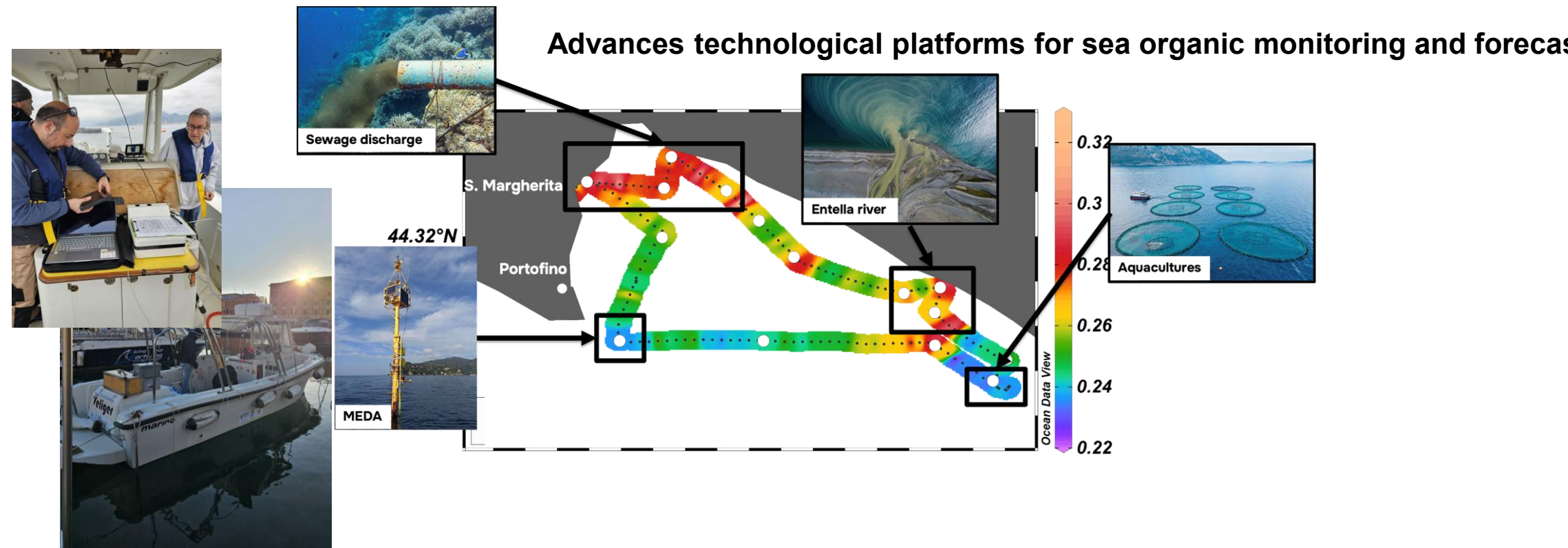
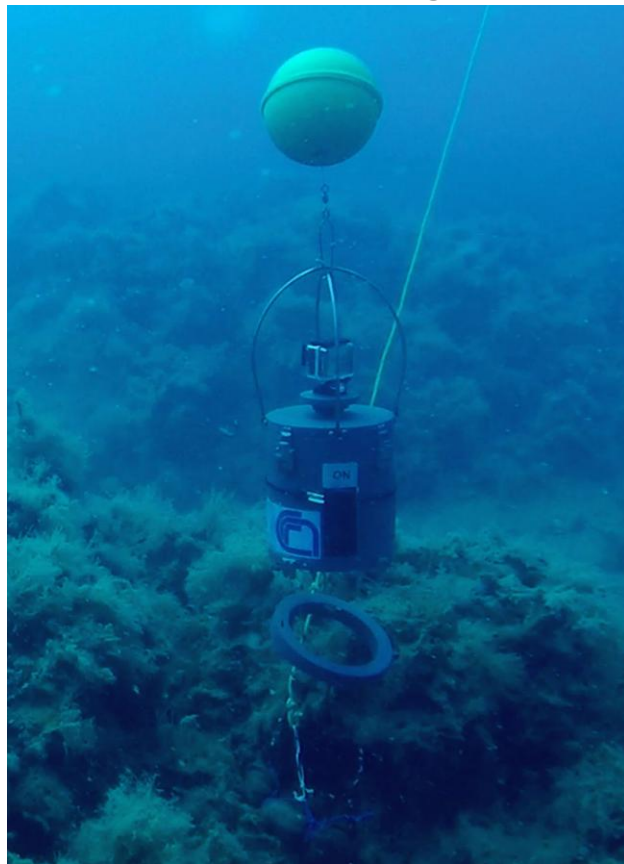


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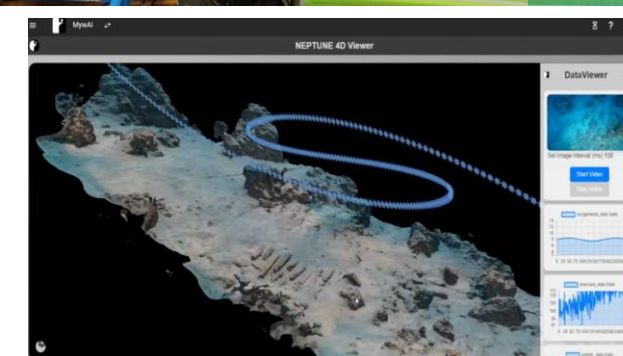
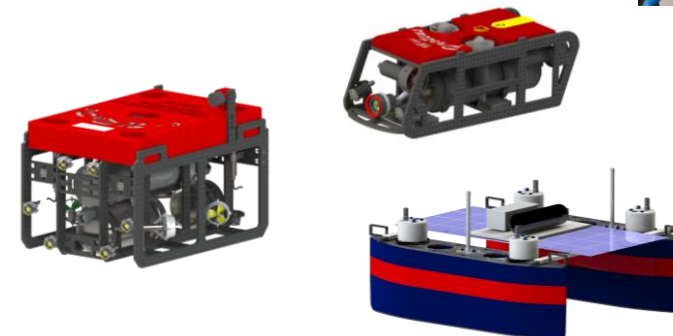
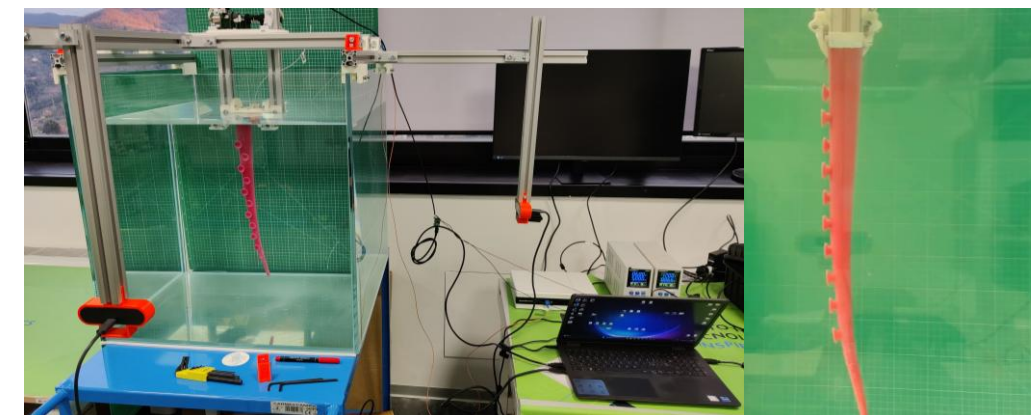
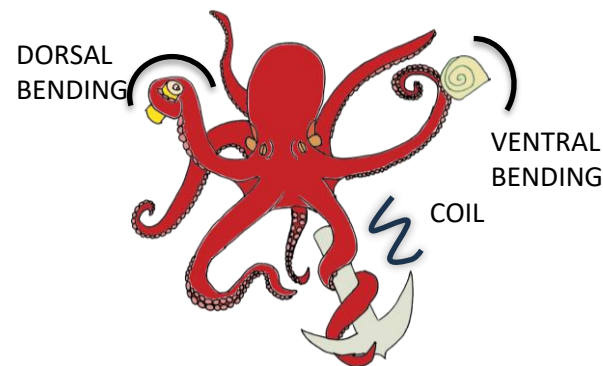
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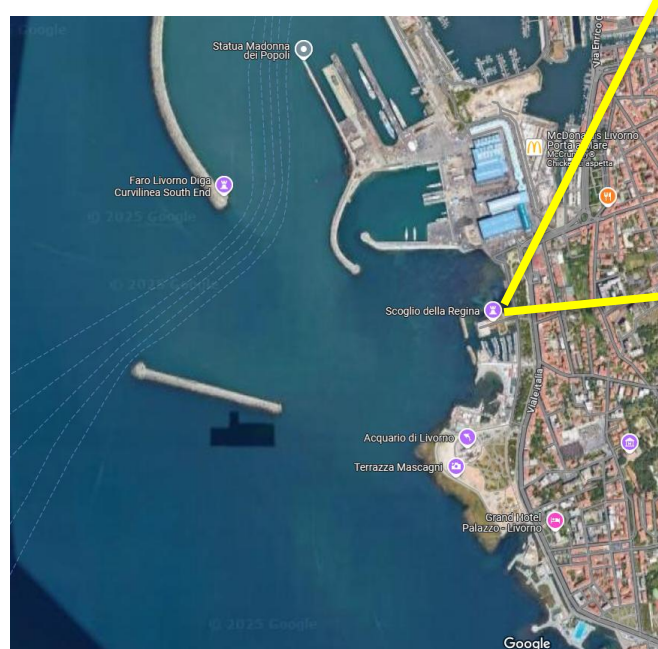
Submersible Rotating Video (SRV) - AI annotation



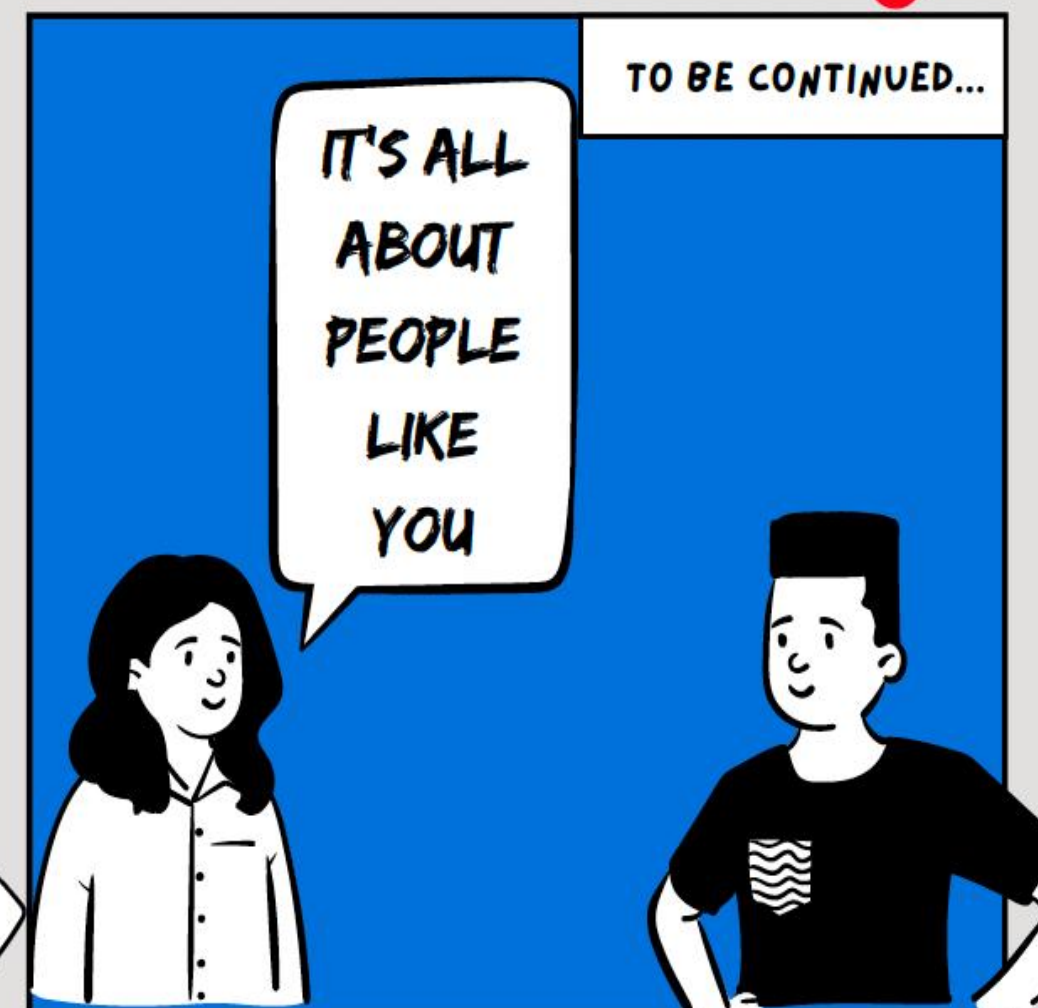
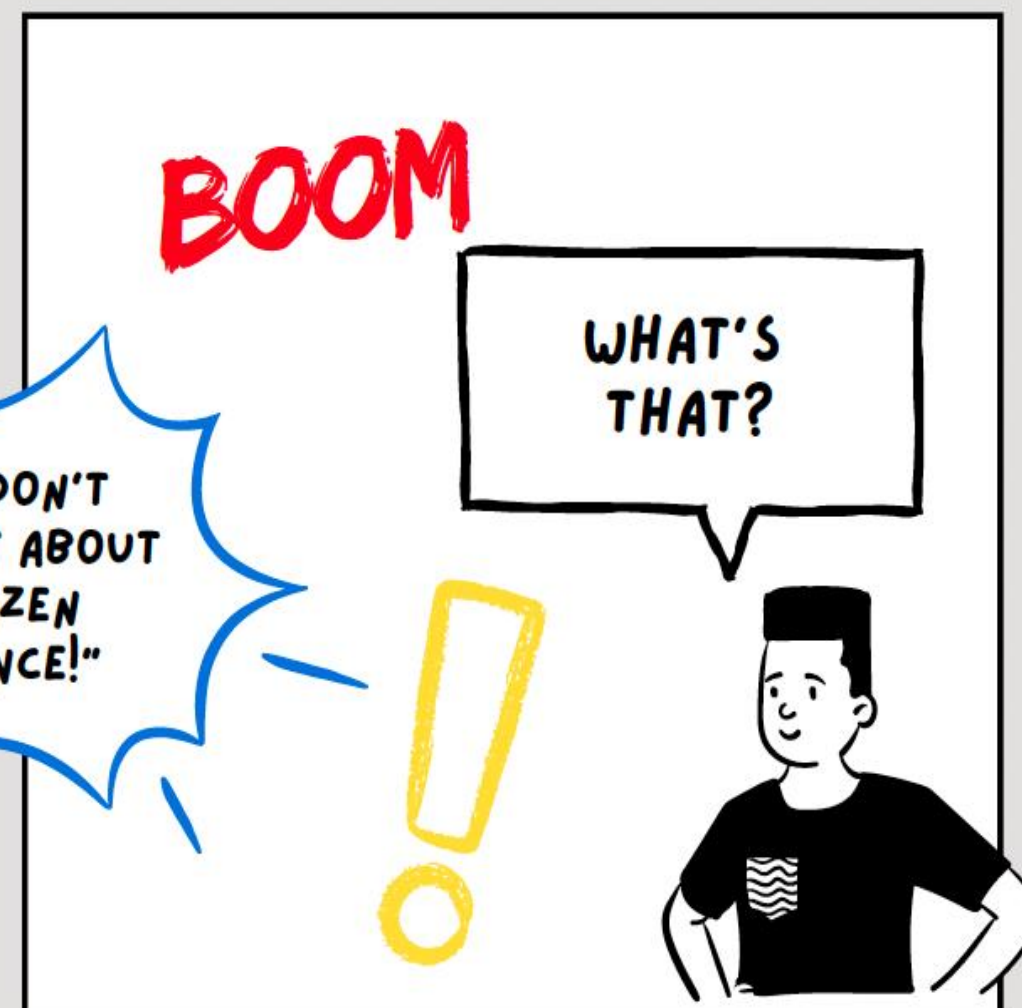
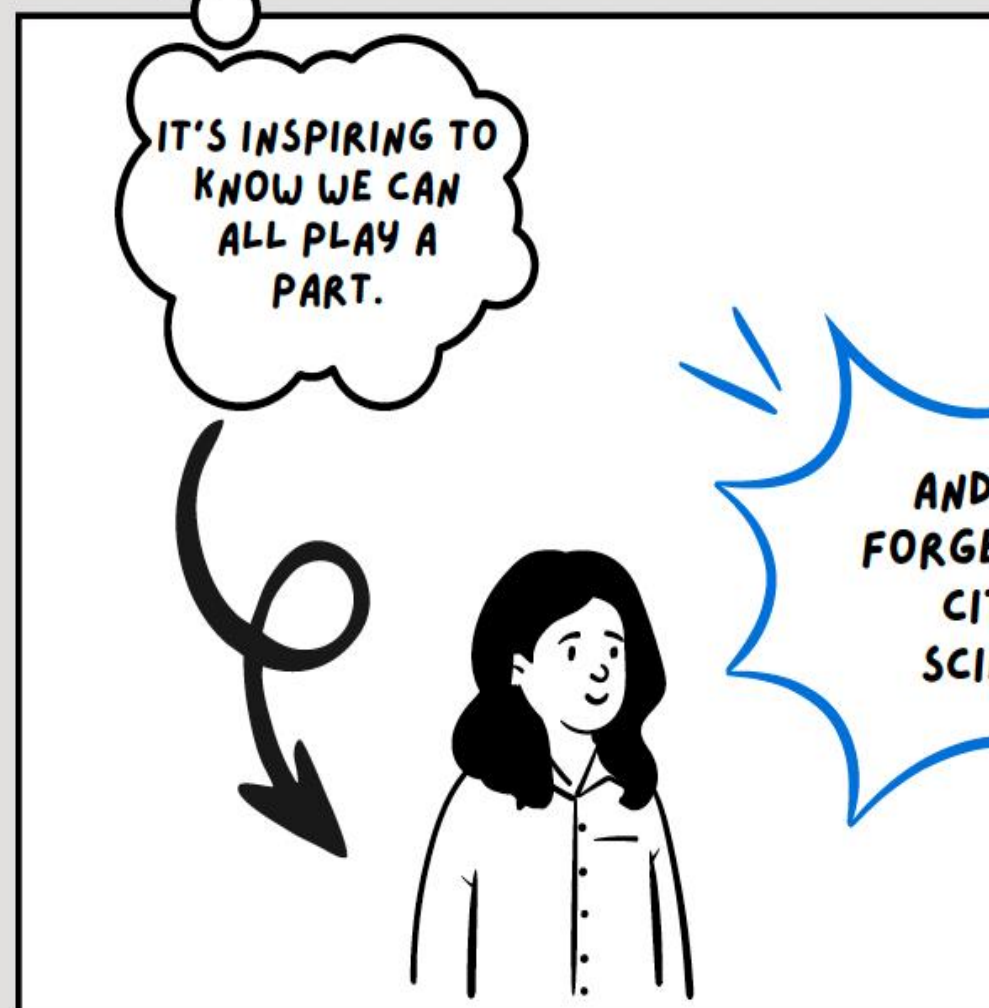
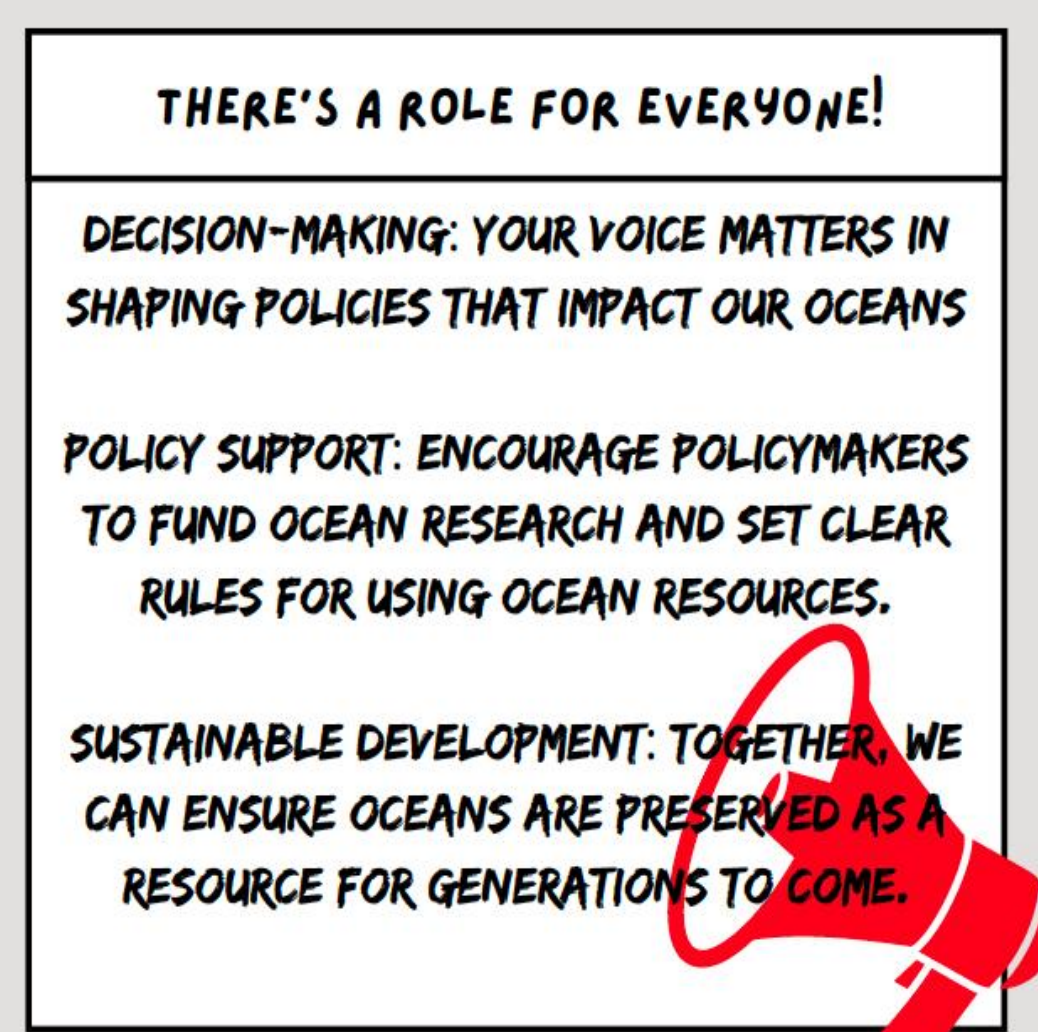
Octopus-inspired soft robotic arm



On shore sea waves monitoring



sismometer to monitor sea waves





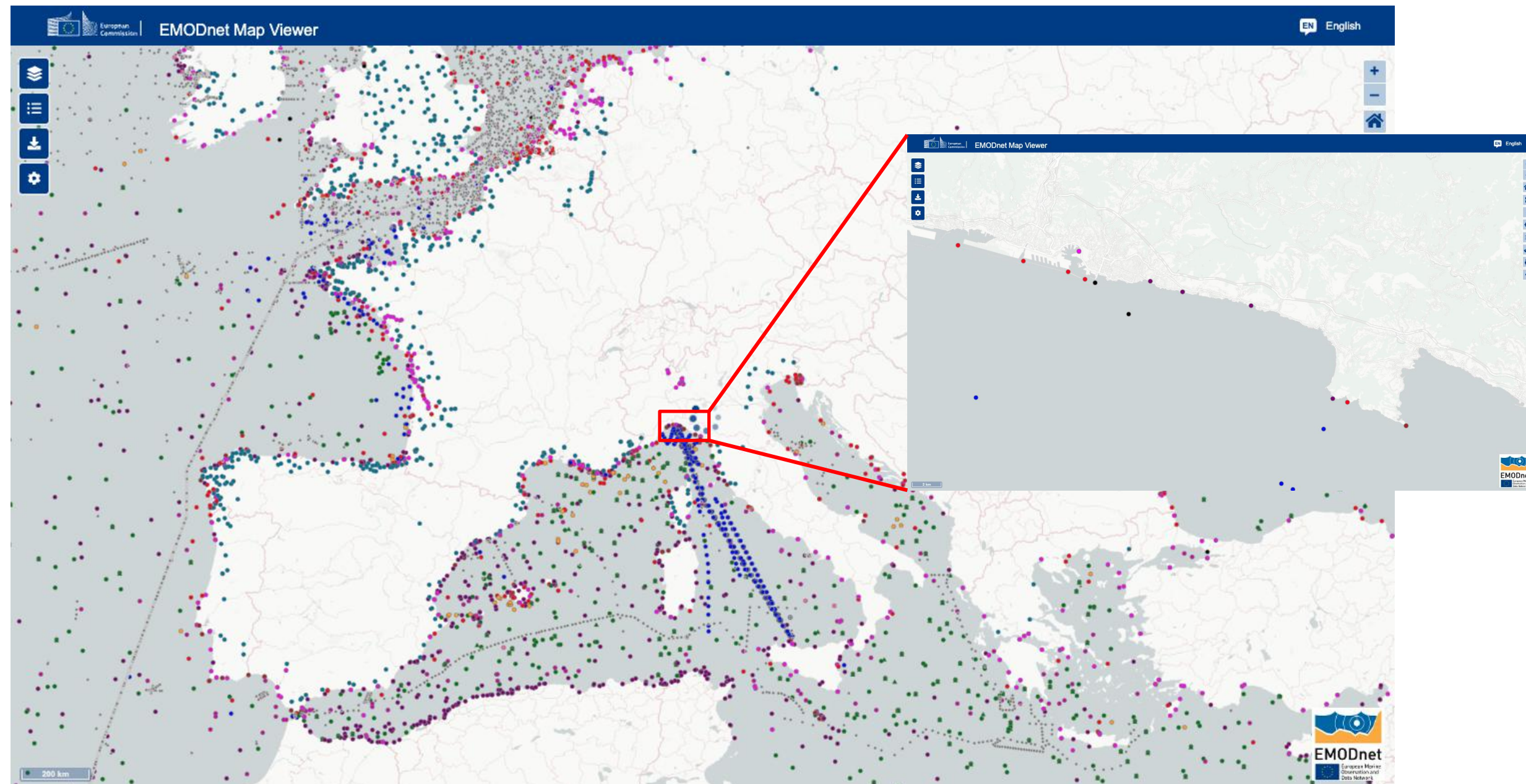
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✓ What's that about?

✓ Why is that important?



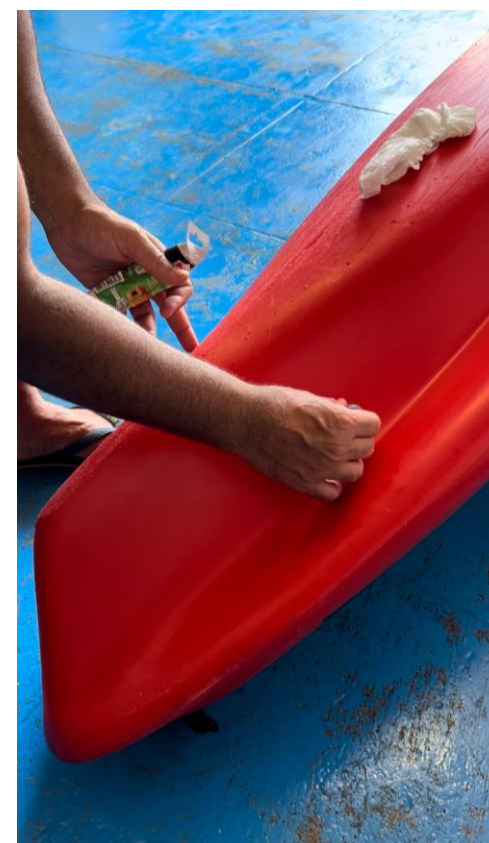
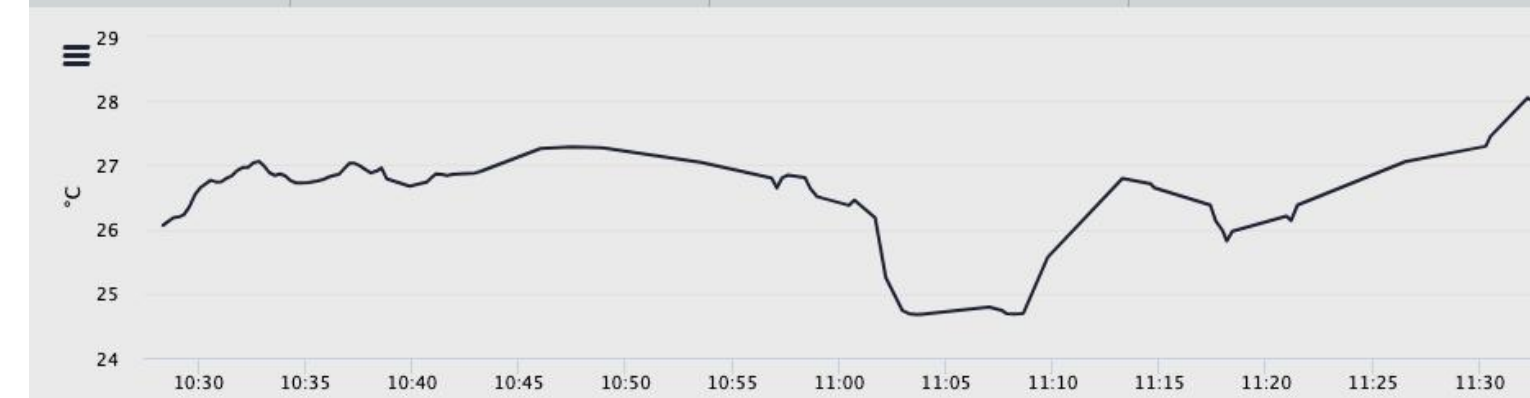
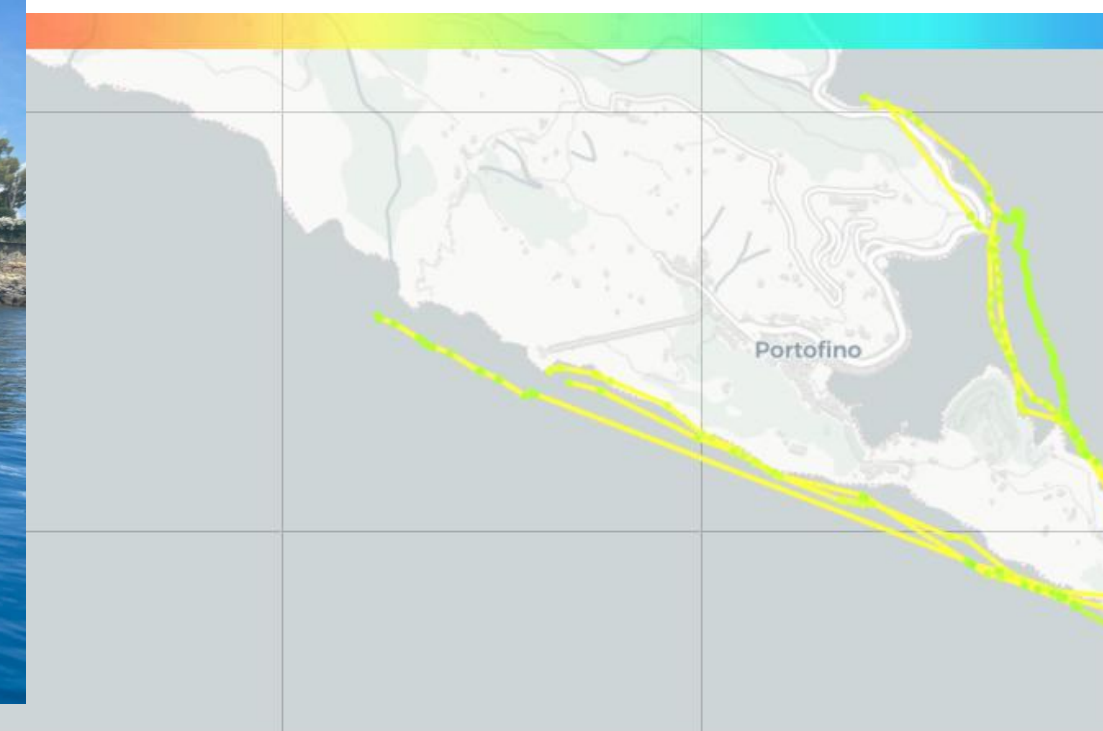
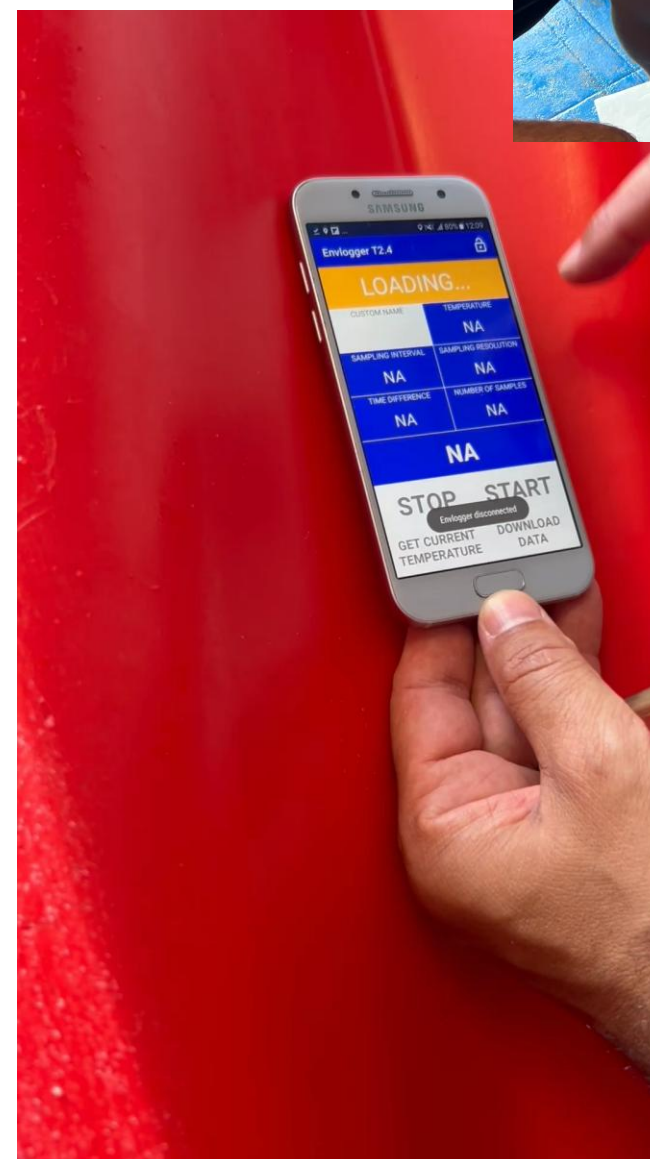


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Technologically Assisted Citizen Science



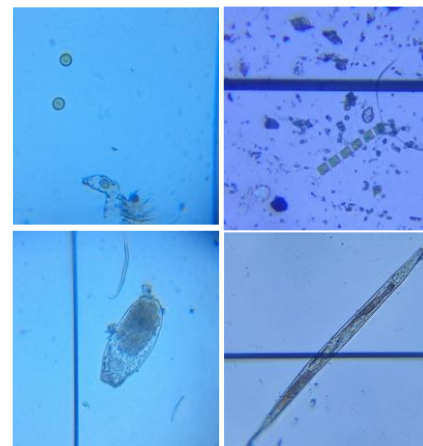
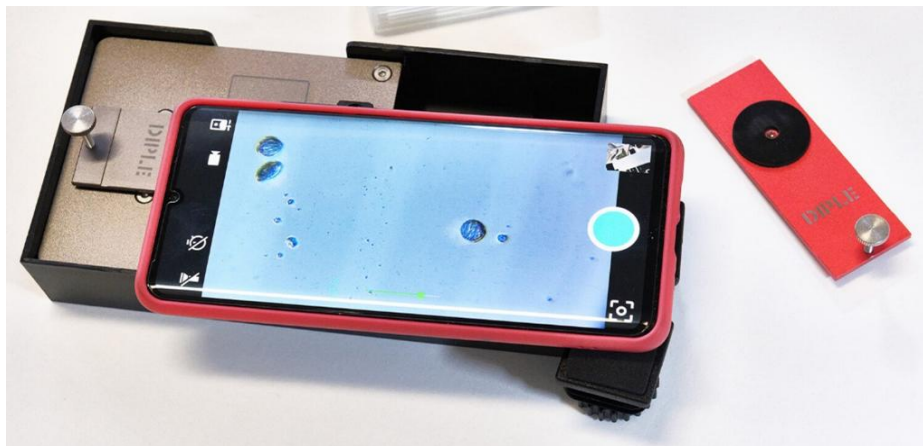
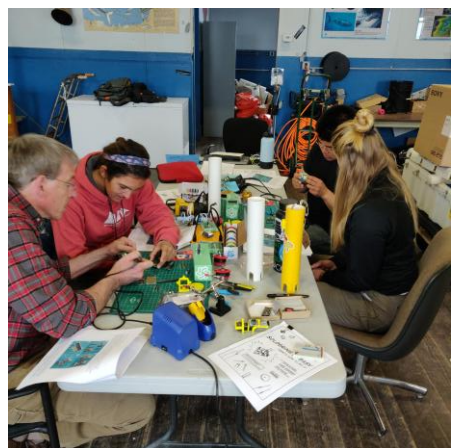
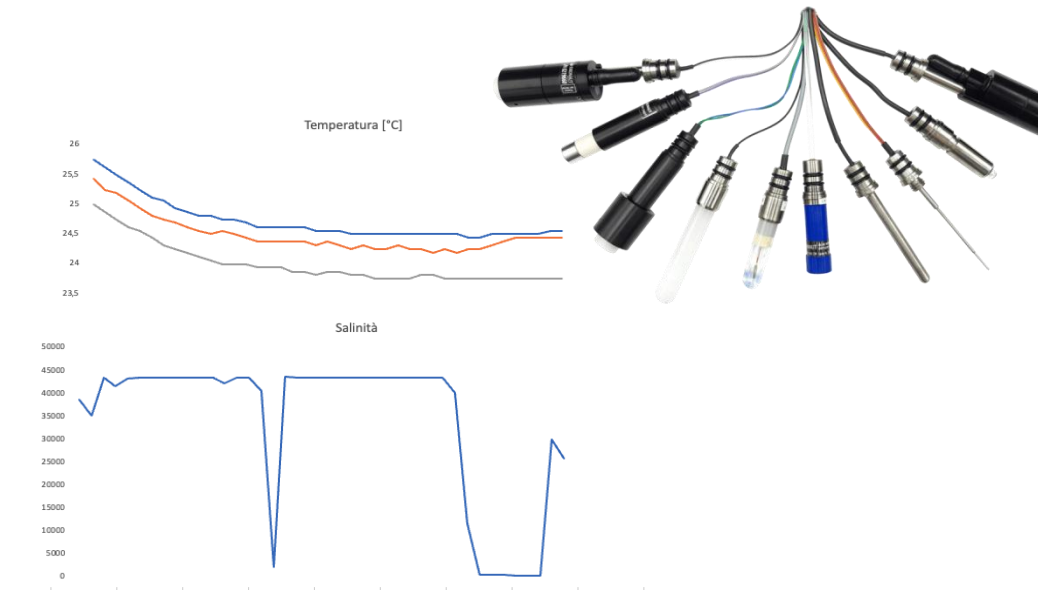
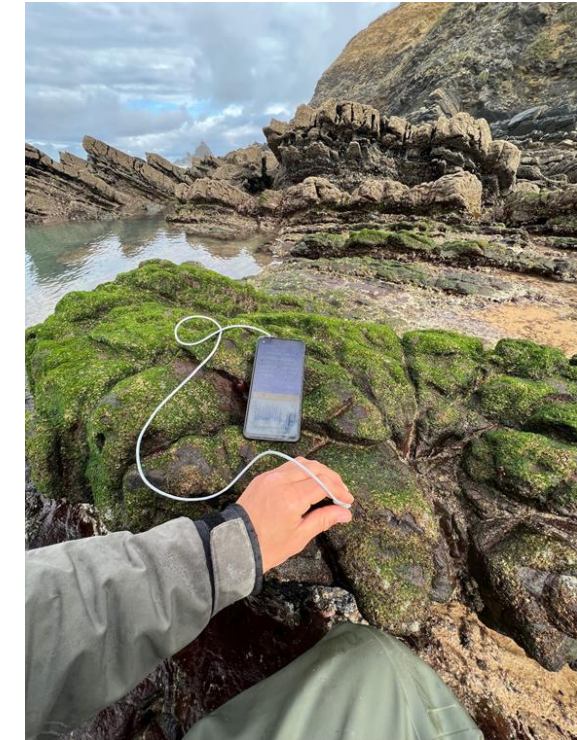


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Technologically Assisted Citizen Science





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more on:

<https://www.raiseliguria.it/en/>

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