



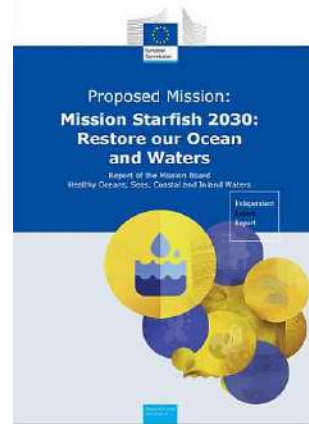
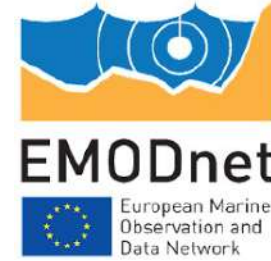
**SMHI**

PATRICK GORRINGE

**EMERGING COST-EFFICIENT  
SENSORS, SCOOP AND ROLE IN  
LANDSEALOT**



WMO



EU requires 20% of marine data from citizen science by 2025



**More observations and data**

# a growing community of interest

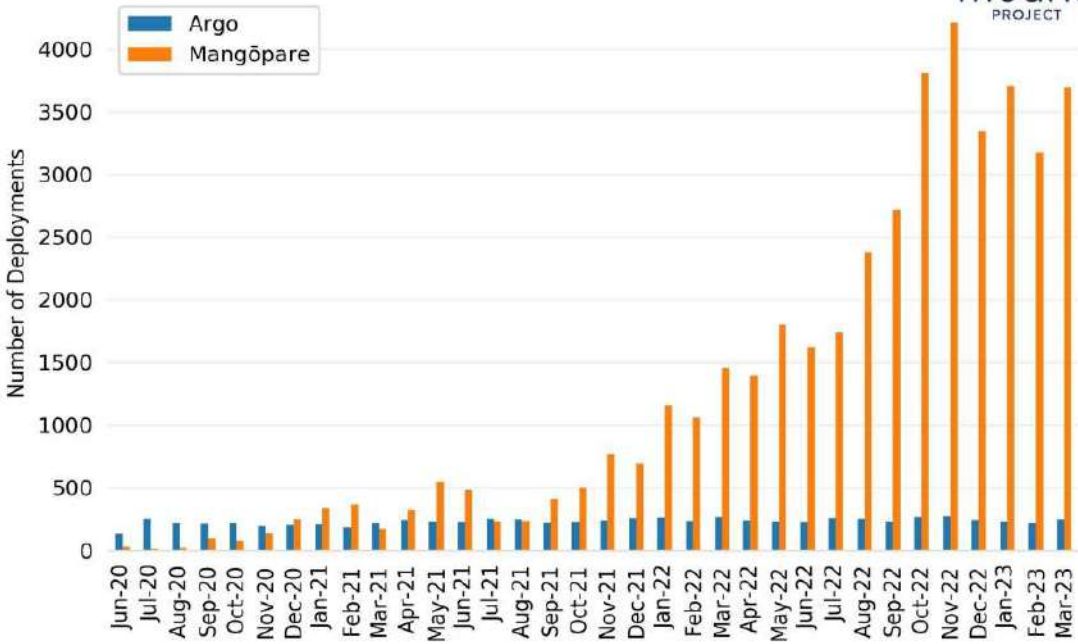
The image displays a collage of promotional posters for various ocean observing technology events, illustrating a growing community of interest. The posters are arranged in an overlapping, fan-like pattern.

- AtlantOS Ocean Hour (January 30, 2023):** A poster for a webinar titled "Democratizing Ocean Observations through Low Cost Technologies and Citizen Science". It features panelists: Fernando D. Lima (Marine Biologist), Katy Croff Bell (Founder and President of Ocean Drifters), Cooper Van Branken (Founder and Director of Borling Data Collective), and Fredrik Gustavsson (Inventor and entrepreneur). Moderators are Patrick Gorringer and Lucie Cocquampot. The event is on Zoom at 11:00 AM - 12:00 PM EST.
- Low Cost Technologies & Data Workshop (June 2nd, 2023):** A poster for a workshop in Cape Town, South Africa. It includes an agenda with an overview of technologies, a lunch break, a poster session, and opportunities for FAIR data practices. Organizers listed are Patrick Gorringer, Lucie Cocquampot, and Julie Harries.
- EOOS Technology Forum 2024 (13 March 2024):** A poster for a forum in London, UK, titled "Catching the Momentum in Ocean Observing Technology: Optimising Value and Data Provision". It lists logos for EuroGOOS, JERICO, Tremor, OGS, SMHI, and DOOS.
- Marine Biodiversity Networking Fridays (April 14th, 2023):** A poster for a low-cost technology practice for ocean observation. It features speakers: Lucie Cocquampot, Constanza Yonaki, Stefano Zaccagnoli, and Anthony Hoyer.
- Democratizing Ocean Observations through Low-Cost Technologies (September 14, 2022):** A poster for a discussion about citizen science and low-cost ocean observations. Speakers include Dr. Priscilla Lange, Dr. Robert J.W. Brewin, Dr. Luiz Paulo de Freitas Assad, and Dr. Andrew David Thaler. Moderators are Lucie Cocquampot and Dr. Mariana Rocha de Sousa.

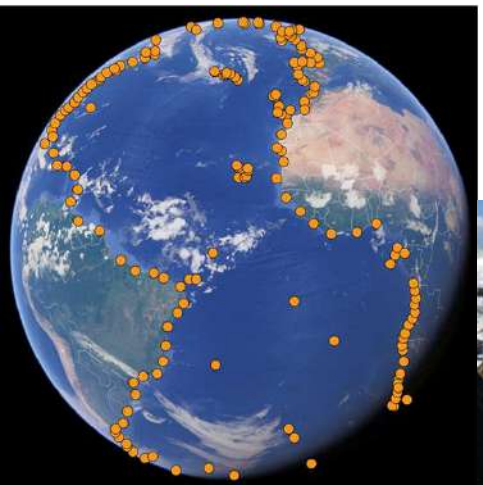
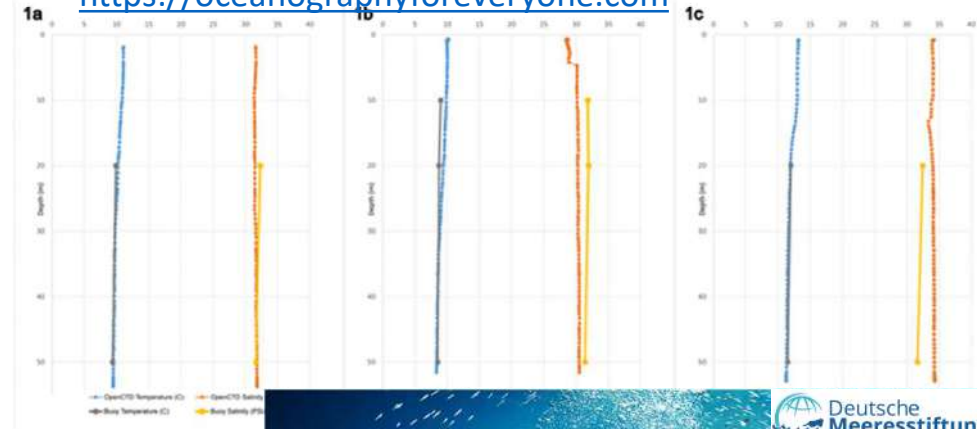




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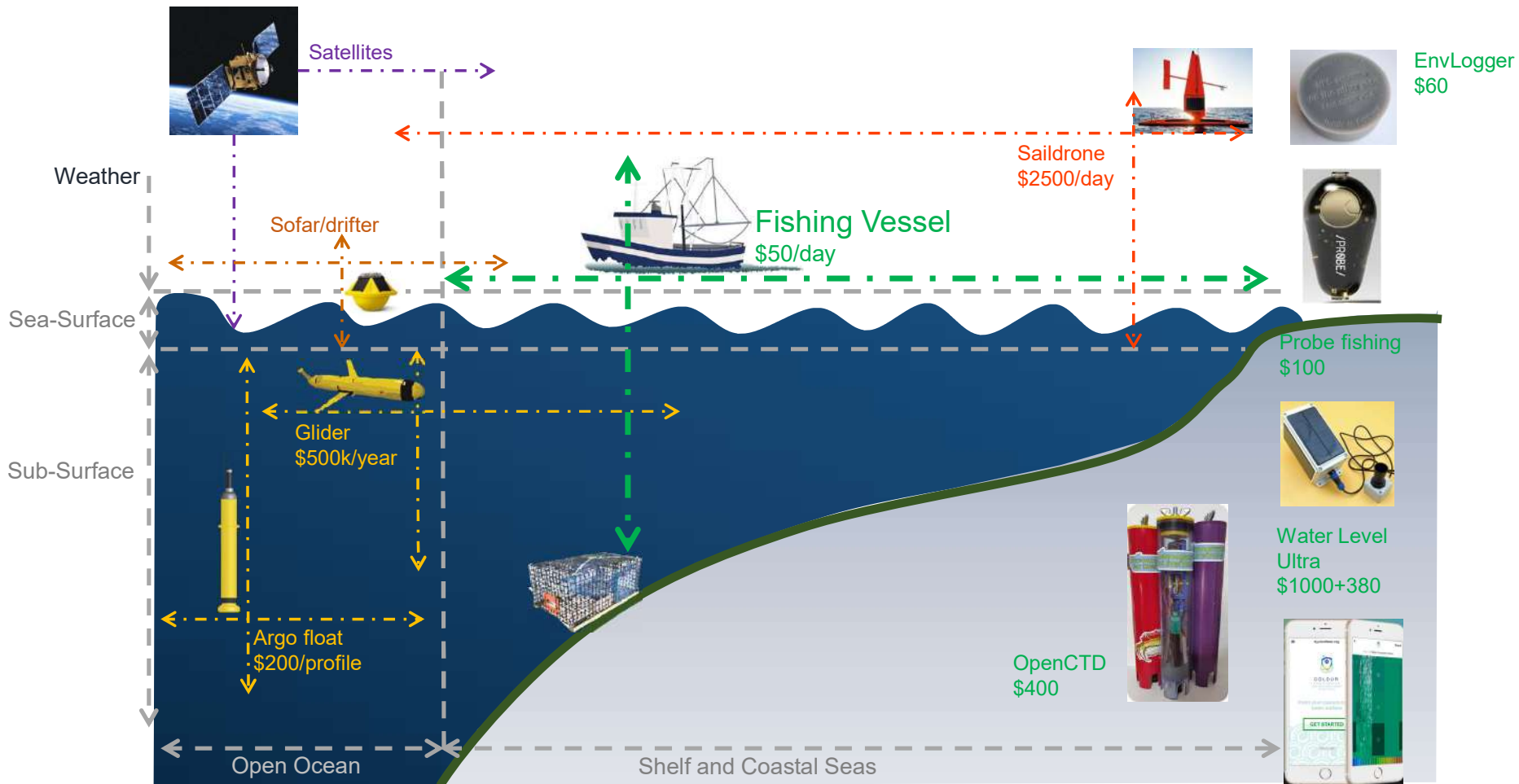
<https://oceanographyforeveryone.com>



<https://cibio.up.pt/en/projects>



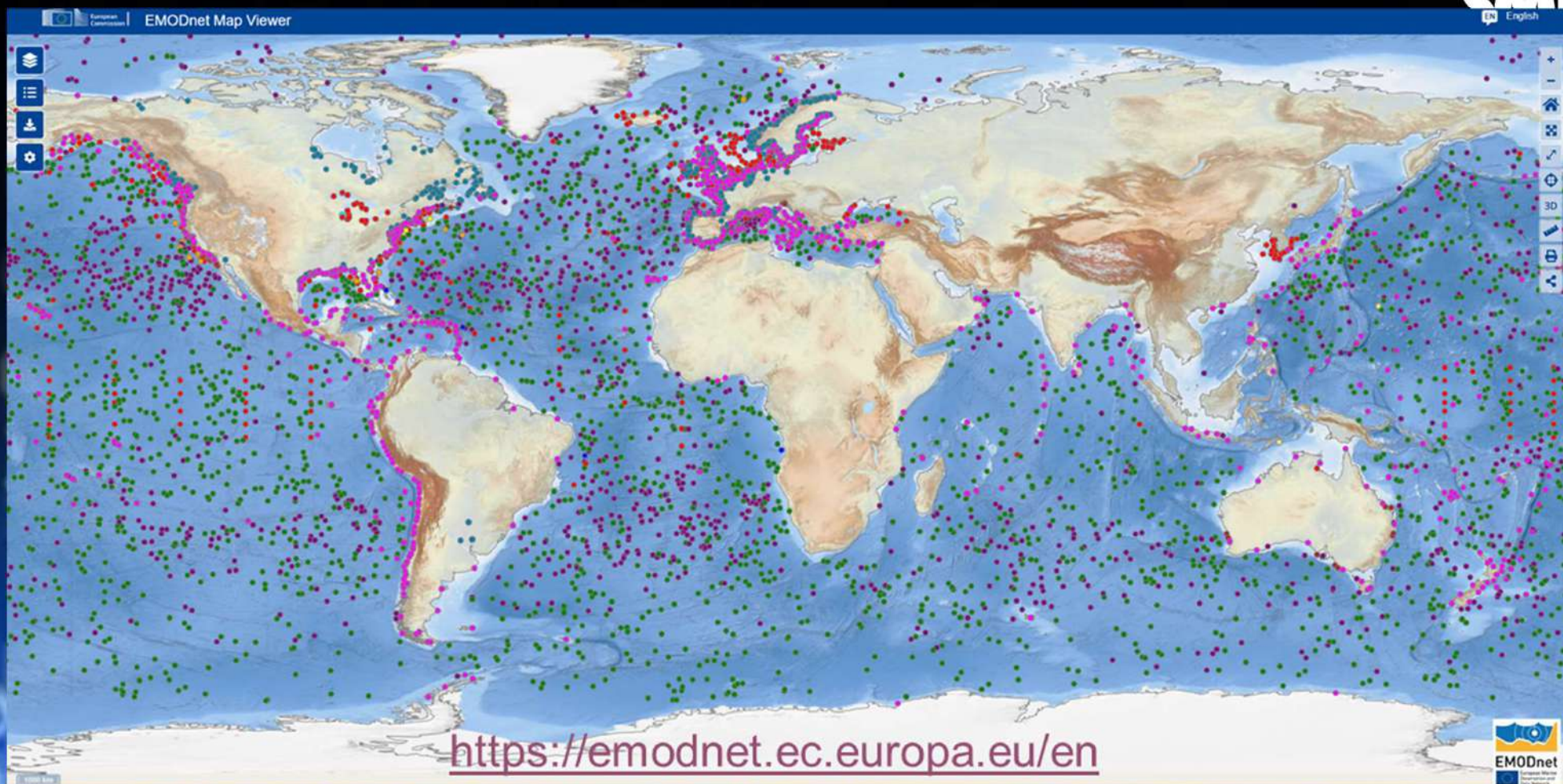
# Filling key gaps in capabilities of other platforms



# Strengths

- Cost effective sensors are an emerging technology suitable to greatly **expand the observation capabilities** in particular in regions with limited resources
- Represent a key tool for **filling data gaps** in existing global and local monitoring networks and contributing information for policy-relevant strategies
- Can **supplement existing monitoring networks** by extending their spatial coverage and increasing monitoring density to provide more localized insights
- Mainly in the **shelf and coastal seas** where we have major data gaps and where often other ocean observation tech is lacking
  - The most important places where maritime stakeholders need accurate forecasts
- Development of these new technologies shows great potential for **advancing citizen science**





<https://blog.orvium.io/fair-principles-in-scientific-data>

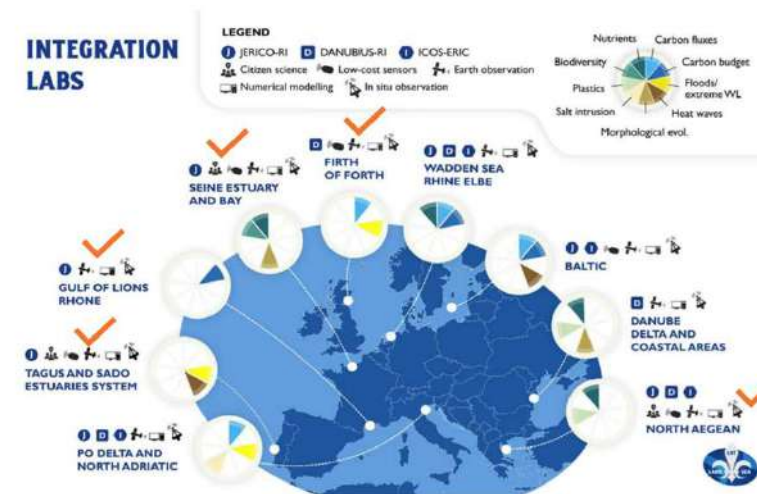
## Next/ongoing steps:

- Need to understand the full **landscape** and needs
  - What sensors exist?
  - Developers?
- Need for a **centralized marketplace website** to distribute information
  - Create a **website/database/directory** of low-cost tech, providers, & testbeds
- Need for a set of **best practices and standards** to be readily available
- More **widespread acceptance** of cost-effective tech and data collected by citizen scientist



<https://landsealot.eu>

<https://oceansynchro.io>





# Next/ongoing steps: SCOOP – Solutions for cost effective ocean observations

- Provide a **focal point for coordination** and alignment of initiatives to identify synergies
- End-user engagement to inform co-design of cost-effective ocean observing solutions
  - **User/stakeholder engagement** is critical in design of systems
- Create **communication** between **users and sensor providers**
- Network building
- Develop a **framework** to enhance and enable **data interoperability**.
  - development of standards
  - Support connections to existing data platforms
  - Support FAIR access to data



<https://oceandecade.org/actions/solutions-for-cost-effective-ocean-observation-scoop>

# Many thanks!



<https://www.sailing4science.org>



<https://educationalpassages.org/>



<https://www.erasmusmaris.eu/>



<https://fvon.org>



<https://aliquidfuture.org>

