



**STRENGTHENING ECOSYSTEM-BASED ASSESSMENT
AND MONITORING FOR PROTECTED HABITATS IN
OFFSHORE AREAS AND NEWLY IDENTIFIED MPAS**

2025 – 2029

OVERALL OBJECTIVE

SEAMPHONI brings visibility and protection to largely unprotected offshore marine areas.

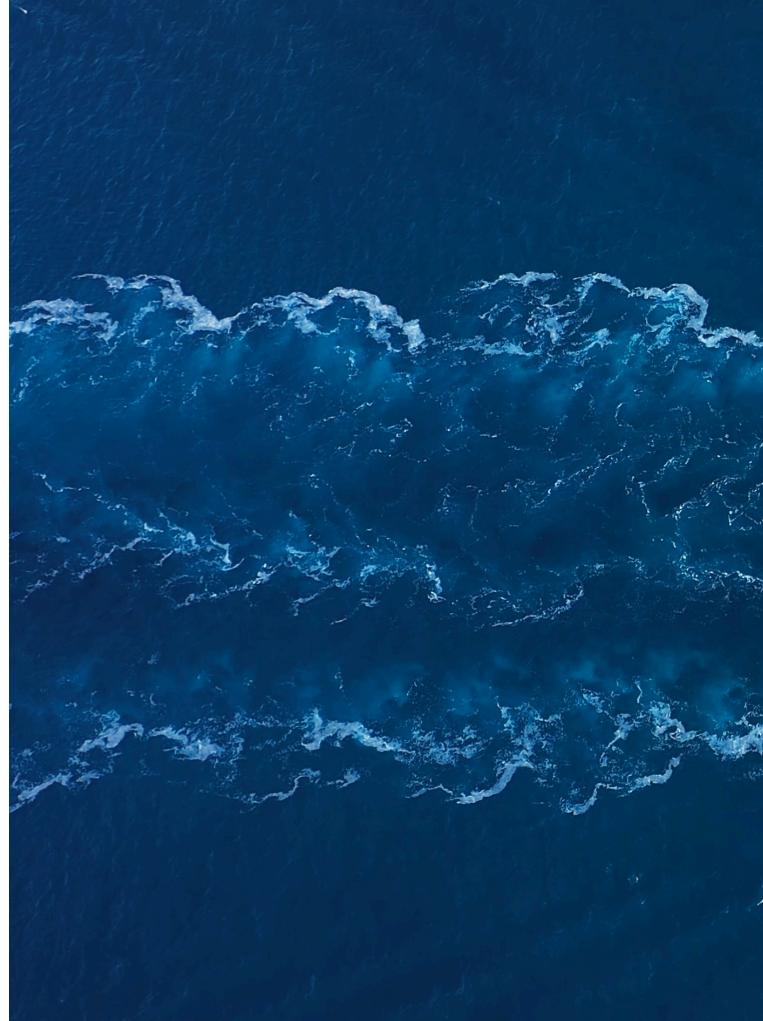
By testing, coupling, and validating three innovative monitoring solutions — environmental DNA (eDNA), acoustics, and imaging — the project will create a shared observing system integrated into an Intelligent Marine Digital Twin, interoperable with the European Digital Twin Ocean.



OBSERVING TECHNOLOGIES

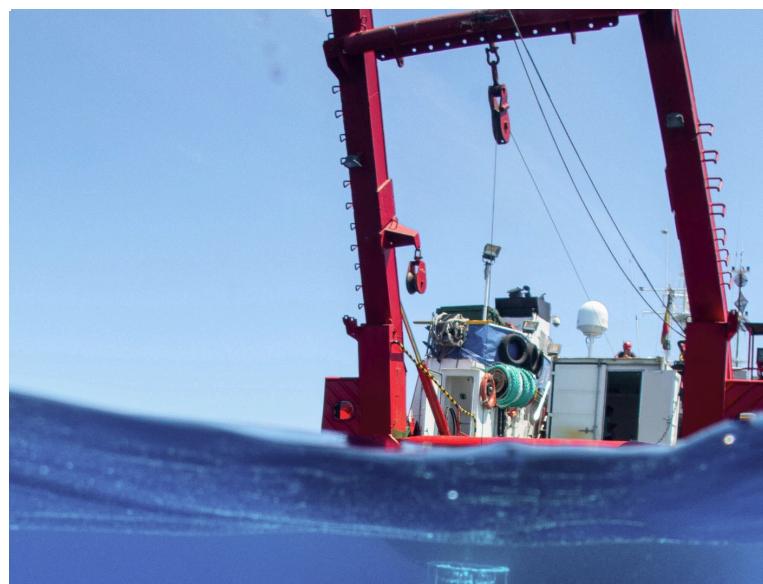
- ✓ eDNA for genetic biodiversity insights;
- ✓ Acoustics for ecosystem processes, noise pollution, and species detection;
- ✓ Imaging & AI for species, habitat, and ecosystem assessments.

Together, these will feed into the SEAMPHONI Digital Twin, supporting marine scientists, MPA managers, policymakers, and citizens.



HOW & WHERE

SEAMPHONI will test, adapt, and integrate cutting-edge monitoring tools (eDNA, acoustics, imaging) in offshore areas, including the Arctic, outermost regions, and tropical seas. It will deliver faster and more continuous biodiversity monitoring, baselines for understudied areas, and blueprints for ecosystem-based marine management. Through an artistic engagement strategy, SEAMPHONI will also reconnect society with offshore ecosystems, tackling the “out of sight, out of mind” challenge.





MISSION

- ✓ Advance offshore biodiversity monitoring with innovative, cost-efficient technologies.
- ✓ Strengthen ecosystem-based management of high seas and offshore MPAs.
- ✓ Support effective marine protection policies, including GBF 2030 targets.
- ✓ Develop predictive models for ecosystem services and functions.
- ✓ Address regulatory and governance fragmentation in offshore areas.
- ✓ Bridge the emotional gap between society and offshore ecosystems through art and citizen engagement.

COORDINATION



UNIVERSITAT POLITÈCNICA
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PROJECT WEBSITE

www.seamphoni.eu (Soon)