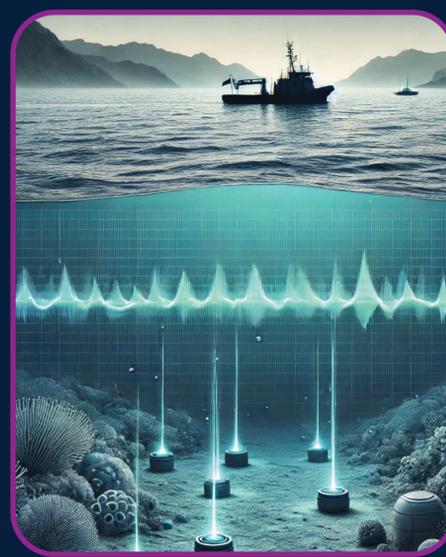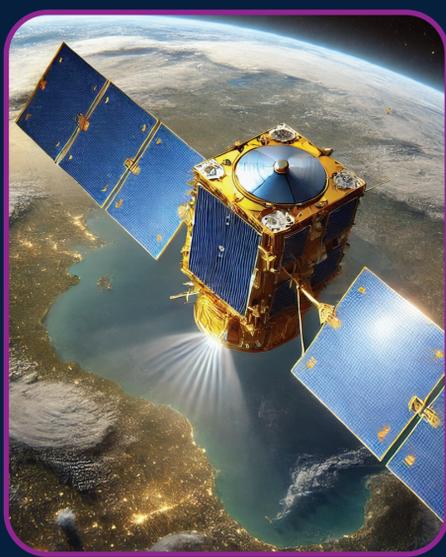# Axolotl

1 September 2024 - 31 August 2027

From sky to seafloor observation
Achieving excellence in oceanic surveillance and conservation through deep learning

**AXOLOTL aims to enhance
marine conservation efforts and maritime surveillance
by leveraging artificial intelligence - deep learning methodologies -
built on standardized and robust data sets**

Our Mission
To develop and validate innovative deep learning models for:

• In-situ marine biodiversity assessment and non-indigenous species detection
leveraging plate images from Artificial Reef Monitoring Structures (ARMS) collected
over several years across Europe and, for the first time, in Cyprus

• Remote sensing for maritime surveillance of small vessels' activities
- Developing super-resolution and small object detection techniques from satellite images
alongside data from Automatic Identification System and Vessel Monitoring System
- Advancing underwater soundscape analysis for detection and classification of specific types
of vessels, including cargo ships, tankers, and small boats

Activities go beyond the strictly scientific scope and include:

Mutual development and reinforcement of researchers' competencies

Access to interdisciplinary networks of excellence

Sustainable linkage with international partners

*Ensuring that Cyprus' scientific excellence is transformed
into actionable innovation and value*

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