



## Operational Sensing Life Technologies for Marine Ecosystems

### **Milestone M5.6a –New instruments deployed and working in operational mode in EMSO-SMARTBAY (MI, M18)**

**Lead Beneficiary:** Marine Institute

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## Preface

This document is a Milestone for the ANERIS project, funded under the European Union's Horizon Europe Research and Innovation Action under grant agreement No. 101094924.

This milestone documents the deployment of CitoSub, developed by CytoBuoy, and the Underwater Vision Profiler 6 (UVP6), developed by AIES-ZOO.

## Summary

This milestone falls under WP5, whose objectives are to set up a converged cyberinfrastructure across the computing continuum, combine the various designed pipelines, and test them on a distributed edge-cloud deployment that will be used for the various case studies that have been proposed. This includes the Marine Institute's provision of the EMSO-SmartBay platform for new instrument deployment and operational mode testing.

The SmartBay observatory, along with UVP6 and CitoSub equipments, was successfully deployed on July 13th.

## List of Abbreviations

EMUAS – Expandable Multi-Imaging Underwater Acquisition System

UVP6 – Underwater Vision Profiler

## 1. Pre-deployment

### 1.1 CytoSub

The CytoSub is an instrument that efficiently collects high-definition, high-frequency data from any underwater locations, providing reliable images of phytoplankton and zooplankton in their natural state, this allows stations such as SmartBay to enhancing monitoring capabilities with single cell analysis and imaging

Prior to the CytoSub's deployment, CytoBuoy technical member Douwe Dreef traveled to Galway to train P&O staff as well as Marine Institute technical and biological teams on May 28th and 30th.



**Figure 1:** *CytoSub training session in Galway pre-deployment.*

### 1.2 UPV6

Marc Picheral guided Shane, the senior SmartBay observatory technician, through the process of integrating the instrument into the observatory systems. Marc was granted with remote access to ensure the instrument was functioning properly, among other things. This task was completed using a 'test' instrument. After the integration was set up, the actual instrument was received for deployment and was integrated into the observatory after additional checks and testing prior to deployment.

### 1.3 EMUAS

We are presently awaiting further information regarding future timelines concerning this instrument.

## 2. Deployment

The deployment of the SmartBay observatory, initially scheduled for mid to late June, was delayed due to unforeseen technical issues and adverse weather conditions. Consequently, the observatory was not deployed until the 13th of July. Although the observatory is not currently providing real-time data to the general public, both CytoBuoy and Hydroptic have the capability to access their respective instruments to view the data live.

Below are some photographs from the observatory's deployment.



**Figure 2:** SmartBay being deployed as well as highlighting the location for UPV6 and CytoSub.



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**Figure 3:** *Smartbay deployment followed by a professional diver who connected the observatory to the network.*

The SmartBay's successful deployment in Galway Bay represents a significant milestone for ANERIS in terms of the aforementioned equipment, as it allows ANERIS partners to further test and develop their equipment in the field.