

CLEAN SEA project: the test in Lake Vättern (Sweden)

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The CLEAN SEA (Continuous Long-term Environmental and Asset iNtegrity monitoring at SEA) project has been realized by eni e&p and its subsidiary Eni Norge in cooperation with Tecnomare in 2012. The aim of the project is to use a commercially available AUV properly upgraded, installed and operated by SAAB AUV, for the execution of environmental monitoring in offshore zone. We participated to the project performing the environmental characterization of site (Lake Vättern, Sweden) selected for the field test of Clean Sea project, and to providing support to processing the collected data by the payload installed. In detail, in the first phase of the project, we characterized the site of interest analyzing the climate, the morphology, and the principal chemical and physical water and environmental parameters on the basis of historical data (meteorology, hydrology, hydrodynamic, wind, ice cover and natural resources of the lake). In the second phase of the project, we processed the oceanographic and environmental data acquired in Lake Vättern during the AUV tests. The tests have been performed in two different areas in the East and West side of the lake. In detail Temperature, Salinity, Methane, Turbidity, Chlorophyll, Colored Dissolved Organic Matter, Polycyclic Aromatic Hydrocarbons, Oxygen, pH, Oxidation Reduction Potential, Refined Oil and Crude Oil have been acquired in 21 different tests with 4 different mission types, and successively processed and evaluated. The analysis highlights the spatial and temporal variability for each parameter, and allows the comparison with the available historical data.