Sentinel-3 products for detecting EUtROphication and Harmful Algal Blooms in the French-English Channel (S-3 EUROHAB).

TASK 1. Activity 1.1: Deliverable T1.1.1. Creation of a cross border data portal.

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Summary:

This report gives the status of the S-3 EUROHAB data portal in spring 2019. Task 1.1 is the creation of a cross-border web based data portal consisting of *in situ* data from monitoring stations, high frequency moorings, and Copernicus Sentinel-3 (S-3) satellite data. The *in situ* and mooring data include temperature, salinity, nutrients, chlorophyll-a (Chl-a), phytoplankton counts (including Harmful Algal Bloom species), dissolved oxygen, turbidity, surface solar irradiance and wind speed. The S-3 data includes Chl-a, turbidity and solar irradiance.

The data is comprised of data from the IFREMER REPHY network, the Environment Agency monitoring network, The NERC National Capability western English Channel Observatory, the UK Solent water time series and S-3 satellite data from Copernicus. These data are automatically uploaded as they become available. There are separate windows for the new S-3 products, Chl-a, HABs, Sea Surface Irradiance and turbidity, that have been created during the project. There is a telemetry link from the High Frequency mooring data to the web portal so that data can be processed and uploaded automatically from any location in UK and Fr enabling easy access and immediate use of the dataset. Visualisation tools have been created so that maps of the *in-situ* data can be produced quickly and easily to facilitate use in WP3 and 4. The visualisation tools include graphics to automatically plot the S-3 against *in situ* data to assess its accuracy.

The aim of the data portal is to provide the necessary data in one single database to assess the environmental factors that lead to HABs (Task 1.2), the dispersion and transport of HABs (Task 1.3), for definition of the GES baseline (Task 1.4), the development of Harmful Algal Bloom & Water Quality algorithms (Task 1.5) and for the parameters to increase the productivity of fish and shellfish operations (Task 2.2). In addition, the data base also provides: 1) long-term surveillance of phytoplankton biomass (through the Chlorophyll-a as a proxy) and water clarity (through the satellite-derived non-algal Suspended Particulate Matter and turbidity) in the FCE area and 2) alerts on target HAB species. These activities contribute to the long-term management of the Water Quality of the FCE waters and to monitoring Harmful Algal Blooms in the FCE area. The data portal will also provide the necessary data (both in situ and from satellite) to forecast HAB species such as *dinophysis* spp. which are toxic at low cellular concentrations and not detectable in Ocean Colour imagery. Statistical analyses of regional parameters will help to define proxies for these toxic species.

The data is from both sides of the English Channel and in southern Brittany, as part of on-going cross-border collaboration within the project. The *in situ* data goes back to 1998 and is comprised of both French UK tat cover both sides of the English Channel coast lines. These *in situ* data (especially Chlorophyll-a and phytoplankton cell counts) will be used to validate the HAB risk maps for the web alert system that will be created in S-3 ERUOHAB.