Water Health Indicator System (WHIS)

A water quality monitoring API based on Copernicus data

N.º do tema de sessão técnica: Nº. 1 – Aplicações e Tecnologia

Resumo

This talk will present initial results from a feasibility study that aims to develop a proof of concept for the Water Health Indicator System (WHIS). This system is being developed in a Portuguese consortium including Development Seed and Associação para a Investigação e Desenvolvimento de Ciências (FCID) from the University of Lisbon, and the support of the Portuguese Space agency, PT Space.

The WHIS system will will leverage the latest advancements in earth observation and big data analytics to provide an innovative solution for monitoring water quality, quantity and health. We will utilize Copernicus data and other available open source satellite data, which will enable us to analyze and visualize water quality parameters in near real-time.

The proposed system provides a continuously updated data stream about the environmental health of inland water bodies. This service will be an API that provides monitoring and reporting capabilities that allow private sector and public agencies to track a set of specialised and highly descriptive Water Health Indicators. We will work with multiple Portugues and International potential users to ensure the system will be relevant for practical use cases.

Indicators will be physical descriptions derived from satellite remote sensing, such as water extent, turbidity, chlorophyll concentration and evapotranspiration. One key advantage of Earth Observation derived indicators is that they are harmonised in time and space. They are computed with the same method and based on the same input data, regardless of the date of observation and where the imagery was collected geographically. This property makes the indicators compatible and comparable against each other without the usual overhead of massive data processing.

The WHIS system will be Non-technical users may be academia, local government, governmental departments that are tasked with ensuring the quality of water sources, hydropower operators monitoring a dam, or large private companies that rely on water sources for their production of agriculture or fast-moving consumer goods such as beverage companies.

Palavras chave

Water Quality, Freshwater, Earth Observation, Sentinel-2, Portugal, API, Software

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