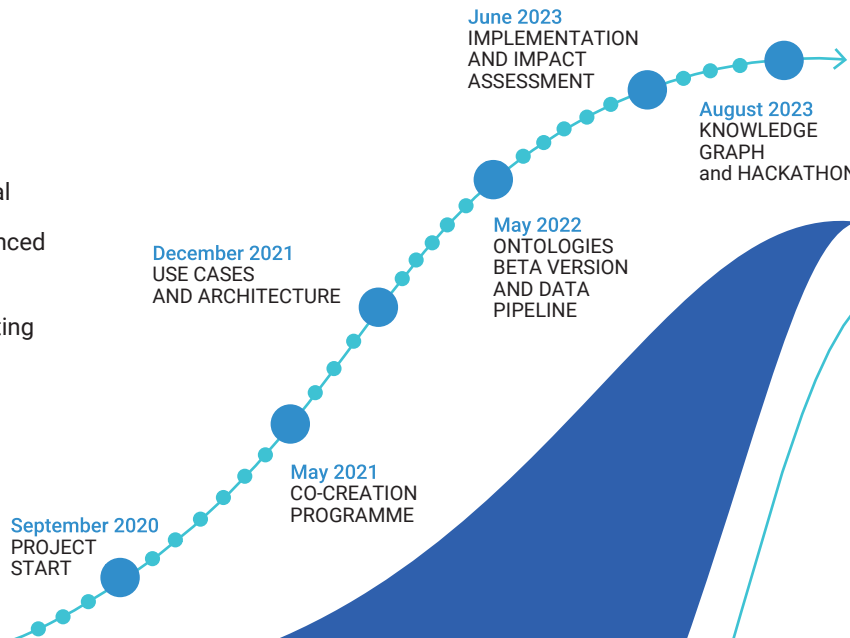




Objectives

- To develop the **FIRST OPEN EUROPEAN KNOWLEDGE GRAPH** on water consumption and pollution, capable of linking environmental data to health data on diseases diffusion. The knowledge graph can be reused for advanced analysis and development of **INNOVATIVE SERVICES BY ANYONE**
- To define valuable use cases, identify supporting datasets to be opened on water and health. Data from different sources will be **SEMANTICALLY HARMONISED**
- To ensure sustainability by applying a fully decentralised data management approach, and by engaging with external users since the initial project phases



Co Creation Programme

The co-creation programme is articulated in a set of regular meetings. Participants are invited to share insights and opinions. Documents and technical artefacts produced will be made publicly available and feedback from co-creators will be incorporated in the project deliverables. Organisations that decide to open their data using WHOW's digital assets will benefit of technology knowledge transfer. The co-creation program ensures user engagement from the initial phase of the project activities. The level of involvement may vary depending on users' needs and objectives.

CO-CREATORS CAN CONTRIBUTE BY:

- defining use cases and identifying supporting datasets and provenance processes;
- re-using WHOW's data models or extending them according to their peculiar needs;
- developing applications/services for enhanced data availability and scientific studies;
- opening data by using the digital assets made freely available.

USE CASES

Human exposure to contaminants in marine environments
Linking data on bioaccumulation and human exposure to: chemicals and biological contaminants in marine waters; ingestion of contaminated fish products; and airborne exposure (e.g. *Ostreopsis Ovata*).

Water for human consumption
Linking data on drinking water usage and quality, measured by compliance with new EU microbiological, chemical and physical parameters, with data on water-related diseases and pathogens.

Extreme events
Linking data on floods, sea storms, storm surges, coastal floods and drought to human health, alteration of the hydrological cycle, and agriculture and fisheries industries.

SEMANTIC LAYER

In order to develop the knowledge graph, WHOW will take into account different data sources usually heterogeneous in terms of format, granularity and semantics. The objective is to **HARMONISE** the data by defining possibly shared ontologies and controlled vocabularies compliant with existing European and Italian standard data models. This will allow users of WHOW's digital artefacts to "speak the same language" in the usage and exchange of water and health data, meeting semantic interoperability requirements.

TECHNICAL ARCHITECTURE

A technical architecture will be developed by applying a fully **DECENTRALISED APPROACH**, where data providers maintain full control on their data. They will have their own knowledge graph production pipeline with the necessary digital artefacts that WHOW will provide as open source software libraries in order to publish water and health data. This approach will guarantee that new data providers can join the knowledge graph with almost **NO CODING REQUIRED**.

PROJECT PARTNERS

Celeris Advisory Ltd (Project Coordinator);
Italian Institute for Environmental Protection and Research (ISPRA);
Italian Research Council - Institute of cognitive sciences and technologies (CNR-ISTC);
ARIA S.p.A. (Regional company for Innovation and Purchases of the Lombardia Region)

