OSCARS
Open Science Clusters' Action for Research & Society

Funded Project

AQUANAV

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Implemented by

IGB
Leibniz Institute of Freshwater Ecology and Inland Fisheries

OPEN KNOWLEDGE MAPS

WIKIDATA

FREIE UNIVERSITÄT BERLIN

Funded by the European Union

CHALLENGE ADDRESSED

- **Aquatic ecosystems** are under pressure due to global change drivers, e.g. pollution, habitat degradation, rising temperatures, and ocean acidification
- **Aquatic experimental research infrastructures (RIs)** allow studying the impact of these drivers in controlled but realistic environments, thus delivering the bases for **predictions** and the development of **mitigation measures**
- Information on the **technical specifications** and location of these RIs is available, but it is **not searchable nor machine readable** and is far from exhaustive
- **Publications are not systematically linked** to the RIs
- **This lack of easy access to information does not comply with the FAIR principles and hinders usage of these valuable RIs and of previously acquired knowledge**

SOLUTION

- **Semantic modeling:**
  - Metadata schema for modeling technical information on the RIs
  - Conceptual model for representing grand challenges and related experimental setups
- **AI-driven visualizations:**
  - Searchable GeoMaps for RIs and linked technical information
  - Dynamic, interactive Knowledge Maps and Streamgraphs of relevant publications and datasets
- **FAIR knowledge graph:**
  - Representation of assembled meta-data in WikiData
  - Scholia profiles for visualization

RESULTS

- **AQUANAVI - an open and FAIR interactive atlas** integrating technical information and geolocation of facilities with respective publications and reports
- AQUANAVI will enable **quick discovery** of available resources, **facilitate new collaborations** and allow the **exploration of experimental setups**
- AQUANAVI will be connected to the **ENVRI HUB and EOSC services**
- The team is well connected with the **community of future users**, and will spread the word through mailing lists, on conferences and on social media
- The project principles and processes will provide a framework that allows others to implement similar systems in other domains and **inspire greater open collaborative exposure** of scientific knowledge transfer

RISKS

- **Information may stay incomplete** - but: AQUANAVI team has a well-established network of researchers potentially using the RIs; these researchers can easily foresee high benefit from their input
- **Low coverage of concepts in ontologies** - but: team has expertise in developing concept definitions and access to domain experts in the community for advice
- **Low future usage of AQUANAVI** - but: researchers have been asking for the missing information already; team is very well connected with future users due to previous EU-funded projects

TEAM

IGB Berlin:

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- Tina Heger
- Jonathan Jeschke
- Katharina Makower
- Jens C. Nejstgaard
- Steph Tyszka

OKMaps:

- Christopher Kittel
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- Maxi Schramm

Wikidata:

- Daniel Mietchen