A pilot study to provide large-volume, user oriented marine spatial data of a federal institution

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EasyGSH-DB

The EasyGSH-DB project produced 20 years (1996-2015) of marine data in a high temporal and spatial resolution for the German Bight in the thematic fields of geomorphology, sedimentology and hydrodynamics. To obtain a high degree of usability and possible applications inhomogeneous data from different origins were harmonized to comparable datasets.

Requirements And Expectations For Publishing

The project followed the FAIR Guiding Principles when publishing data. EasyGSH-DB agreed on the FAIR Principles as a prerequisite for data management and as responsibility for data publishing.

In the project, it was important not only to find a way to publish the harmonized data, but also to make it as user-friendly as possible. For this purpose, potential users were identified and interviewed. To meet stakeholder expectations, project groups were set up to merge user requirements and doability to provide data and services like:

- free model and processed data
- quick download in a maximum of three steps
- on-the-fly visualization
- technical, detailed documentations

Five steps to determine a user oriented approach to data publishing: 01 – find users; 02 – interviews; 03 - participative project groups; 04 – periodic meetings; 05 – product and publishing

Data flow And Technical Infrastructure
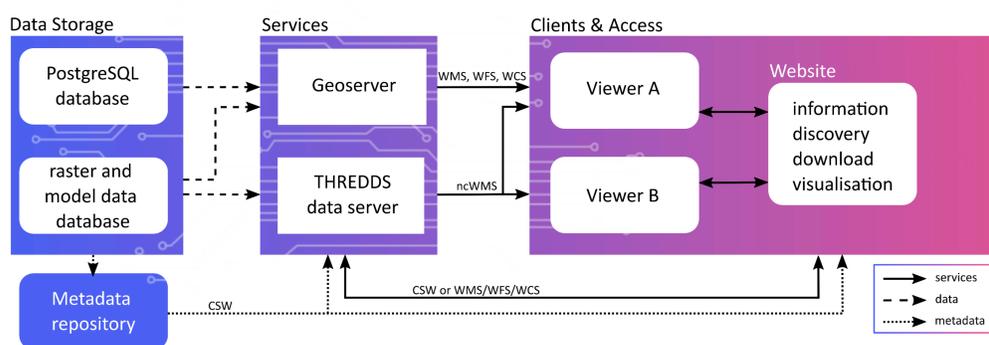
Overview of technical infrastructure from data storage to access, including data, metadata and web service flows.

Managing the flow between storage and data depends on required data and publishing type. For example metadata is generated at the start of each new model run and based on ISO 19115 and 19157. Each processing step from model to analysis are remembered automatically in the lineage element. This provides a continuous control, validation and maintenance of data and metadata. Metadata are also used as pathways to connect download and web interface.

To use the data in any online environment, OGC Standard services (WMS, WFS and WCS) for processed vector and raster data allow download and visualization in viewers. Model data (NetCDF) need a separate server to utilize a download and second viewer with separate functionalities for on-the-fly discovery and visualization.

Web Interface
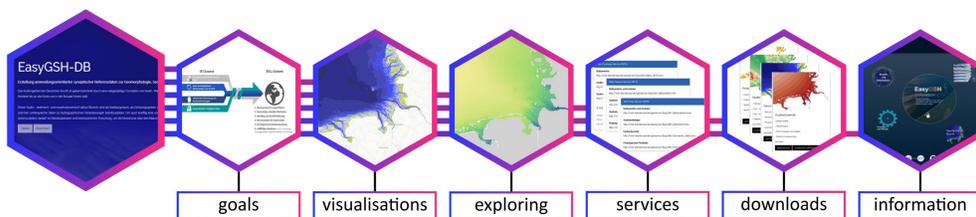
Main topics of website

The most efficient way to provide project progress (information and data) to stakeholders was a website with a simple graphical user interface. Allowing stakeholders multiple ways to reach the same information or downloads depending on their preference to navigate between sites. Even as a prototypical way to explore possibilities to share data from a project of a federal institution the usage of the data exceeded assumptions and motivated others to share.

Implemented Key Points

- available for free under CC-BY 4.0
- standardized data access via WMS, WFS and WCS
- pre packaged download for NetCDF, ESRI shape or GeoTIFF with supporting information like styling or data sources
- technical documentations, validations and project updates
- thematic themes are associated with data doi and published papers
- metadata is harvested into other repositories (e.g. mCloud, MDI-DE, GDI-DE, Inspire)

Experience shows us that the application of the data must be diverse and flexible. The presented solution was the best way for the project to publish data in a reasonable way and fulfilled the goal to motivate coworkers and marine colleagues to share their data. For more information around EasyGSH-DB in form of model validation, technical papers or presentations visit our website.