BalticAIMS: Integrated Maritime and Territorial Spatial Planning for the Baltic Sea

## Report for NoR
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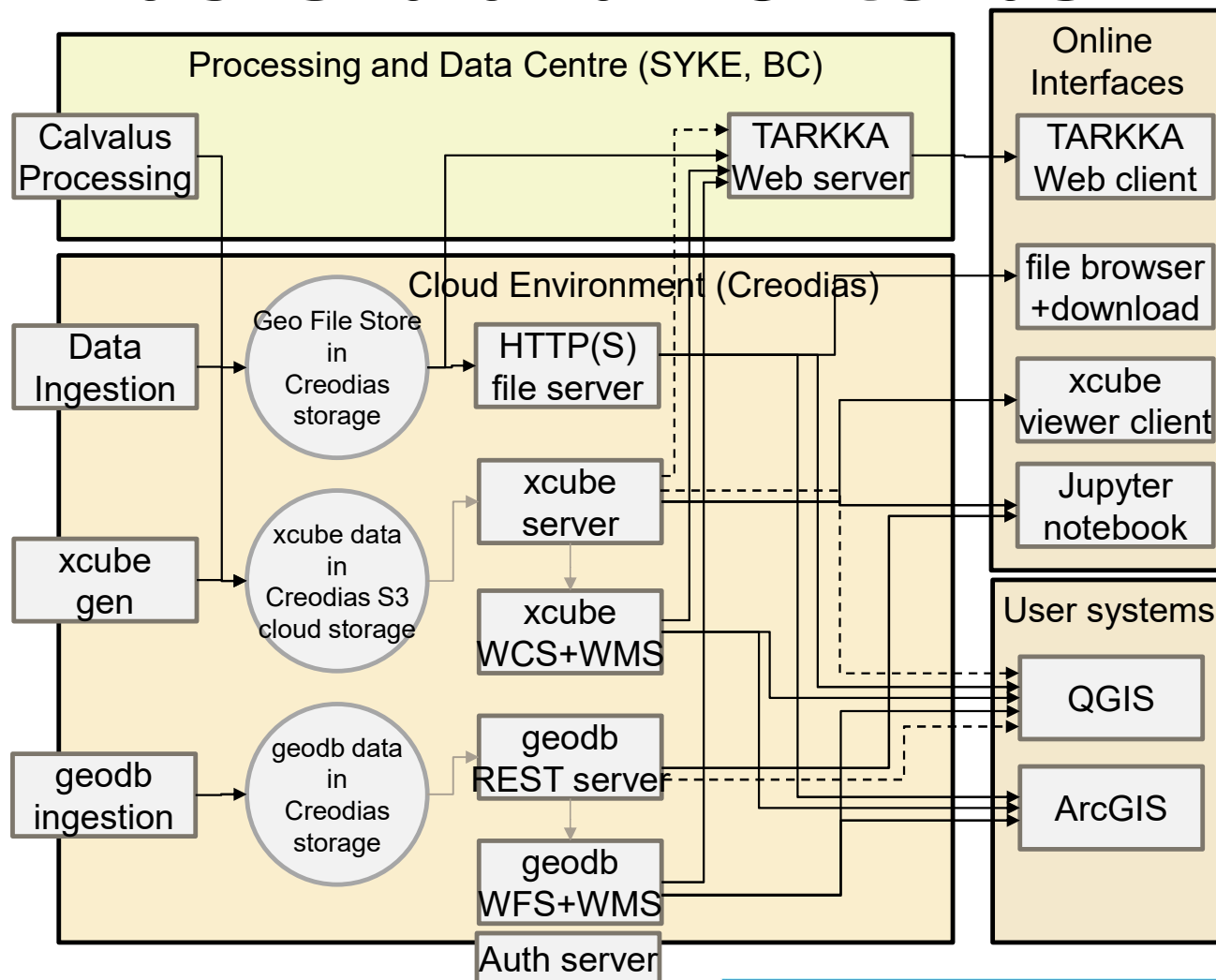
Overview of BalticAIMS project 1/2

- **Spatial planning** is a process that aims to mitigate the impacts of human activities and eventually improve the state of the environment through coordination and implementation of various practices and policies.
- One important action for the improvement of the state of the Baltic Sea is to improve the territorial and maritime spatial planning capabilities for the organizations operating in the area. This includes provision of a better data and information basis to support decision making.
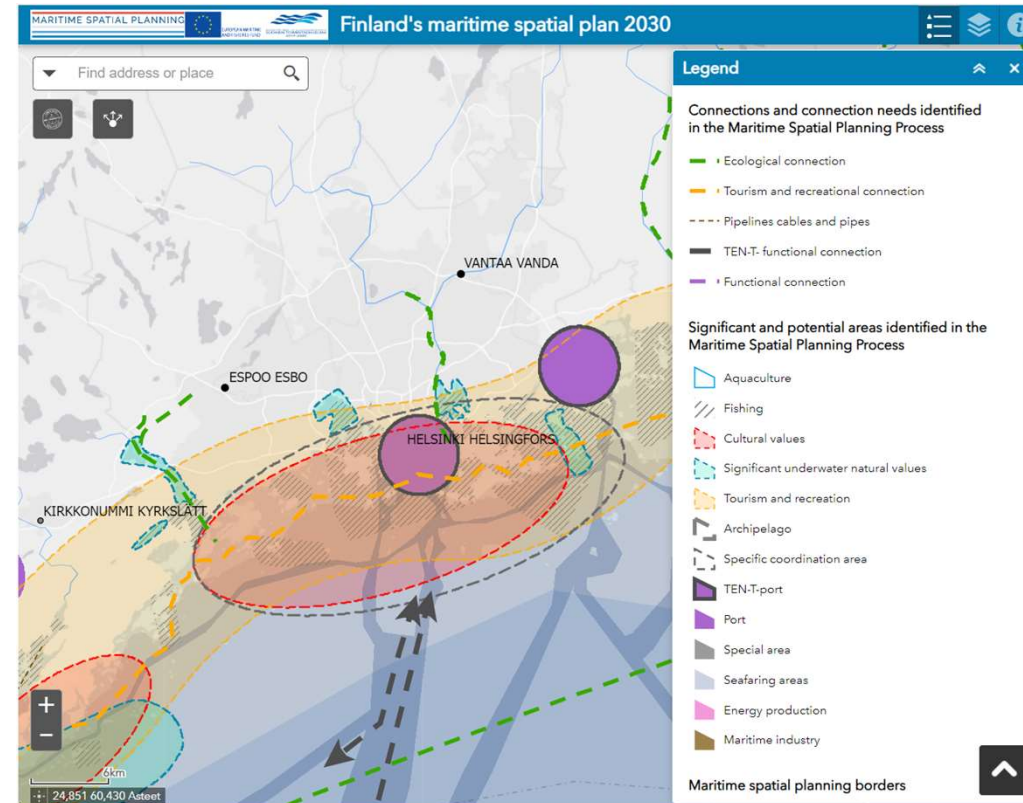
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Overview of BalticAIMS project 2/2

- The **objective of BalticAIMS** was to develop an integrated data approach to obtain a full view of the essential processes of land and coastal water areas by combining various currently available satellite data sources, in situ observations and model predictions about dynamic landcover and water quality characteristics.
- The goal was reached through the following technical objectives:
  - Identify suitable environmental data and GIS materials.
  - Integrate, process and store thematic information.
  - Create the data access, visualization and analysis systems and tools.
- Project duration 2021-2023
- More info: www.syke.fi/projects/BalticAIMS

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3

Backend and frontends

Processing and Data Centre (SYKE, BC)

Calvalus Processing

TARKKA Web server

Cloud Environment (Creodias)

Data Ingestion

Geo File Store in Creodias storage

HTTP(S) file server

xcube gen

xcube data in Creodias S3 cloud storage

xcube server

xcube WCS+WMS

geodb ingestion

geodb data in Creodias storage

geodb REST server

geodb WFS+WMS

Auth server

Online Interfaces

TARKKA Web client

file browser +download

xcube viewer client

Jupyter notebook

User systems

QGIS

ArcGIS

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xcube serves time series of image data

geodb serves features and their time series

File server for pragmatic file access

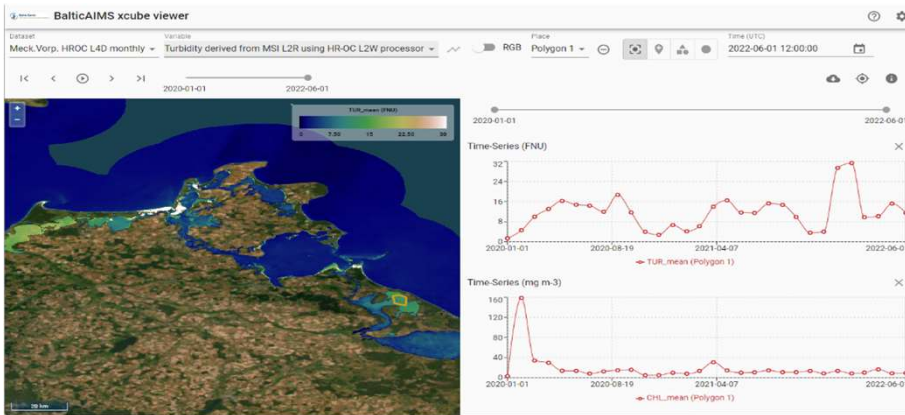OGC and REST interfaces for integration into user clients

Tarkka, viewer, notebooks as generic clients

Processing and ingestion to add collections and to extend the time series

Links at www.balticaims.eu/

4

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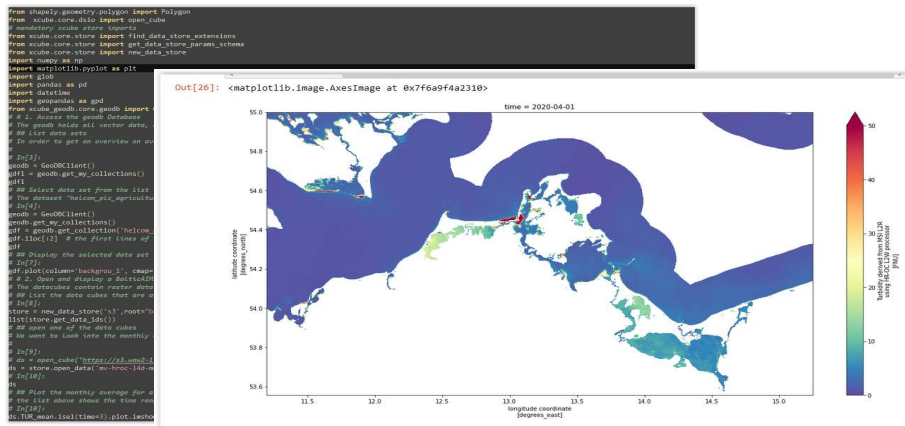
BalticAIMS technical solutions
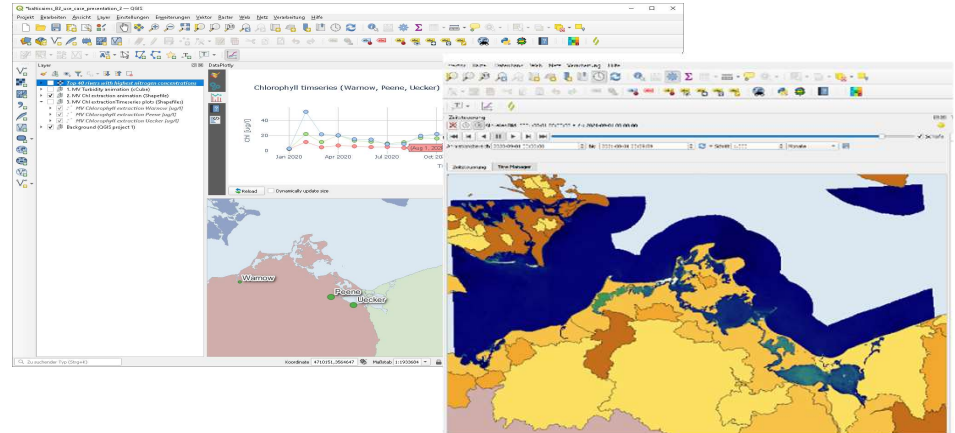
BalticAIMS browser-based Viewer

Tarkka+ - Browser-based Graphical Interface (tarkka.syke.fi)

Xcube Jupyter Notebooks

BalticAIMS Web Feature Service integration for GIS use

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BalticAIMS service based on User and Stakeholder requirements

- Maps and timeseries of Chl a, TSM and SST with high spatial resolution
- Simple interfaces for easy access to data
- Possibility to integrate products in User Systems

Road towards an EO based Baltic monitoring support service

For more information, visit:

https://www.syke.fi/projects/BalticAIMS

Or contact: Sampsa Koponen - *BalticAIMS Project Coordinator*

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Feedback from Users and Stakeholders

"BalticAIMS Service offers easy access to the EO based products for users at different skill levels and without the need for advanced GIS software"

"Dedicated access to satellite images and EO based raster products relevant for spatial planning and monitoring of coastal land and waters of the Baltic Sea is a substantial improvement"
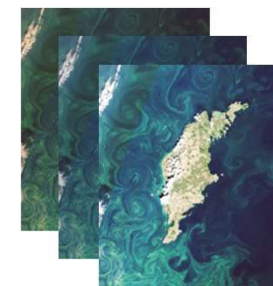
Future developments

Service expansion:
- *New application examples*
- *New products*
- *Full Baltic coverage*

Technical developments:
- *Improved GIS functionality and Ready to use Jupyter Notebooks*
- *Access to analysis ready data*

Baltic Sea Service Platform

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Summary and the contribution of NoR

- Combinations of satellite data, in situ observations and model predictions provide useful information for experts working on Maritime Spatial Planning

- The CreoDIAS resources provided by NoR allowed the project to develop and provide services in the cloud environment

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