

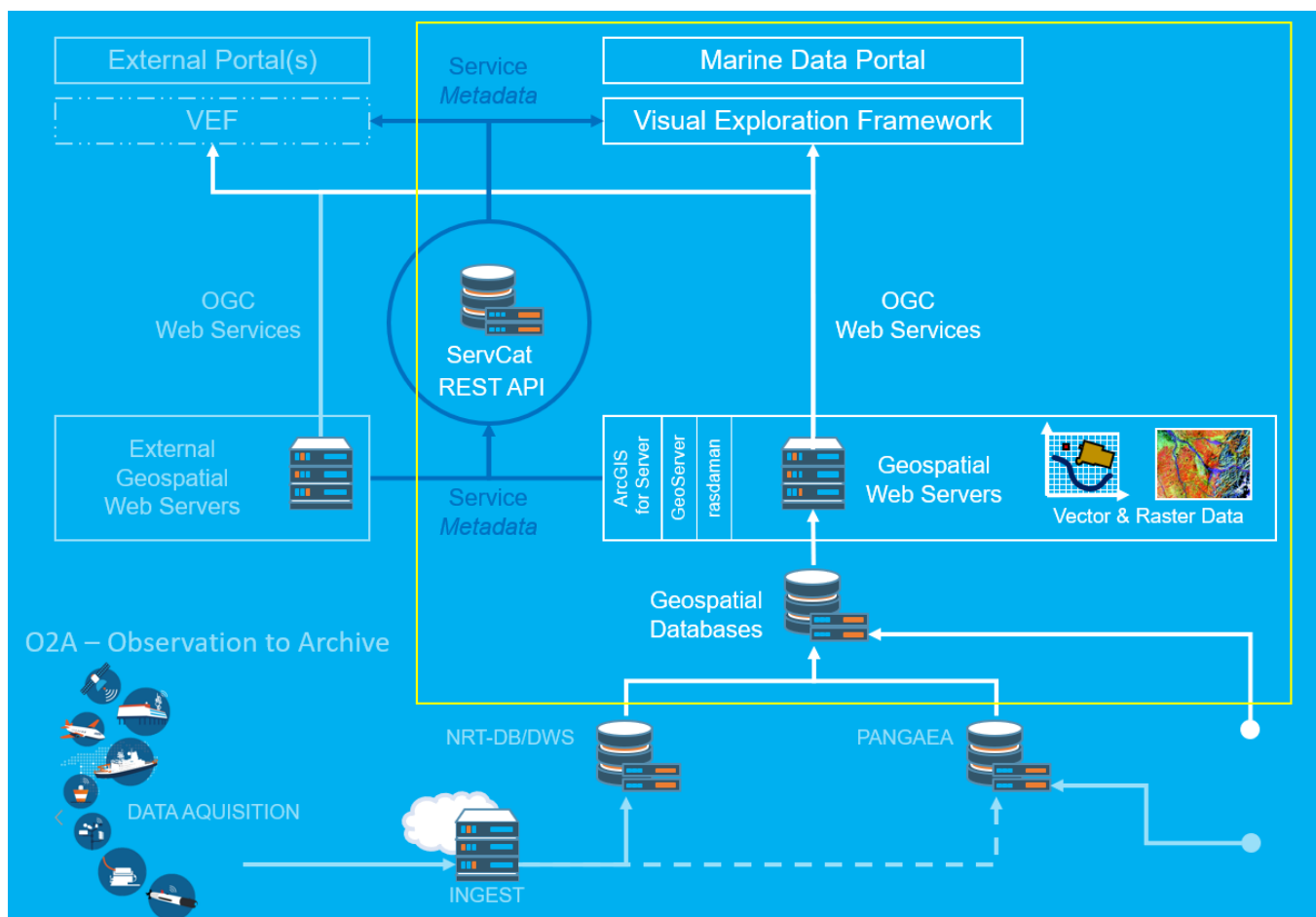
Technical Infrastructure

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Overview

This document gives a brief technical overview of our Spatial Data Infrastructure (SDI) and related technologies. It covers the "golden box" extent of the following image.

The following sections contain summaries for each SDI component. All linked source code will be licensed under a [BSD 3 clause](#) and available on [Gitlab](#). If you're interested in collaboration contact us via o2a-support@awi.de.



Databases

Several spatial databases are operated in order to [harmonise](#) and optimise geodata. This is a necessary step for providing the data in a filterable and standardised way via OGC web services (see next section).

The spatial databases are PostgreSQL instances with spatial extensions. The source code is accessible on [Gitlab](#).

Geospatial Web Servers

Three sorts of geospatial web servers are operated: several [ArcGIS for Server](#) instances, a Docker-based cluster of [GeoServer](#) instances, and a [rasdaman](#) instance. These servers read data from the spatial databases (and file systems) and provide them as [OGC](#) web services (OWS) which is a standard way of delivering digital maps and geodata.

Further reading on specific OWS:

- Web Map Service ([Wikipedia](#), [OGC standard](#))
- Web Feature Service ([Wikipedia](#), [OGC standard](#))
- Web Coverage Service ([Wikipedia](#), [OGC standard](#))

O2A Spatial (Software Module)

O2A Spatial is a Python software suite for the automation of two tasks: geodata ingestion and O2A SDI management.

Data ingestion means harvesting OWS metadata into ServCat and harvesting data from different sources, converting it into O2A Data Formats, ingesting it into a spatial database. SDI management takes care of orchestrating geospatial web servers, especially the GeoServer cluster.

The source code is accessible on [Gitlab](#).

Service Catalog

The Service Catalog (ServCat) is a metadata catalog. It holds capabilities information on (mainly) OGC web services. It can be filled and searched using a REST-based API.

Currently a [ServCat instance](#) is operated as source for the search functionality in VEF-based viewers.

Please have a look at the [Service Catalog](#) page for more details.

The source code is accessible on [Gitlab](#).

Visual Exploration Framework

The Visual Exploration Framework (VEF) aims to provide modularized building blocks which can be easily combined and integrated into web-based portals and viewers.

It is built as a JavaScript and CSS library using modern web technologies. The framework builds an additional abstraction layer above common JavaScript frameworks to simplify the composition of visualizations in the context of DAM and MareHub.

Currently it's used in the [Marine Data Portal](#) and its [Viewer](#).

The source code is accessible on [Gitlab](#).

 Do you like to contribute? Send us a mail o2a-support@awi.de and describe how you like to contribute.