



API4INSPIRE

D3 - Technical documentation, source code and working prototype Information system and documentation



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1. Introduction

This deliverable reports on the documentation and source code created in the scope of the API4INSPIRE project. The documentation is divided into technical documentation, that describes how to use and deploy the APIs, and prototype documentation, that describes the prototypes that are deployed.

All documentation is hosted on the API4INSPIRE documentation website, that can be found at: <https://datacoveeu.github.io/API4INSPIRE/>

The documentation site will be further updated as the project continues.

2. Technical Documentation

2.1.1. OGC API – Features

The documentation for OGC API – Features describes the API itself, how to deploy a service using an existing GeoServer installation, and how to deploy a pre-configured “black-box” GeoServer.

- [OGC API - Features Overview](#)
- [GeoServer](#)
 - [GeoServer App Schema Mapping](#)
 - [Mapping - Example Overview](#)
 - [Mapping File Base](#)
 - [Basic Feature Mapping](#)
 - [Feature Chaining Mapping](#)
 - [Identifiers](#)
- [Preconfigured GeoServer "Black Boxes"](#)
 - [GeoServer Black Box Configuration for HY-N and TN-W](#)
 - [GeoServer Black Box Configuration for SU-V](#)
 - [GeoServer Black Box Configuration for AM](#)
 - [GeoServer Black Box Configuration for NZ](#)

2.1.2. SensorThings API

The SensorThings API documentation describes the API, with a list of example queries, and links to implementations of clients and servers.

- [OGC SensorThings API](#)
- [The Data Model](#)
- [Basic Requests](#)
- [Tailoring Responses](#)
- [Filtering Entities](#)
- [Expanding Entities](#)

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- [Example Queries](#)
- [Implementations](#)

3. Working Prototype Documentation

The information about the deployed prototypes can be found under the header “Data Nests”.

- **Data Nests**
 - [Airy Austria](#)
 - [Urban Data Platform Hamburg](#)
 - [Franco-Germanic Flow](#)
 - [Ad-Hoc Sources](#)

4. Source Code

4.1. FROST-Server

Any code and documentation developed in the project, that is not project specific, will flow back into the development version of FROST (hosted on GitHub), to be included into the next stable release.

Extensions that are (partly) developed in the context of the API4INSPIRE project include:

- GeoJSON result format:
 - <https://fraunhoferiosb.github.io/FROST-Server/extensions/GeoJSON-ResultFormat.html>
- Custom Entity Linking extension:
 - <https://fraunhoferiosb.github.io/FROST-Server/extensions/EntityLinking.html>

4.2. SensorThings API Tools

Several implementation-independent tools have been created that are useful when deploying a SensorThings API instance:

- Tool for Importing GeoJSON into SensorThings:
 - <https://github.com/hylkevds/FROST-GeoJsonImporter>
- Tool for integrating SensorThings data into web map tools (OpenLayers & Leaflet)
 - <https://github.com/DataCoveEU/STAM>
- SensorThings Processor, for generating aggregate values from sensor data:
 - <https://github.com/FraunhoferIOSB/SensorThingsProcessor>
- SensorThings Importer, for importing CSV and other data:

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- <https://github.com/FraunhoferIOSB/SensorThingsImporter>

4.3. GeoServer

GeoServer deployment(s) will strive to reuse the existing App-Schema configuration, or at least to use it as a starting point, to publish the necessary features through OGC API – Features and to encode the features in the selected formats, e.g. GeoJSON. A guide for upgrading existing systems will be provided, describing in which situations the existing configurations, mainly the App-Schema mappings, can be used as is or which modifications will be needed.

All the developed code and documentation, that is not specific to this project, will be contributed back to the GeoServer project (hosted on GitHub) following the contributions guidelines. In practice, this means that all contributions will be bound to community acceptance and review, backwards compatibility with the existing functionalities will need to be maintained. The target release for the implemented improvements and fixes is GeoServer 2.18.0, which is not officially planned yet but should happen around September 2020. Possible backports will need to be evaluated case by case.

4.4. OGC API Simple

OGC API Simple is a green-fields implementation of the OGC API – Features. It can be used on top of an existing SQLite or PostGIS database:

<https://github.com/DataCoveEU/API4INSPIRE/tree/master/OGCAPISimple>