



# Status Update on Good Practices



*64th MIG-T Meeting, 21-22 January 2021*



# INSPIRE Good practices

- Fully community-driven approach
- Fast track to development and endorsement of new technical approaches
- Implementation evidence is needed
- Updated Good Practice library available
- Procedure for endorsement
  - *Step 1. Initiation*
  - *Step 2. Submission as good practice candidate*
  - *Step 3. Outreach*
  - *Step 4. Submission*
  - *Step 5. Legal scrutiny*
  - *Step 6. Feedback*

The screenshot shows the 'INSPIRE KNOWLEDGE BASE' website, specifically the 'Good Practice Library' section. The page features a navigation menu with options like 'Home', 'Learn', 'Implement', 'Participate', 'Use', and 'Toolkit'. A 'Quick search' sidebar is visible on the left. The main content area is titled 'Good Practice Library' and includes sections for 'Good Practice documents' and 'Good Practice Template'. The 'Good Practice documents' section contains a table with two columns: 'Candidate' and 'Endorsed'. The 'Good Practice Template' section has a 'Download Template' button. The 'Context' section provides background information on the development of INSPIRE and the role of good practices.

Candidate	Endorsed
<a href="#">Building one access point to dispersed data sources</a>	GeoDCAT-AP
<a href="#">Making spatial data downloadable via WMS services</a>	SDMX for Human Health and Population Distribution
<a href="#">OGC compliant INSPIRE Coverage data and service implementation</a>	OGC API - Features as an INSPIRE download service
	OGC SensorThings API as an INSPIRE download service

**Good Practice Template**  
[Download Template](#)

**Context**

The development of INSPIRE foresaw the creation of an initial set of legally-binding Implementing Rules (IRs) and Technical Guidelines (TGs). As technology evolved since INSPIRE's creation and as experience is being gained through the implementation process, the need for new TGs emerged (e.g. for download services for observations and coverages), alongside a range of related tools that can maximise the benefits of the implementation process. These were developed in 2015 and 2016 under dedicated actions under the Maintenance and Implementation Work Programme.

At the same time, in the Thematic Clusters discussion forums, good practices for specific implementation issues (e.g. how to create persistent identifiers), opportunities offered by emerging technologies and standards (e.g. Vector Tiles, OGC SensorThings API) or extensions/profiles for specific application domains are being shared and discussed. Also, work in Member States, by solution providers or in research projects often yield interesting results that implementers in other Member States could benefit from.




At least three types of good practice can already be observed:

1. Good practice related to INSPIRE implementation, where practitioners are extending and evolving the key elements of INSPIRE to support their communities' needs, such as extended data models.
2. Good practice related to tools and techniques useful for INSPIRE implementation which may not fully cover all requirements but that can help link INSPIRE with other initiatives, including the use of different encodings to share INSPIRE-related data.



GP Endorsed by the 12<sup>th</sup> MIG Meeting  
26-27 November 2020

## Good practices - status

- SDMX 
- MIWP Action 2020.1
  - OGC API-Features as INSPIRE Download service 
- Good practices candidates (pitched at the 63<sup>rd</sup> MIG-T meeting; 13-14 October 2020)
  - GP1. Building one access point to dispersed data sources
  - GP2. Making spatial data downloadable via WMS services
  - GP3. Coverage data and service implementation
  - GP4. SensorThings API as INSPIRE Download services 



# OGC API - Features



# OGC API Features - Overview

- Fundamental **Web API building blocks** for interacting with features
- Meets expectations of **developers** today
- Leverages **mainstream IT** specifications and technologies including **OpenAPI**, easier to learn and use, faster to implement and deploy
- **Simplifies access** to geospatial data for those that are not experts
- Acknowledges the importance of **HTML**, APIs can be accessed in a **web browser**, no special client necessary to view the data
- Standard driven by validation through **early implementations**
- Development in an **open, inclusive process**

# Good practice on OGC API – Features in INSPIRE - Principles

## OGC API - Features

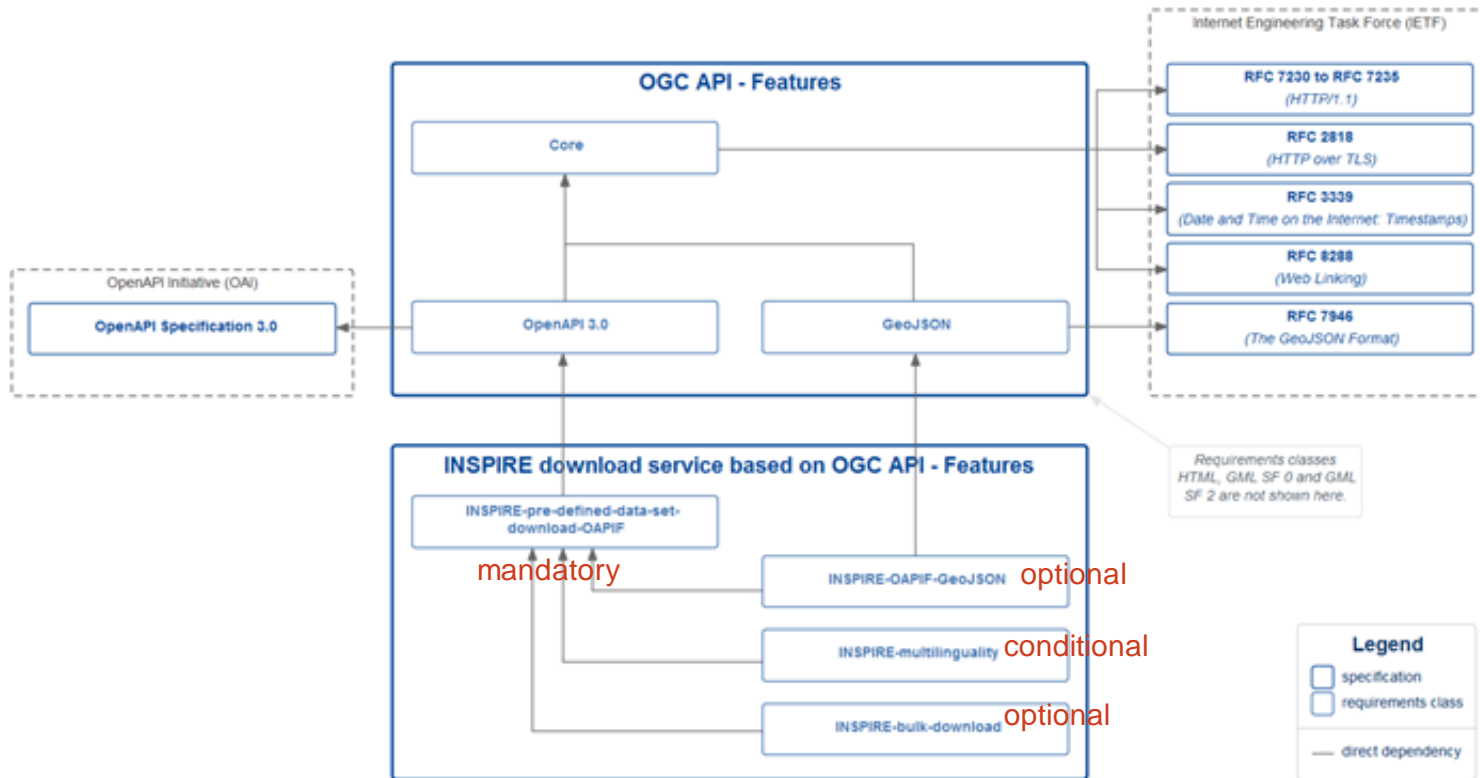
- A **Web API** provides data from one **data set**.
  - ! Data publishers often will need to provide more than one Web API
- A data set is structured into one or several **feature collections**.

## INSPIRE

- No INSPIRE-specific extensions
- The composition of a data set is determined by the data publisher.
  - A data set can contain features belonging to different themes
- A feature collection contains features of only one feature type.

- Confirmed support by tools (client and server)

# Requirements classes & dependencies

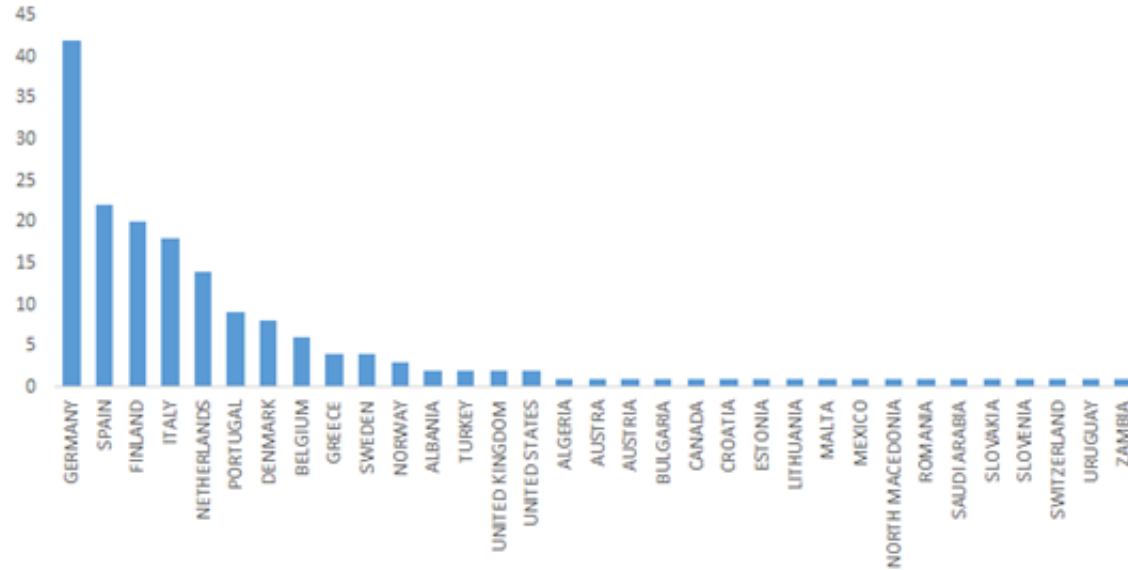




# Outreach

<https://inspire.ec.europa.eu/events/webinar-ogc-api-features-inspire-download-service>

- Held on 6 November
- 185 Registered attendees
- Public sector bodies, academia and students, software companies
- 33 countries
  - Member States
  - ENPI and Candidate Countries
  - USA, Mexico, Saudi Arabia, Uruguay, Zambia, Canada



# Deployments

- Weather observations from approximately 400 weather stations in Finland (FMI)
- Surface and groundwater (BRGM (Geological Survey) & OFB (Office for Biodiversity), France)
- Landing page for all OpenData-classified WFS-interfaces of the SDI Rhineland-Palatinate
- Geographic Names, Addresses, Buildings (NLS Finland)
- Protected sites (ISPRA Italy)
- Multiple data themes (NRW)

# Comments from the MIG

- Ensure support for CRS different from CRS84
- Existing spec to be updated accordingly

## OGC API - Features - Part 2: Coordinate Reference Systems by Reference

**Open Geospatial Consortium**

Submission Date: 2020-07-06

Approval Date: 2020-10-27

Publication Date: 2020-11-02

External identifier of this OGC® document: <http://www.opengis.net/doc/IS/ogcapi-features-2/1.0>

Internal reference number of this OGC® document: 18-058

Version: 1.0

Category: OGC® Implementation Standard

Editors: Clements Portele, Panagiotis (Peter) A. Vretanos

### OGC API - Features - Part 2: Coordinate Reference Systems by Reference

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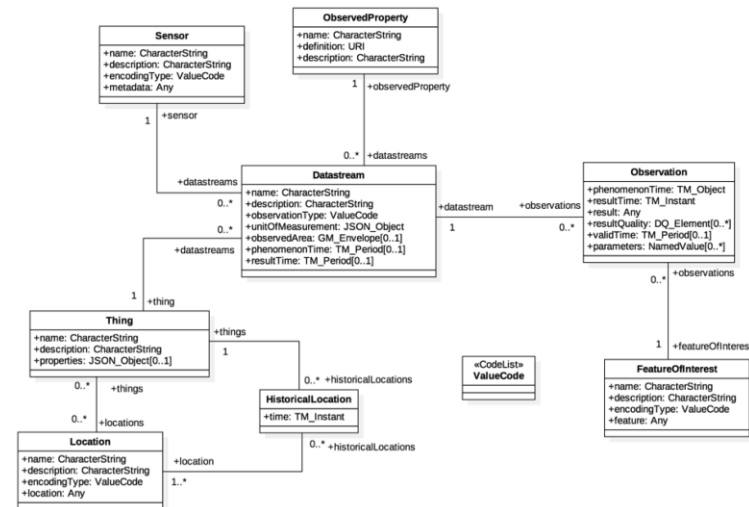


# SensorThings API



# SensorThings API

- OGC Standard since 2015, V1.1 update 2019
- Provides a powerful and simple means for exposing spatio-temporal data
- Can be used with sensor data (and beyond)
- Fit for multiple IoT use cases
- Synchronous and asynchronous transactions
- Very good client support
- Based on O&M Data model (ISO 19156)
- RESTful API following Oasis Odata V4.0
  - Allows powerful queries



# Good practice on SensorThings API in INSPIRE

Mappings available for:

- STA specifications and the operations defined by the NS Regulation
- STA and both INSPIRE Environmental Monitoring Facilities and the Observational model
  - Unitizing the opportunities for extension defined in STA V1.1
- Implementation evidence

The screenshot displays the GitHub interface for the repository `INSPIRE-MIF / gp-ogc-sensorthings-api`. The main content area shows the `README.md` file with the following text:

**gp-ogc-sensorthings-api**

Good Practice document for INSPIRE download services based on OGC SensorThings API

**Overview of work pertaining to INSPIRE**

For compliance with INSPIRE, data providers must demonstrate compliance with the INSPIRE Implementing Rules. Pertaining to the data requirements towards download services, we have shown alignment between STA V1.1 and both INSPIRE Environmental Monitoring Facilities and the Observational model in our publication on "Extending INSPIRE to the Internet of Things through SensorThings API" doi:10.3390/geosciences8060221

**Data Alignment - Matching tables**

The Excel Sheet [INSPIRE SensorThings Matching](#) provides a good basis for the alignment of an existing data source with the requirements from STA and INSPIRE

**EC INSPIRE Documents**

- [INSPIRE Data Specification Implementing Rules](#)
- [INSPIRE Data Specification Technical Guidelines](#)

**Network Services Alignment**

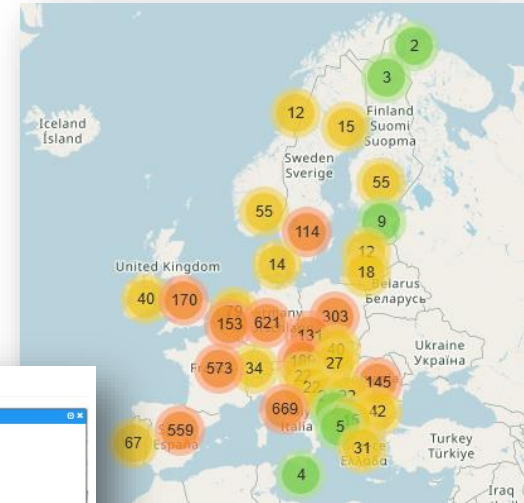
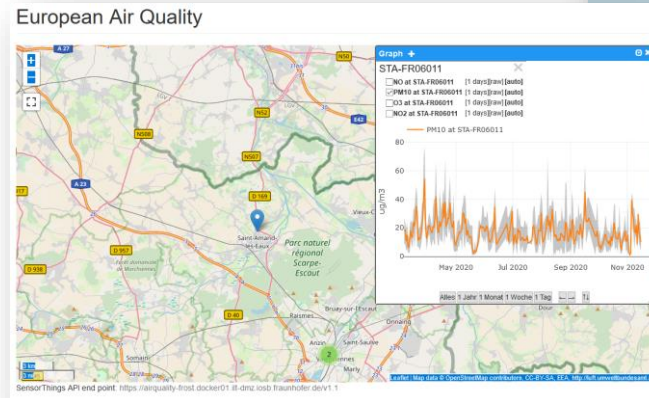
The right sidebar contains repository metadata: 'About' (Good Practice document for INSPIRE download services based on OGC SensorThings API), 'Releases' (No releases published), 'Packages' (No packages published), and 'Contributors' (hylikevds, KathiSchleidt, MarcoMinghini).

<https://github.com/INSPIRE-MIF/gp-ogc-sensorthings-api>

# Outreach

- SensorThings API brings Dynamic Data to INSPIRE
- 80 registered attendees
- Two parts
  - Overview of STA in INSPIRE
  - Hands-on session
    - Deploying and interacting with the API

<https://joinup.ec.europa.eu/collection/elise-european-location-interoperability-solutions-e-government/document/presentation-sensorthings-api-brings-dynamic-data-inspire>



<https://datacoveeu.github.io/API4INSPIRE/>

# Deployments

- Air Transport information complemented by meteorological data in Austria
- Urban Data Platform Hamburg:
  - Smart City Sensors together with road transport networks
- Franco-Germanic Flow: Cross-border water: surface & ground, quality & quantity, flood zones
- Covid ad-hoc:
  - Realtime air quality
  - Covid-19 case data
  - Background demography layer



# Next steps (endorsed good practices)

1. Validation of OGC API – Features & SensorThings API instances
  - Creation of ATS and ETS for the INSPIRE Reference validator
2. Uptake by data providers
3. Gradual evolution of the specification
  - Based on community demand
  - Entirely on GitHub

# Next steps (candidate good practices)

1. Follow the procedures
2. JRC can help with
  - Organising events

# Thank you



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