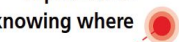




Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Office of Topography swisstopo
Coordination, Geo-Information and Services COGIS

wissen wohin
savoir où
sapere dove
knowing where



Going more webby! The new wave of OGC APIs

PoC swisstopo-meteoswiss

 **Unconference** #4, October 13th 2022, Bern

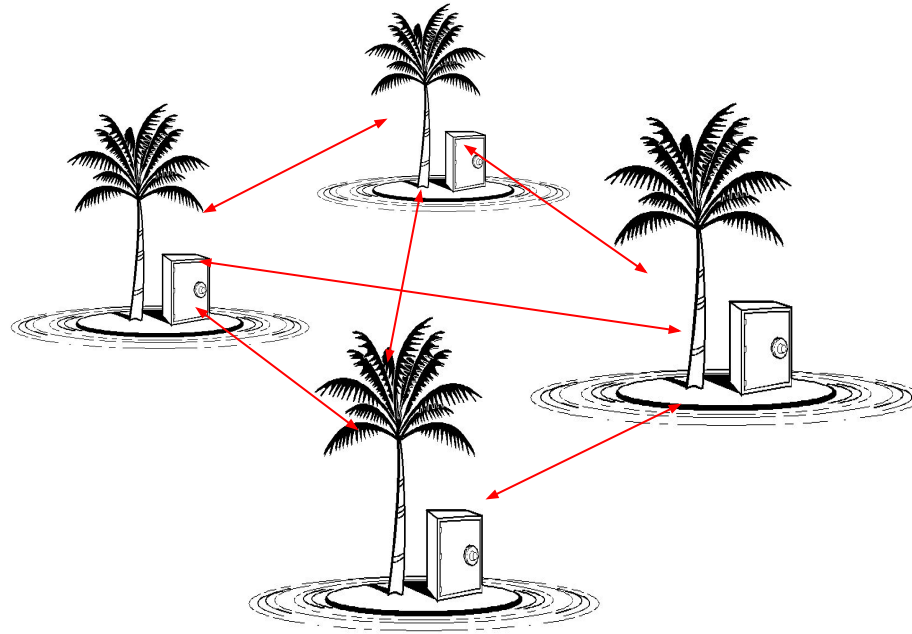
Pasquale Di Donato, swisstopo/COGIS

[illegible]



Spatial Data Infrastructures

- Connecting isolated GI systems through Web services





Barriers cont.

- The model works +/- well within the GI community, but ...

There are barriers to bringing geospatial data to the broader (Web) community



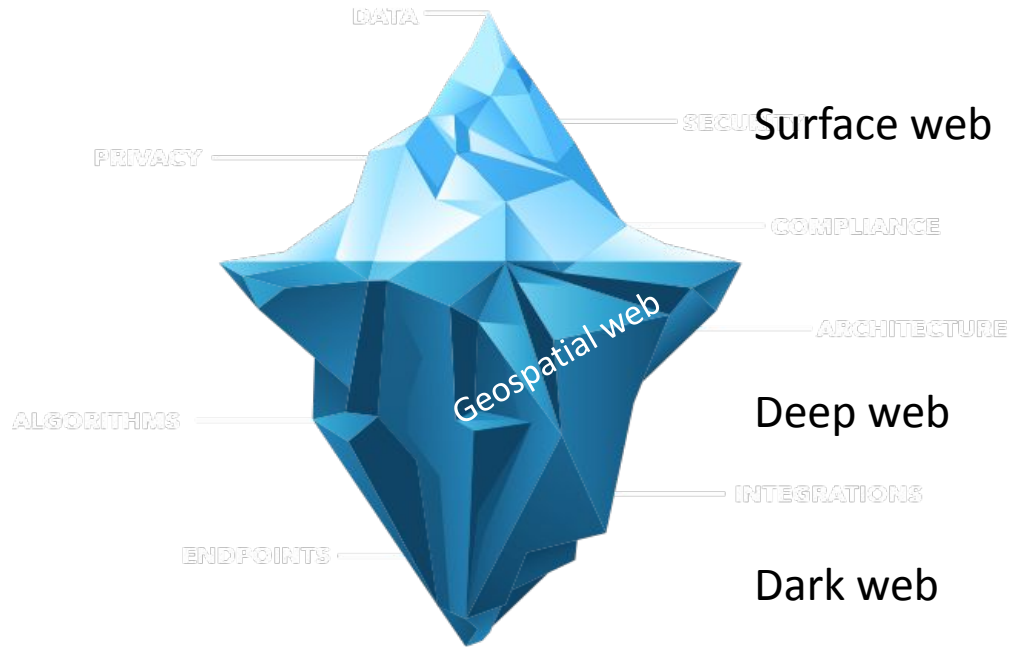
Barriers

- Geoservices are built to be accessed and searched by **domain specific** tools. Data behind these services are not readily available to the wider public
- Standards for the exchange of geodata and for geoservices have not managed to break **isolation**
- Metadata and data are coupled very loosely
- SDIs are **invisible** to the Web (SDIs content is not indexable)



The deep geospatial web

- Seen from outside the geospatial domain, data published via OGC services is part of the «deep Web»





Going more webby!

“We need to be much more standard citizens of the Web as opposed to creating our own separate Geospatial web where we did things differently”

Ed Parsons



W3C and OGC

- January 6th 2015 W3C and OGC announced a new collaboration to improve **interoperability** and **integration** of spatial data **on the Web**
- The Spatial Data on the Web Working Group was launched:
 - [Spatial Data on the Web Best Practices](#) published September 28th 2017



Spatial Data on the Web Best Practices

15 Best practices:

- Use global unique persistent HTTP **URIs** for Spatial Things
- Make your spatial data **indexable** by search engines (i.e. HTML encoding, Structured Markup)
- ...
- Expose spatial data through convenience **APIs**
- ...



The new wave of OGC APIs

- Under the impulsion of the collaboration with the W3C, OGC has started the development of a new family of standards
- These new standards define resource-centric APIs that take advantage of modern web development practices
- Roadmap



The swisstopo-meteoswiss PoC

- Motivation MeteoSwiss:
 - Provide Open Data via OGC 24
 - “bulk download”
 - “feature access” for selected datasets
- Motivation swisstopo:
 - Renew/modernize api.geo.admin.ch
 - Continue development “bulk” download (STAC API)



The swisstopo-meteoswiss PoC

- The API is an implementation of both:
 - OGC API Features – Part 1: Core (OAFeat)
 - **Feature based** service providing access to objects as GeoJSON
 - STAC API
 - **Dataset based** download service providing access to an entire dataset (or parts of it) as a file
 - The STAC API is a superset of OAFeat

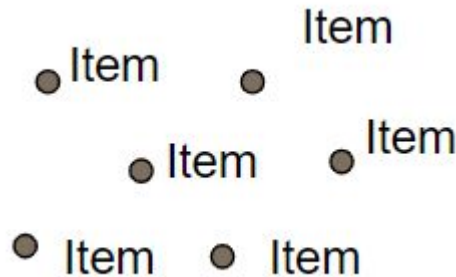


OAFeat vs STAC API

OAFeat Data model

Collection: set of metadata about a dataset

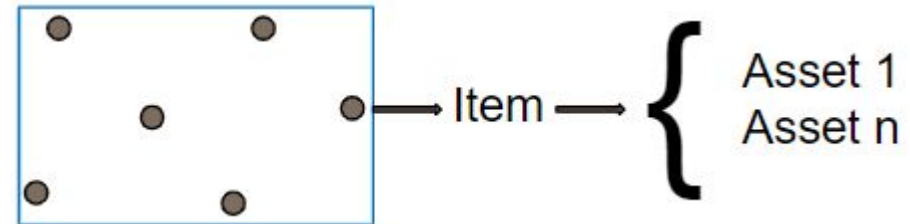
- **Item**: a real data object as GeoJSON



STAC Data Model

Collection: set of metadata about a dataset

- **Item**: serves as index to an Asset. It contains the **footprint** and the **timestamp** of the data in the Asset file(s)
- **Asset**: one or more data file(s)





DEMO

- <https://poc.meteoschweiz-poc.swisstopo.cloud/root/>
- <https://github.com/camptocamp/oapi-poc/blob/main/tutorial/howto.md>
- <https://radianteearth.github.io/stac-browser/#/external/poc.meteoschweiz-poc.swisstopo.cloud/root/>



Consuming the API with the STAC Browser

- <https://radiantearth.github.io/stac-browser/#/>
- Copy&Paste the API URL and Load

PoC MeteoSchweiz

Source Share

Browse Search

Description

OAPI - POC

Proof of concept (POC) to ingest geospatial datasets from MeteoSwiss into a SpatioTemporal Asset Catalog (STAC) and expose as OGC API Features.

Terms of Service

1. This service is **experimental and thus not for operational use**.
2. This service is limited in time, from 1.8.2022 to 30.9.2022 (might be extended).
3. The service has limited availability and limited operating hours: It is frequently rebooted.
4. During the limited service period, data can be accessed **for testing purposes only**. You

Read more

Additional resources

- Metadata about the processes
- The Open API definition
- The Open API definition (Swagger UI)

Catalogs 10

Tiles

List

Ascending

Descending

Filter catalogs by title

CombiPrecip Precipitation accumulated 1h (PoC)

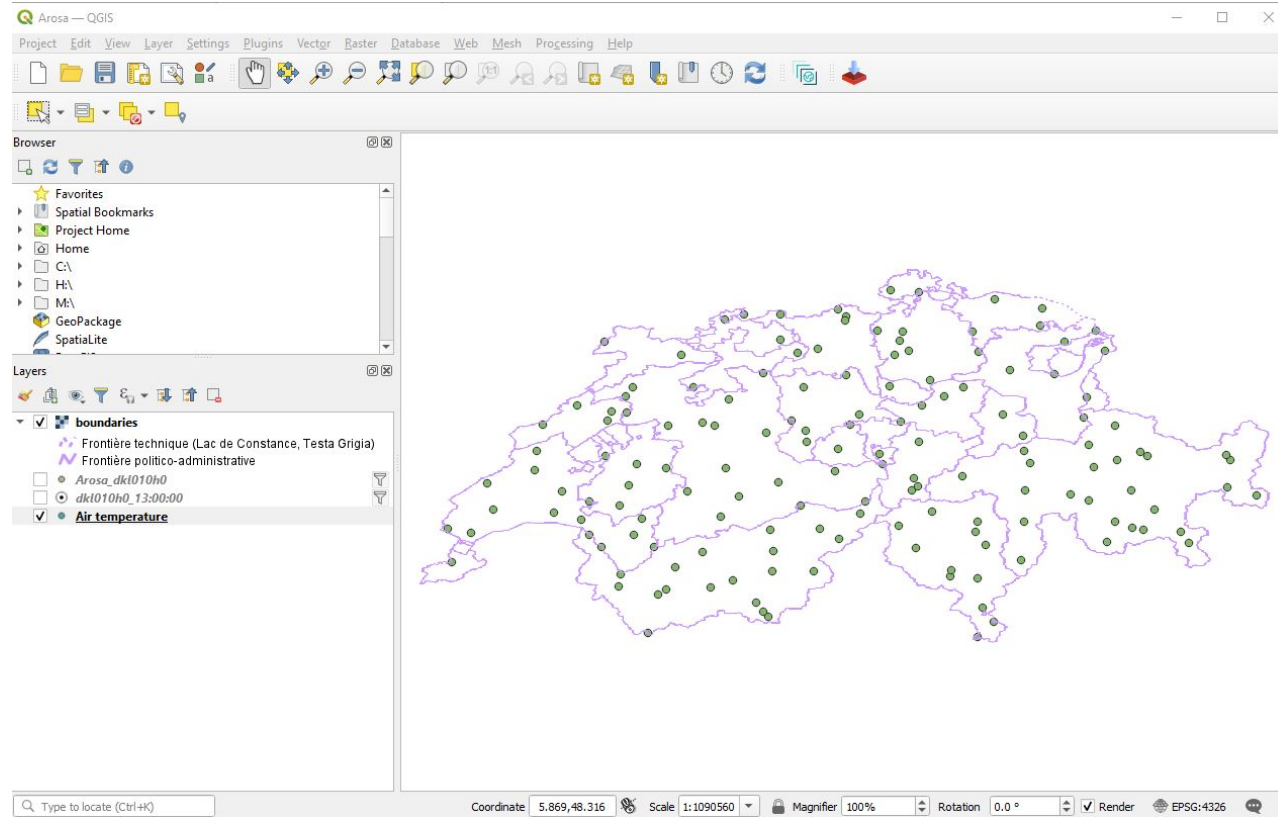
CombiPrecip (radar and precipitation measurement combined) Sum accumulated 1h. Temporary data set for internal use only

Climate normals temperature 1961-1990 (PoC)

Gridded dataset of monthly and yearly averages of temperature over the norm period 1961-1990.

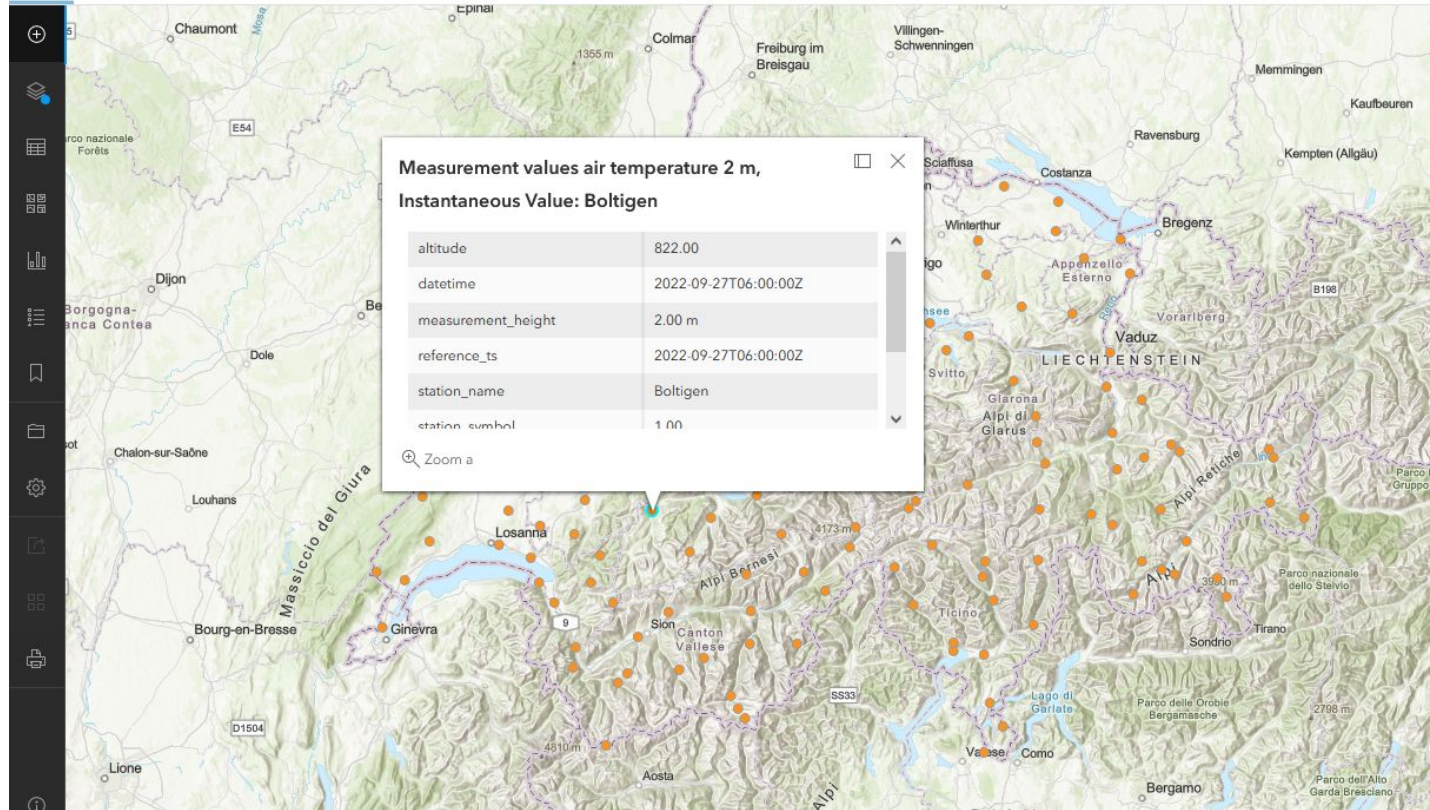


Consuming the API (OAFeat) with QGIS



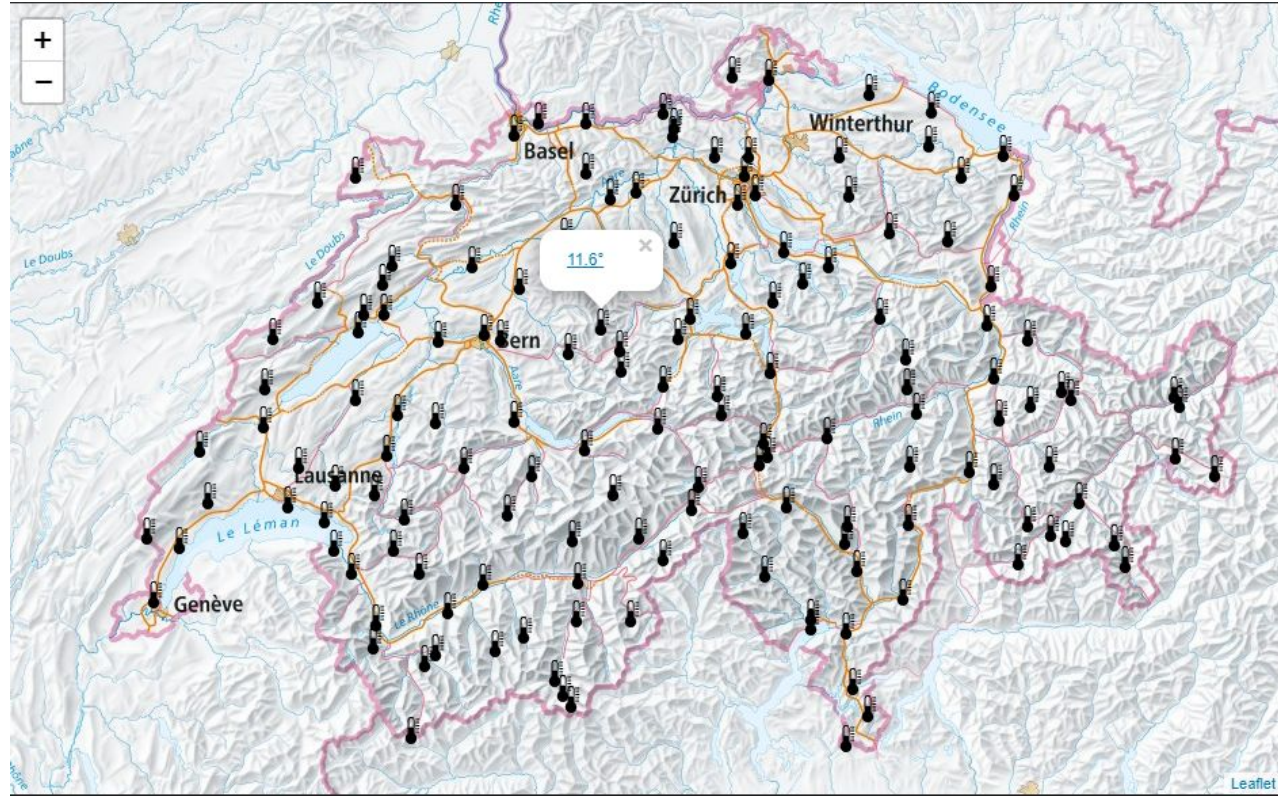


Consuming the API (OAFeat) with ArcGIS Online





An example of an interactive web map with Leaflet





Grazie per l'attenzione !

- Biblio
 - [Spatial Data on the Web Best Practices](#)
- API Landing Page
 - <https://poc.meteoschweiz-poc.swisstopo.cloud/root/>
- API GitHub Repo
 - <https://github.com/camptocamp/oapi-poc>
- API Tutorial
 - <https://github.com/camptocamp/oapi-poc/blob/main/tutorial/howto.md>

