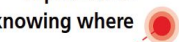Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
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Federal Office of Topography swisstopo
Coordination, Geo-Information and Services COGIS

wissen wohin
savoir où
sapere dove
knowing where

swisstopo

Going more webby! The new wave of OGC APIs

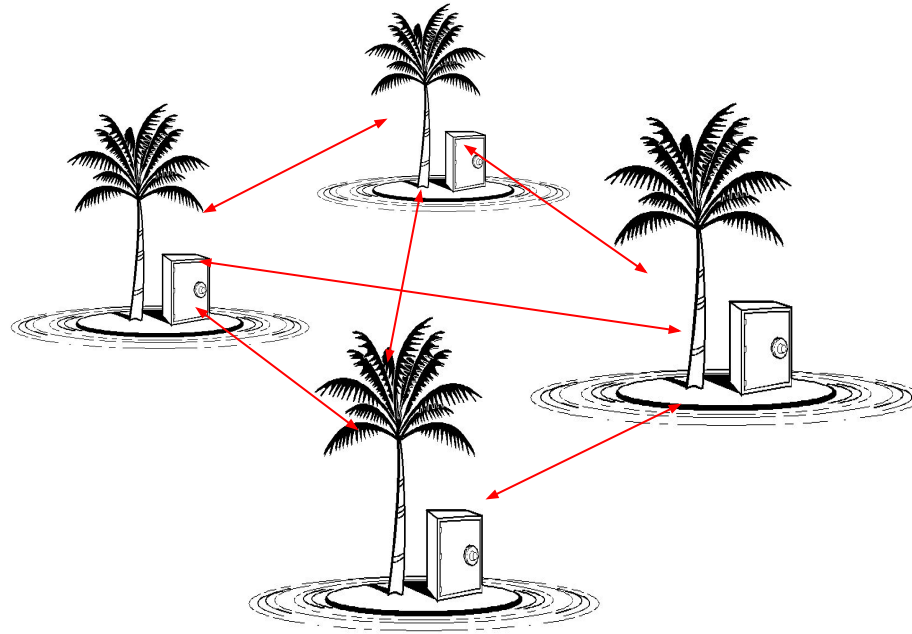# PoC swisstopo-meteoswiss

Unconference Geo #4, October 13th 2022, Bern

Pasquale Di Donato, swisstopo/COGIS

Spatial Data Infrastructures

Late 90's

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»

Surface web

Geospatial web

Deep web

Dark web
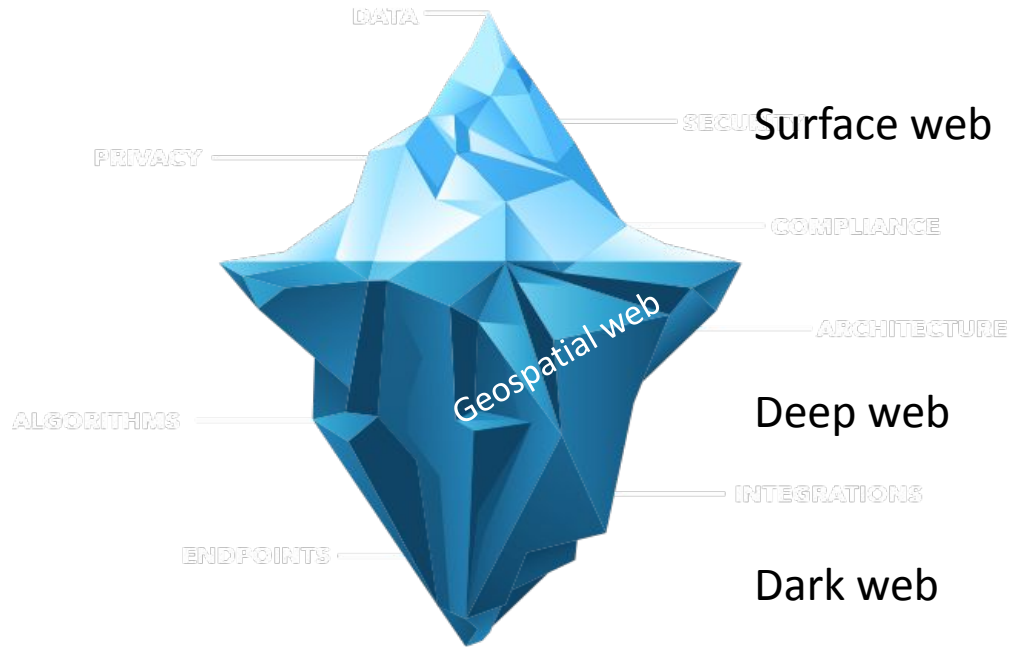
Going more webby!

"*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

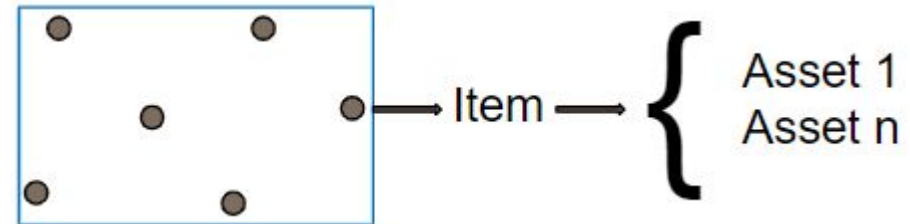# OAFeat vs STAC API

OAFeat Data model

Collection: set of metadata about a dataset

- Item: a real data object as GeoJSON
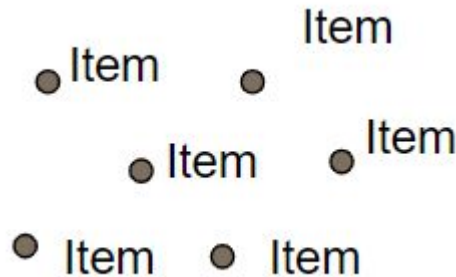
STAC Data Model

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://radiantearth.github.io/stac-browser/#/external/poc.meteoschweiz-poc.swisstopo.cloud/root/

Consuming the API with the STAC Browser

- https://radiantearth.github.io/stac-browser/#/
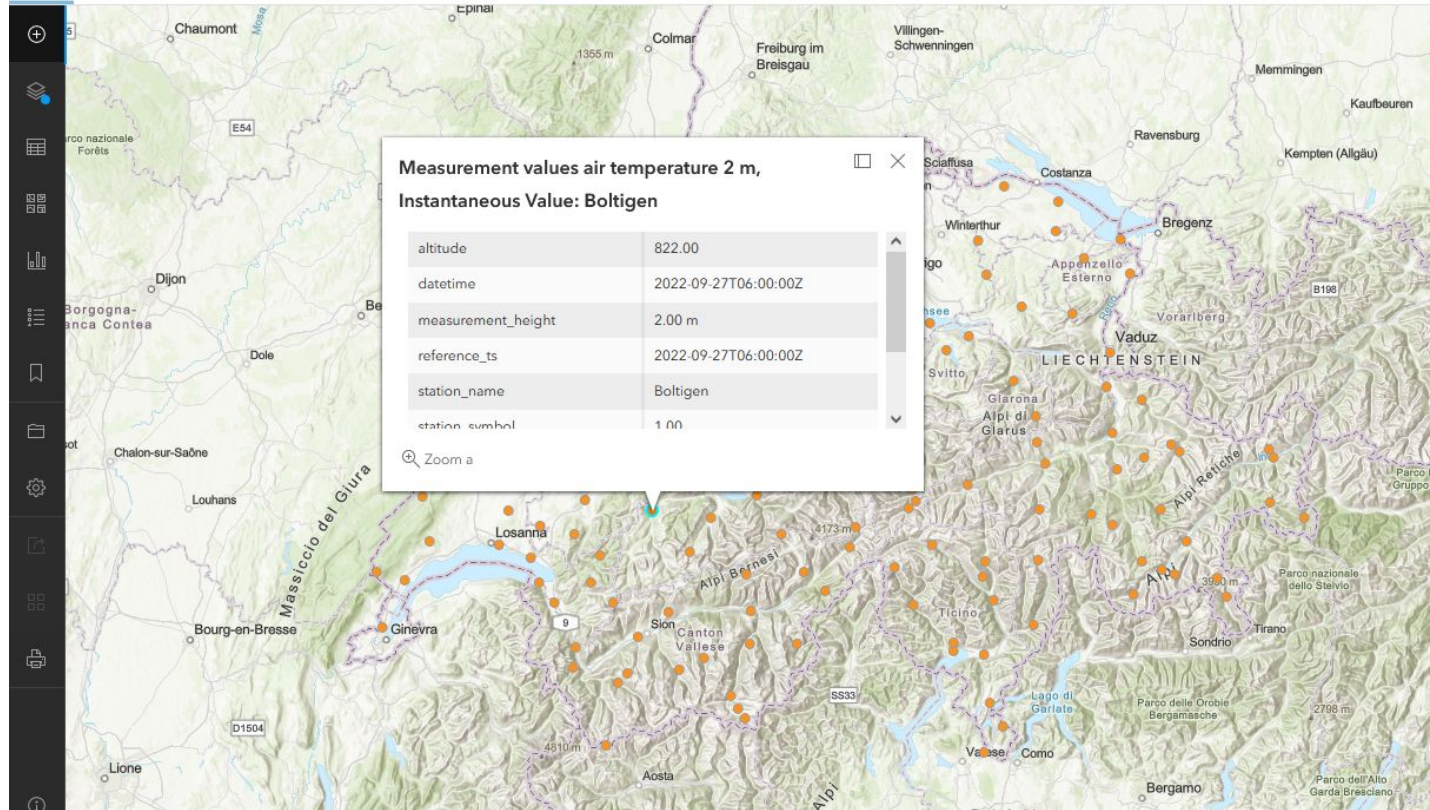- Copy&Paste the API URL and Load
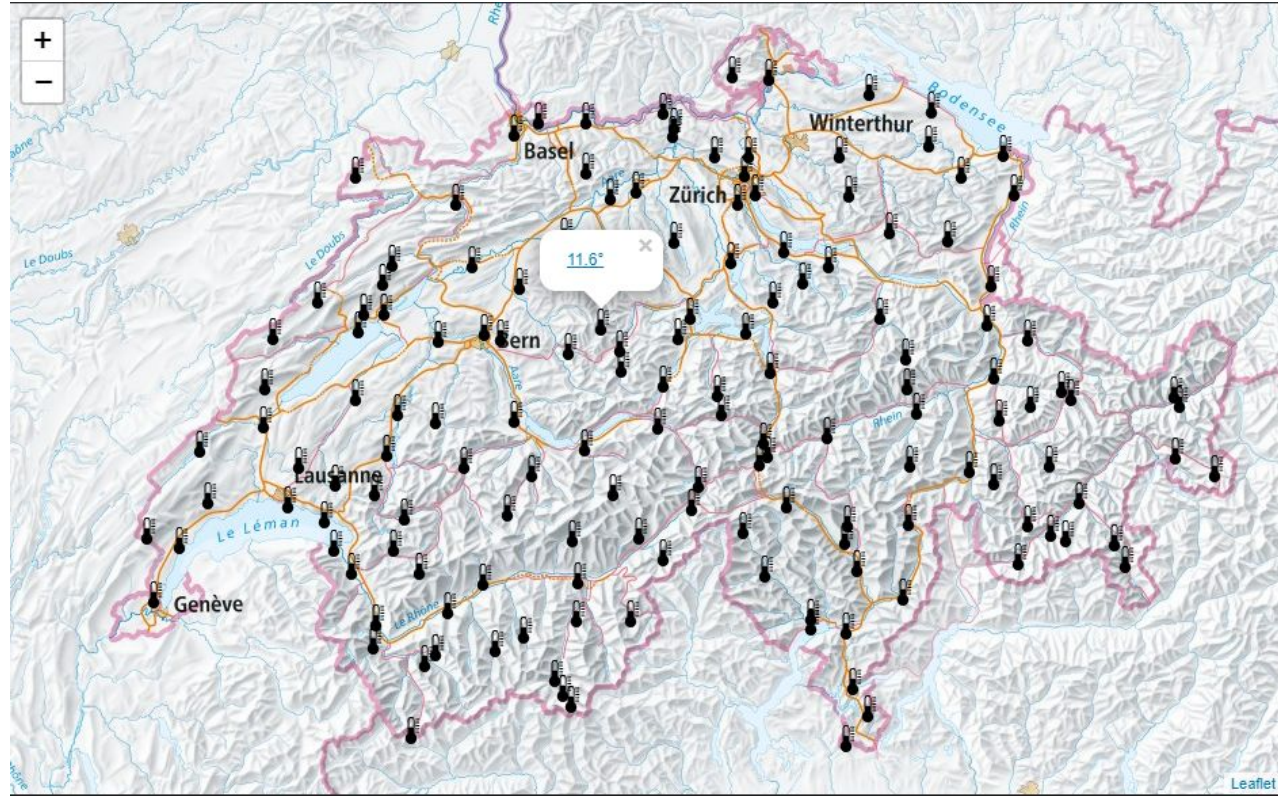
Consuming the API (OAFeat) with QGIS

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](#)