



Open  
Geospatial  
Consortium

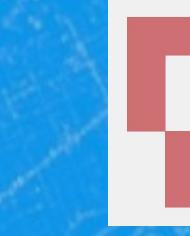
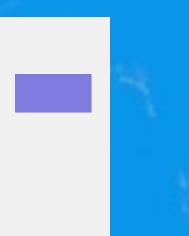
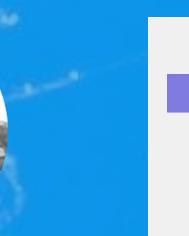
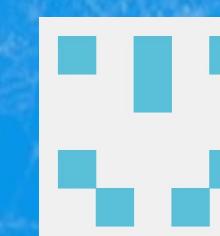
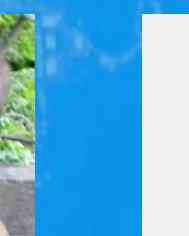
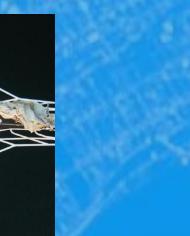
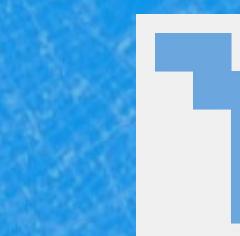
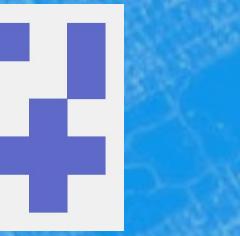
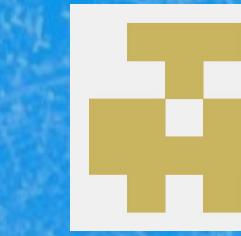
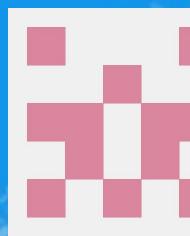
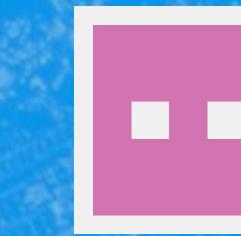
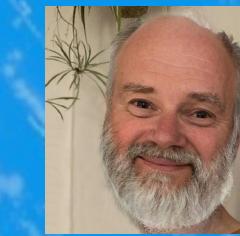
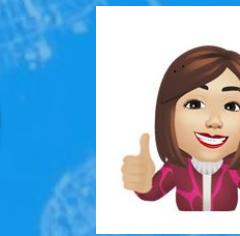
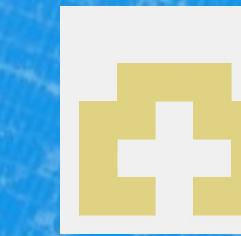
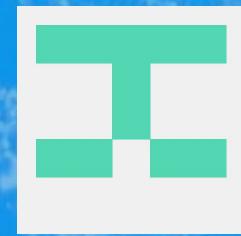
# Metadata Code Sprint

#Day1 - Kick-off

14-16<sup>th</sup> September, 2022



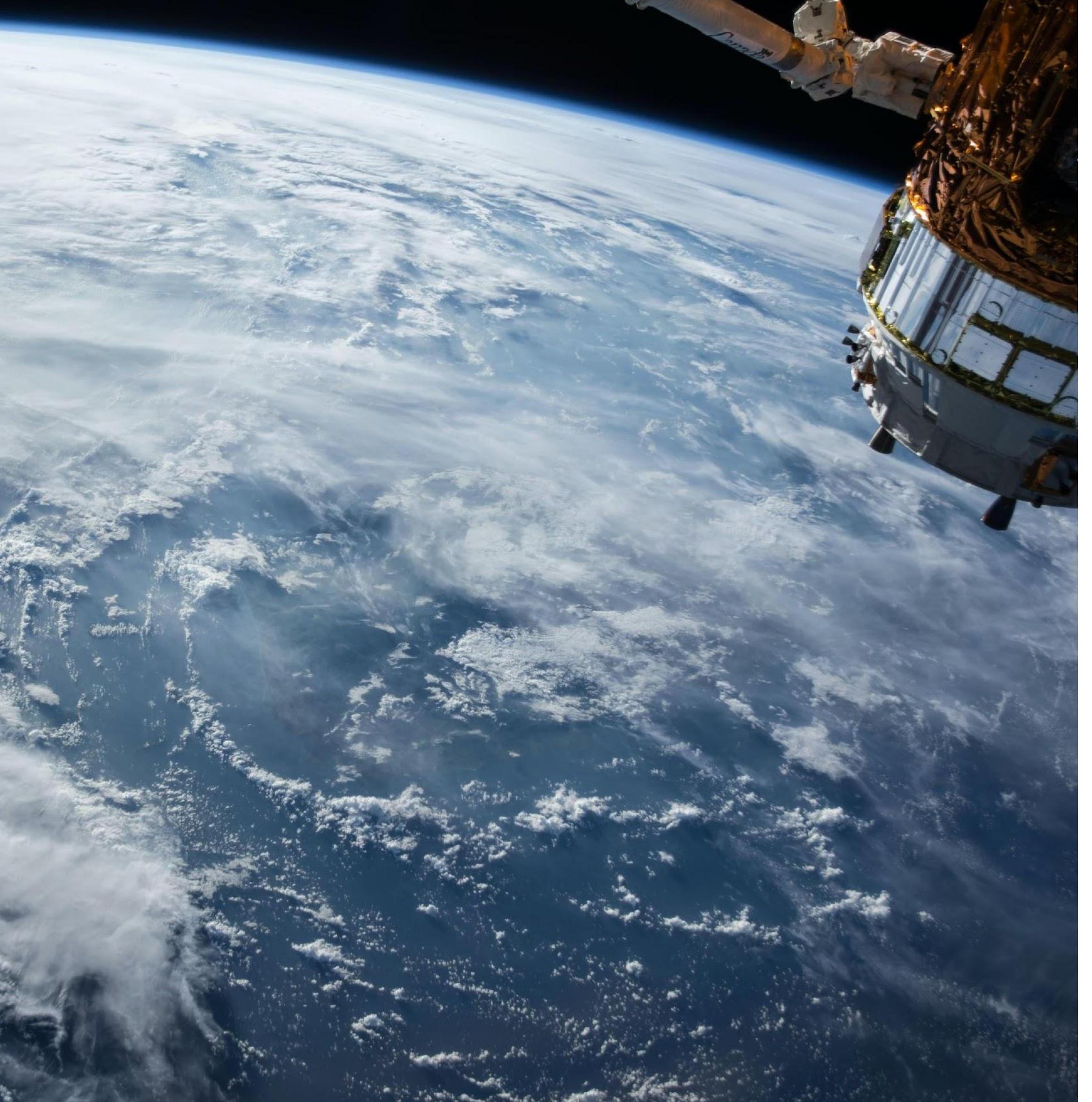
# Welcome



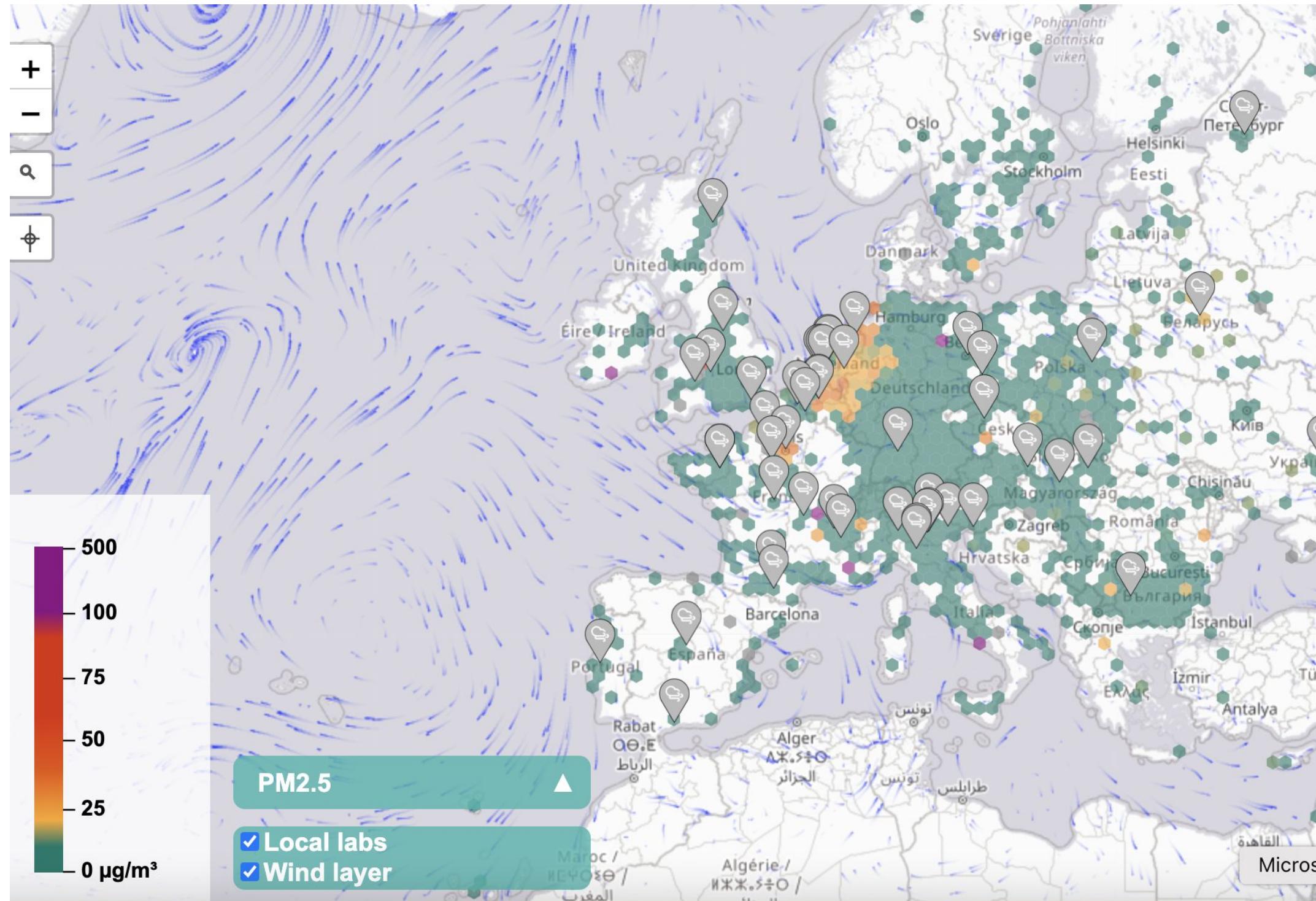
Data from: 06/09/2022

# Agenda

- Welcome Remarks
- Sprint Goals
- Q & A



# Motivation



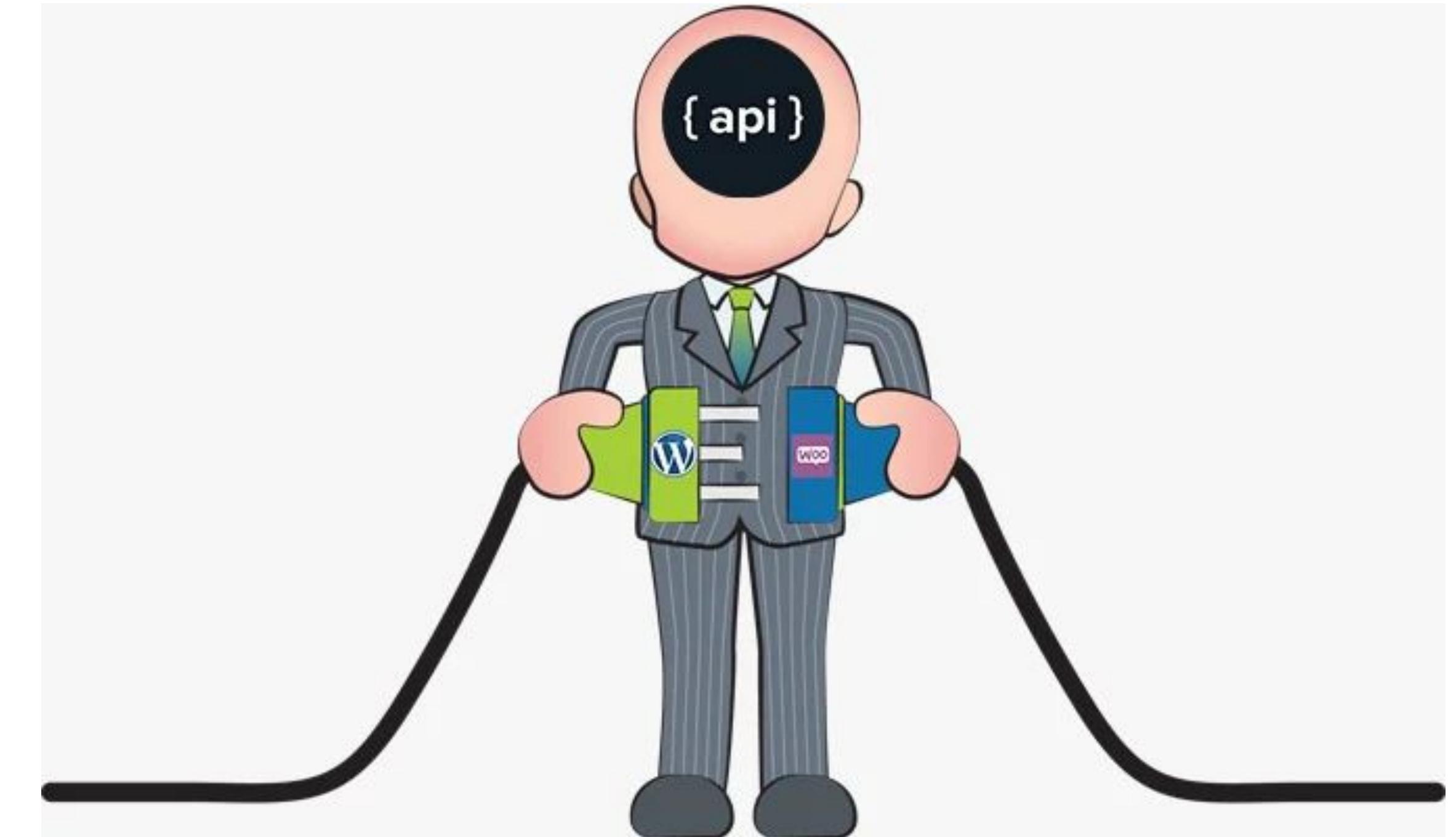
Current values of sensors measuring air quality.  
Source: <https://maps.sensor.community/#2/0.0/0.0>



Travel times across London. Source:  
<https://movement.uber.com/>

# Modern Web APIs

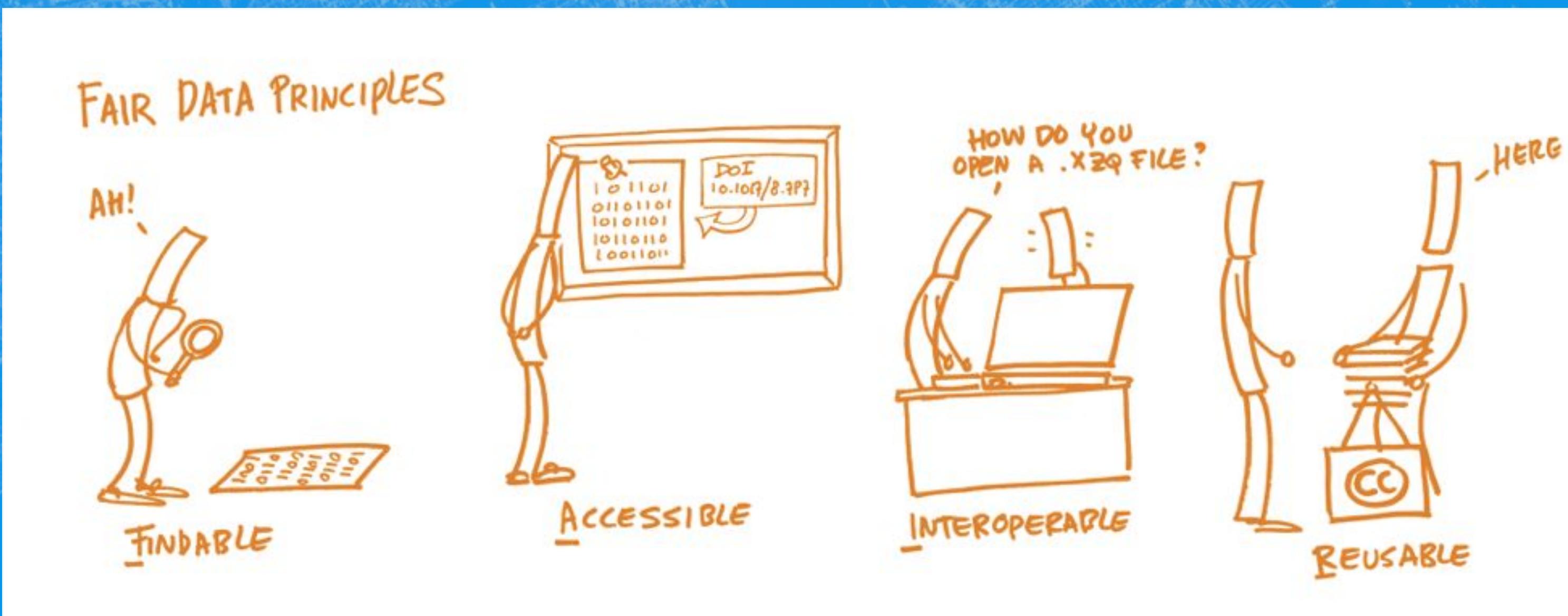
- APIs are a popular, effective method for rapid software development.
- There is an increasing need for interoperability between Web APIs.



Source:

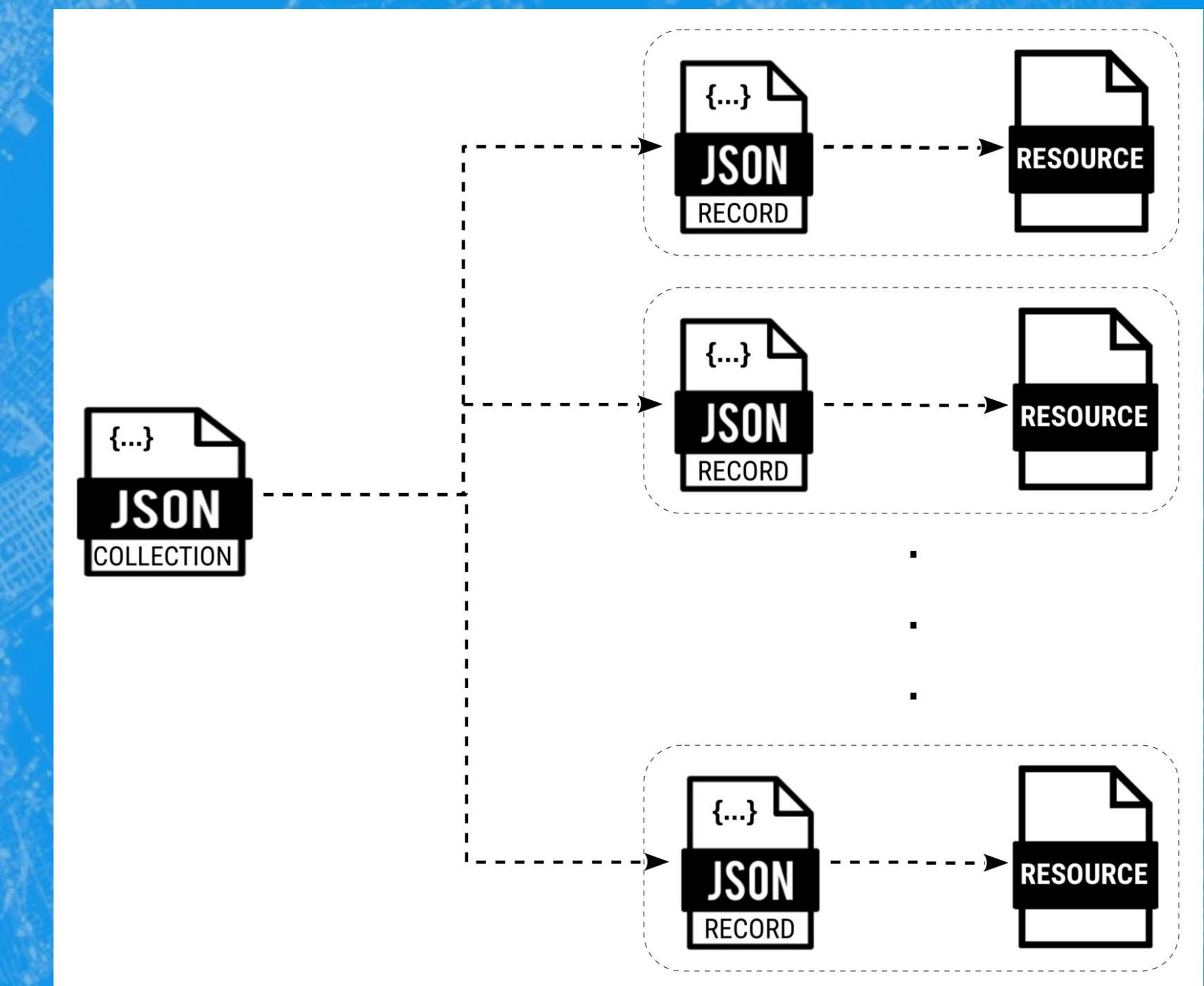
<https://www.fiverr.com/ketion/create-custom-wordpress-or-woocommerce-rest-api-endpoints>

A **Code Sprint** is a collaborative and inclusive event to support the development open standards and implementations of the standards, as well as creating awareness about the standards.



# Specifications focused on catalogues of geospatial information and geospatial metadata encodings:

- OGC API – Records
- STAC
- ISO 19115
- JSON-FG



Crawlable catalogue example

Source:

[https://github.com/opengeospatial/ogcapi-records/blob/master/images/crawlable\\_catalogue\\_example.png](https://github.com/opengeospatial/ogcapi-records/blob/master/images/crawlable_catalogue_example.png)

Brought to you by:



Open  
Geospatial  
Consortium





# What is OGC?

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**A hub for thought leadership, innovation, and standards for all things related to location**

## Our Vision

Building the future of location with community  
and technology for the good of society

## Our Mission

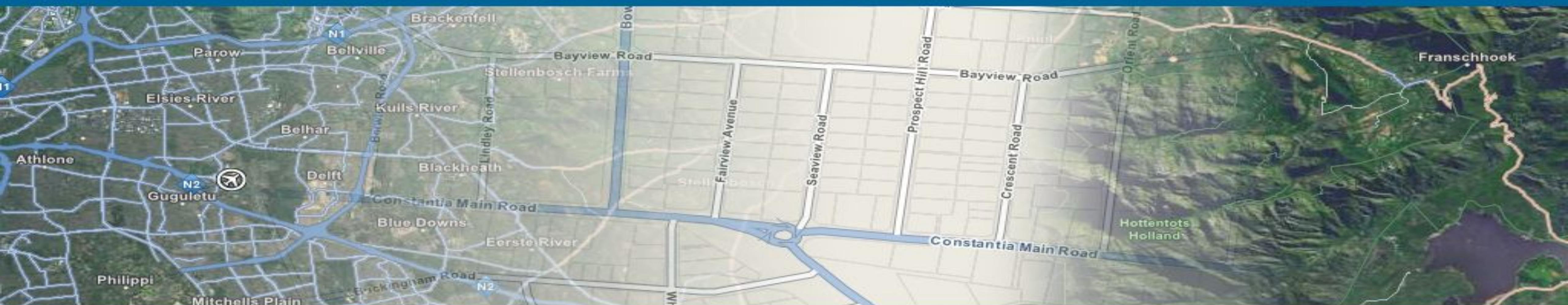
Make location information Findable, Accessible,  
Interoperable, and Reusable (FAIR)

## Our Approach

A proven collaborative and agile process combining consensus-based  
standards, innovation project, and partnership building

# ISO/TC 211 Geographic information/ Geomatics for OGC Code Sprint September 14<sup>th</sup>-16<sup>th</sup>, 2022

Peter Parslow, ISO/TC 211 chair-elect



# Sprint Sponsor's Remarks



# Sprint Sponsor's Remarks



# Geonovum

**Founded in 2007**

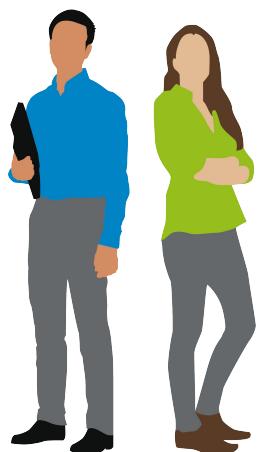


## **Public organisation**



Supervisory Board appointed by the  
Minister of Interior  
Board of Directors  
Programme council

## **Staff**



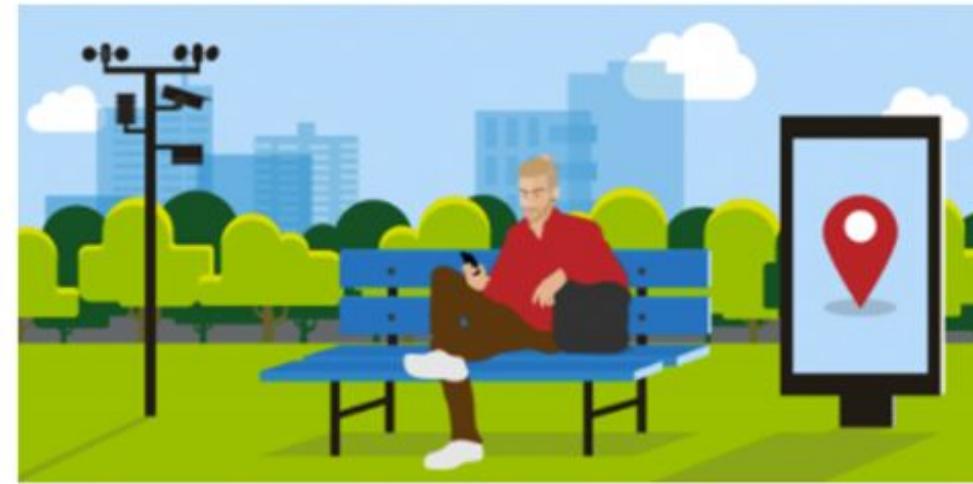
Mix of own staff, posted workers from  
various organisations in the public  
sector and knowledge institutes,  
supplemented with hired staff

**We explore, enable,  
ensure**

# Domains/Sectors



Energie



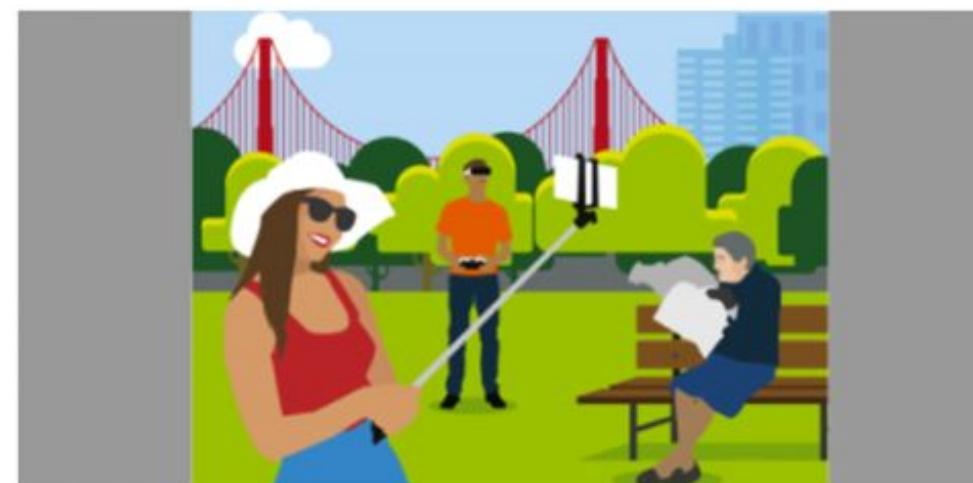
Ethic en Privacy



Geo-beleid, wet- en regelgeving



Geo4COVID



GeoSamen - Wijs met Locatie



Kennisplatform API's



Maatschappelijke vraagstukken



SDI.Next: een data infrastructuur waarop je kan bouwen



Standaardisatie

# Geonovum team



Ine de Visser

Ine is a Dutch delegate to the European INSPIRE MIG-T, which works on the management and maintenance of the European INSPIRE infrastructure. Ine is a tactical advisor to the national georegister, part of PDOK.



Jan van Gelder

Jan is architect standards and is responsible for safeguarding the coherence between the various standards such as the key registers, the DSO and around the theme of energy transition.



Thijs Brentjens

Thijs is advisor on the INSPIRE technical guidelines, such as the view and download services. He has worked on Dutch profiles for services (WMS and WFS).



Linda van den Brink

Linda is involved in geo-standards and information models and, among other things, the development of the Subsurface Key Register and previously in the Large-Scale Topography Key Register. Linda is the leader of the OGC-W3C working group on Spatial Data on the Web.

# GeoCat and 3DGI



Jeroen Ticheler

Jeroen founded Geocat in 2007, he held various positions for the FAO in GIS/remote sensing and established the GeoNetwork opensource project.

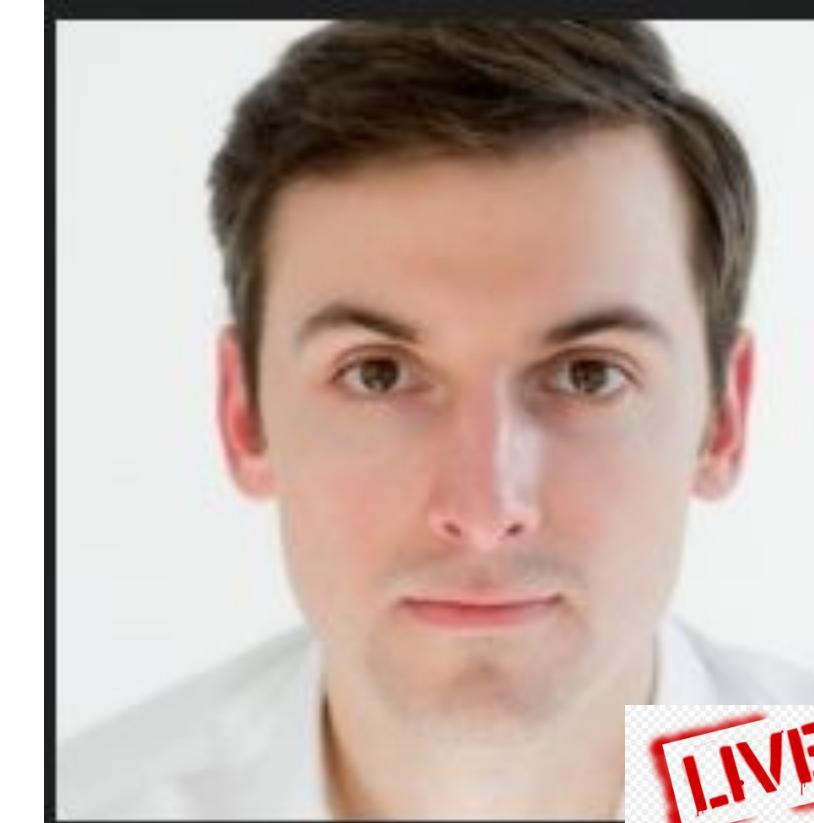
GeoCat offers advanced software and solutions, professional support and training for easy and efficient publishing of geographic data on the Internet.

<https://www.geocat.net/nl/>



Jose Garcia

Jose is a software engineer who has worked mostly in geospatial software development, both with proprietary and open source software solutions.

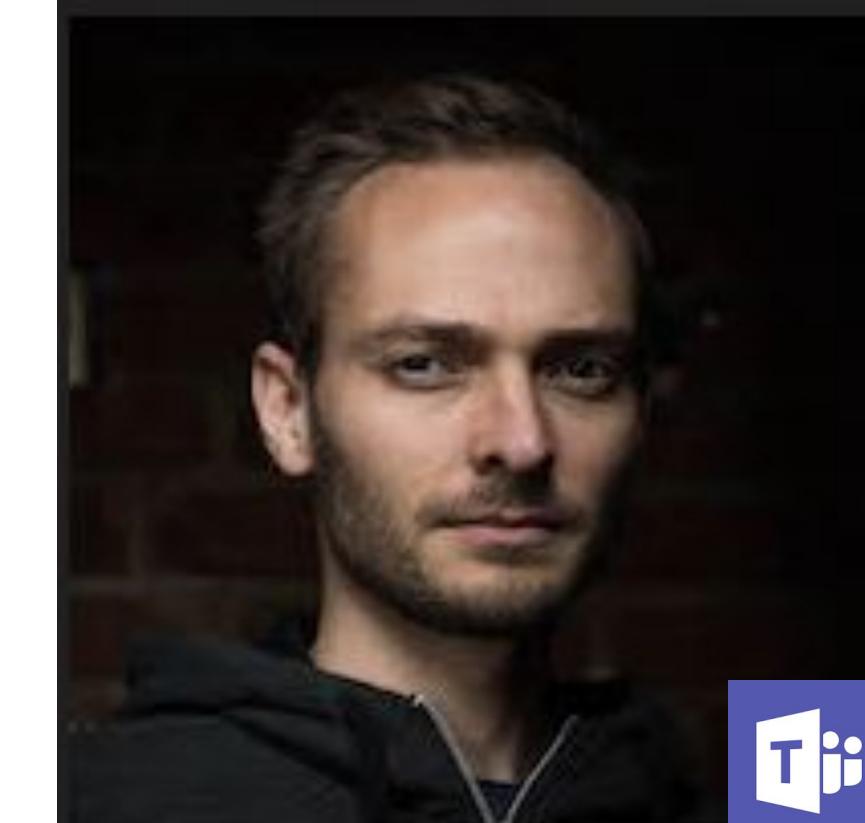


Balázs Dukai

Balázs is a 3D geoinformation software developer and consultant. He is co-editing the CityJSON standard and he is an expert in data management.

3DGI is a software development and consulting company with a focus on 3D geoinformation and open source technologies.

<https://3dgi.nl/>



Ravi Peters

Ravi is a programmer and consultant in 3D geoinformation. He is an expert in automatic LoD2 building reconstruction and 3D GIS in general.

# Why we are attending the sprint(1)

## Importance of OGC standards for the Netherlands:

- In NL relatively large amount of geodata is available as open data.
- In order to unlock these openly without vendor lock-ins, we need OGC standards.
- In addition, NL is too small to have only national standards: we have to align with international ones.

## Why we sponsor:

Two reasons:

- In OGC API Records we see a means of making metadata easier to find, which also makes data easier to find: essential in federated structures and to make geodata applicable for major societal challenges.
- In JSON-FG we see an important tool to make geodata lighter and more compact compared to GML. GeoPackage helped us at file level, JSON-FG should do that at encoding level (so output APIs, etc.)

# Why we are attending the sprint(2)

## What we plan to do for: OGC API Records & JSON-FG

- during the sprint
  - explore the possibilities to offer the (Dutch) NGR meta data via OGC API Record as:
    - DCAT
    - ISO19115
    - Extension on GeoNetwork
  - explore the possibilities of JSON-FG on:
    - Use well-known Coordinate Reference Systems (CRSs) other than WGS 84 ->e.g. Dutch RD
    - Use of non-Euclidean metrics, in particular ellipsoidal metrics
    - Solids and multi-solids as geometry types
    - Encode temporal characteristics of a feature (date, timestamp or interval)
    - Support of Arcs

## How we plan to do that for: For JSON-FG

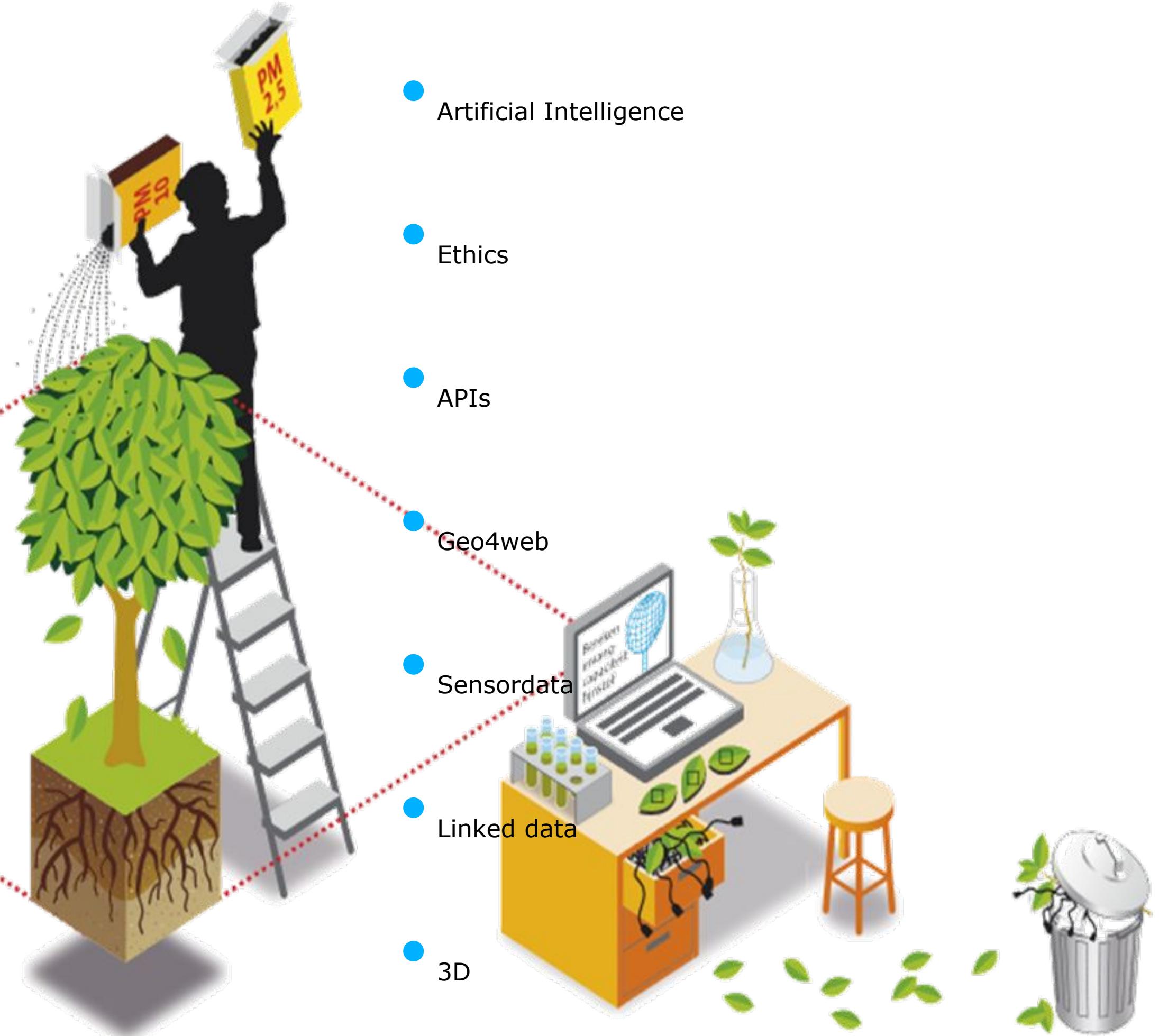
- before the sprint:  
<https://pypi.org/project/cityjson2jsonfg/>
  - build converter CityJSON 2 JSON-FG
  - convert data to JSON-FG (at least 3D BAG)
- during the sprint  
<https://data.3dgi.xyz/jsonfg/>
  - Extend CityJSON drag-and-drop viewer to include JSON-FG viewer
  - also test viewer as client with serverside solutions from other code sprint participants
- after sprint
  - lessons learned: on the one hand towards OGC with regard to standard itself, on the other towards NL with regard to implementation advice about standard.

# It's all about...

# Working together



# Experiment

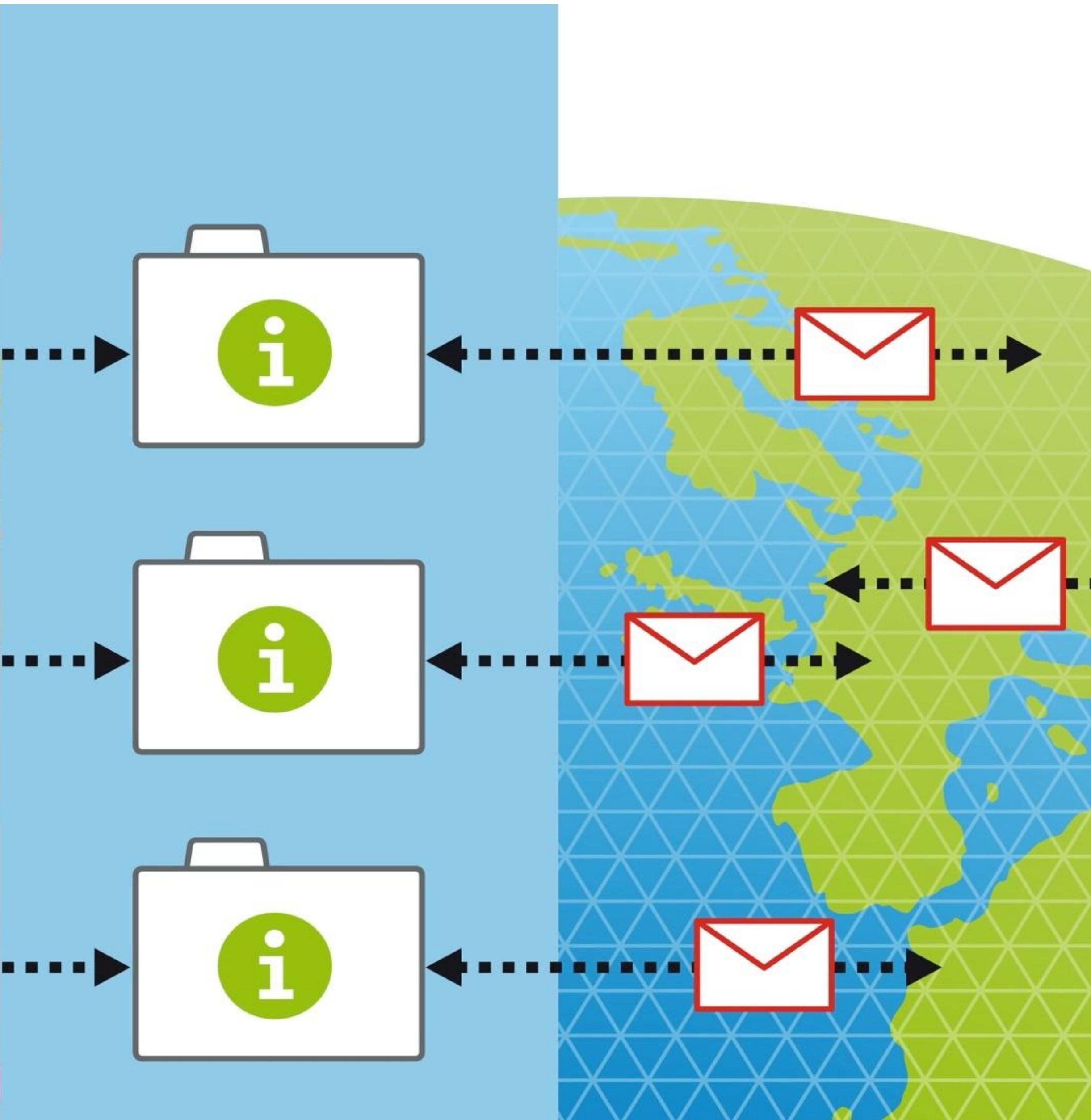


# Standardisation



- Semantics
- Exchange
- Visualisation
- Technique





# Maintenance



We develop standards to support practice. This requires active maintenance.

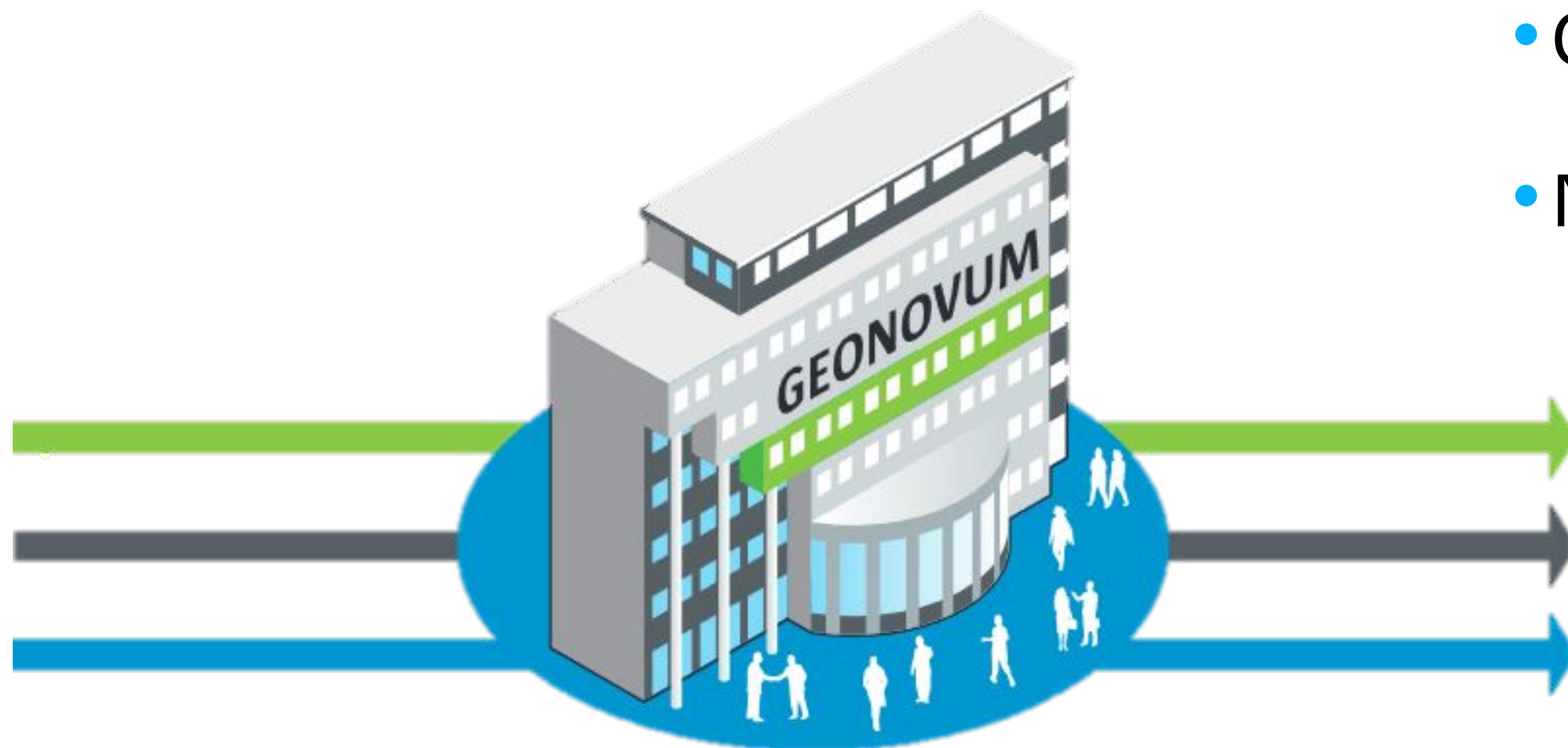


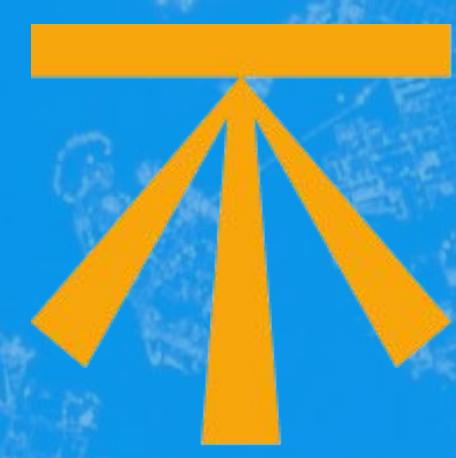
# International

- > OGC
- > W3C
- > INSPIRE
- > ISO
- > NEN
- > Forum Standardisation NL
- > ..

# What we cherish

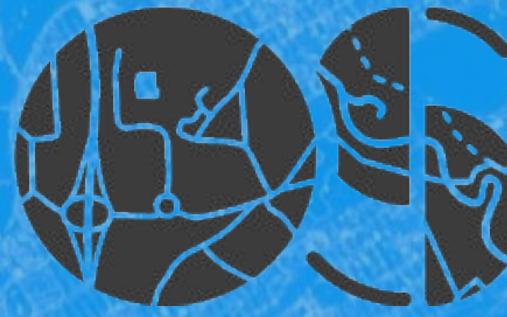
- Craftsmanship
- Neutrality
- Openness
- Network





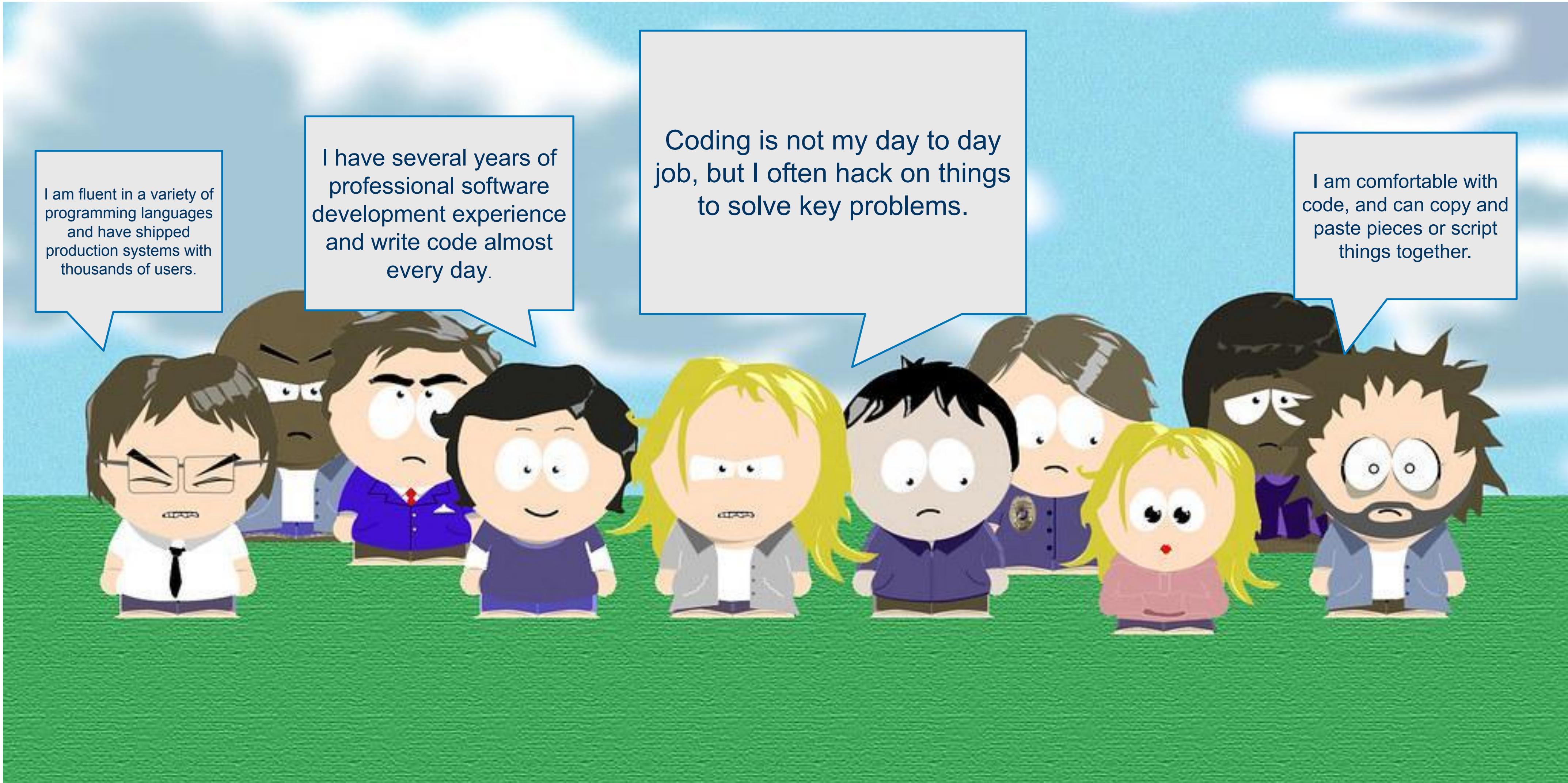
# GEOVATION

from



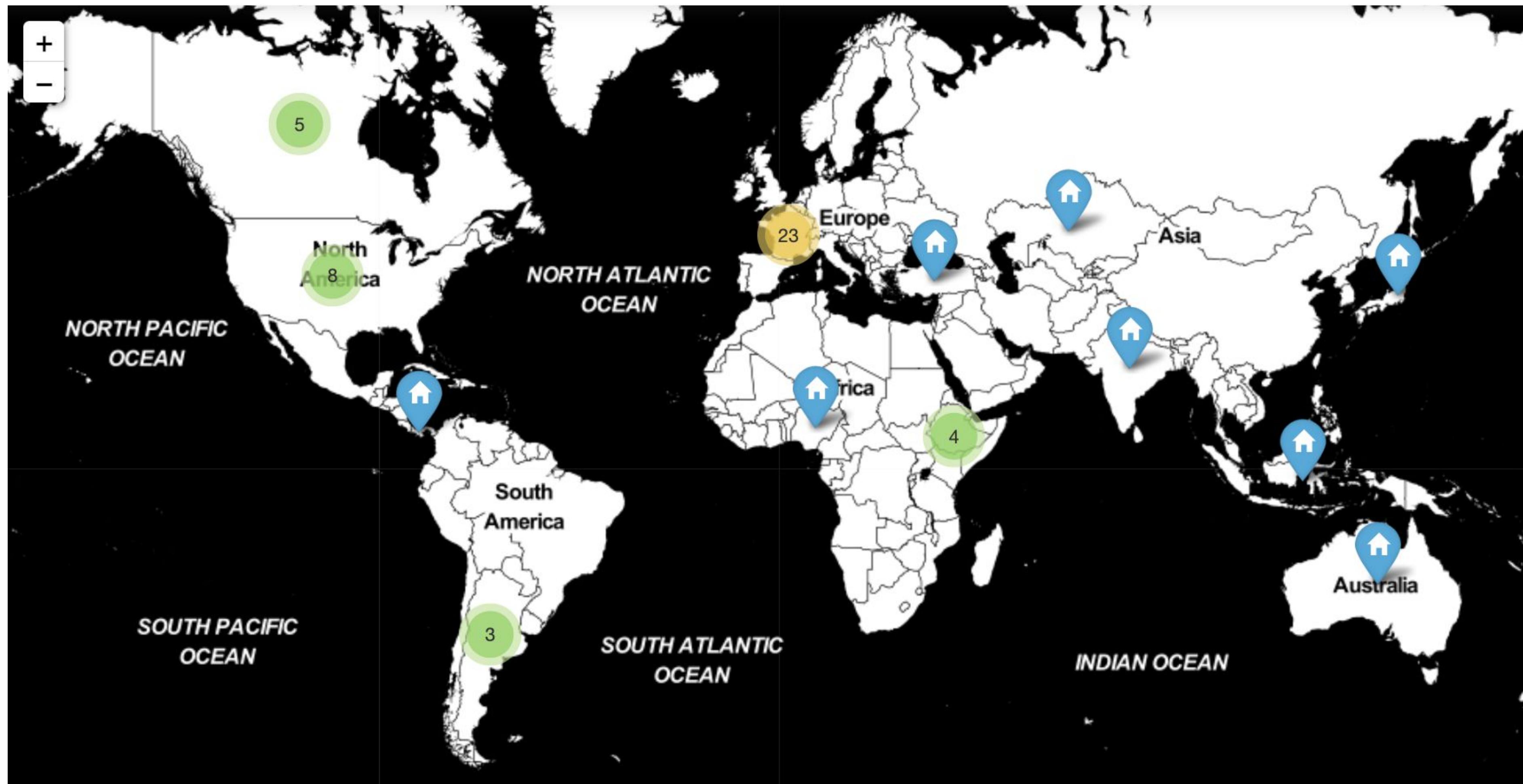
Ordnance  
Survey

# Who are the participants of the sprint?



Data from: 06/09/2022

# Where do they come from?



Data from: 06/09/2022

# Hybrid Code Sprint

- Virtually on Discord
- In-person, in Geovation

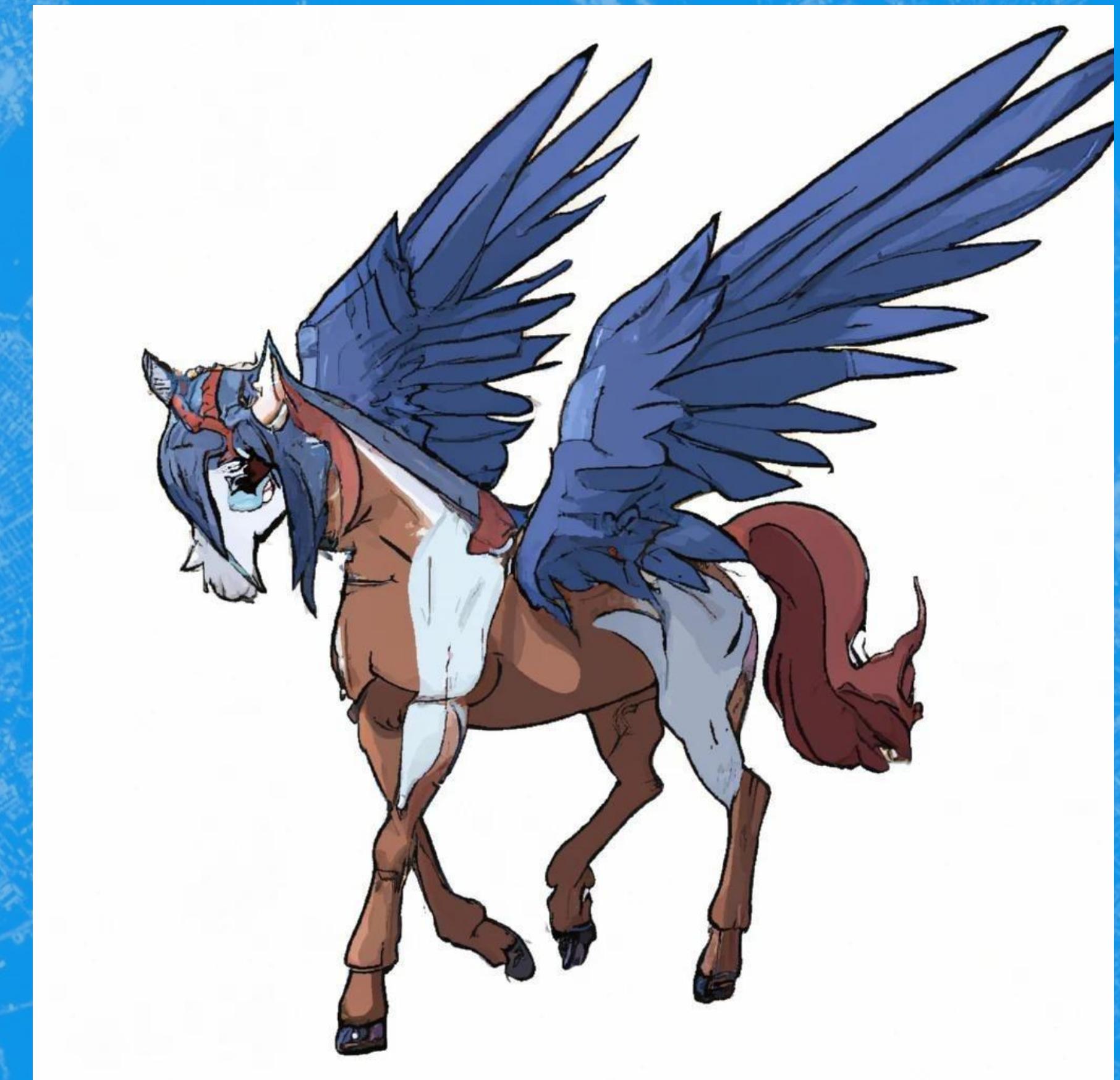


Image generated with DALL.E 2 :<https://openai.com/dall-e-2/>

# Sprint Structure (2x speeds)

The virtual sprint will take place on the  
OGC Events Discord Server.



Main Track  
General channels



Mentor Stream  
Mentoring channels

# Main Track

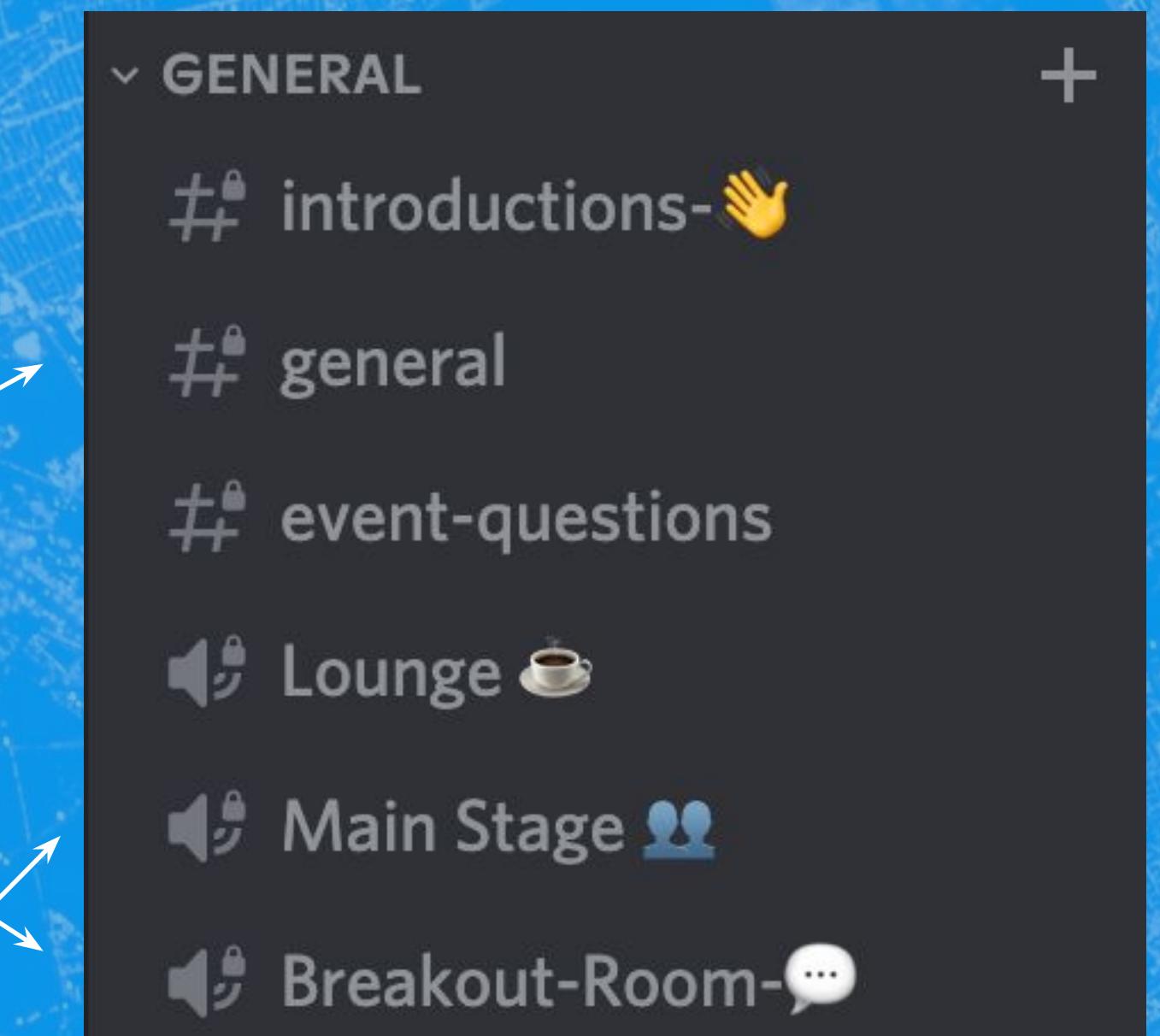


Developers will be working at their own pace:

- Developing standards implementations.
- Testing standards implementations.
- Providing feedback.

Discussion and knowledge sharing

Meet at given checkpoints

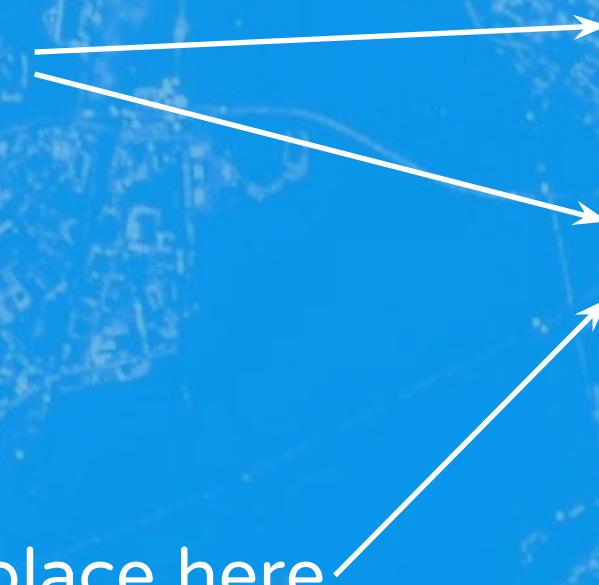


# Mentor Stream



Developers will have the opportunity to give their first steps, using the standards or implementations of the standards.

You can find mentoring here



Tutorials will take place here



A dark-themed sidebar with a list of channels under the heading "MENTORING". The sidebar includes a collapse arrow, a plus sign for adding more channels, and small icons next to each channel name.

- collapse arrow MENTORING +
- # whois
- # find-a-mentor
- # mentor-room-📚
- 🔊 Mentor Room 📚

# Tutorials



Wednesday, the 14<sup>th</sup>,  
16:00-16:45 BST

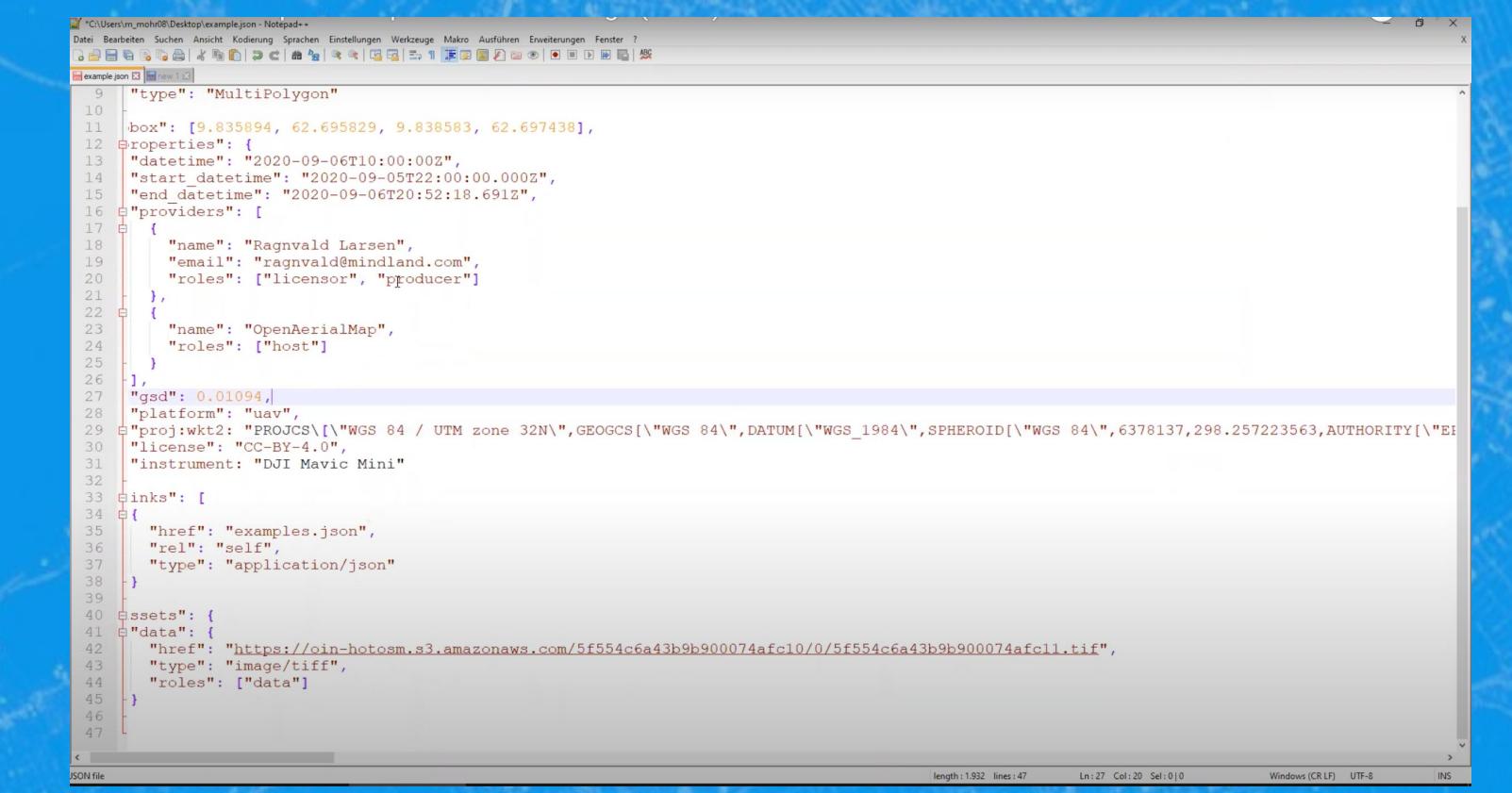
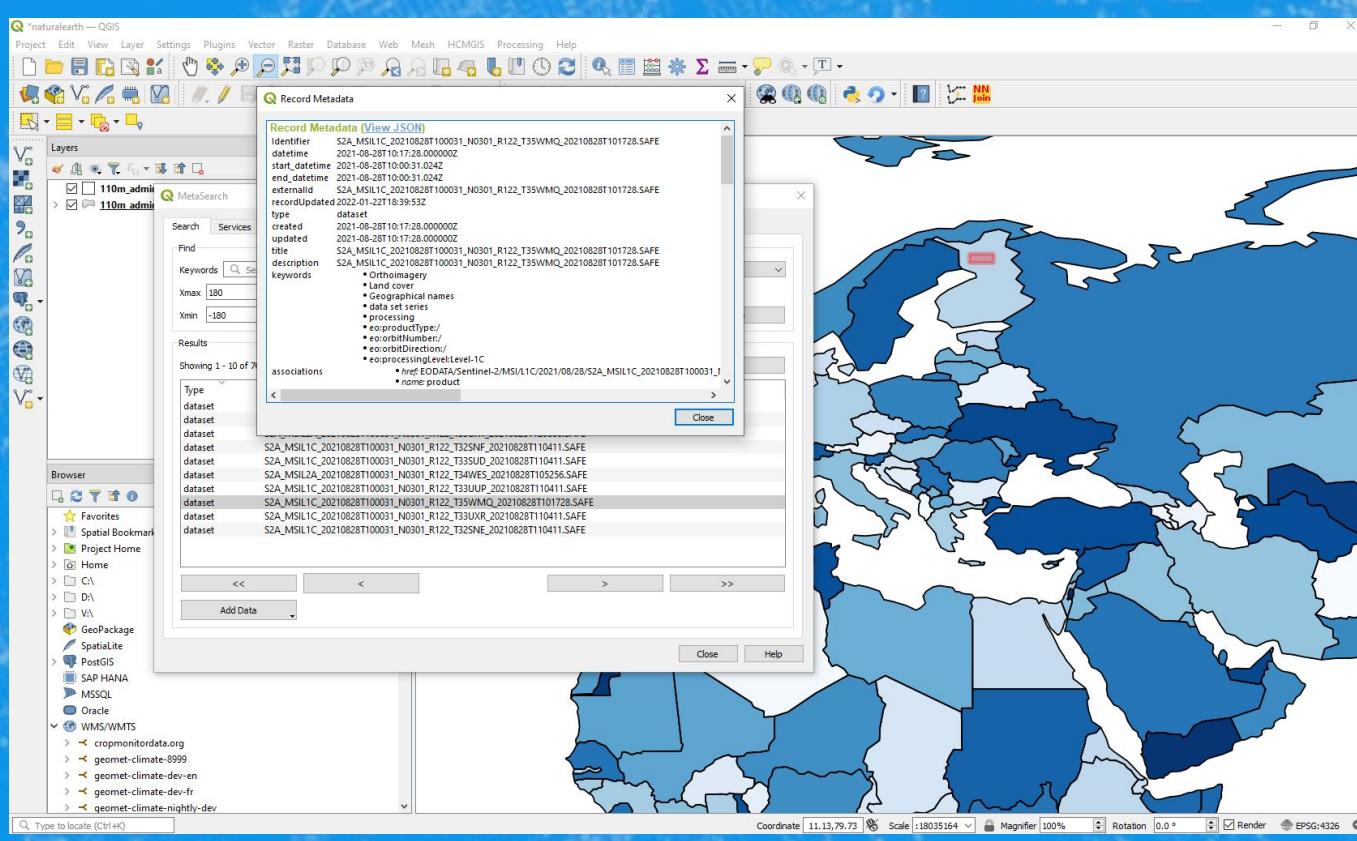
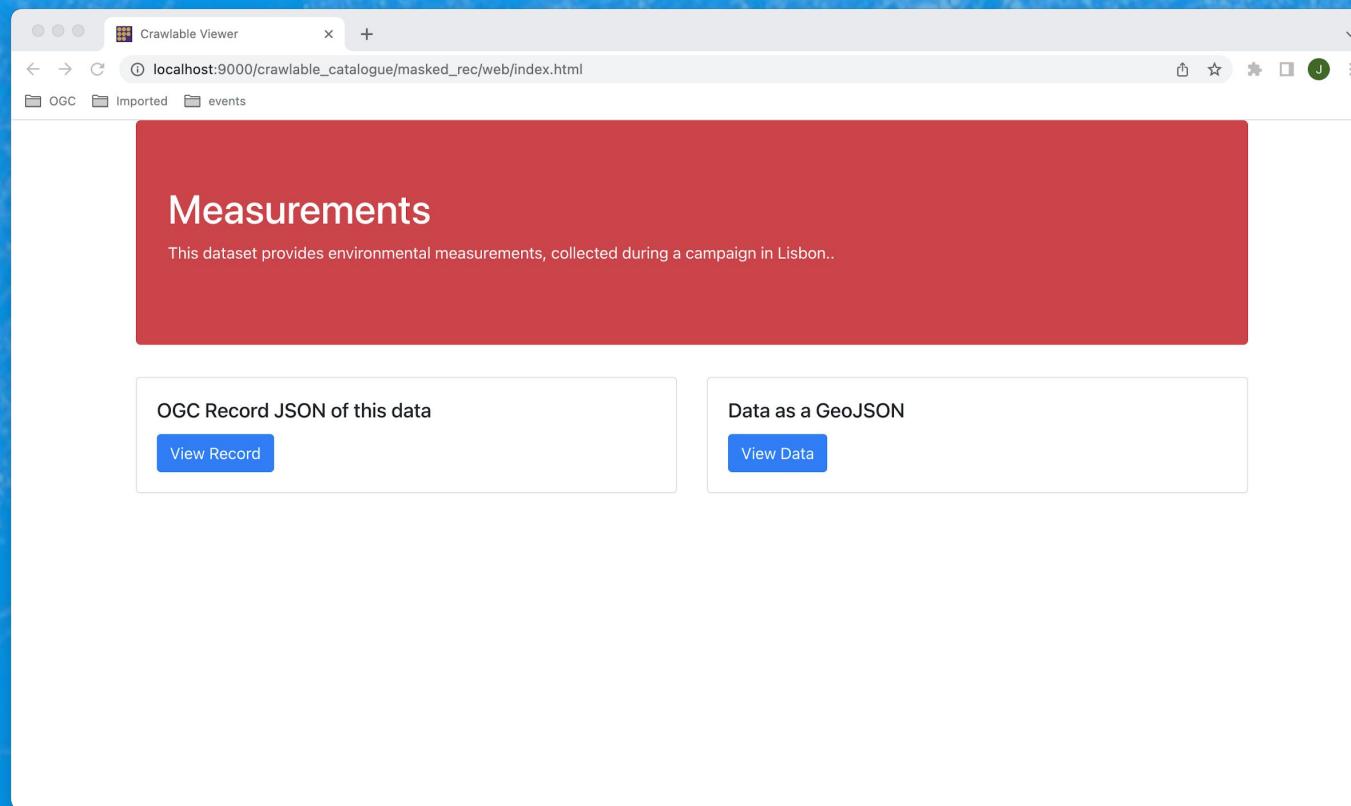
# Organize your data on the cloud with a crawlable OGC API - Records catalogue

Thursday, the 15<sup>th</sup>, 18:30-19:30  
BST

# Metadata management, publishing and discovery using OGC API - Records

**Friday, the 16<sup>th</sup>, 12:00-12:45  
BST**

# Introduction to SpatioTemporal Asset Catalogs (STAC)



# Geovation

- Main meetings and tutorials will take place on the main quadrant room (this one).
  - We also have 2 breakout rooms for other meetings



Images generated with DALL.E 2 :<https://openai.com/dall-e-2/>

# Day #1 - Wednesday, the 14<sup>th</sup> of September, 2022

2022-09-14		Day #1: Kick-Off	
	09:00 - 09:20 BST	Welcome Remarks - Joana Simoes	V:  #Main Stage
	09:20 - 09:40 BST	Sprint Goals for OGC API - Records, STAC, ISO 19115 and JSON-FG	V:  #Main Stage
	09:40 - 10:00 BST	Q&A	V:  #Main Stage
	10:00 - 12:30 BST	Practical work	V:  #Breakout Room
	12:30 - 13:30 BST	Lunch	
	13:30 - 17:00 BST	Practical work	V:  #Breakout Room
	17:00 - 18:00 BST	Early dinner	
	18:00 - 20:00 BST	Practical work	V:  #Breakout Room
	20:00 - 21:00 BST	Daily Brief Back	V:  #Main Stage

# Day #2 - Thursday the 15<sup>th</sup> of September, 2022

2022-09-15		Day #2	
	09:00 - 10:00 BST	Practical work	V:👥 #Breakout Room
	10:00 - 11:00 BST	Stand-up & demos	V:🏛️ #Main Stage
	11:00 - 12:30 BST	Practical work	V:👥 #Breakout Room
	12:30 - 13:30 BST	Lunch	🍜
	13:30 - 14:30 BST	Practical work	V:👥 #Breakout Room
	14:30 - 15:00 BST	Issues & concerns	V:🏛️ #Main Stage
	15:00 - 17:00 BST	Practical work	V:👥 #Breakout Room
	17:00 - 18:00 BST	Early dinner	🍜
	18:00 - 20:00 BST	Practical work	V:👥 #Breakout Room
	20:00 - 21:00 BST	Daily Brief Back	V:🏛️ #Main Stage

# Day #3 - Friday, the 16<sup>th</sup> of September, 2022

2022-09-16		Day #3: Final Day	
	09:00 - 10:00 BST	Practical work	V:👤 #Breakout Room
	10:00 - 11:00 BST	Stand-up & demos	V:🏛️ #Main Stage
	11:00 - 13:00 BST	Practical work	V:👤 #Breakout Room
	13:00 - 14:00 BST	Lunch	🍜
	14:00 - 15:00 BST	Practical work	V:👤 #Breakout Room
	15:00 - 17:00 BST	Demos & Wrap-up	V::钲 GotoMeet

# Feel Free to add more items to the schedule

2022-07-14		Day #3: Final Day	
	05:00 - 07:00 EDT/ 11:00 - 13:00 CEST	Practical work	V:👤 #Breakout Room
	07:00 - 08:00 EDT/ 13:00 - 14:00 CEST	Stand-up & demos	V:🏛️ #Main Stage
	08:00 - 10:30 EDT/ 14:00 - 16:30 CEST	Practical work	V:👤 #Breakout Room
	10:30 - 11:00 EDT/ 16:30 - 17:00 CEST	Issues & concerns	V:🏛️ #Main Stage
	11:00 - 13:30 EDT/ 17:00 - 19:30 CEST	Practical work	V:👤 #Breakout Room
	12:00 - 13:00 EDT/ 18:00 - 19:00 CEST	Working group meeting	V:👤 #Breakout Room
	13:30 - 14:30 EDT/ 19:30 - 20:30 CEST	Demos	V:钲 GotoMeet
	14:30 - 15:30 EDT/ 20:30 - 21:30 CEST	Wrap-up	V:钲 GotoMeet

👉 Example from a previous schedule

👉 <https://github.com/opengeospatial/developer-events/wiki/Metadata-Code-Sprint#schedule>

# More Information

**GitHub repo:**

<https://github.com/opengeospatial/developer-events/wiki/Metadata-Code-Sprint>

**Wiki page:**

<https://github.com/opengeospatial/developer-events/tree/master/2022/Metadata-Code-Sprint>

**Hashtags: #CODESPRINT18 #OGCAPI**



# #Introductions

The screenshot shows a Slack interface for the 'OGC Events' workspace. The left sidebar lists various channels: #judging, #mod-log, Staff War Room, #general, #event-questions, Lounge, Main Stage, Breakout Room, #sponsor-1, ACTIVITIES, MENTORING, #whois, #find-a-mentor, #mentor-room, Mentor Room, and a direct message with doublebyte (#8420). The main channel, #introductions, is highlighted and displays a welcome message from Mats Åhlin and Joana Simoes, along with a clapping hands emoji.

**# introductions**

Introduce yourself and share any links you'd like to. Please, keep the conversations in #general instead.

**Welcome to #introductions!**

This is the start of the #introductions **private** channel. Introduce yourself and share any links you'd like to. Please, keep the conversations in #general instead. You can use the next template for an introduction:

- Who you are and where you come from.
- Where you study or work at and what your role is.
- Your general craft and hobbies.
- Where can people follow you.

Additionally, you can add if you're looking for a team and what.

**Add members or roles** | **Edit Channel**

Event Staff | Mentor | Speaker | Judge | Sponsor | Attendee

October 20, 2021

Mats Åhlin - CM ISO/TC 211 10/20/2021  
I seem to be able to write here.

November 9, 2021

doublebyte Today at 6:01 PM  
Indeed you can  
Feel free to introduce yourself in this channel  
My name is Joana Simoes, Data Engineer/Data Scientist and Developer Relations @ OGC

clapping hands emoji

Message #introductions

EVENT STAFF — 2

- doublebyte
- Scott Simmons OGC

ONLINE — 6

- adesugbaa
- bgrotan Playing Zvift
- Flavia R Ferreira
- francbartoli
- greenscar
- SAT

OFFLINE — 28

- ajay.gondane
- AntoC
- Cameron Wilson
- Carlos Mota
- carlospalma
- cportele
- Daniel Lugo

# Sprint Goals for OGC API - Records

An aerial photograph taken from an airplane window, showing a vast landscape below. The terrain is covered in patches of white, likely snow or ice, with darker areas representing vegetation or roads. In the distance, a range of mountains with snow-capped peaks is visible against a clear blue sky. The perspective is looking down and slightly forward, with the horizon line roughly in the middle of the frame.

# Sprint Goals for STAC API

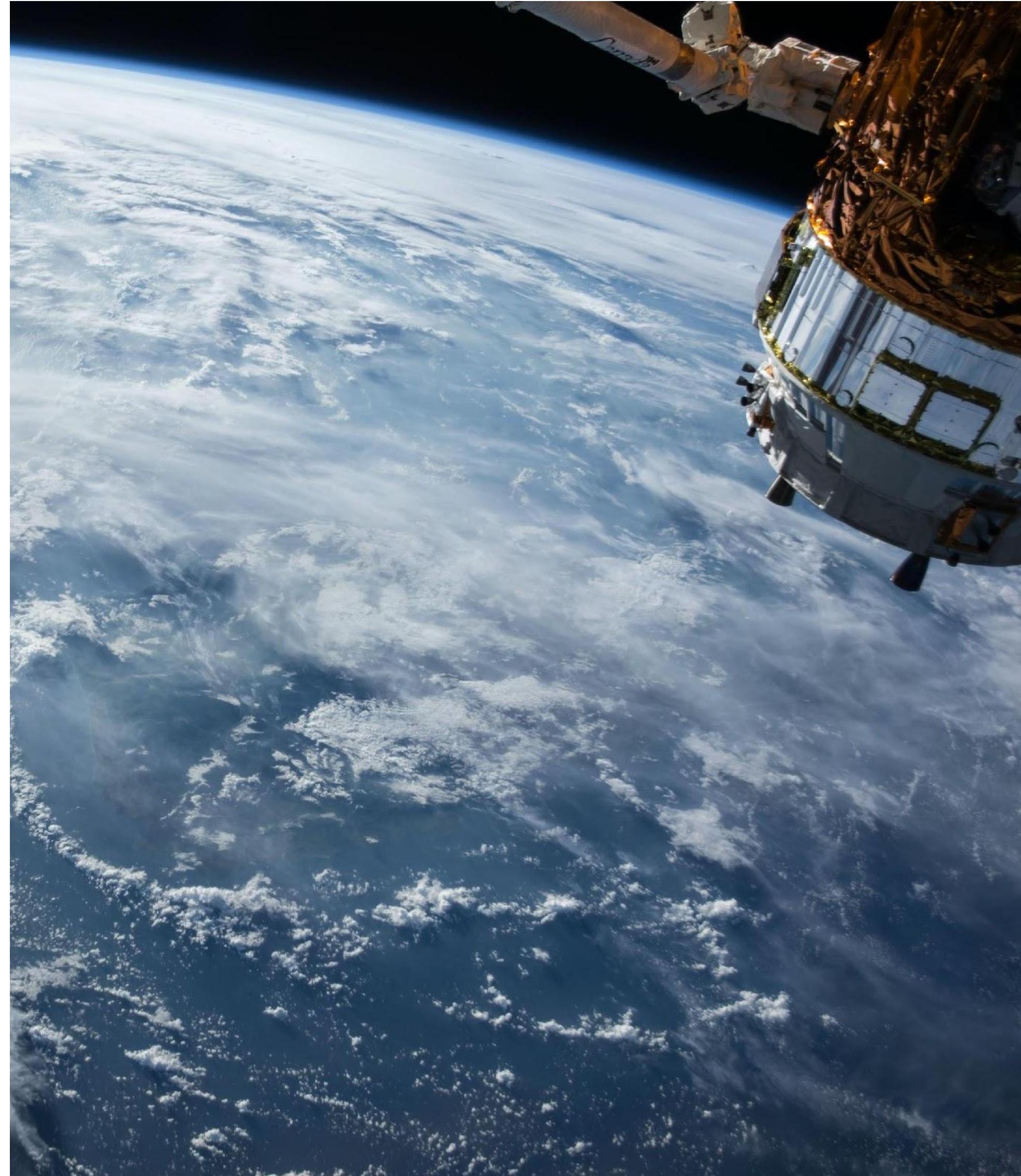
An aerial photograph taken from an airplane window, showing a vast landscape below. The terrain is a mix of dark, forested areas and lighter, snow-covered fields and roads. In the distance, a range of mountains with prominent peaks covered in snow. The sky above is a clear, pale blue, and the horizon line is visible in the middle ground.

# Sprint Goals for ISO 19115

An aerial photograph taken from an airplane window, showing a vast landscape below. The scene is dominated by a thick layer of white clouds. In the lower portion of the image, there are patches of dark ground, likely fields or roads, interspersed with white snow. In the background, a range of mountains is visible, their peaks partially obscured by clouds. The overall atmosphere is one of a high-altitude perspective, looking down at a winter wonderland.

# Sprint Goals for JSON-FG

An aerial photograph capturing a vast landscape from high above. In the foreground, there are large, white, fluffy clouds. Below them, a range of mountains is visible, their peaks and slopes covered in a thick layer of snow. The terrain below the mountains appears to be a mix of dark, possibly forested areas and lighter, open fields or agricultural land. The sky above is a clear, pale blue, transitioning to a darker shade towards the top of the frame.



# Thank You

## Community

500+ International Members  
110+ Member Meetings  
60+ Alliance and Liaison partners  
50+ Standards Working Groups  
45+ Domain Working Groups  
25+ Years of Not for Profit Work  
10+ Regional and Country Forums

## Innovation

120+ Innovation Initiatives  
380+ Technical reports  
Quarterly Tech Trends monitoring

## Standards

65+ Adopted Standards  
300+ products with 1000+ certified implementations  
1,700,000+ Operational Data Sets  
Using OGC Standards



# Motivation

The growing uptake of location within and beyond geospatial developer communities.

