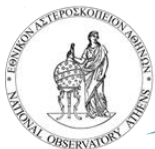


# **Umbrella Access Point for Copernicus and GEO data**

Tools and roadmap to efficient and effortless geo-spatial data access



**01**

# **How it started – Umbrella Sentinel Access Point**



**GLOBAL  
COVERAGE**

**DOWNLOAD SPEED**

**MOTIVATION**

# **UMBRELLA SENTINEL ACCESS POINT**

A SINGLE POINT OF ACCESS FOR SENTINEL DATA, CONNECTING TO MULTIPLE SENTINEL DATA SOURCES

**MAINTENANCE**

**MISSION  
AVAILABILITY**

# ABOUT THE APPLICATION



**NO MISSION OR  
GEOGRAPHIC  
RESTRICTIONS**

**CONTINUOUS  
AVAILABILITY**

**SELECTION OF THE  
MOST OPTIMAL  
DATA SOURCE**



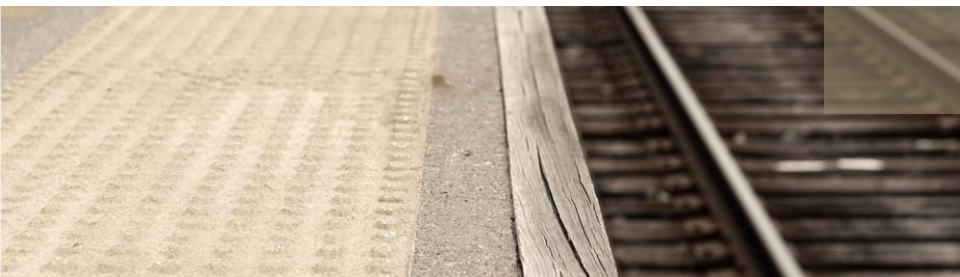
The background image shows a city street scene. On the left, there are bare trees and a brick building. In the center, a large steel truss bridge spans the street. On the right, there is a multi-story brick building with a fire escape. A semi-transparent grey rectangle is overlaid in the center, containing the text.

# Ten Connected Hubs

Open Access Hub, PEPS,  
ONDA-DIAS among others

**02**

## **Work in progress and next steps**



Website



EuroGEOSS Showcases: Applications Powered by Europe

Training Material



Scripts



Umbrella has been utilized by the agriculture showcase in order to create time-series of Sentinel-1 and Sentinel-2 for phenology monitoring and yield prediction.



ABOUT

API

EXAMPLES

CONNECTED HUBS

INNOVATION

IMPLEMENTATION

CONTACT

## GET SENTINEL-2 METADATA FOR A SPECIFIC AREA OF INTEREST DURING MAY 2020

```
#####  
# A basic example of using the Umbrella API #  
#####
```

```
import os  
import sys  
import csv  
import json  
import stat  
import types  
import requests  
import logging
```

```
# set the query  
url = 'http://umbrella.beyond-eocenter.eu/api/products/sentinel2?in_bbox=20.8,38.41,23.82,40&sensing_date__gte=2020-05-01&sensing_date__lte=2020-05-31'
```

```
# used for pagination  
starting = -100
```

```
# used for counting the total results harvested  
total_results = 0
```

```
# dictionary with the collected url per product  
products = {}
```



# e-shape

EuroGEOSS Showcases: Applications Powered by Europe



# NextGEOSS & The Sentinel Broker Hub

- Within the scope of NextGEOSS and relying on NOA's vast knowledge and experience in monitoring Sentinel Hubs, NOA team has developed an **Sentinel Linker Service** that enables users to have access to different hubs which are using **DHuS** software.



## Different Architecture

Umbrella connects to **both DHuS and non-DHuS** APIs and thus overcoming the limitation of APIs certain architecture

# ONGOING WORK

- Enabling **Smart and Sophisticated Queries** that **combine Sentinel Metadata with Meteo Data** in order to allow **targeted download** of Sentinel products
  - For example, users have the potential to define parameters such as **temperature** and **precipitation** so to further filter based on them the number of satellite images that are given from Umbrella as response.
- Blending Copernicus and meteo data in **fused feature spaces for supporting downstream services**



**USE CASES**

**GEO-CONNECTION**



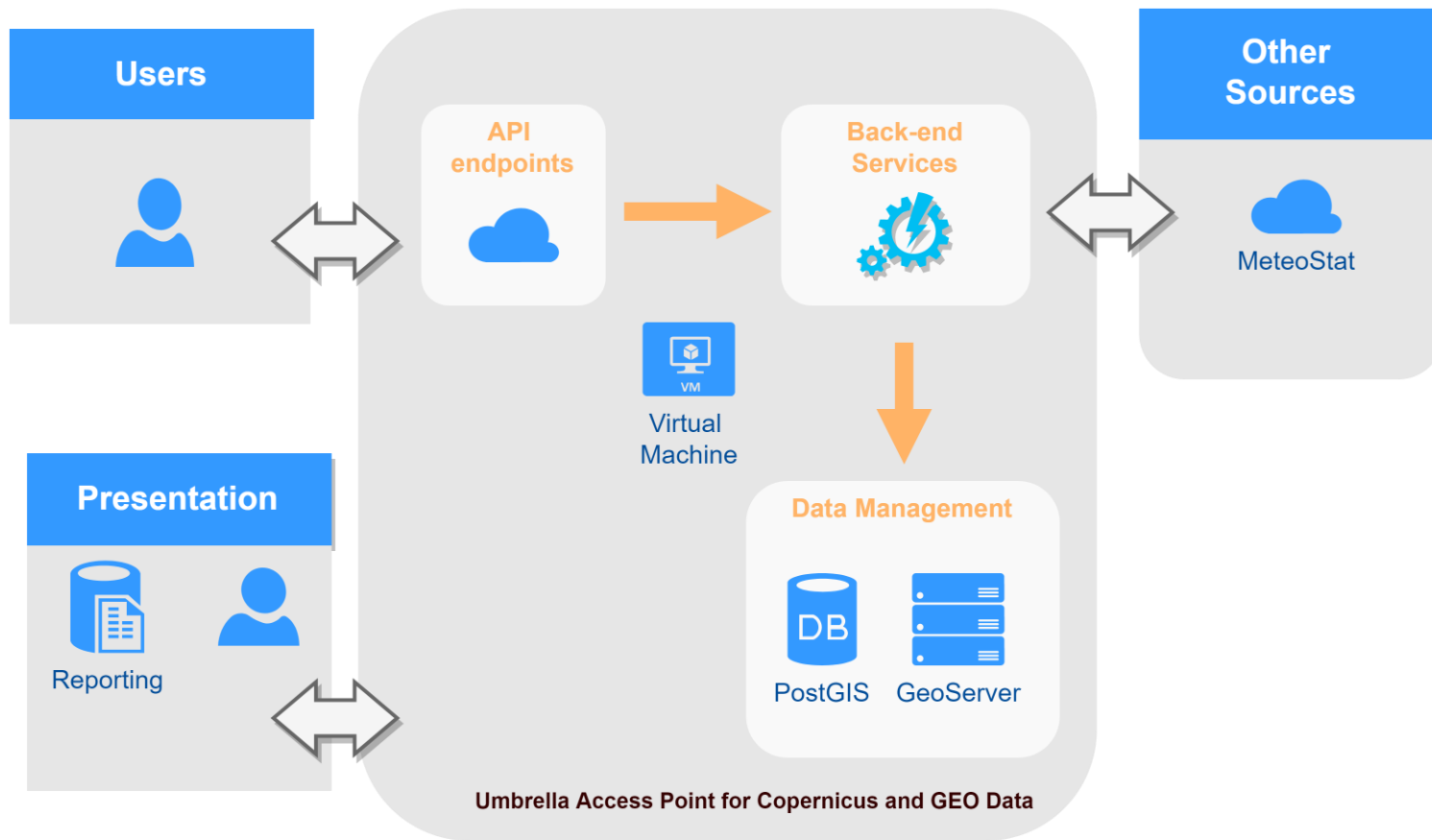
**Eiffel**  
GEOSS APPLICATIONS  
FOR CLIMATE CHANGE

**GEOSS Portal**



- The functionalities of Umbrella are currently extended so to **encompass GEOSS portal datasets**.
- This work is done in the context of H2020 project **Eiffel – GEOSS Applications for Climate Change** and the geo-cradle initiative that is closely connected to the project, disseminating its outputs to the geo-cradle network of stakeholders.
- The projects aims at revealing the **role of GEOSS portal and it's provided datasets** for building climate change adaptation and mitigation applications.
- In that direction, Umbrella Sentinel Access Point is extended so to allow the contstruction of requests that include meteo parameters and thus upgraded to **Umbrella Access Point for Copernicus and GEO data**.





# FUTURE WORK

- Connect Umbrella to additional APIs that offer **meteo** data.
- **Increase the number of Umbrella App functionalities** by adding operators for supporting different users' requirements
- **Extend the response** of Umbrella App with additional data



# Thank you!

Does anyone have any questions?  
Follow our team!

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