

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**



**NO MISSION OR
GEOGRAPHIC
RESTRICTIONS**

**CONTINUOUS
AVAILABILITY**

**SELECTION OF THE
MOST OPTIMAL
DATA SOURCE**

ABOUT THE APPLICATION



Ten Connected Hubs

Open Access Hub, PEPS,
ONDA-DIAS among others

02

**Work in progress
and next steps**



Website



e-shape

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



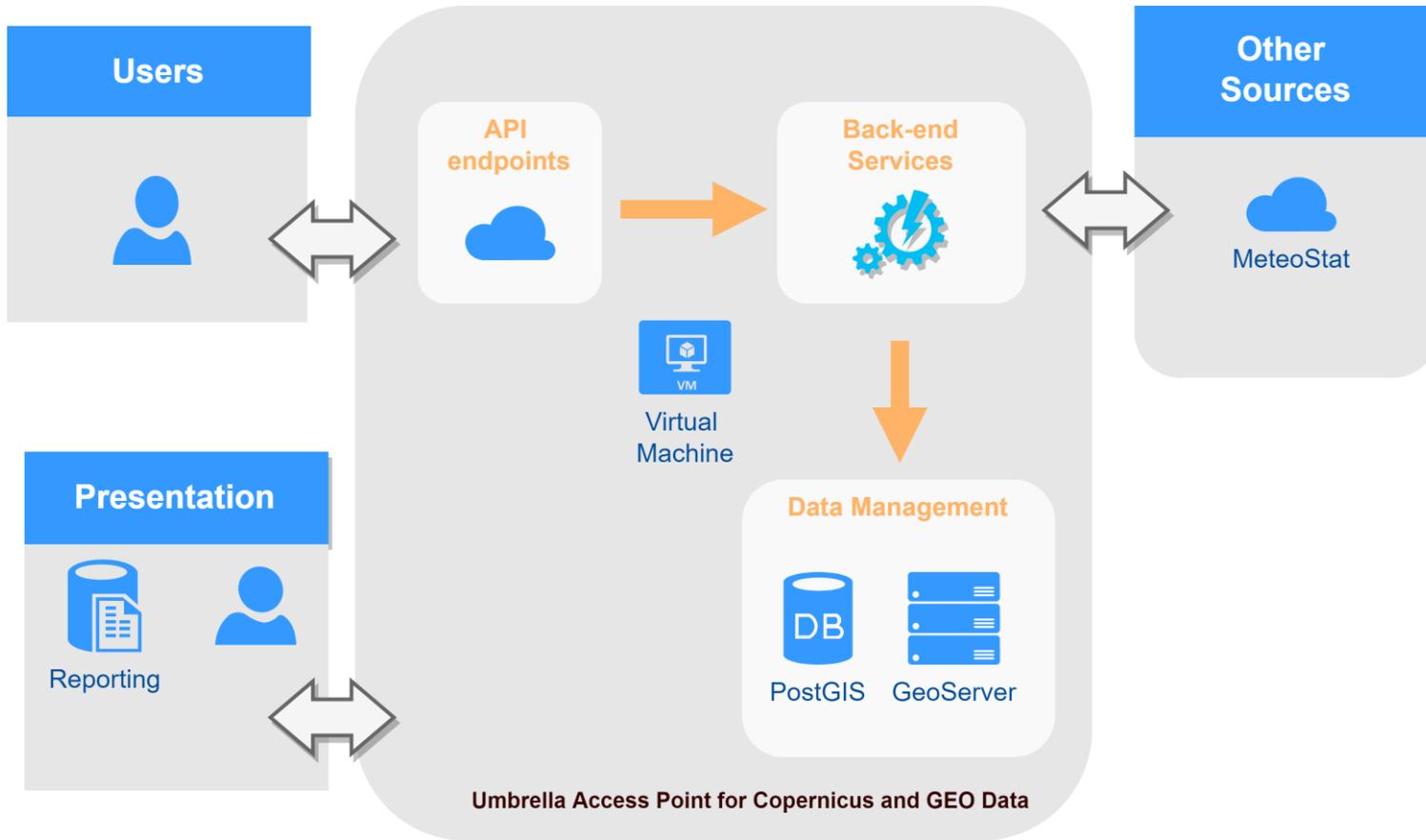
Eiffel
GEOSS APPLICATIONS
FOR CLIMATE CHANGE

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 construction of requests that include meteo parameters and thus upgraded to **Umbrella Access Point for Copernicus and GEO data**.

GEO-CONNECTION



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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