

# Možnosti využitia údajov a služieb Copernicus

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Program Copernicus  
Údaje Programu Copernicus  
Spracovanie údajov  
Príklady využitia údajov

relative orbit 036  
relative orbit 079  
relative orbit 122  
relative orbit 136



# Program Copernicus

10 rokov prevádzky  
programu Copernicus

cca. 20 TB surových  
dát denne

globálny "zlatý"  
štandard satelitného  
monitoringu Zeme





# Program Copernicus

The Copernicus logo features a stylized blue 'C' that curves around the word 'Copernicus' in a blue, sans-serif font. The background of the slide is a dramatic sky with large, golden and grey clouds over a green landscape with a body of water.

MINISTERSTVO  
ŽIVOTNÉHO PROSTREDIA  
SLOVENSKEJ REPUBLIKY



MINISTERSTVO  
ŠKOLSTVA, VÝSKUMU,  
VÝVOJA A MLÁDEŽE  
SLOVENSKEJ REPUBLIKY



MINISTERSTVO  
VNÚTRA  
SLOVENSKEJ REPUBLIKY

SARIO  
SLOVENSKÁ AGENTÚRA PRE  
ROZVOJ INVESTÍCIÍ A OBCHODU



# Údaje Programu Copernicus

Džungľa údajov

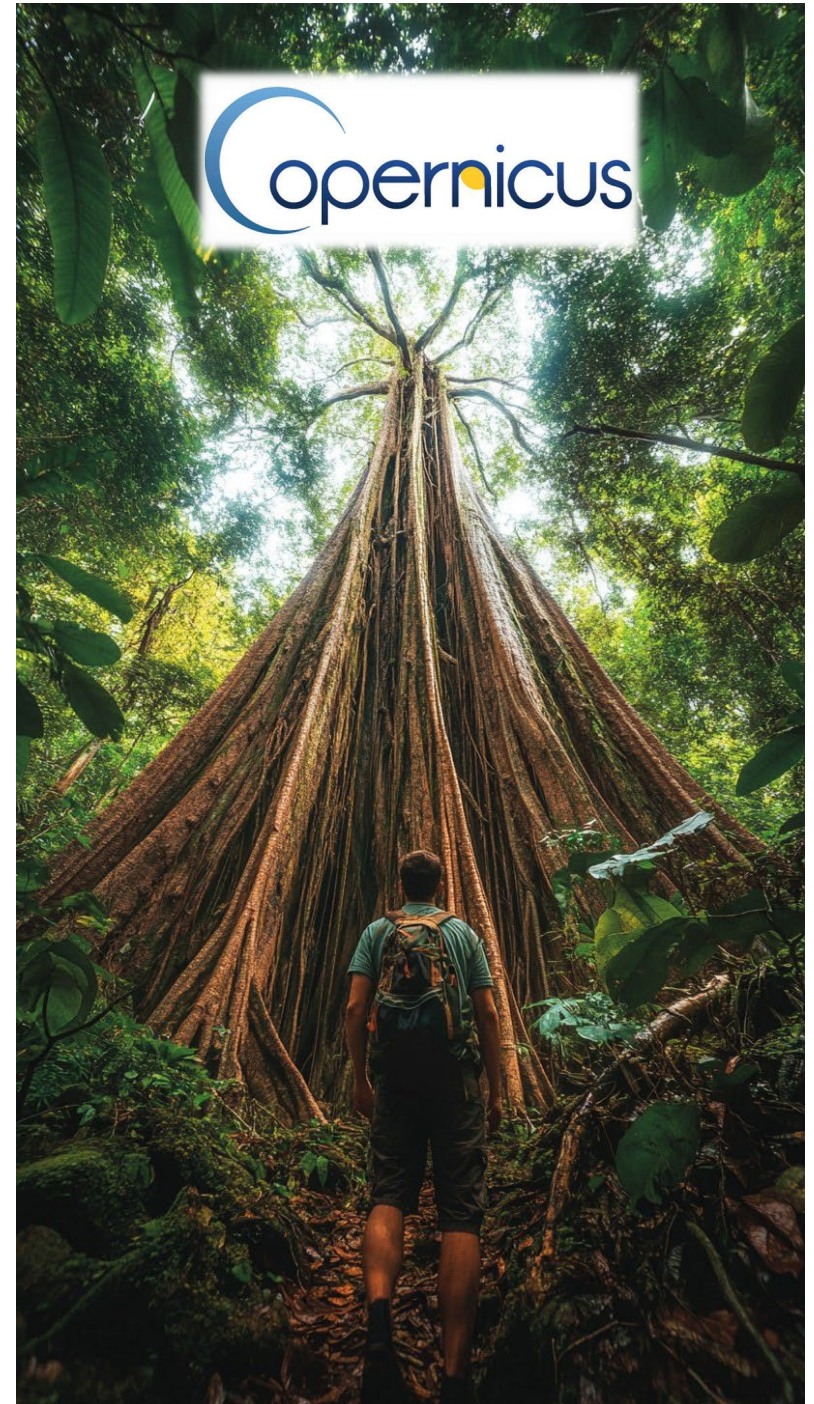
Kompletný ekosystém

Rôznorodé zdroje údajov

BIG Data

Data overload

Problém so správnym  
pochoopením údajov



# Údaje Programu Copernicus

## Na čo sa hodia údaje programu Copernicus

Variable [Select all](#)



At least one selection must be made

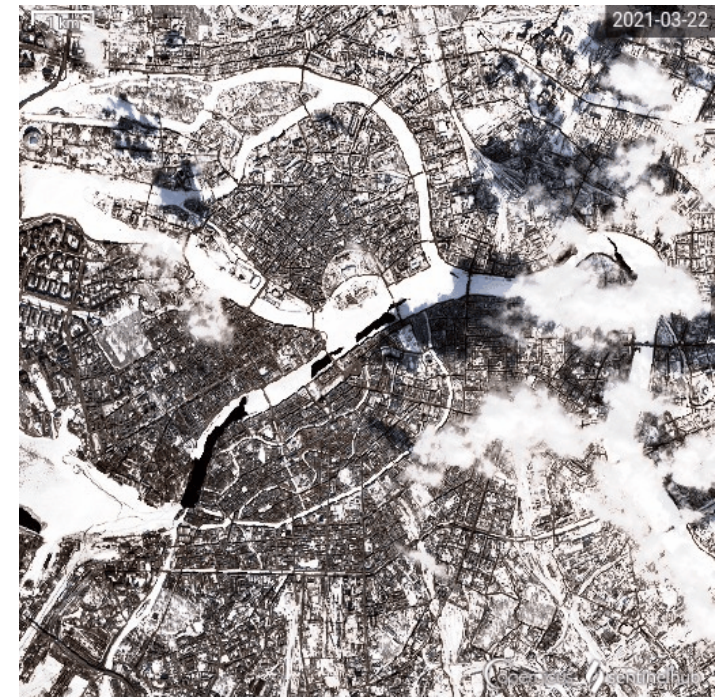
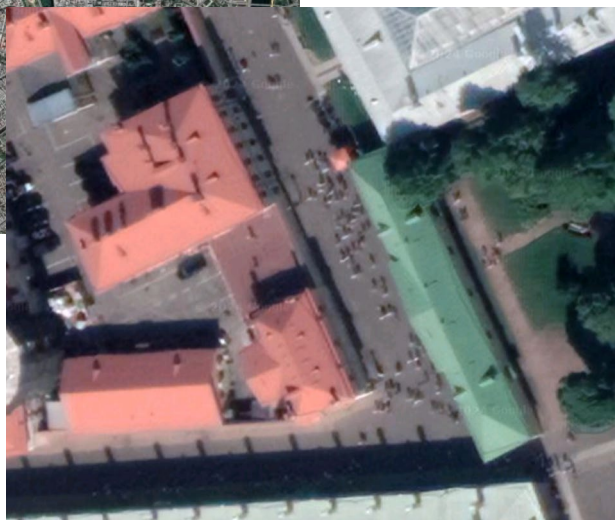
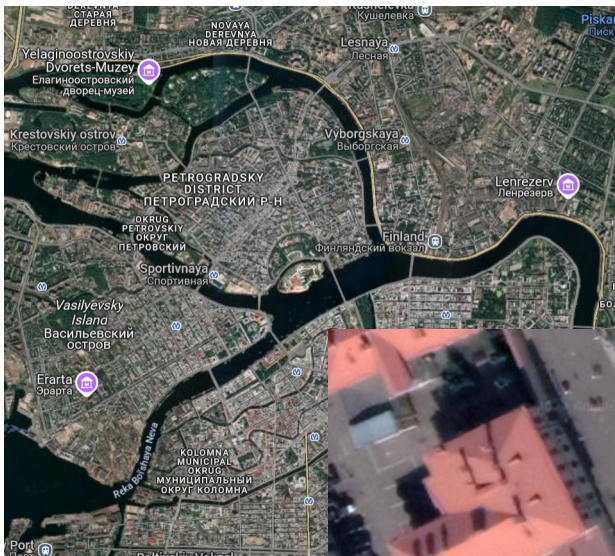
- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Alder pollen                         | <input type="checkbox"/> Ammonia                            | <input type="checkbox"/> Birch pollen                                  |
| <input type="checkbox"/> Carbon monoxide                      | <input type="checkbox"/> PM10, dust                         | <input type="checkbox"/> Formaldehyde                                  |
| <input type="checkbox"/> Glyoxal                              | <input type="checkbox"/> Grass pollen                       | <input type="checkbox"/> Mugwort pollen                                |
| <input type="checkbox"/> Nitrogen dioxide                     | <input type="checkbox"/> Nitrogen monoxide                  | <input type="checkbox"/> Non-methane volatile organic compounds (VOCs) |
| <input type="checkbox"/> Olive pollen                         | <input type="checkbox"/> Ozone                              | <input type="checkbox"/> Particulate matter < 2.5 µm (PM2.5)           |
| <input type="checkbox"/> Particulate matter < 10 µm (PM10)    | <input type="checkbox"/> Peroxyacyl nitrates                | <input type="checkbox"/> PM2.5, total organic matter                   |
| <input type="checkbox"/> PM10, sea salt (dry)                 | <input type="checkbox"/> PM10, wildfires                    | <input type="checkbox"/> Ragweed pollen                                |
| <input type="checkbox"/> PM2.5, residential elementary carbon | <input type="checkbox"/> PM2.5, secondary inorganic aerosol | <input type="checkbox"/> Sulphur dioxide                               |
| <input type="checkbox"/> PM2.5, total elementary carbon       |   |  |



# Údaje Programu Copernicus

Podrobné, ale menej aktuálne údaje

Menej podrobné, ale aktuálne údaje





# Spracovanie údajov

Dôkladný prieskum

Trpezlivá práca

Zrnká výsledkov


Interpretácia  
výsledkov





# Údaje Programu Copernicus

## Copernicus Data Space Ecosystem <https://dataspace.copernicus.eu/>


News  Dashboard Cases Events Gallery Videos About





PROGRAMME OF  
THE EUROPEAN UNION



EXPLORE DATA 


ANALYSE DATA 

ECOSYSTEM 

COPERNICUS BROWSER 

SUPPORT 



 CDSE infrastructure is experiencing temporary instabilities in networking components. This is impacting some users accessing data, as well as related components such as Copernicus Browser, Sentinel Hub and others. We are investigating the incident and will inform you once the problem is solved. We apologize for the inconvenience.

## Explore the Copernicus Data Space Ecosystem

Welcome to the Copernicus Data Space Ecosystem, an open ecosystem that provides free instant access to a wide range of data and services from the Copernicus Sentinel missions and more on our planet's land, oceans and atmosphere.

The Copernicus Data Space Ecosystem not only ensures the continuity of the open and free access to Copernicus



# Údaje Programu Copernicus

## Vizualizácia/vyhľadávanie/ukladanie údajov

The image displays the Copernicus Browser interface, which is used for visualizing, searching, and storing data. The interface is split into two main sections: a left sidebar and a main map area.

**Left Sidebar:**

- Header:** Copernicus BROWSER, EN, Peter Pastorek, VISUALIZE, SEARCH.
- Search Results:** Showing 50 results of 104436. The results are listed in a table with columns for 'Visualize', 'SENTINEL-2', 'MSI', and 'S2MSI2A'. Each result includes a small satellite image, a file ID (e.g., S2A\_MSIL2A\_20241117T095301\_N0511\_R079\_T33TVE\_2), mission name (SENTINEL-2), instrument (MSI), size (e.g., 913MB), and sensing time (2024-11-17T09:53:01.024000Z).
- Footer:** Logos for the European Union, Copernicus, and ESA, along with 'About' and 'Support' links.

**Main Map Area:**

- Map:** A satellite-style map of Europe with several blue rectangular footprints overlaid, indicating the locations of the data points.
- Search Bar:** 'Go to Place' with a magnifying glass icon.
- Map Controls:** A vertical toolbar on the right side of the map containing icons for home, info, layers, share, location, scale, 3D view, and a legend.
- Coordinates:** At the bottom right, the current coordinates are shown as 'Lat: 48.20, Lng: -2.50' and a scale of '300 km'.



# Spracovanie údajov

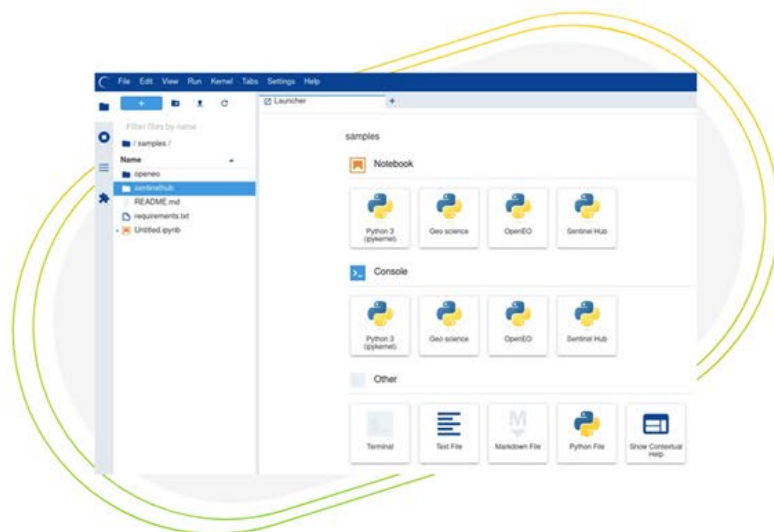
## JupyterLab



Home >

## JupyterLab

The JupyterLab service is a web-based environment that allows you to immediately start working with the Copernicus Data Space Ecosystem data and APIs.



## Welcome to JupyterLab

Enhance your experience and streamline your workflows with the JupyterLab service. This service enables you to leverage the Copernicus Data Space Ecosystem services and access data effortlessly.

The JupyterLab service allows you to dive into data exploration, visualization, and analysis without the hassle of installing dependencies or downloading large data sets.

A set of notebook samples is automatically available after login and will help you to kick-start your journey in the Copernicus Data Space Ecosystem.

[ACCESS DOCUMENTATION](#)

[FOLLOW VIDEO TUTORIAL](#)

# Spracovanie údajov

## JupyterLab



PROGRAMME OF  
THE EUROPEAN UNION



esa

[Home](#)

[Token](#)

[peter.pastorek22@gmail.com](#)

[LOGOUT](#)

### Server Options

Small server

Spawns small notebook server with 2 CPU cores and 4GB RAM

Medium server

Spawns medium notebook server with 2 CPU cores and 8GB RAM

Large server

Spawns large notebook server with 4 CPU cores and 16GB RAM



Anti-Robot Verification

[Click to start verification](#)

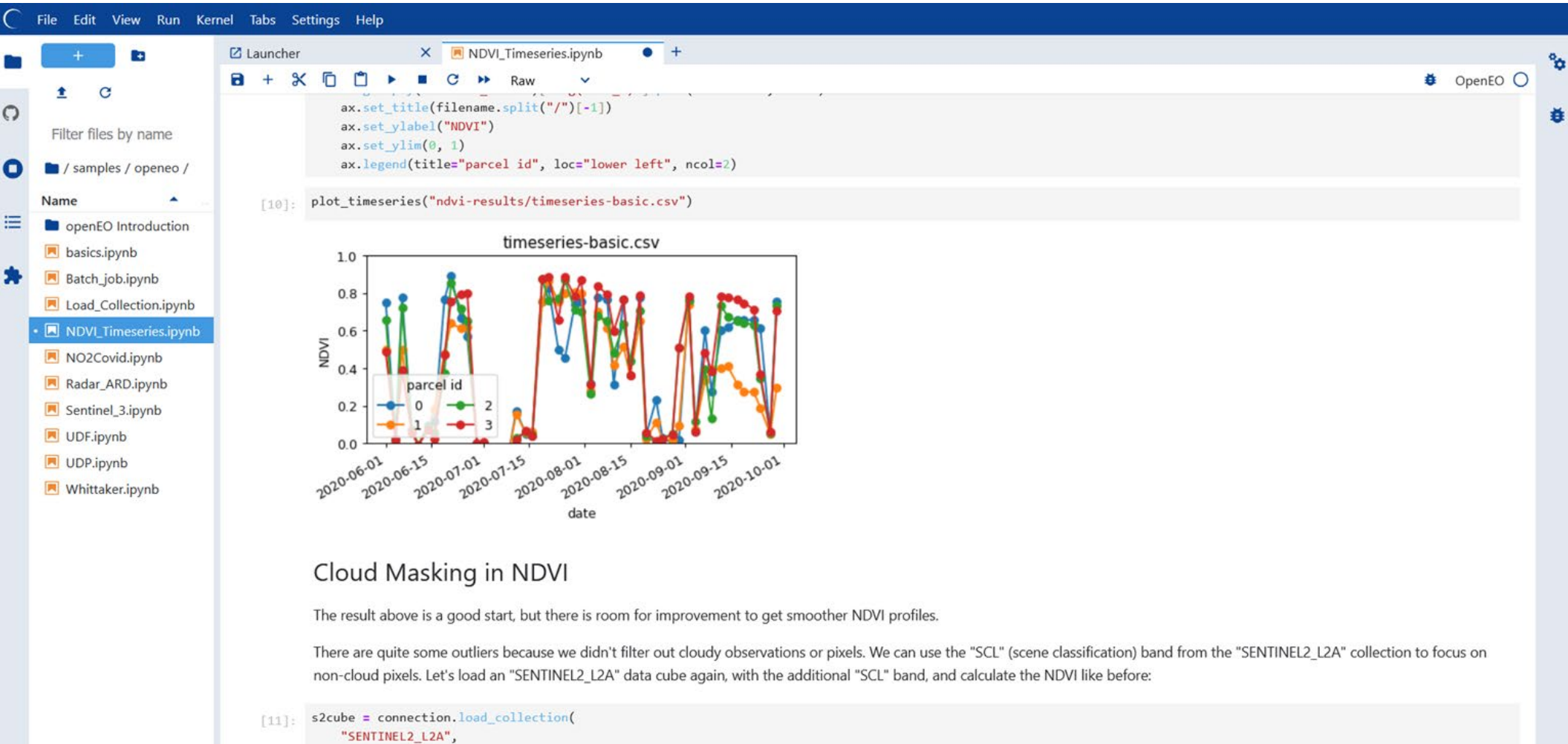
FriendlyCaptcha [↗](#)

START



# Spracovanie údajov

## JupyterLab



# Spracovanie údajov

## Vystopovateľnosť údajov

The screenshot shows the top navigation bar of the Copernicus Traceability service. It includes links for News, Dashboard, Cases, Events, Gallery, Videos, and About. Below the navigation bar are logos for the Programme of the European Union, Copernicus, and ESA. The main menu includes 'EXPLORE DATA', 'ANALYSE DATA' (which is underlined), and 'ECOSYSTEM'. There are also buttons for 'COPERNICUS BROWSER', 'SUPPORT', and a user profile icon. The breadcrumb trail shows 'Home > Analyse >'. The main heading is 'Traceability', followed by a paragraph explaining the service's purpose: 'The Traceability service allows for the complete tracing of a data product's integrity from its origin to its download. Traceability allows users to verify that data is original and untampered, as well as whether the product has been marked as obsolete.' A green button labeled 'ACCESS THE TRACEABILITY' is positioned below the text.

### Query all available traces

The Traceability service enables the complete tracing of a data product's integrity from its origin to its download. This allows users to verify that data is original and untampered, identify download locations, as well as understanding whether the product has been marked as obsolete and should no longer be used.

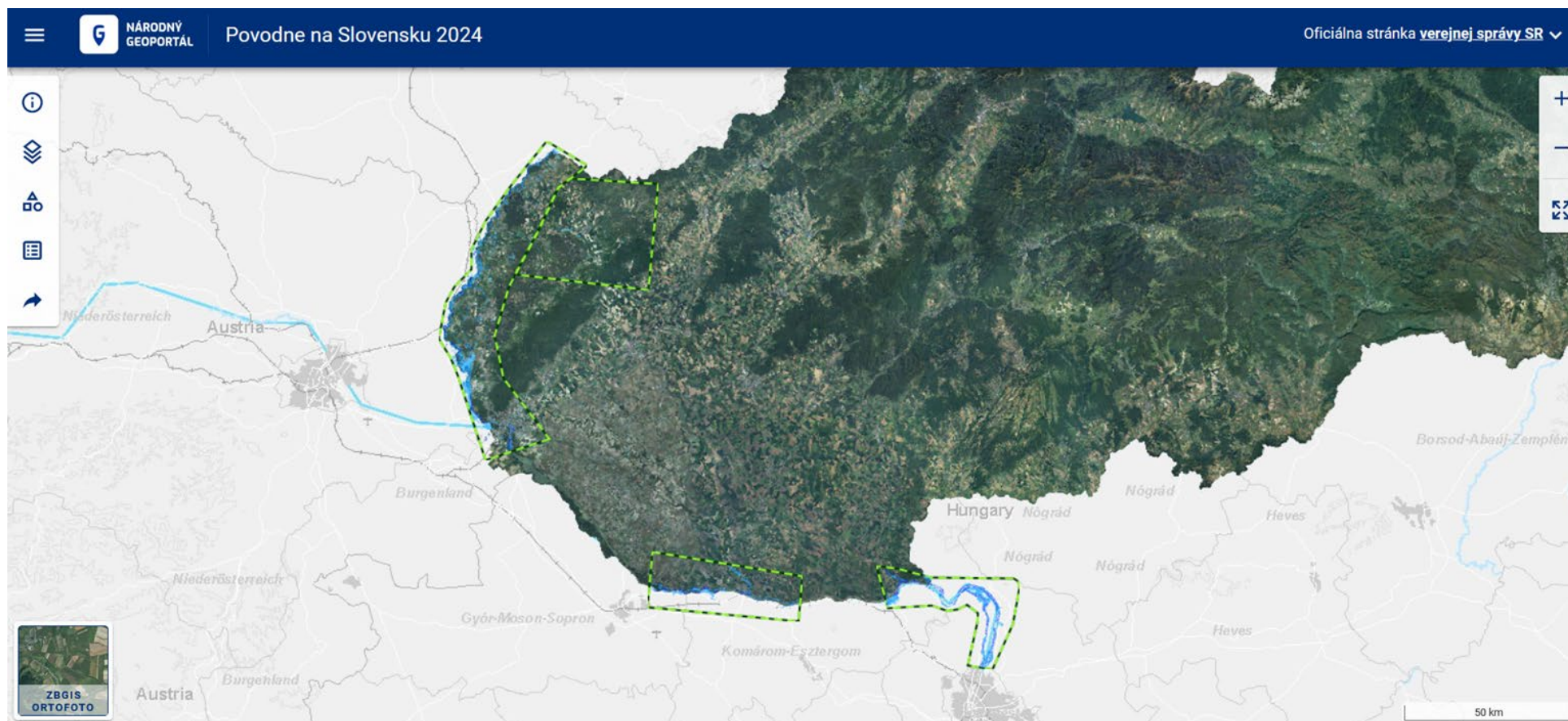
### Search for a product's traces and verify a download



# Príklady využitia údajov

## Povodne na Slovensku 2024

Copernicus Emergency service - Národný geoportál



# Príklady využitia údajov

## Intersucho







**Copernicus**

**Ďakujem za pozornosť**