



# e-shape solutions: Unlocking the potential of Earth Observation data for climate change and urban

**14 – 15 February 2023**

*9.30 – 17.00 CET*

Valletta, Malta

Malta Council for Science and Technology

# e-shape

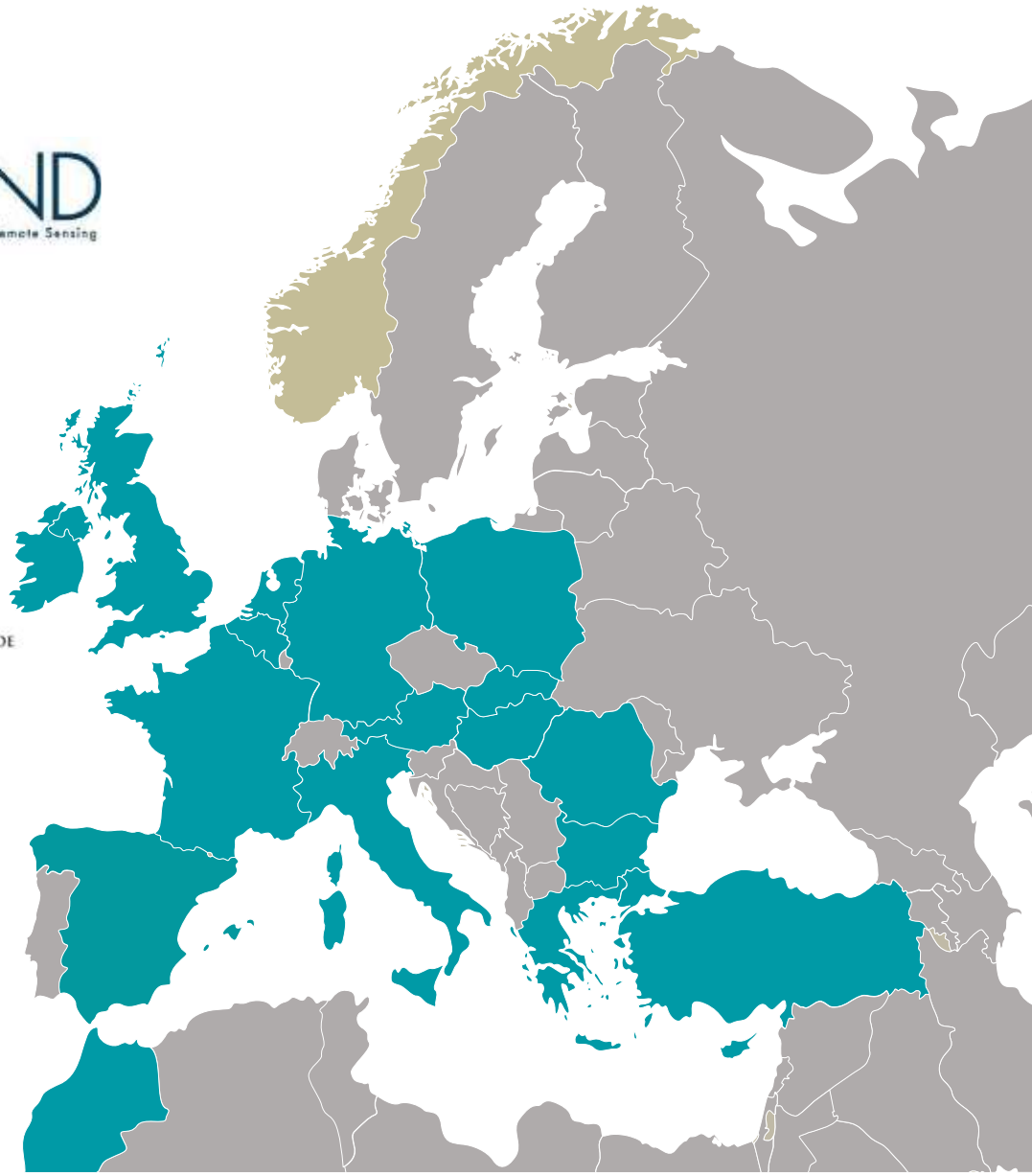
An event co-organised by



The Malta Council for  
**Science & Technology**

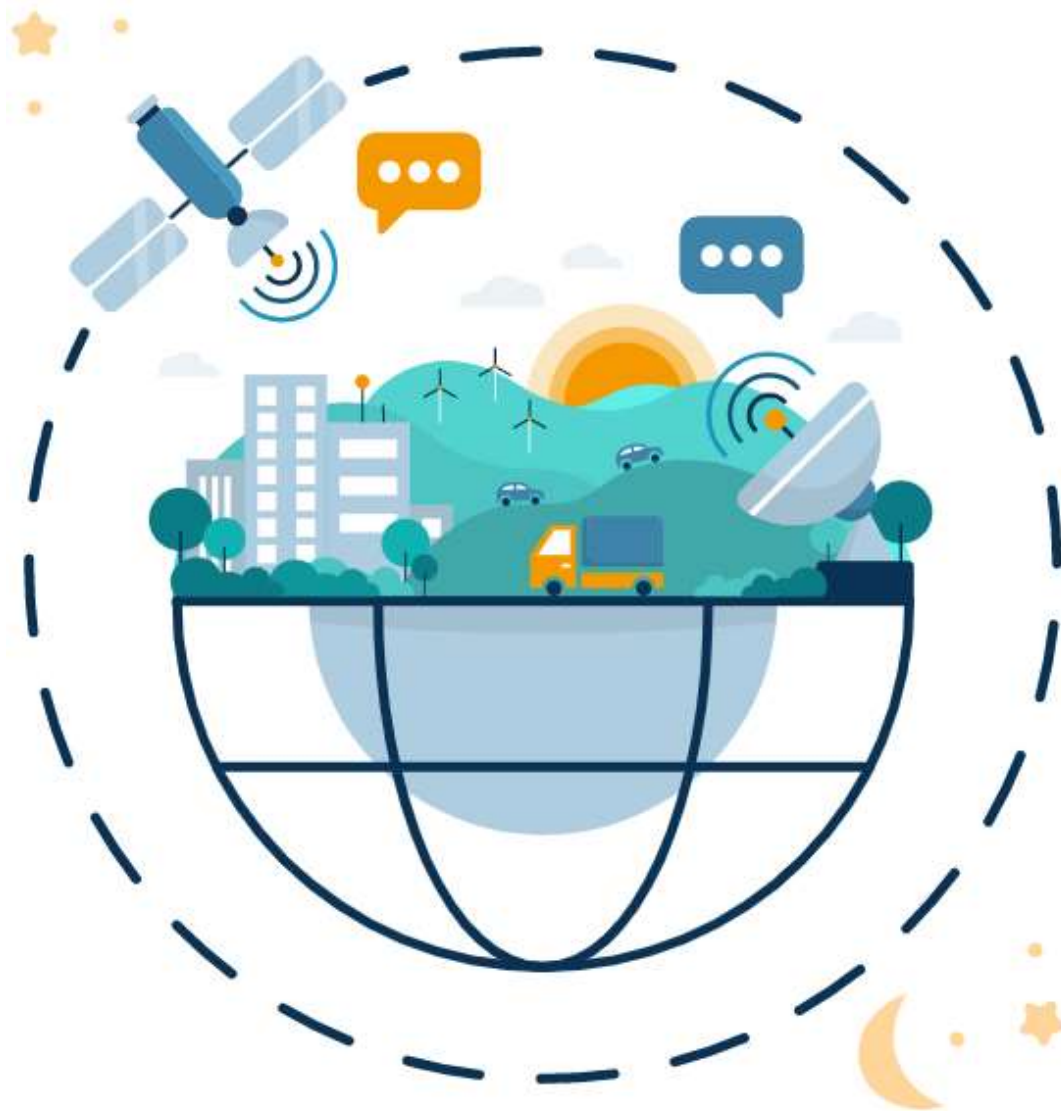
**eurisy**  
ACTING COLLECTIVELY TO  
BRIDGE SPACE AND SOCIETY

# Members



# Mission

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**Eurisy** has been mandated by its Members to create networks to bridge space and society.



# Approach



*Facilitator* → EXPLORE

Raise awareness of satellite applications to help professional communities in many sectors: from transport to risk management, from habitat protection to energy, from climate change to the IoT.



*Matchmaker* → CONNECT

Support potential end users of satellite applications by leveraging its vast network among space and non-space communities; understanding patterns and links and/or creating them for mutual benefits.

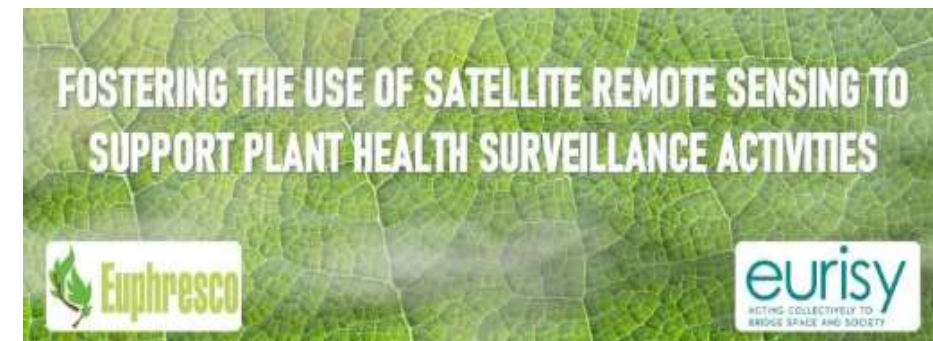


*Adviser* → INFORM

Provide feedback to decision-makers on possible measures to overcome obstacles in diffusing space-derived innovation in society.

# Publications

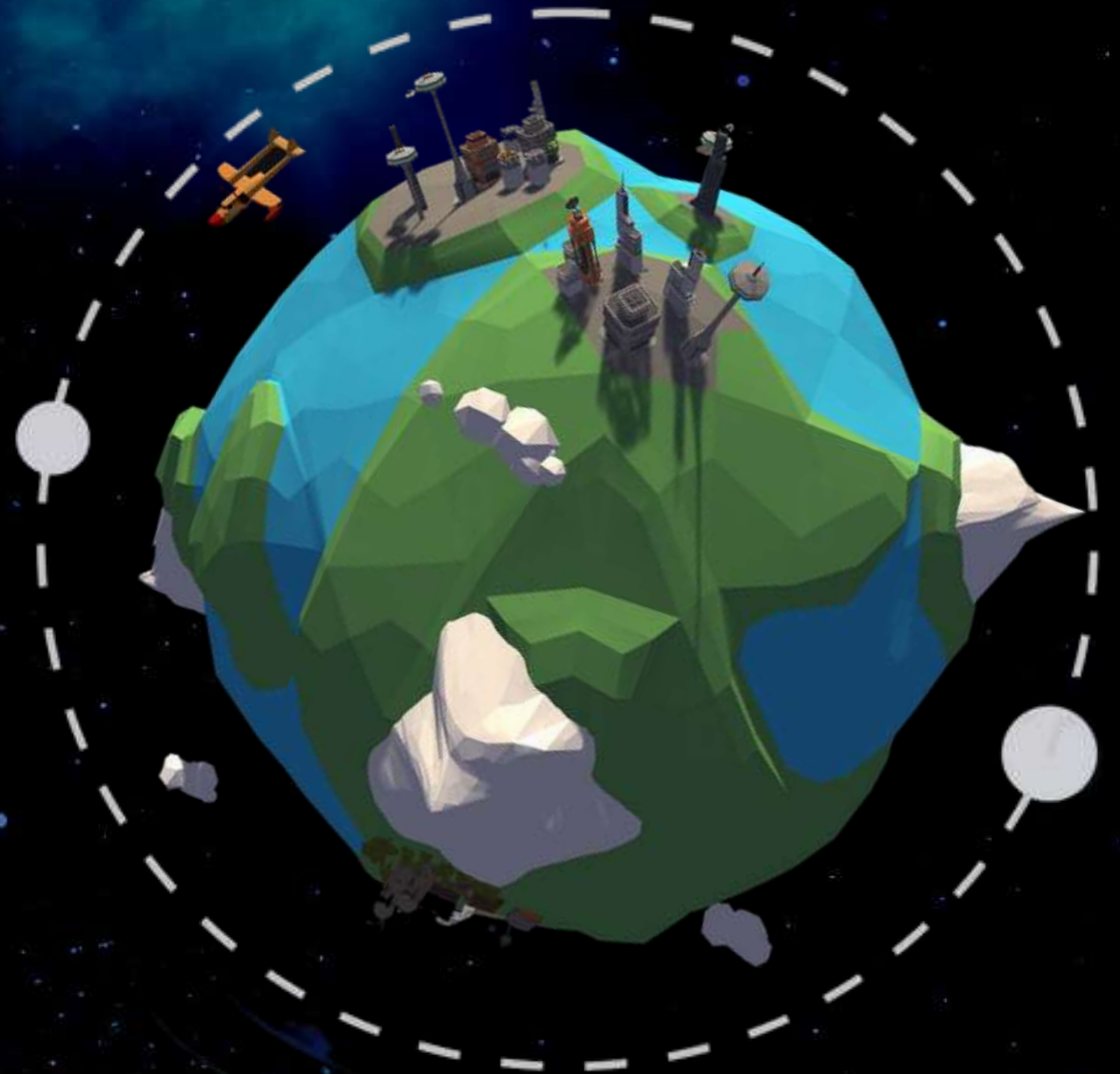
The full collection of Reports is available online.



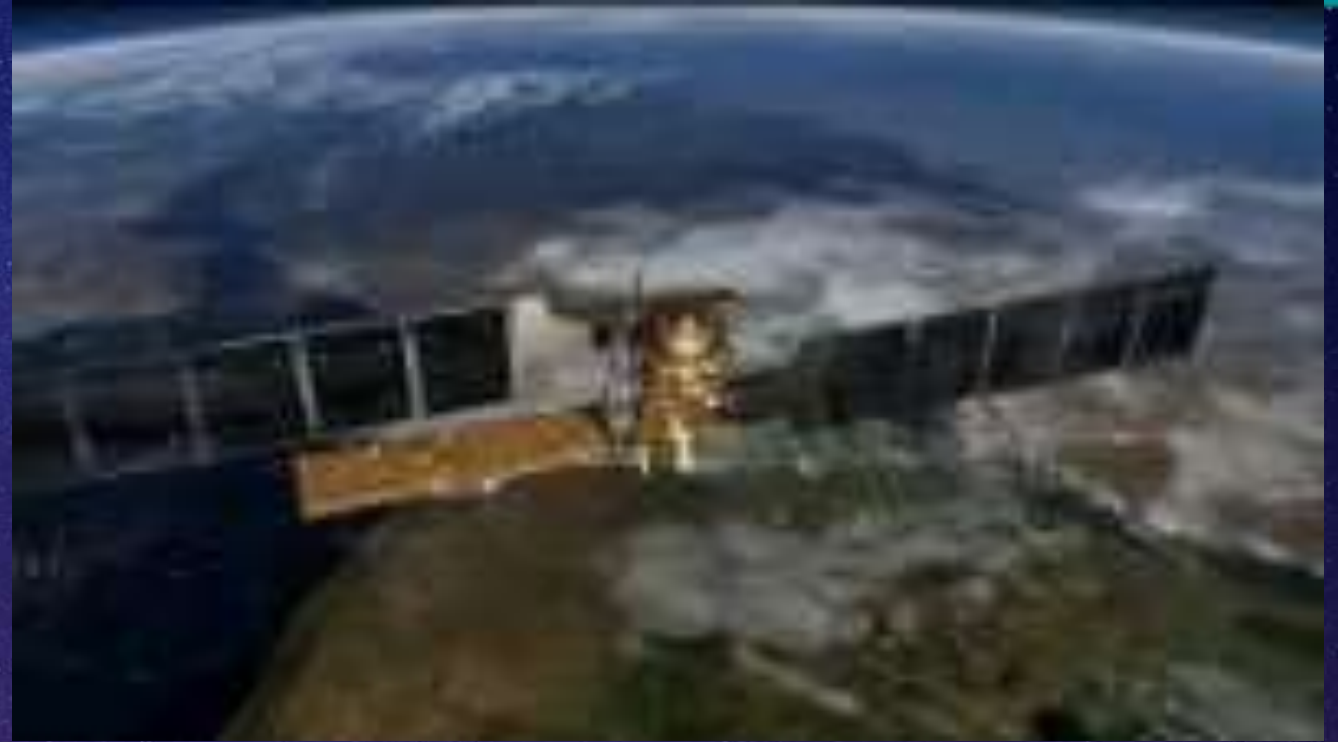


# SPACE SERVICE HUB

CONNECT WITH USER  
COMMUNITIES ON A WHOLE  
NEW LEVEL



# COPERNICUS AND ME



## COPERNICUS & ME

Supporting access to  
electricity in  
Sierra Leone

## COPERNICUS & ME

Diminishing the carbon  
footprint of ships

## COPERNICUS & ME

Monitoring and  
preventing floods in  
Wallonia

## COPERNICUS & ME

Monitoring water  
turbidity during the  
port extension works  
at Port-la-Nouvelle

## COPERNICUS & ME

Mitigating the effects  
of climate change at  
public transport  
stops in Prague

## COPERNICUS & ME

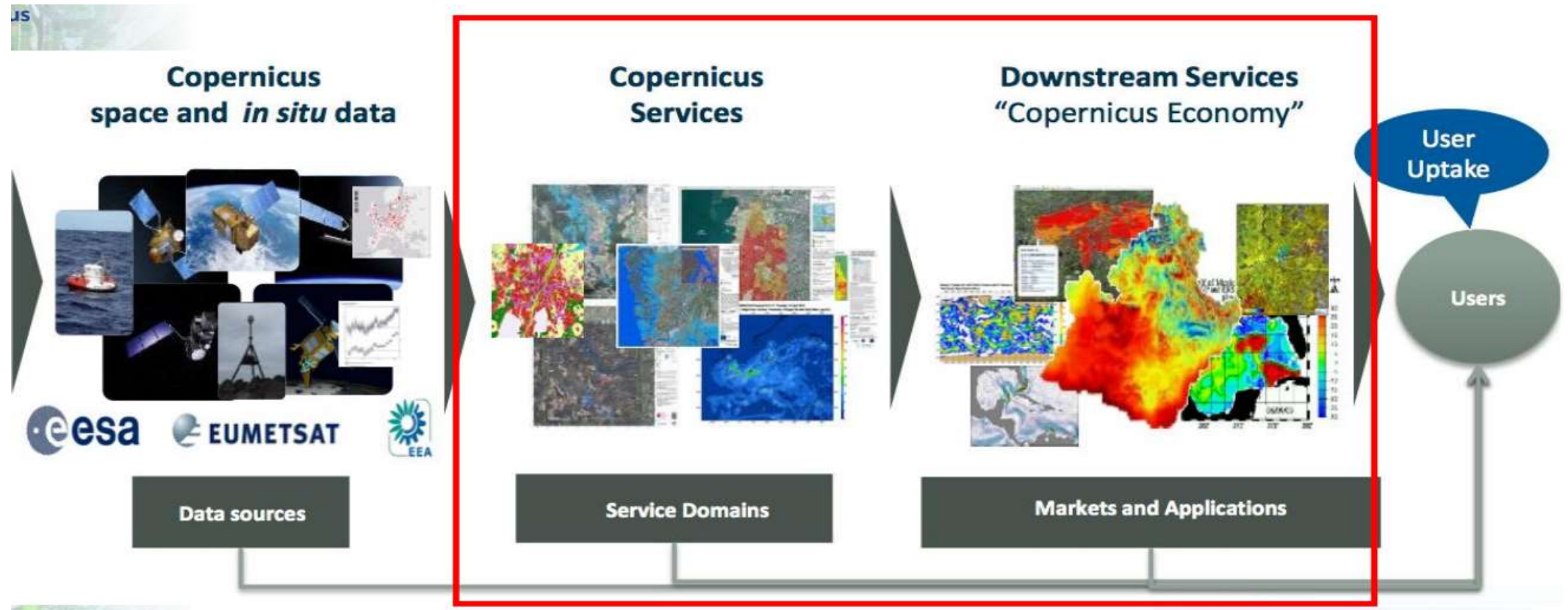
Safeguarding cultural  
heritage in Rhodes



# Copernicus data policy

## Legal framework of the data and information policy

- Regulation (911/2010) establishing the GMES programme authorised the Commission to adopt the delegated Regulation 1159/2013 of 12 July 2013 on access to data and information





# Copernicus FFO data policy

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## Objectives:

- Promote the use and sharing of Copernicus data and information;
- Strengthen Earth observation markets in Europe, in particular the downstream sector, with a view to enabling growth and job creation;
- Support the European research, technology and innovation communities.

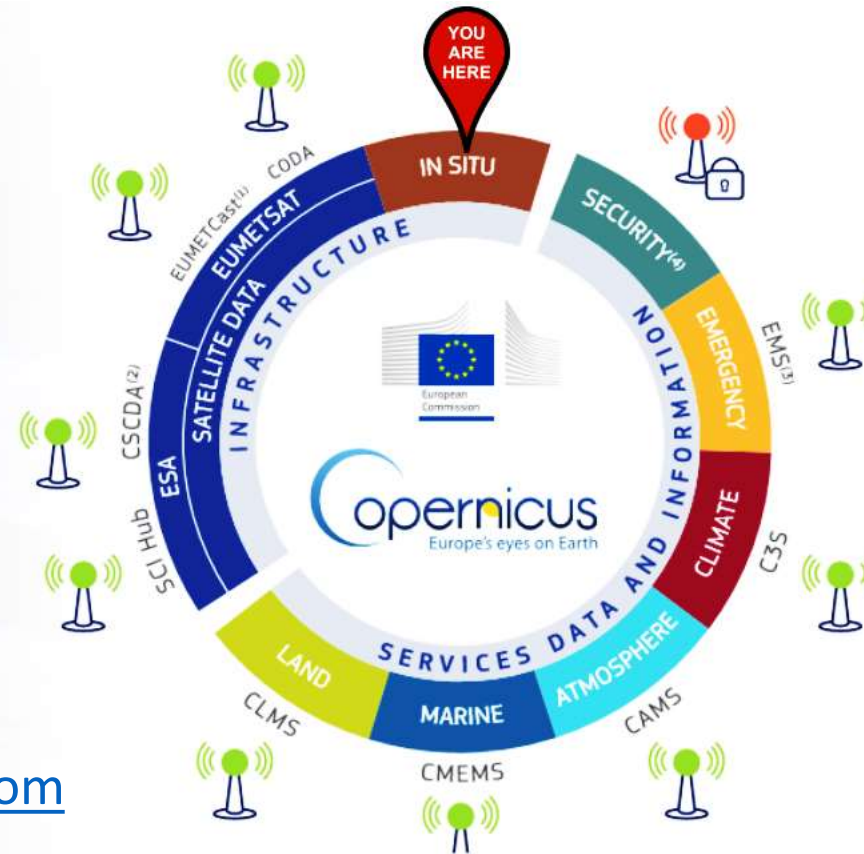
## Key elements:

- No restriction on use nor on users  
Reproduction, redistribution with or without adaptation Commercial and non-commercial uses
- A free of charge version of any dataset is always available (under pre-defined format on Copernicus dissemination platform)
- Worldwide without limitation in time
- Attribution clause
- No warranty made on data and information provided

# Copernicus data access

## 4 satellite data access:

- 2 managed by ESA:
  - Scientific Data Hub (SCI Hub): <https://scihub.copernicus.eu/>
  - Copernicus Space Component Data Access (CSCDA): <https://spacedata.copernicus.eu>
- 2 managed by EUMETSAT:
  - EUMETCast: [www.eumetcast.com](http://www.eumetcast.com)
  - Copernicus Online Data Access (CODA)



## 6 Thematic Services:

INSPIRE compliance

- 5 are under Full, free and open access:



Land (CLMS)



Marine (CMEMS)



Atmosphere (CAMS)



Climate (C3S)



Emergency (EMS)

1 restricted access for MS authorities – Security





# Research and User Support (RUS)

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The RUS Service is the “New Expert Service for Sentinel Users” funded by the EC, managed by the ESA and operated by CS SI and its partners. It offers:

- Free access to a **powerful computing environment based on scalable Virtual Machines**, for non-commercial activities;
- Access to **Webinars** in order to help users benefit from Copernicus missions data. List of upcoming Webinars is available here <https://rus-training.eu/training>;
- Focus on future trainers with special “**Train-The-Trains**” sessions;
- **Personalized advice and assistance** for visualizing, converting and interpreting the data;
- Help users to tap into and **exploit** Sentinel data resources;
- Support of users through the use of Virtual Machines with processing facilities;
- Integration of your own algorithms on the existing Virtual Machines.

# Copernicus data access

## THE DIAS & WHERE TO REACH THEM

**CREODIAS**

[WWW.CREODIAS.EU](http://WWW.CREODIAS.EU)

**sobloo**

[WWW.SOBL00.EU](http://WWW.SOBL00.EU)

**mundi**  
WEB SERVICES

[WWW.MUNDIWEBSERVICES.COM](http://WWW.MUNDIWEBSERVICES.COM)

**ONDA**

[WWW.ONDA-DIAS.EU](http://WWW.ONDA-DIAS.EU)

**WEKEO**  
by COPERNICUS

[WWW.WEKEO.EU](http://WWW.WEKEO.EU)





# Diminishing the carbon footprint of ships

## The user:

**D-ICE  
ENGINEERING  
COMPANY**



## The challenge:

Ships, boats and vessels have a heavy impact on the ocean and the environment.

More than 3% of global carbon dioxide emissions can be attributed to vessels (equivalent to the annual GHG emissions from over 205 million cars)

## The solution:

SATORI software relies on data from Copernicus satellites to acquire information on weather, wind, waves and sea currents on sea routes. The data are used to calculate ships' motions and interactions with the environment.

## The benefit:

Thanks to SATORI, shipowners can assess the convenience of installing windassisted propulsion systems to reduce the carbon footprint of their fleet.



# Monitoring water turbidity during the port extension works at Port-la-Nouvelle

## The user:

Directorate of the  
Sea, Occitanie /  
Pyrénées-  
Méditerranée Region  
Port-la-Nouvell

## The challenge:

In 2018, the Occitanie region decided to start important works to adapt the commercial port of Port-la-Nouvelle to new traffics and allow for the development of new sectors. The regional plan foresees the installation of floating wind-turbines and the creation of a green

## The solution:

The Sentinel-2 -3data contributed to in-situ monitoring, by providing a big picture of water turbidity levels and a forecast of the turbidity levels expected within the next three days.

## The benefit:

Thanks to the Copernicus data, it was possible to avoid damage to the nearby natural areas and to prevent the infiltration of a turbid plume in the nearby pond of Bages Sigean.







# Prague: Copernicus to mitigate the effects of climate change at public transport stops

## The user:

**Prague City Hall,  
Department of  
Environmental  
Protection**



## The challenge:

Prague is particularly vulnerable to extreme heat events. To implement adaptive measures, the EPD sought to visualise heat vulnerability maps, especially nearby public transport stops, where two-thirds of the population spend a considerable amount of

## The solution:

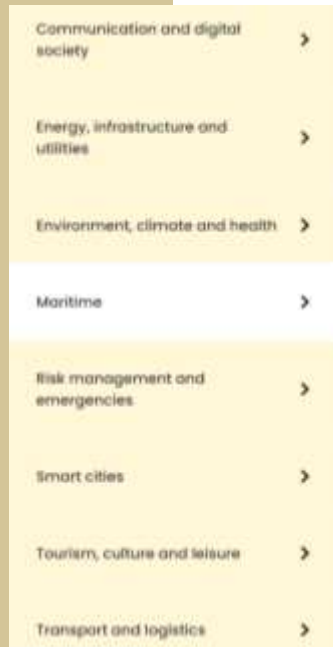
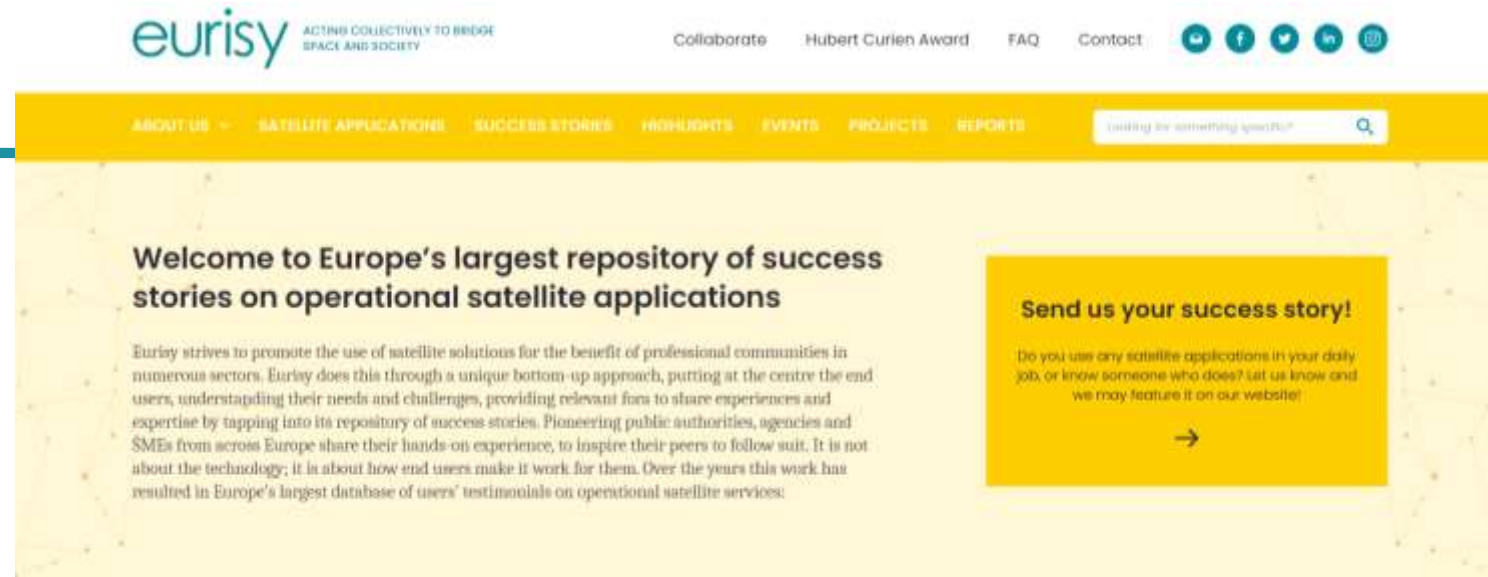
Adaptive capacity, was assessed by mapping greeneries and water bodies around public transport stops. This index was calculated by summing up the Advanced Vegetation Index and the Normalised Differential Water Index.

## The benefit:

Based on the information provided by the map, the Environmental Protection Department is taking measures to make transport stops more resilient to heatwaves and hence more comfortable for residents and tourists.

# User cases

**Success stories will foster the relations between service providers and end users.**



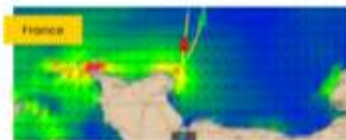
**Montenegro**  
Montenegro: Protecting marine habitats thanks to a map based on satellite information



**Italy**  
Lazio Region: supporting coastal zone management with geo-information services



**Finland**  
Finland: All-year-round open ports due to efficient ice-breaking services



**France**  
Weather4D: smooth seas and fair winds ahead with satellite technology



**Sweden**  
Effect of construction work around the port area



**Spain**  
Effect of construction work around the port area

The Success Stories aim at addressing communities outside the space sector and offer them the opportunity to express their needs and to present their challenges.

The objective is to favour the integration of satellite-based solutions in their workflow.

# Thank you!



[www.e-shape.eu](http://www.e-shape.eu)