

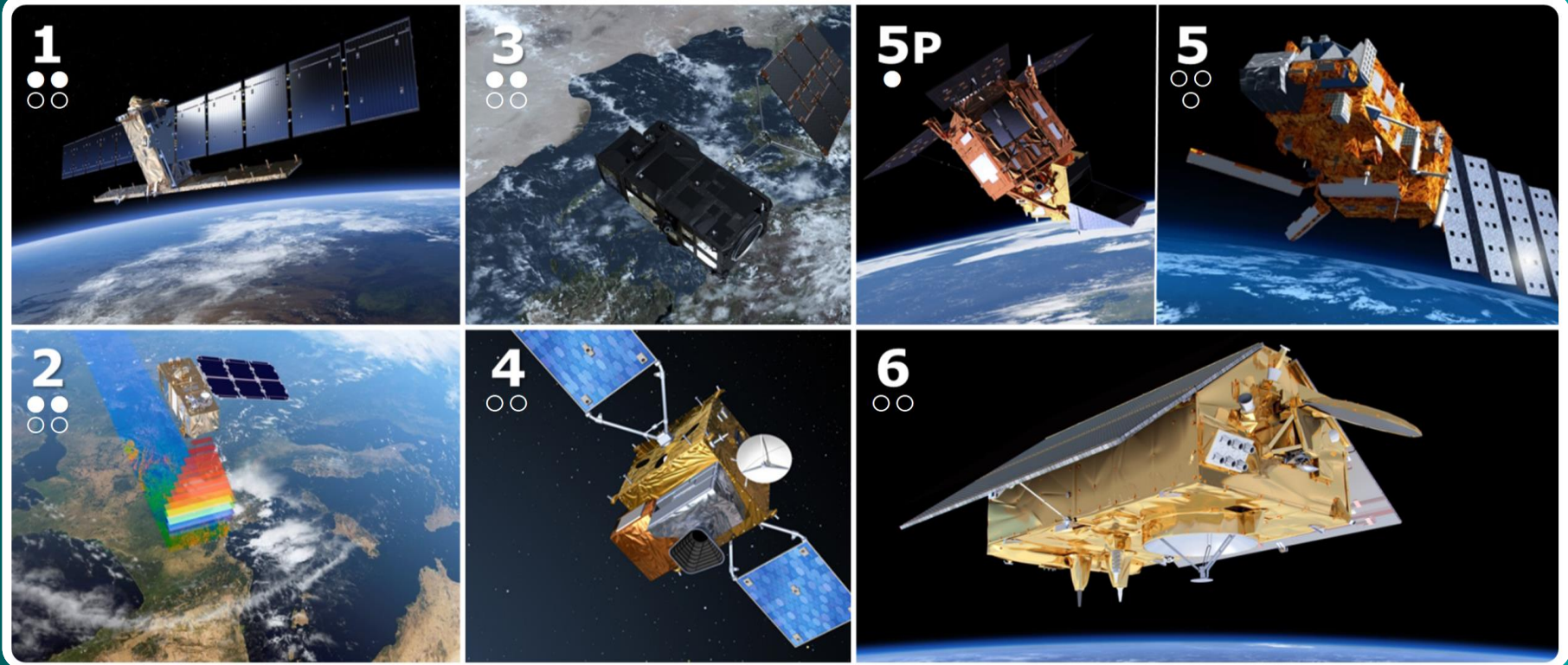
# Introduction Sentinel-1 data access

Dinh Ho Tong Minh, INRAE

Adapted from Francesco Sarti, ESRIN-ESA

# The Big Data Revolution

Copernicus is the largest producer of EO data in the world





# Copernicus Sentinel Status



**S-1**



Radar

**A**

3 Apr. 2014

**B**

25 Apr. 2016

**C**

2022/23

**D**

> 2022/23

**S-2**



High Res.  
Optical

**A**

23 Jun. 2015

**B**

6 Mar. 2017

**C**

2022/23

**D**

> 2022/23

**S-3**



Medium Res.  
Optical &  
Altimetry

**A**

16 Feb. 2016

**B**

25 Apr. 2018

**C**

2023

**D**

> 2023

**S-4**



Atmospheric  
Chemistry  
(GEO)

**A**

2022

**B**

2027

**S-5P**



Atmospheric  
Chemistry  
(LEO)

**A**

13 Oct. 2017

**S-5**



Atmospheric  
Chemistry  
(LEO)

**A**

2021

**B**

2027

**C**

> 2027

**S-6**



Altimetry

**A**

2020

**B**

2025





**SENTINEL-1**

For the last 25 years, ESA has been constantly supporting the SAR Interferometry (InSAR) communities with:

- ❑ the **provision of InSAR data**, through:
  - the development and operations of SAR satellites ([ERS-1](#), [ERS-2](#), [Envisat](#))
  - a precise satellite orbital maintenance including InSAR tandem campaigns ([ERS-1/ERS-2 tandem](#), [ERS-2/Envisat tandem](#))
  - the development of a large and consistent InSAR data archive
  - a constant effort in facilitating the use of SAR data
- ❑ the **development of InSAR science and InSAR applications**,
- ❑ bringing together the InSAR communities through **Fringe & Living Planet workshops**.

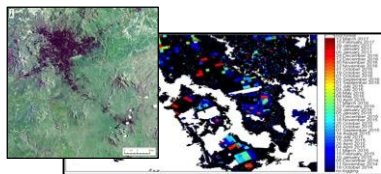




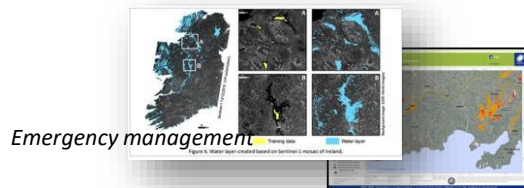
## Sentinel-1 applications → ever increasing



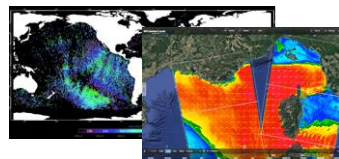
*Maritime surveillance: oil spill monitoring, ship detection, illegal fisheries, etc.*



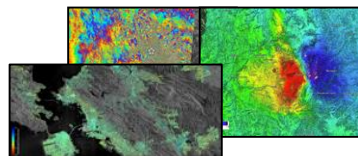
*Land use, agriculture, forestry, logging, land classification, urban planning*



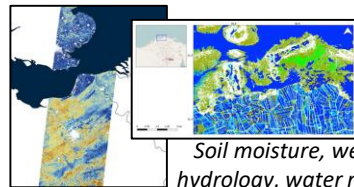
*Emergency management*



*Sea state: wind, wave*

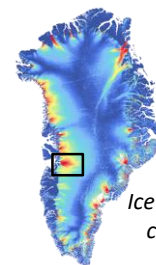
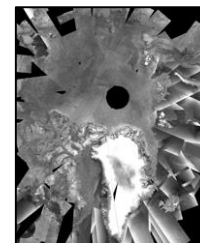


*Ground deformation: subsidence, landslides, earthquakes, volcanoes, infrastructure monitoring*

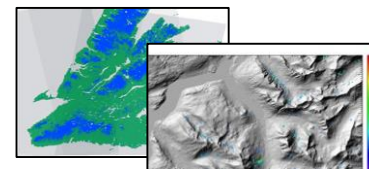


*Soil moisture, wetland, hydrology, water mapping*

*Sea ice and iceberg monitoring*



*Ice sheets, glaciers, climate change*



*Snow, permafrost, avalanches,...*

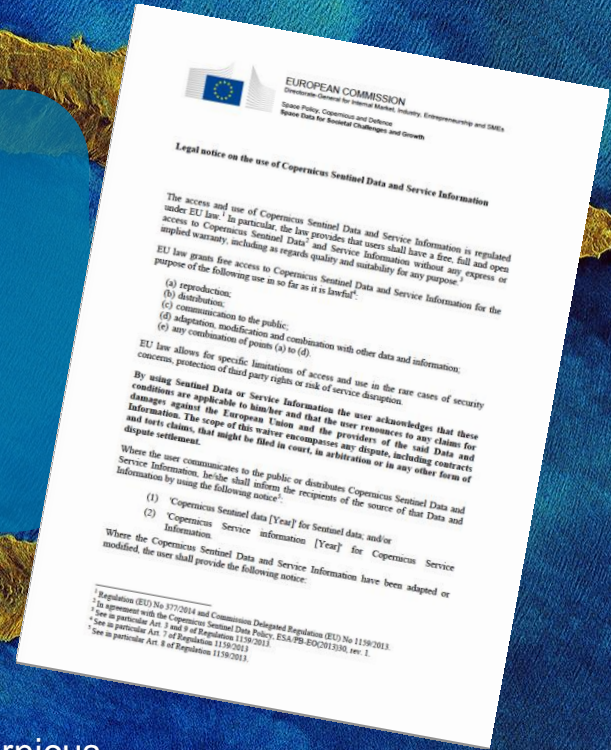


# Copernicus Sentinel Data Policy



## Sentinel data are available:

- ✓ Free, Full and Open\*
- ✓ Over very long term
- ✓ Systematically, Operationally



\* ESA Sentinel Data Policy (Sep 2013) and EU Delegated Act on Copernicus Data and Information Policy (Dec 2013)



## Registered Users



355,740

## Users Downloads Volume



273.23 PB

## Published Products



30,402,544

Statistics on  
01 September 2020

[scihub.copernicus.eu](https://scihub.copernicus.eu)



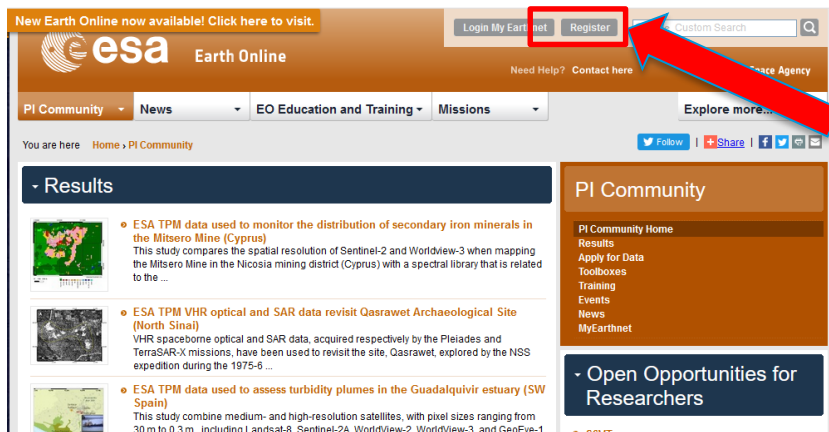
# EO-SSO account Registration & Log in

The EO-SSO account allows the PI to access to *My Earthnet* functionality.

If you **do not** have an EO-SSO account, follow the registration procedure starting from:

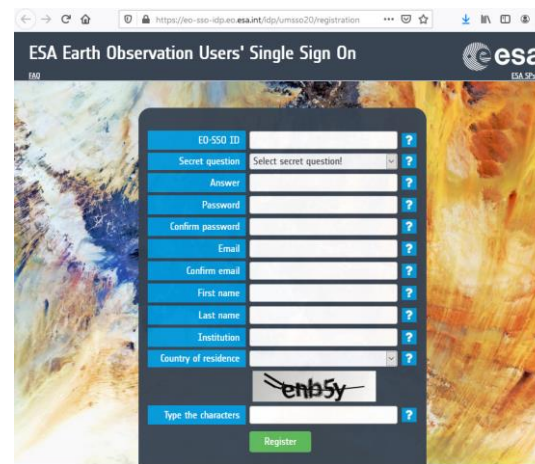
<https://earth.esa.int/web/guest/pi-community>

**Step 1** – Click ‘Register’ button at the top of the page



**Step 2** - Fill in the registration form with your prospective account details

<https://eo-ssoidp.esa.int/idp/umsso20/registration>



**Step 3** – Click the ‘Registration’ button once the form is completed

Your new account will be generated, and you will shortly receive an automated email asking you to activate this account. Simply click on the link provided in the email, and your registration will be complete.

# Copernicus Open Access Hub

<https://scihub.copernicus.eu/>



Welcome to the Copernicus Open Access Hub

The Copernicus Open Access Hub (previously known as Sentinels Scientific Data Hub) provides complete, free and open access to Sentinel-1, Sentinel-2, Sentinel-3 and Sentinel-5P user products, starting from the In-Orbit Commissioning Review (IOCR).

Sentinel Data are also available via the Copernicus Data and Information Access Services (DIAS) through several [platforms](#).

Please visit our [User Guide](#) for getting started with the Data Hub Interface. Discover how to use the APIs and create scripts for automatic search and download of Sentinels' data.

Latest update: see the section on [Long Term Archive](#) for the upgrade of the interfaces for access to offline data.

For further details or requests of support please send an e-mail to [ecosupport@copernicus.esa.int](mailto:ecosupport@copernicus.esa.int)

**Reports & Stats**

Data updated hourly

31,475  
prod. published in the last 24h  
(S1 + S2 + S3 + S5P)

180,541  
downloads in the last 24h  
(SciHub + API Hub + S-3 PreOps + S-5P PreOps)

Reports

**Resources**

DHUS Open Source Portal

Copernicus Copernicus Portal

esa Sentinel Online

**Open Hub** API Hub S-5P Pre-Ops POD Hub

**Latest News**

Search the news... all the news

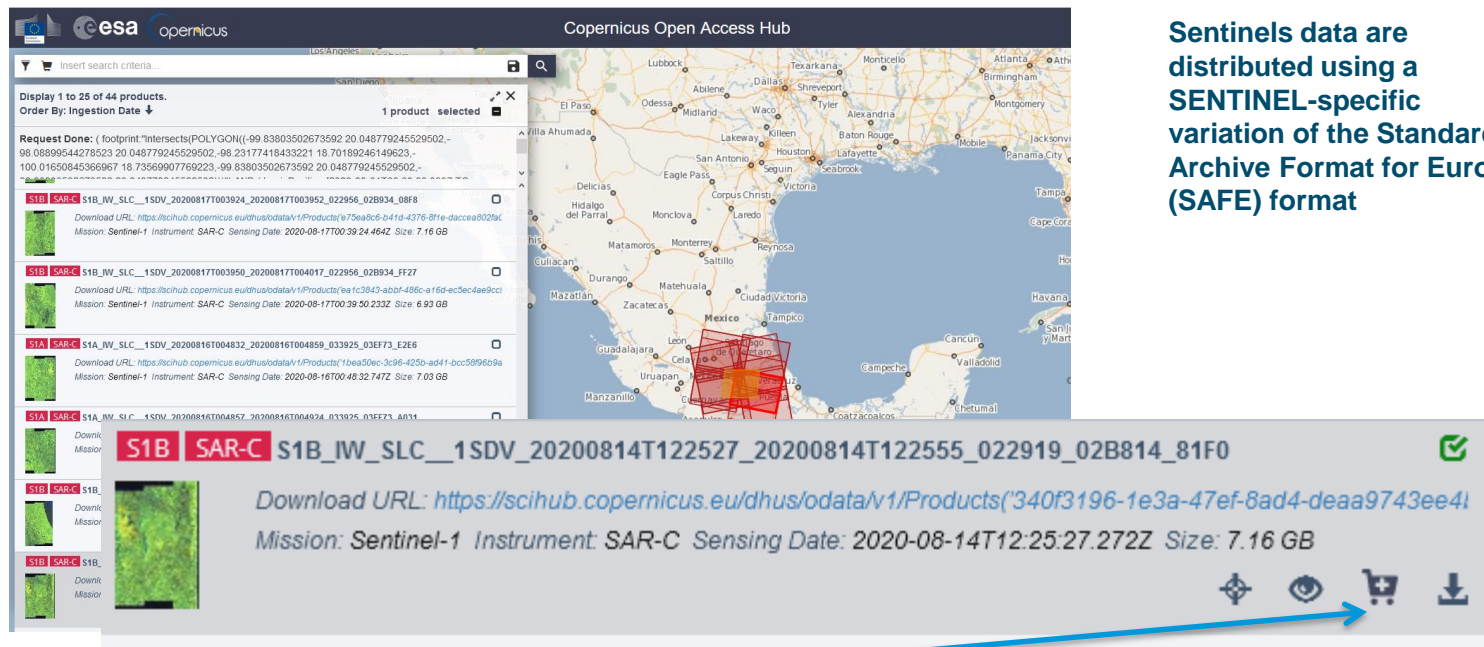
Infrastructure Security Maintenance activities 25 and 26 August 2020  
As already announced on 17 August, infrastructure Security Maintenance activities are scheduled on:  
\* Tuesday 25 and Wednesday 26 August

➤ open and free on-line access to Sentinel-1 products | Access through self-registration



# Copernicus Open Access Hub

Sentinels data are distributed using a **SENTINEL-specific variation of the Standard Archive Format for Europe (SAFE)** format



The screenshot shows the Copernicus Open Access Hub interface. On the left, there's a search bar and a list of products. The main area displays a map of Mexico with a red bounding box around a specific location. Below the map, the details for a selected product are shown, including the product ID, download URL, mission, instrument, sensing date, and size. A blue arrow points from the text below to the download icon in the product details.

**Product ID:** S1B\_IW\_SLC\_\_1SDV\_20200814T122527\_20200814T122555\_022919\_02B814\_81F0

**Download URL:** [https://scihub.copernicus.eu/dhus/odata/v1/Products\('340f3196-1e3a-47ef-8ad4-deaa9743ee41'\)](https://scihub.copernicus.eu/dhus/odata/v1/Products('340f3196-1e3a-47ef-8ad4-deaa9743ee41'))

**Mission:** Sentinel-1 **Instrument:** SAR-C **Sensing Date:** 2020-08-14T12:25:27.272Z **Size:** 7.16 GB

Select product of your interest and use the icons to : Zoom in the map, view product details \*, move it in the 'Cart', **“Download product”**



Click and download, shopping cart, batch download. A maximum of 2 concurrent downloads per user is allowed in order to ensure a download capacity for all users.