

ESA EO Data Access Training course 2021

Raffaele Rigoli, Amalia Castro, Francesco Sarti

19/03/2021

HERITAGE Missions (ERS-1,2 and ENVISAT)

Earth Explorers (EEs)

Third Party Missions (TPM)

Access to ESA and ESA TPM and Visualization tool

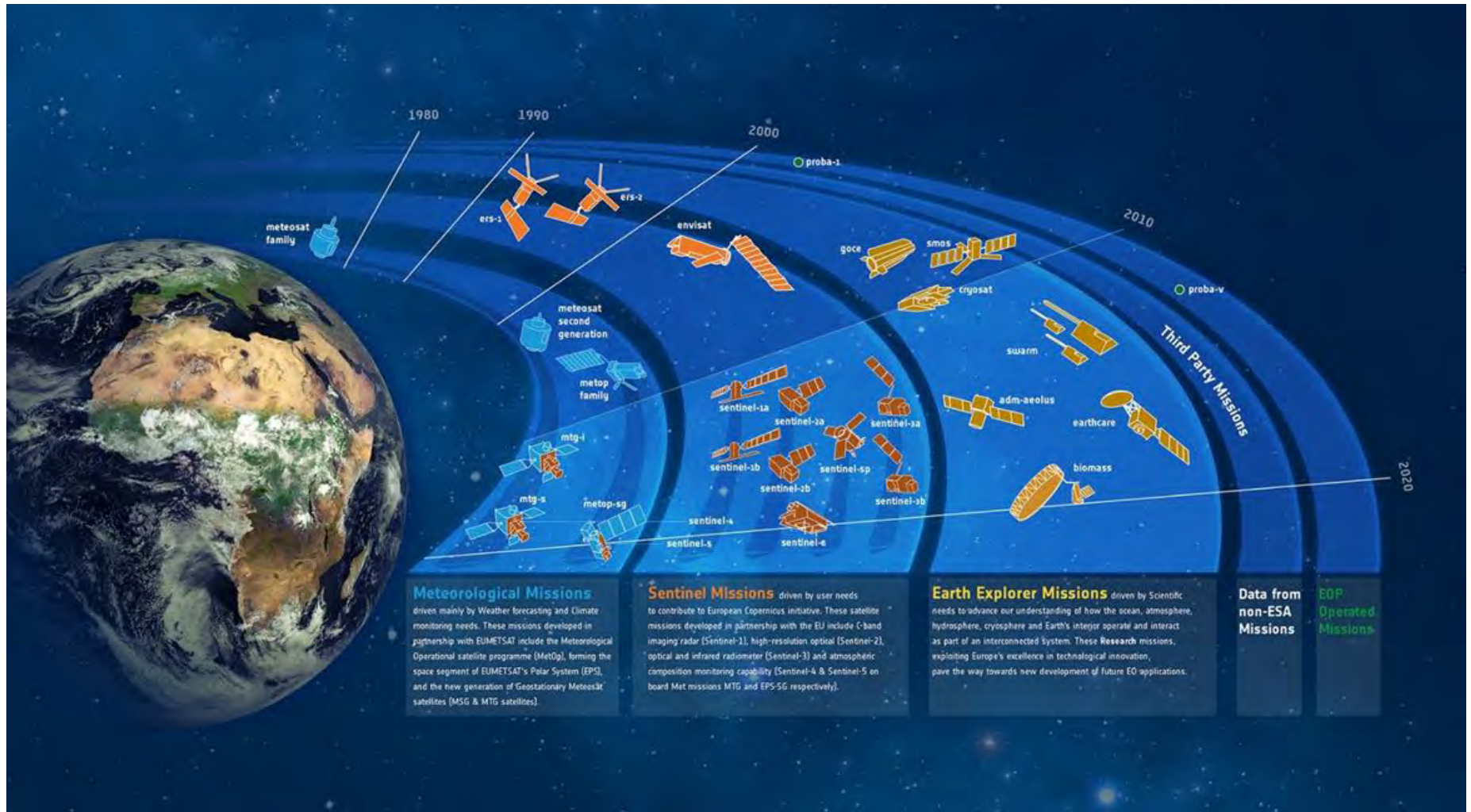
- Data policy and EO Sign-In registration
- Access via EO-CAT
- Other data access mechanism examples (free and restricted)
- EEs access, AOs and visualization tool

Access to Copernicus Sentinels Data (focusing on Copernicus hub)

- Data Policy and use typologies (focusing on scientific users)
- Sentinel Data data hub (registration, search and download)
- Sentinel 3 and EUMETSAT CODA hub
- DIAS and other hubs to access Sentinels data

- **RUS service introduction**

- **ESA Toolboxes and App**



The European Remote Sensing satellite ERS-1, launched in 1991, carried a comprehensive payload including an imaging synthetic aperture radar, a radar altimeter and other powerful instruments to measure ocean surface temperature and winds at sea. ERS-2, which overlapped with ERS-1, was launched in 1995 with an additional sensor for atmospheric ozone research.

Instruments:

Active Microwave Instrument (AMI)

The Active Microwave Instrument is the largest onboard system and combines the functions of a Synthetic Aperture Radar (SAR)

Radar Altimeter (RA)

This measures variations in the satellite's height above sea level and ice with an accuracy of a few centimetres and helps provide data to know the **satellite's exact orbital position**

AATSR (Advanced Along Track Scanning Radiometer)

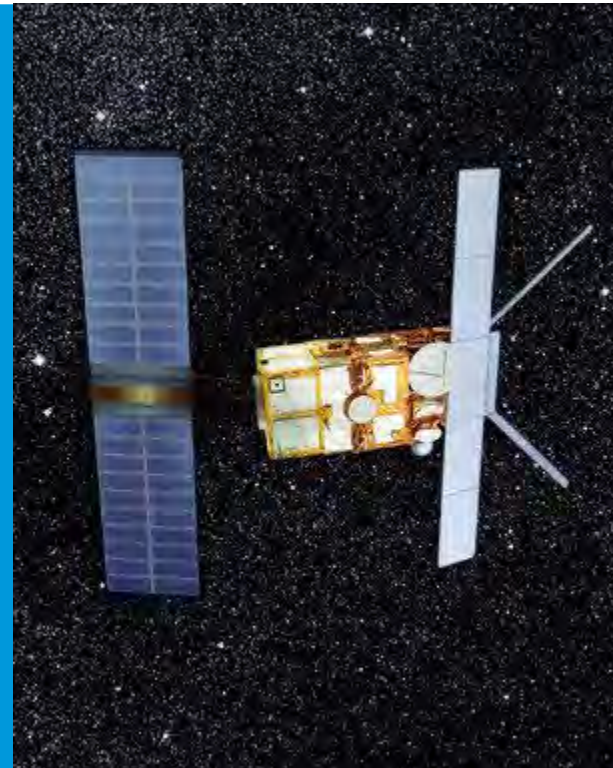
Along-Track Scanning Radiometer (ATSR)

The ATSR consists of two instruments, an Imaging Infrared Radiometer (IIR) and a passive Microwave Sounder (MS).

Global Ozone Monitoring Experiment (GOME)

In the light of the increasing concern about atmospheric ozone levels, the GOME instrument was added to the ERS-2 payload.

GOMOS (Global Ozone Monitoring by Occultation of Stars)



Heritage Mission: ENVISAT

Envisat had 10 instruments to provide continuous observation and monitoring of Earth's land, atmosphere, oceans and ice caps was the largest Earth observation spacecraft ever built

Instruments:

ASAR (Advanced Synthetic Aperture Radar)

MERIS (Medium Resolution Imaging Spectrometer)

AATSR (Advanced Along Track Scanning Radiometer)

SCIAMACHY (an imaging spectrometer whose primary mission objective was to perform global measurements of trace gases in the troposphere and stratosphere)

RA-2 (Radar Altimeter, an instrument determining the two-way delay of the radar echo from Earth's surface)

GOMOS (Global Ozone Monitoring by Occultation of Stars)

MWR (Microwave Radiometer)

LRR (Laser Retro Reflector)



SMOS

The Soil Moisture and Ocean Salinity (SMOS) mission, launched on 2 November 2009, is exploiting an innovative two-dimensional interferometer to acquire brightness temperature observations at L-band (1.4 GHz). These observations translate into information on the moisture held in soil and salinity in the surface layers of the oceans, which are needed to further our understanding of Earth's water cycle (still in operation)

GOCE

The Gravity field and steady-state Ocean Circulation Explorer (GOCE) was launched on 17 March 2009 and ended on 11 November 2013. GOCE provided high spatial resolution gravity-gradient data to improve global and regional models of Earth's gravity field and geoid

CryoSat

CryoSat, launched on 8 April 2010, is measuring fluctuations in the thickness of ice on both land and sea determine how Earth's ice is changing. This information is leading to a better understanding of the relationship between ice and global climate. CryoSat carries an innovative SAR/interferometric radar altimeter (still in operation)

Swarm

Swarm, launched on 22 November 2013, is providing the best-ever survey of the geomagnetic field and its temporal evolution. The geomagnetic models resulting **from the mission will provide new insights into Earth's interior. This information** will lead to a better understanding of atmospheric processes, and also have practical applications in areas such as space weather and radiation hazards (still in operation)

Aeolus

The prime aim of the Atmospheric Dynamics Mission is to demonstrate measurements of vertical wind profiles from space. The mission employs a high-performance Doppler wind lidar based on direct-detection interferometric techniques. ADM-Aeolus was launched in August 2018 (still in operation)

Coming soon: EARTHCARE (2022), BIOMASS (2022), FLEX etc.

Full information on EEs at

https://www.esa.int/Applications/Observing_the_Earth/The_Living_Planet_Programme/Earth_Explorers/About_Earth_Explorers2

ESA EO Third Party Missions (TPM)





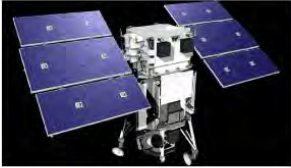
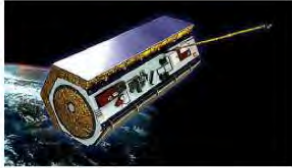








ESA uses its multi-mission ground systems to acquire, process, distribute and archive data from other satellites (owned by either public or private entities outside or within Europe) – known as Third Party Missions.

Details of the Third Party Missions currently supported by ESA can be found on:

<https://earth.esa.int/web/guest/pi-community/apply-for-data/3rd-party>

and

<https://earth.esa.int/eogateway/search?ext=&category=Missions&subFilter=third%20party%20missions&sortby=RELEVANCE>

 <p>PROBA-1</p> <p>PROBA-1 is a technology demonstration satellite that later became an operational Earth observation mission.</p>	 <p>WorldView-4</p> <p>WorldView-4 was an imaging and environment-monitoring satellite from DigitalGlobe of the United States, which...</p>	 <p>WorldView-1</p> <p>WorldView-1 helped meet the growing commercial demand for multi-spectral geospatial imagery.</p>	 <p>PAZ</p> <p>The PAZ (Spanish for "peace") satellite, operates as a constellation alongside TerraSAR-X and TanDEM-X.</p>
<p>Mission - Heritage Missions, Third Party Missions</p>  <p>IRS-1C and IRS-1D</p> <p>The Indian Remote Sensing satellites IRS-1C and IRS-1D were identical Earth-imaging satellites operated by the Indian Space...</p>	<p>Mission - Third Party Missions</p>  <p>GOSAT Series</p> <p>The GOSAT series is composed of two environment-monitoring satellites developed by JAXA dedicated to the observation of...</p>	<p>Mission - Third Party Missions</p>  <p>Landsat Series</p> <p>The Landsat series is the world's longest running system of satellites for moderate-resolution optical remote sensing for land...</p>	<p>Mission - Third Party Missions</p>  <p>WorldView Series</p> <p>The WorldView constellation are environment-monitoring satellites, from DigitalGlobe, have been supplying imagery since 2007.</p>
<p>Mission - Heritage Missions, Third Party Missions</p> 	<p>Mission - Third Party Missions</p> 	<p>Mission - Third Party Missions</p> 	<p>Mission - Third Party Missions</p> 



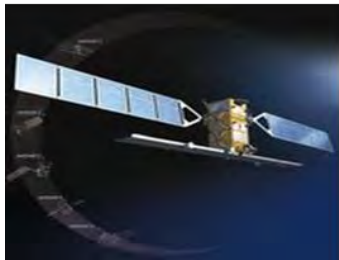
ERS and Envisat



Earth Explorers

Revised ESA Earth Observation Data Policy ESA/PB-EO(2010)54

- Free datasets (for all data available on Internet)
- Restrained datasets (L0)



Sentinels

Copernicus (GMES) Data Policy, Joint Principles for Sentinel Data Policy [ESA/PB-EO(2013)30, rev.1]

- Free, full and open data policy



EO Sign In **registration** needed

(for some TPMs

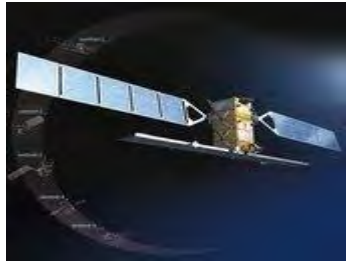
EO Sign In + **project proposal**)

proposal)

Copernicus hub self

registration

No registration (from June 2018)

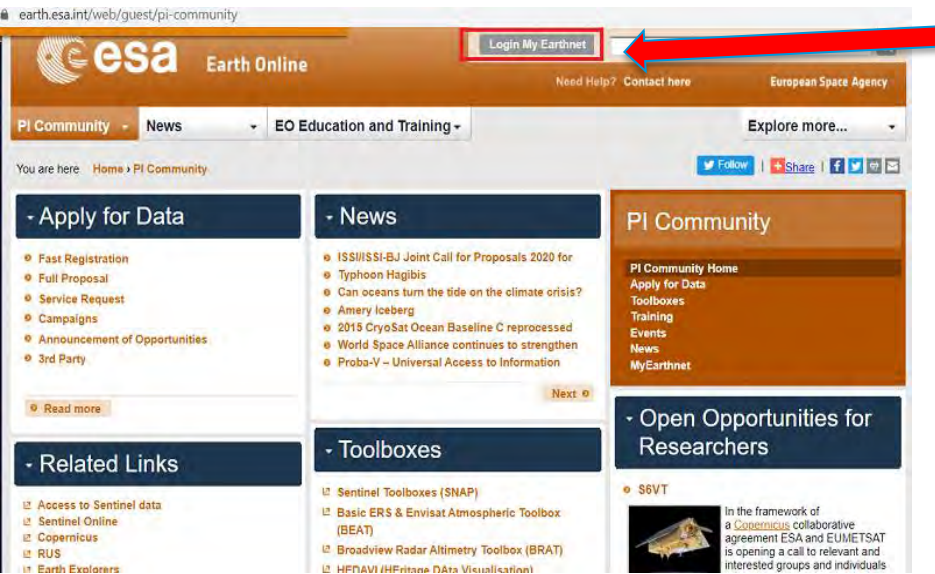


EO Sign In account Registration & Log in (1/2)

The EO Sign In account allows the PI to access to *My Earthnet* functionality.

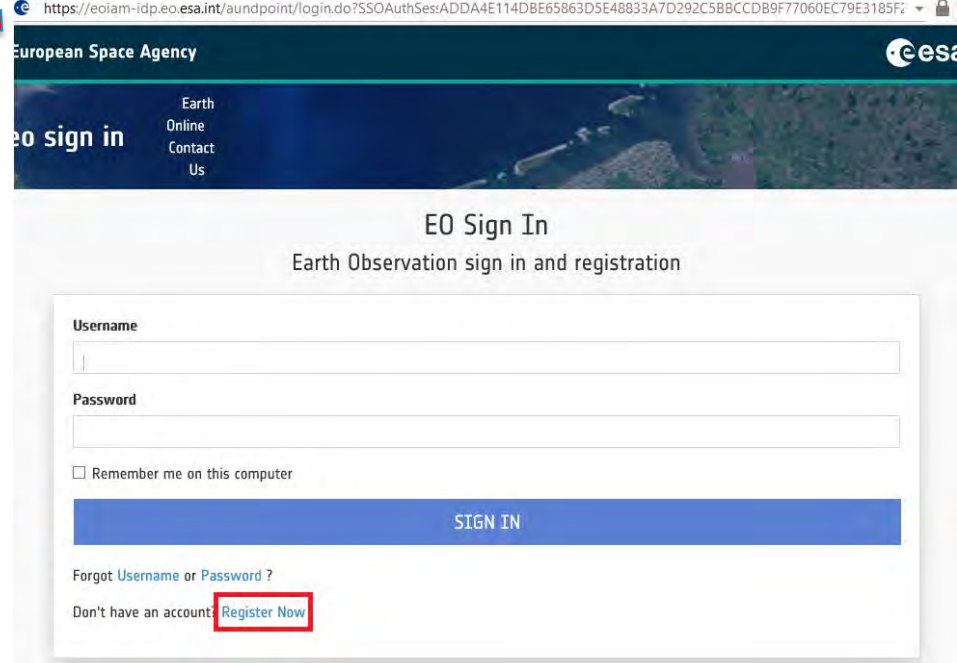
If you **do not** have an EO Sign In account, follow the registration procedure starting from **ESA PI Community** website : <https://earth.esa.int/web/guest/pi-community>

Step 1 – Click ‘Login My Earthnet’ button at the top of the page



Step 2 - Click the ‘Register now’ button to proceed with your EO Sign In registration

<https://eoiam-idp.eo.esa.int/>



EO Sign In account Registration & Log in (2/2)



Step 3 – Enter a valid email address as username



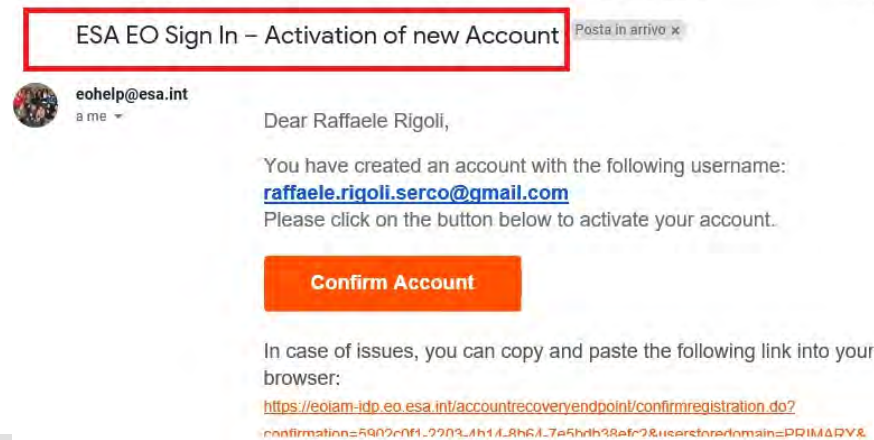
Start Signing Up

Enter your email as username here

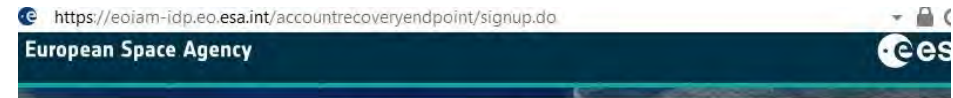
Username *

[PROCEED TO SELF REGISTER](#) [CANCEL](#)

Step 5 – Your new account will be generated, and you will shortly receive an automated email asking you to activate this account. Simply click on the “Confirm account” button provided in the email, and your registration will be complete.



Step 4 - Fill in the registration form with your prospective account details and accept online ESA and ESA TPM terms and conditions data +EOSign In Privacy Policy. Then click “Register”



Create New Account

First Name * Last Name *

Password * Confirm password *

Country of residence * Contact e-mail *

Institution *

I'm not a robot

I hereby confirm that I have read and understood the [Privacy Policy](#)

I hereby confirm that I have read and understood the [Terms and Conditions for the Utilisation of ESA's Earth Observation Data](#)

I hereby confirm that I have read and understood the [Terms and Conditions for the Utilisation of Data under ESA's Third Party Missions scheme](#)

[REGISTER](#)

Already have an account? [Sign in](#)

Privacy Policy https://eoiam-idp.eo.esa.int/authenticationendpoint/privacy_policy.do
ESA T&C <https://http://earth.esa.int/files/terms>
ESA TPM T&C <https://http://earth.esa.int/files/TPMterms>



Accessing ESA Missions (ERS & ENVISAT and ESA TPMs) through the ESA EO CAT (1/2)



<https://eocat.esa.int/sec/#data-services-area>

EO-CAT is the ESA EO Catalogue application and is the main visible part of the whole ESA catalog system. EO-CAT is designed to manage end-user Earth Observation services. Using EO Catalogue Services, you can browse the metadata and images of Earth Observation data acquired by various satellites and download data belonging to ESA and ESA TPM collections only with your ESA EO Sign In account



Accessing ESA Missions (ERS & ENVISAT and ESA TPMs) through the ESA EO CAT (2/2)



The first and necessary step to make a catalogue search is to choose at least one dataset. Once at least one dataset has been selected, to set the search criteria, the user has to click on the 'Filters' button at the bottom of the 'Datasets' button. The search criteria widget is then displayed. You can select **for example 'Acquisitions Dates'** (using time slider) AOI (using map extent). Select product of interest and click download . For full details see User Guide -><https://eocat.esa.int/sec/help.html>

<https://eocat.esa.int/sec/#data-services-area>

The screenshot shows the ESA EO CAT web interface. At the top, there are navigation links: Home, Settings, User Guide, Contact Us, and About. The main interface is divided into several sections:

- Keywords:** A section with a 'Reset all keywords' button.
- Area Of Interest:** A section with buttons for 'Box', 'Polygon', 'Gazetteer', and 'Import'. Below these are input fields for West, South, East, and North coordinates, and buttons for 'Use map extent' and 'Set whole world'.
- Map:** A central map showing East Africa and the Red Sea region. A red box highlights the 'Datasets' button, and another red box highlights the 'Filters' button. Red arrows point to these buttons with text: 'Click to select dataset' and 'Click to open widget to insert your search criteria'.
- Search Results:** A table with columns: Product Type, Start, Stop, Mission, Instrument, Instrument Mode, Orbit, and Track. The table shows results for Landsat 5 Thematic Mapper and Landsat 7 ETM+ data from 2008. A red box highlights the 'Download' icon in the first row, with a red arrow pointing to it and text: 'Click to download the product selected - you need to insert EO Sign In to download the product'.
- Filters:** A section at the bottom showing a time slider for the year 2008, with a 'Click to start your search' button.

ESA Missions (ERS & ENVISAT, EEs and ESA TPMs) product details



https://earth.esa.int/eogateway/search?skipDetection=true&text=&category=Data

earth online Find something on Earth Online

THEMATIC AREA ALL DATA NEWS MISSIONS EVENTS TOOLS ACTIVITIES INSTRUMENTS CAMPAIGNS DOCUMENTS

European Space Agency

earth online Find something on Earth Online

Go To Advanced Search >>

Landsat MSS ESA Archive

Data

27 Mar 2020

Keywords: [Imaging Spectrometers/Radiometers](#) [Land Surface](#) [Land Use and Land Cover](#) [Landsat](#) [Landsat-1](#) [Landsat-2](#) [Landsat-3](#) [Landsat-4](#) [Landsat-5](#) [MSS](#)

[DOWNLOAD DATA](#)

Description	Details	Related Datasets
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Description

This dataset contains all the Landsat 1 to Landsat 5 Multi Spectral Scanner (MSS) high-quality ortho-rectified Level 1 GEO and GTC dataset acquired by ESA over the Fucino, Kiruna (active from April to September only) and Maspalomas (on campaign basis) visibility masks.

The acquired Landsat MSS scene covers approximately 183 x 172.8 km. A standard full scene is nominally centred on the intersection between a path and row (the actual image centre can vary by up to 200 m). The altitude changed



Accessing ESA Missions (ERS & ENVISAT ,EEs and ESA TPMs) – ASAR L1 data



https://earth.esa.int/eogateway/catalog/envisat-asar-im-single-look-complex-l1-asa_ims_1p-?text=ASAR+L1

EO Sign In account needed

European Space Agency

earth online ASAR L1

Go To Advanced Search >>

Find more Data ↕

Envisat ASAR IM Single Look Complex L1 [ASA_IMS_1P]

Envisat ASAR Image Mode Single Look Complex Level 1

Data

28 Nov 2019

Keywords: Agriculture ASAR Biosphere Cryosphere Envisat Imaging Radars Land Surface Oceans Sea Ice Snow and Ice Soils Terrestrial Hydrosphere Topography Vegetation

DOWNLOAD DATA ⓘ

Description Details Related Datasets

DESCRIPTION

This data product represents a single-look, complex, slant-range, digital image generated from Level 0 ASAR data collected when the instrument is in Image Mode. Seven possible swaths in HH or VV polarisation are available. The product is primarily intended for use in SAR quality assessment and calibration or applications requiring complex SAR images such as interferometry, and can be used to derive higher level products.

HOW TO ACCESS THIS DATA

Users can freely access the collection using the below links and will be requested to log in (new users must first register an account) to ESA EO Sign In to download the products.

ESA internal users can use their ESAAD account.

Data is available on EO4AT

[Data is available on the ESA Online Dissemination System upon user registration](#)



ENVISAT & ERS 1/2 (A)SAR On-The-Fly (OTF) Processing



Missions ▾ Earth Topics ▾ Data Access ▾ PI Community ▾

You are here [MyEarthnet](#)

Product Registration - product selection ASAR L1 products (IMP, IMS, APP, APS, WSS)

ESA Products

Satellite	Instrument	Product	#	Action
ENVISAT	ASAR (On-The-Fly)	ASAR L1 products (IMP, IMS, APP, APS, WSS)		Delete

Terms and Conditions acceptance

In order for ESA to give access to the dataset accessible via simple registration, the Principal investigator shall have read and accepted the Terms and Conditions for

[Terms and Conditions for the use of ESA data](#)

By checking this box I confirm my acceptance of the Terms and Conditions for the use of ESA data

[Back](#) [Save](#)

For help, refer to
[ASAR-OTF-User Manual.pdf](#)
&
[ASAR-OTF-FAQ](#)



ERS & ENVISAT SAR and ASAR Data Download (L1 and L0)

- Registration\ log in
- Acceptance of terms and conditions
- Product download through ESAR online dissemination server:

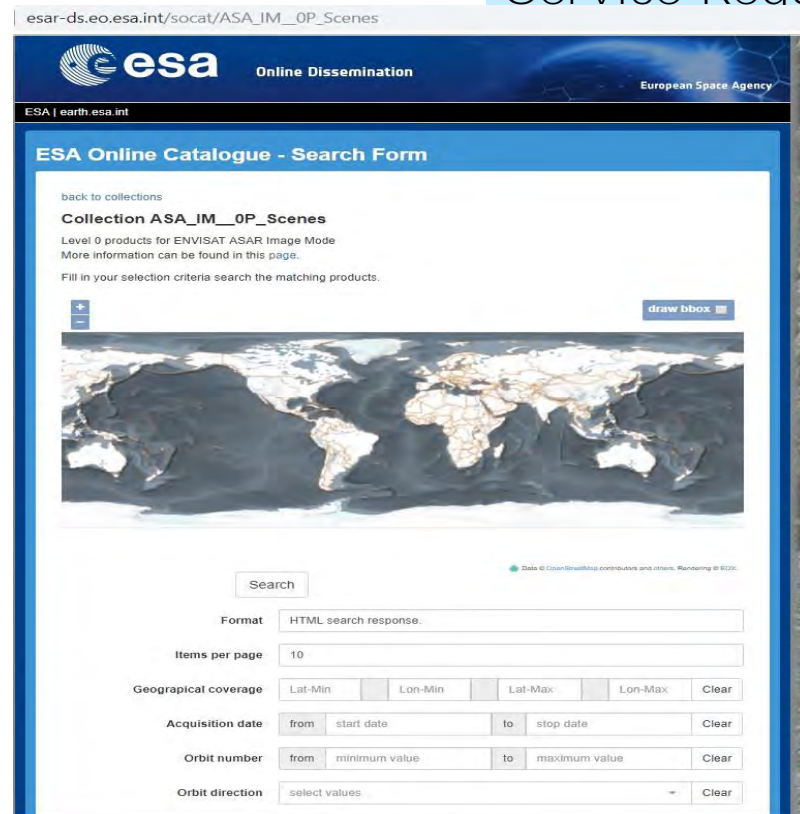
EO Sign In account needed
For L0 EO Sign In account and Data Service Request

<https://esar-ds.eo.esa.int/oads/access/collection>



The screenshot shows the ESA Online Dissemination homepage. At the top, there is the ESA logo and the text 'Online Dissemination' and 'European Space Agency'. Below this, a navigation bar includes 'Collections' and 'Login' buttons. The main content area is titled 'Welcome to ESA Online Dissemination' and contains a list of product collections. Each collection entry includes a link to the product and an 'Info' button.

Collection	Information page
ASA_IM_0P - Level 0 Scenes product for ENVISAT ASAR Image Mode	Info
ASA_IMS_1P - Level 1 product for ENVISAT ASAR Image Mode	Info
ASA_IMP_1P - Level 1 product for ENVISAT ASAR Image Mode	Info
ASA_AP_0P - Level 0 Scenes product for ENVISAT ASAR Alternate Polarisation Mode	Info
ASA_APS_1P - Level 1 product for ENVISAT ASAR Alternating Polarisation	Info
ASA_APP_1P - Level 1 product for ENVISAT ASAR Alternating Polarisation	Info
ASA_WS_0P - Level 0 Scenes product for ENVISAT ASAR Wide Swath Mode	Info
ASA_WSS_1P - Level 1 product for ENVISAT ASAR Wide Swath	Info
SAR_IM_0P - Level 0 Scenes data for ERS SAR	Info
SAR_IMS_1P - Level 1 product for ERS SAR	Info
SAR_IMP_1P - Level 1 product for ERS SAR	Info
SAR_IMM_1P - Level 1 Medium Resolution product for ERS SAR	Info



The screenshot shows the 'ESA Online Catalogue - Search Form' page. It features a search bar, a 'Search' button, and various filters for search results. A world map is displayed at the top of the search area. The filters include Format, Items per page, Geographical coverage, Acquisition date, Orbit number, and Orbit direction.

Format: HTML search response

Items per page: 10

Geographical coverage: Lat-Min, Lon-Min, Lat-Max, Lon-Max, Clear

Acquisition date: from start date to stop date, Clear

Orbit number: from minimum value to maximum value, Clear

Orbit direction: select values, Clear

**some specific datasets (e.g RAW/L0) are available upon positive evaluation of the data service request

DATA SERVICE REQUEST for ERS & ENVISAT SAR and ASAR L0 Data Download and for some ESA TPM (DEIMOS-1/2, RADARSAT-1/2)

https://earth.esa.int/web/guest/pi-community/apply-for-data/service-request



Navigation bar for ESA Earth Online. It includes the ESA logo, 'Earth Online' text, and links for 'Login My Earthnet', 'Register', and a 'Google Custom Search' box. Below this are navigation tabs for 'Missions', 'Earth Topics', 'Data Access', and 'PI Community', along with a 'Need Help? Contact here' link and 'European Space Agency' text.

You are here [Home](#) > [PI Community](#) > [Apply for Data](#) > [Service Request](#)

[Follow](#) | [Share](#) | [f](#) [t](#) [g+](#) [e](#)

- Data Service Request

Welcome to the submission area for a Data Service Request

Beyond the standard services for ESA (A)SAR data access which are available to any user, some specific services related to specific data and some ESA TPM data (including (A)SAR L0, COSMO-SkyMed ESA collection, DEIMOS-1/2 and RADARSAT-1/2 data) or to specific level of performances are available. Such specific services and ESA TPM data can be granted by ESA, within technical, financial or legal constraints, to users who describe and justify their needs within a **Data Service Request**.

Data Service Requests can be submitted at any time, using the submission link below. ESA's reply to the request is usually provided within a couple of weeks

- Guidelines for the submission of Data Service Requests
- Terms and Conditions for the use of Data Service Requests
- Submit a new Data Service Request

Standard services for data access... Please check the list of data systems... Should you be interested in requesting data, please provide the relevant information. Information about accepted projects...

Since June 2019 ESA has simplified the procedure to apply for RADARSAT and DEIMOS-1/2 TPM data by including them to the Data Service request.



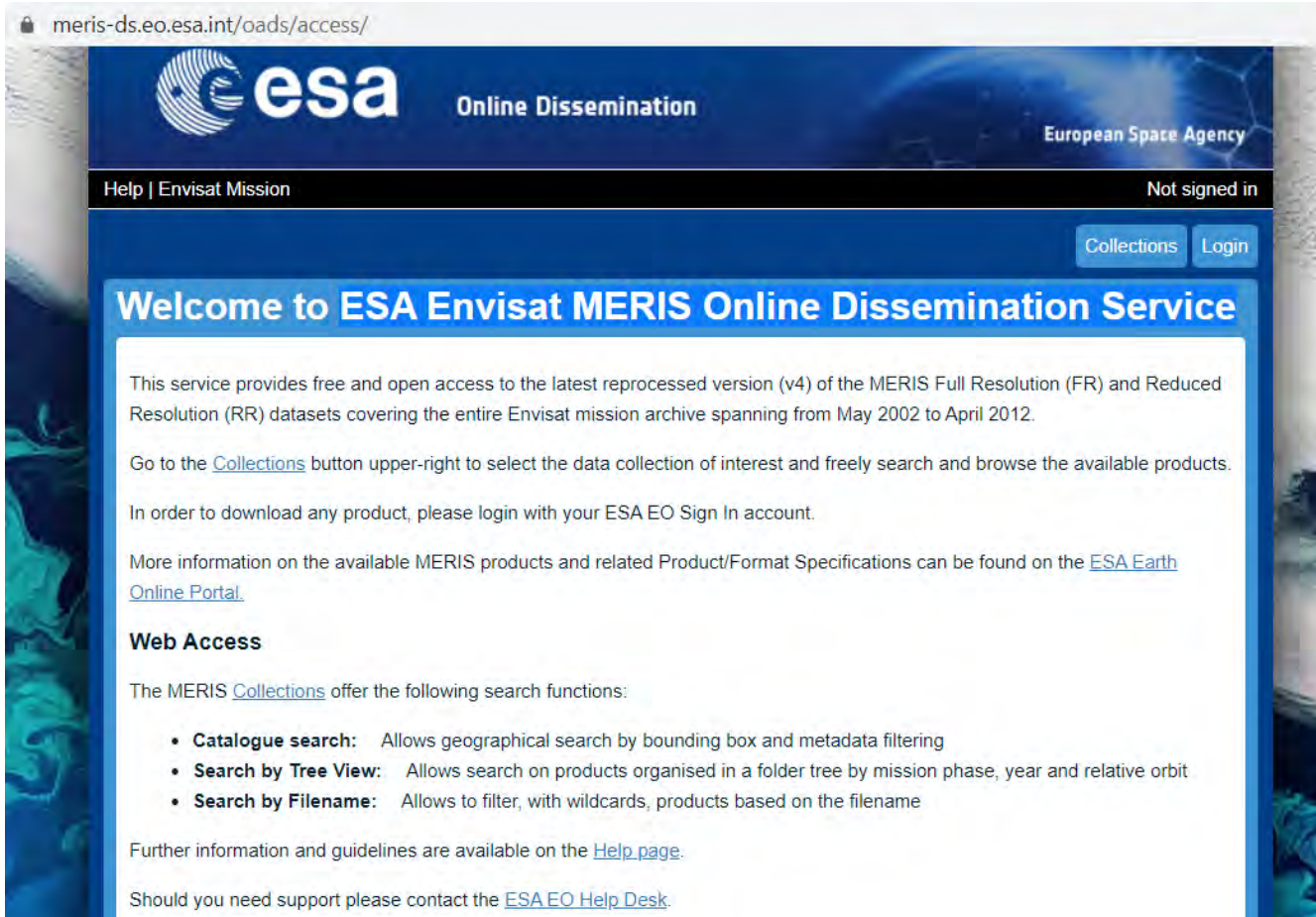
PI Community sidebar menu with the following items: PI Community Home, Results, Apply for Data (with sub-items: Fast Registration, Full Proposal, Service Request), Campaigns, AO's, 3rd Party, and Toolboxes.

Data access guides: [ESA](#); [TPM](#)

MERIS - My Online Data (Free Dataset) Access Using your EO Sign In account ESA Envisat MERIS Online Dissemination Service

Support to the access to the selected Online data, is provided by ESA EO Help & Order Desk.
<https://meris-ds.eo.esa.int/oads/access/>

EO Sign In
account needed



meris-ds.eo.esa.int/oads/access/

esa Online Dissemination
European Space Agency

Help | Envisat Mission Not signed in

Collections Login

Welcome to ESA Envisat MERIS Online Dissemination Service

This service provides free and open access to the latest reprocessed version (v4) of the MERIS Full Resolution (FR) and Reduced Resolution (RR) datasets covering the entire Envisat mission archive spanning from May 2002 to April 2012.

Go to the [Collections](#) button upper-right to select the data collection of interest and freely search and browse the available products.

In order to download any product, please login with your ESA EO Sign In account.

More information on the available MERIS products and related Product/Format Specifications can be found on the [ESA Earth Online Portal](#).

Web Access

The MERIS [Collections](#) offer the following search functions:

- **Catalogue search:** Allows geographical search by bounding box and metadata filtering
- **Search by Tree View:** Allows search on products organised in a folder tree by mission phase, year and relative orbit
- **Search by Filename:** Allows to filter, with wildcards, products based on the filename

Further information and guidelines are available on the [Help page](#).

Should you need support please contact the [ESA EO Help Desk](#).

ENVISAT/ERS (A)ATSR - My Online Data (Free Dataset) Access Using your EO Sign In

Support to the access to the selected Online data, is provided by ESA EO Help & Order Desk. the (A)ATSR regional extraction tool. This site provides you with services for accessing ERS-1, ERS-2 and Envisat (A)ATSR data products. <https://ats-merci-ds.eo.esa.int/merci/welcome.do>

ats-merci-ds.eo.esa.int/merci/welcome.do

| Home | Query Products | Query Sites | Product Orders Manager | RSS | Logout | Help



Welcome to the (A)ATSR regional extraction tool. This site provides you with services for accessing ERS-1, ERS-2 and Envisat (A)ATSR data products.

New (A)ATSR users should [register](#) for use of data.

The **MERCI** file archive currently covers the following 3rd Reprocessing dataset of Level-1b (TOA) and Level-2 (NR) products:

ERS-1 (ATSR-1): 08 August 1991 to 17 December 1997

ERS-2 (ATSR-2): 01 June 1995 to 22 June 2003

Envisat AATSR: 20 May 2002 to 08 April 2012

Sea Surface Temperature and Land Surface Temperature

Users wishing to access SST and LST retrievals are referred to the Level 2 NetCDF products, in preference to the NR products, for improved processing of these parameters. These datasets are available via FTP. See the following news items for further information:

- [SST dataset based on \(A\)ATSR Reprocessing for Climate \(ARC\) processing](#)
- [LST dataset from the University of Leicester](#)

EO Sign In
account
needed

Third Party Mission Data Access via ESA



EO Sign In
account needed

<https://tpm-ds.eo.esa.int/collections/>



TPM online access list

Access Third Party Missions data distributed by ESA by clicking the collections below

ALOS	+
DEIMOS-1&2	+
GOSAT	+
IKONOS	+
IRS-1C/1D	+
JERS-1	+
KOMPSAT-2	+
LANDSAT	+
OCEANSAT-2	+
PLEIADES	+
PROBA-1	+
RAPIDEYE	+
SEASAT	+
SPOT	+
WORLDVIEW-2	+
SPECIAL COLLECTIONS	+

Only

<https://tpm-ds.eo.esa.int/collections/>
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Missions

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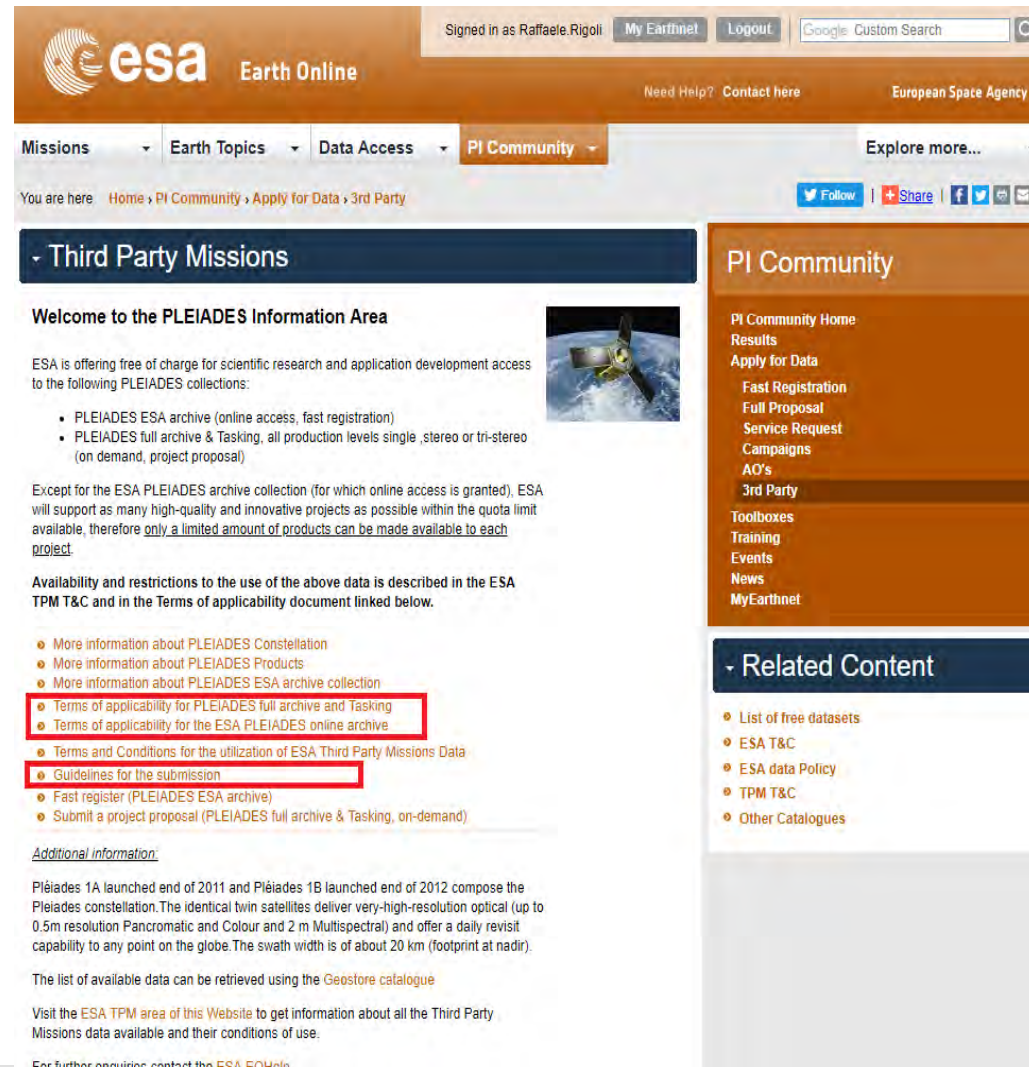
Some specific TPM restricted access (available for free with a limited quota assigned to ESA): EO Sign In and then Project proposal submission

Example PLEIADES access info page

In The PI Community website at :

<https://earth.esa.int/web/guest/pi-community/apply-for-data/3rd-party>

You will find the list of all info areas for each of the active TPM reporting access conditions and terms of applicability. For some of them only a limited quota can be assigned to each proposal



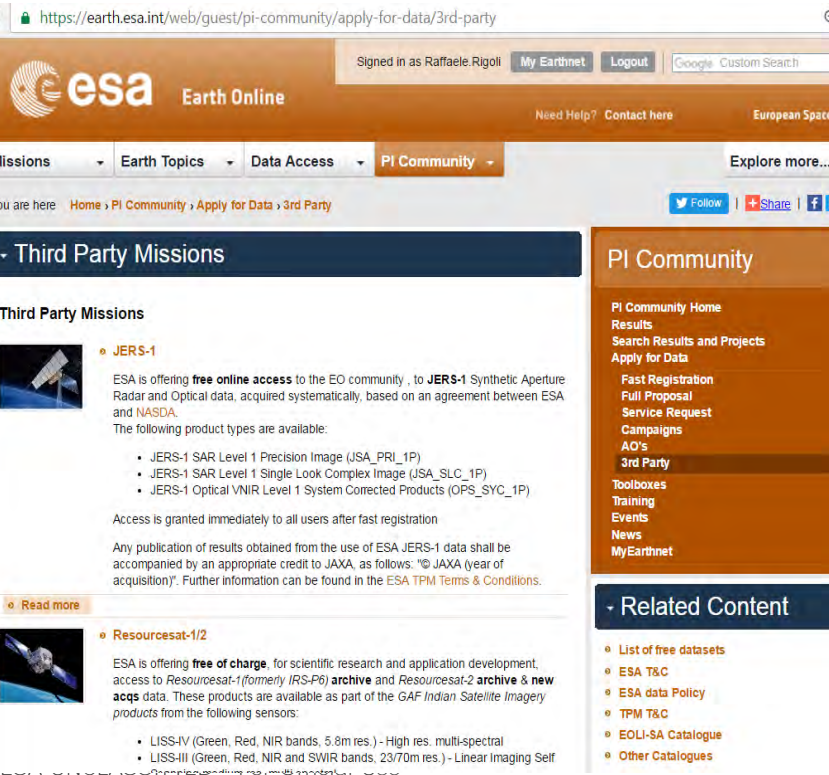
The screenshot shows the 'Welcome to the PLEIADES Information Area' page. The page is part of the ESA Earth Online website, with a navigation bar at the top. The main content area is titled 'Third Party Missions' and contains the following sections:

- Welcome to the PLEIADES Information Area**: A section explaining that ESA offers free access to scientific research and application development for PLEIADES collections.
- Availability and restrictions to the use of the above data**: A section describing the ESA TPM T&C and the Terms of applicability document.
- Additional information**: A section providing more details about the PLEIADES constellation and data retrieval.

Key information highlighted in red boxes includes:

- Terms of applicability for PLEIADES full archive and Tasking
- Terms of applicability for the ESA PLEIADES online archive
- Guidelines for the submission

The right sidebar contains a 'PI Community' menu with links to Home, Results, Apply for Data, Fast Registration, Full Proposal, Service Request, Campaigns, AO's, 3rd Party, Toolboxes, Training, Events, News, and MyEarthnet. Below this is a 'Related Content' section with links to List of free datasets, ESA T&C, ESA data Policy, TPM T&C, and Other Catalogues.



The screenshot shows the 'Third Party Missions' page. The page is part of the ESA Earth Online website, with a navigation bar at the top. The main content area is titled 'Third Party Missions' and contains the following sections:

- JERS-1**: A section explaining that ESA offers free online access to the EO community for JERS-1 Synthetic Aperture Radar and Optical data, acquired systematically, based on an agreement between ESA and NASA. The following product types are available:
 - JERS-1 SAR Level 1 Precision Image (USA_PRI_1P)
 - JERS-1 SAR Level 1 Single Look Complex Image (USA_SLC_1P)
 - JERS-1 Optical VNIR Level 1 System Corrected Products (OPS_SYC_1P)
- Resourcesat-1/2**: A section explaining that ESA offers free of charge access to Resourcesat-1 (formerly IRS-P6) archive and Resourcesat-2 archive & new acqs data. These products are available as part of the GAF Indian Satellite Imagery products from the following sensors:
 - LISS-IV (Green, Red, NIR bands, 5.8m res.) - High res. multi-spectral
 - LISS-III (Green, Red, NIR and SWIR bands, 23/70m res.) - Linear Imaging Self

The right sidebar contains a 'PI Community' menu with links to Home, Results, Apply for Data, Fast Registration, Full Proposal, Service Request, Campaigns, AO's, 3rd Party, Toolboxes, Training, Events, News, and MyEarthnet. Below this is a 'Related Content' section with links to List of free datasets, ESA T&C, ESA data Policy, TPM T&C, and Other Catalogues.

Project proposal for some specific TPM restricted

Some TPMs access is available for free with a limited quota assigned by ESA after project proposal evaluation): register for EO Sign In and then submit a Project proposal



The screenshot shows the ESA Earth Online website interface. The main navigation bar includes 'Missions', 'Earth Topics', 'Data Access', and 'PI Community'. The 'PI Community' dropdown menu is open, showing 'Full Proposal' as the selected option. The page content includes a welcome message, a list of links for guidelines and terms, and a 'Related Content' section with links to datasets and policies.

Geographic restrictions for TPM on demand since Jan. 2021 (accessible to PIs resident in EUROPE, ESA member states and Canada)

For further detail on the project proposal mission process refer to the general guidelines available at: <https://earth.esa.int/files/guidelines>

Earth Observation data distribution services improvement

ESA has started a process to improve the Earth Observation data distribution services, aiming at facilitating access to data and information for the end users, initially by shortening the access path and reviewing authentication and authorisation processes.

This improvement concern first the **Earth Explorers** GOCE, CryoSat and Swarm (SMOS coming soon) data access through the setting-up of a simplified procedure **leading the users straight to the product repository** without affecting the current data retrieval method itself.

GOCE:<http://eo-virtual-archive1.esa.int/Index.html>

SMOS*:<https://smos-diss.eo.esa.int/>

**EO_SSO account registration still needed to download SMOS data*

SWARM:<https://swarm-diss.eo.esa.int/>

CRYOSAT:<http://science-pds.cryosat.esa.int/>

AEOLUS**:<http://aeolus-ds.eo.esa.int>

***For the time being, data download is only allowed to selected users (Developers, Cal/Val users) . Free and open access to general public will be allowed at a later stage*



swarm-diss.eo.esa.int/#swarm%2FLevel1b%2FEntire_mission_data%2FEFlx_LP%2FSat_C



Swarm Data Access

The access and use of Swarm products are regulated by the ESA's Data Policy and subject to the acceptance of the specific Terms & Conditions.
Users accessing Swarm products are intrinsically acknowledging and accepting the above.



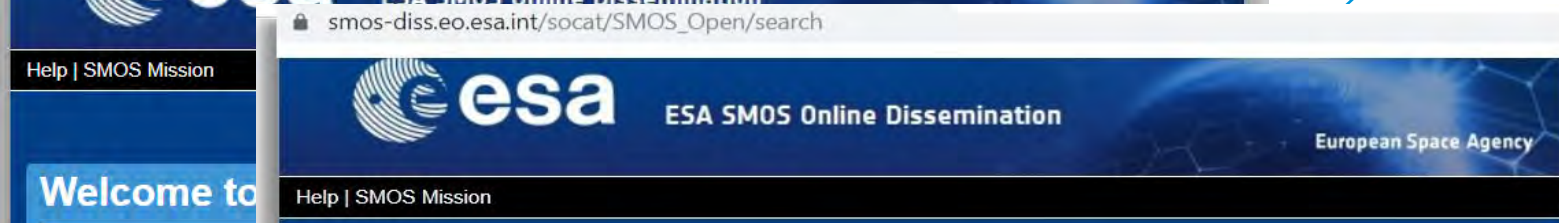
Home > Level1b > Entire_mission_data > EFlx_LP > Sat_C

Name	Modified
 SW_OPER_EFIC_LP_1B_20131204T094004_20131204T223759_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131205T023219_20131205T235959_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131206T000000_20131206T121017_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131209T091921_20131209T235959_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131210T000000_20131210T235959_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131211T000000_20131211T235959_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131212T000000_20131212T235959_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131213T000000_20131213T235959_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131214T000000_20131214T235959_0501.CDF.ZIP	Sep 26, 20
 SW_OPER_EFIC_LP_1B_20131215T000000_20131215T235959_0501.CDF.ZIP	Sep 26, 20

EEs access (data access with EO-Sign id registration): SMOS



EO Sign In account needed to log-in and download the data



Welcome to



This service provides a Near Real Time, and to The operational and re... browsed for, following t In order to download ar one beforehand (Start Detailed information on Format Specifications a

Web Access:

You can search and br to be **logged in** in orde

A Simple Online Catal available) and file form:

FTP Access:

SMOS products can als your own EO-SSO crec

In addition to the Earth NetCDF format under t



ESA SMOS Online Catalogue - Search Result

[back to search form](#) | [bulk download lists](#)

1 2 3 >

Collection SMOS_Open

SMOS L1 and L2 Science data (more information can be found in this page)

Search result page 1 of more than 6 pages (10 of more than 60 records found in 3.138 seconds).



[SM_OPER_MIR_SMUDP2_20191014T163825_20191014T173139_650_001_1.zip](#)


[Download Product](#) | [Product Info](#) | [Browse](#)

[SM_OPER_MIR_SMUDP2_20191013T030638_20191013T035957_650_001_1.zip](#)

Goce Mission Not signed in

[Collections](#) [Login](#)

Welcome to the ESA GOCE Online Dissemination Service



Service News

15/03/2021: New product baseline for the GOCE Gravity solution Grids available - [see related news](#)

ESA has replaced the Single Sign On with a new Earth Observation Identity and Access Management system. Existing active users have received an email to activate their new account to be used from now on. Read more on [New Registration Interface News](#).

This service provides access to the **free and open** GOCE *telemetry, Level 1 and Level 2 Science data products*, including GOCE derived gravity field models.

Data is organized by [collections](#) and the products can be openly searched and browsed for.

In order to download any products of interest **via HTTP**, please **login** with your own ESA EO Sign In account.

GOCE products can also be downloaded **via FTP** from <ftp://goce-ds.eo.esa.int> using your own [EO Sign In credentials](#). Note that for internal ESA users the ESAAD account cannot be used.

ACCESS TO SMOS L3 and L4 PRODUCTS



The Barcelona Expert Centre (BEC) was created in 2007, as a joint initiative between the Spanish Research Council (CSIC) and the Universitat Politècnica de Catalunya (UPC), to provide support to the Spanish SMOS-related activities. BEC provides FTP access to SMOS L3 e L4 that can be requested ,by simple registrations at <http://bec.icm.csic.es/>

Barcelona Expert Center

REMOTE SENSING RESEARCH, DATA DISTRIBUTION AND VISUALIZATION SERVICES

[HOME](#) [BEC PRODUCTS](#) [REMOTE SENSING SPECIAL ISSUE](#) [CONTACT](#) [ABOUT BEC](#) [PROJECTS](#)



Print This Post

NEW RELEASE OF EUROPE SMOS L4 SOIL MOISTURE AT 1 KM

Posted on August 1, 2019

We are pleased to release the latest version of the cloud-free BEC L4 soil moisture at 1 km over Europe. The L4 soil moisture v4 maps are produced from the synergy of:

- SMOS L1C brightness temperature,
- European Center for Medium Weather Forecast (ECMWF) land surface temperature (LST),
- Terra Moderate Resolution Imaging Spectroradiometer (MODIS) Normalized Difference Vegetation Index (NDVI).

The downscaling technique uses the BEC L3 soil moisture v3 as benchmark. A detailed explanation of the downscaling algorithm and the resulting product is included in [BEC Land Products Description](#)

New L4 Soil Moisture At 1 Km

SMOS L4 Soil Moisture product v4.0 is available!
[Read more...](#)



Extended Deadline Special Issue: 30 December 2019

The Remote Sensing Journal and BEC have organized a Special Issue entitled "Ten Years of Remote Sensing at Barcelona Expert Center".



[Read more..](#)

[FTP Access](#)

Available Variables:

SMOS Sea Surface Salinity

SMOS Sea Ice

Singularity Exponents

SMOS Surface Soil Moisture

Details in the product documentation:

<http://bec.icm.csic.es/product-s-documentation/>

A primary objective of the GOCE mission was to map the ocean's time mean circulation globally in unprecedented detail. The final GOCE geoid based on 42 months of gravity observations. The level-2 data are the fundamental products that will be available to users worldwide. They consist of a spectral representation of the gravity potential on a sphere, gridded values of geoid heights and gravity anomalies, including error information and calibrated gravity-gradients in different reference frames. ICGEM (International Centre for Global Earth Models <http://icgem.gfz-potsdam.de>) provides an extensive table of links to download main global geopotential model coefficients.



I C G E M

Global Gravity Field Models



We kindly ask the authors of the models to check the links to the original websites of the models from time to time. Please let us know if something has changed.

The table can be interactively re-sorted by clicking on the column header fields (Nr, Model, Year, Degree, Data, Reference). In the data column, the datasets used in the development of the models are summarized, where **S** is for satellite (e.g., GRACE, GOCE, LAGEOS), **A** is for altimetry, and **G** for ground data (e.g., terrestrial, shipborne and airborne measurements).

The links **calculate** and **show** in the last columns of the table directly invoke the *Calculation Service* and *Visualization page* for the selected model. For models with a registered **doi** ("digital object identifier") the last column contains the symbol ✓, which directly opens the page on "http://dx.doi.org". If you click on the reference, the complete list of references can be seen.

Nr	Model	Year	Degree	Data	References	Download	Calculate	Show	DOI
176	XGM2019e_2159	2019	2190 5540 760	A, G, S(GOCO06s), T	Zingerle, P. et al, 2019	gfc zip gfc zip gfc zip	Calculate	Show	✓
175	GO_CONS_GCF_2_TIM_R6e	2019	300	G (Polar), S(Goce)	Zingerle, P. et al, 2019	gfc zip	Calculate	Show	✓
174	ITSG-Grace2018s	2019	200	S(Grace)	Mayer-Gürr, T. et al, 2018	gfc zip	Calculate	Show	✓
173	EIGEN-GRGS.RL04.MEAN-FIELD	2019	300	S	Lemoine et al, 2019	gfc zip	Calculate	Show	
172	GOCO06s	2019	300	S	Kvas et al., 2019	gfc zip	Calculate	Show	✓

EEs access to selected users (Cal/Val): AEOLUS



Submit a proposal (EO Sign In needed) for Cal/Val access to Aeolus data :
<https://earth.esa.int/aos/aeoluscalval>

Signed in as Raffaele Rigoli | My Earthnet | Logout |

Need Help? | Contact here | European Spa

Missions | Earth Topics | Data Access | **PI Community** | Explore more.

You are here: Home > PI Community > Apply for Data > AO's

Announcements of Opportunity

NoR Call | OSEO | [Aeolus_CalVal_Call](#) | S5PVT | S3VT | G-POD | Previous AOs

Welcome to the submission area for the AO for Aeolus Calibration and Validation

ESA is pleased to announce the reopening of the Announcement of Opportunity (AO) call for the Aeolus Mission.

The objective of the current reopening is

- to invite worldwide scientists, new groups and individuals, to participate in Aeolus CAL/VAL throughout the mission lifetime.

Please note that proposals already submitted/confirmed for the other calls released in 2007 and 2014 remain valid and do not need to be resubmitted.

Funding of the activities solicited through this AO shall be covered by national/institutional resources. As a CAL/VAL PI or co-PI, access to Aeolus product quality information will become available to you first-hand and before the official product release. Furthermore, you will be given the opportunity to quickly learn cooperate directly with other Aeolus CAL/VAL PIs and to perform joint activities.

- Invitation Letter and description of the Aeolus CALVAL AO call:
 - [Aeolus CALVAL AO call invitation letter](#)
 - [Aeolus CALVAL call detailed description and instructions](#)
- Aeolus Mission Documentation:
 - [Aeolus Mission Requirements](#)
 - [Aeolus Sensor, Processing and Product Description](#)
 - [Aeolus System Requirements](#)
- Aeolus CALVAL Documentation:
 - [Aeolus Scientific CALVAL Implementation Plan \(coming soon\)](#)
 - [Aeolus Scientific Calibration and Validation Requirements \(coming soon\)](#)
- Aeolus test dataset access, software tools and product documentation:
 - [ESA Aeolus Online Dissemination System](#)
 - [Dissemination System description, data reading, conversion and overpass table tools](#)
 - [Aeolus Sensor, Processing and Product Description](#)
 - [Aeolus Level 1B Documentation](#)
 - [Aeolus Level 2A Documentation](#)
 - [Aeolus Level 2B Documentation](#)

PI Community

- PI Community Home
- Results
- Apply for Data
- Fast Registration
- Full Proposal
- Service Request
- Campaigns
- AO's
- 3rd Party
- Toolboxes
- Training
- Events
- News
- MyEarthnet

Related Content

- List of free datasets
- ESA T&C
- ESA data Policy
- TPM T&C
- Other Catalogues

If the proposal is accepted by ESA (Aeolus Scientific review Board) PI can download the data from the ESA Aeolus online dissemination server:

<http://aeolus-ds.eo.esa.int/>

aeolus-ds.eo.esa.int/oads/access/

esa ESA Aeolus Online Dissemination European Space Agency

Help | Aeolus Mission Not signed in

Collections Login

Welcome to the ESA Aeolus Online Dissemination System

Welcome to the **ESA Aeolus Online Dissemination System**.
Aeolus data is organised into different collections.
Mapping of each data type to relevant collection can be found here: [Aeolus Collections](#).

Data Access:

Search and browse the Aeolus products is free and available to any user

For the time being, **data download is only allowed to selected users (Developers, Cal/Val users, etc.)** after login.
Specific question about Data Access can be addressed to info.aeolus-calval@esa.int.

Free and open access to general public will be allowed at a later stage

The "Collections" button (top right) gives access to the Aeolus data.

Data Search:

Three different search mechanisms are provided:

- The **Catalogue search** allows for both temporal and geographical queries;
- The **Tree view navigation** allows data structure navigation; it is based on Processing Baseline (if applicable), Year-Month and Day (of sensing or validity).
- The **File name search** allows product searching by its file name or part of it (using wildcards).

Support:

For inquiries relevant to Data Access please write to info.aeolus-calval@esa.int

For inquiries relevant to Data Interpretation, Data Content, scientific topics please refer to [Cal/Val Wiki Page](#) (login needed)

For inquiries relevant to Dissemination System issues please write to aeolus-pdgs-support@esa.int



ESA and ESA TPM data access mechanisms to resume:



**EO Sign In registration
(prerequisite)**

Earth Explorers
(SWARM) /
no registration –
direct download

Simple fast registration (browse data/add product/T&C acceptance) for almost all data ESA (ENVISAT ERS and ESA TPM), immediate

Data service request (title and summary/explanation tba) for (A)SAR LO, some TPM (e.g. DEIMOS, RADARSAT) and no standard request (e.g. full mission data), few days

Project Full Proposal
(- Announcement of special opportunities Project proposal in response to specific ESA announcement of opportunity)



ESA Announcement of Opportunities :

**EO Sign In
registration
(prerequisite)**




ESA issues research announcements at regular intervals (e.g. for new Missions or specific agreement with other Agencies) Open opportunities for Researchers . Also in this case a project proposal is needed under a pre defined scheme and to submit it you need EO Sign In account. Full list of current Calls is available at:


<https://earth.esa.int/web/guest/pi-community/apply-for-data/ao-s>

- Open Opportunities for Researchers


- Aeolus Cal/Val




ESA is pleased to announce the reopening of the Announcement of Opportunity (AO) call for the Aeolus Mission.
- S5PVT




Within the framework of its Copernicus missions, ESA is pleased to announce the Sentinel-5 Precursor Calibration and Validation Team Call.
- OSEO



The Open Science Earth Observation (OSEO) call offers to scientists the opportunity to exploit at no cost a full archive of optical EO data for science, applications and technological innovation, by offering services which exploit state of the art ICT.
- S3VT



The S3VT call is open to relevant and interested groups and individuals worldwide; group responses are particularly welcome.
- G-POD



ESA is offering all scientists with the possibility to perform bulk processing exploiting the large ESA Earth-observation archive together with ESA available GRID computing and dynamic storage resources.

HEDAVI – the EO data visualization tool for ESA EO Heritage Missions



<http://hedavi.esa.int/>

Navigation: Galleries | **Basic Finder** | Expert Finder | Base Maps | Elevations | Menu

Search: Search place, coordinates... [Q]

Mission: ERS | **ENVISAT** | LANDSAT

Instrument: **ASAR** | MERIS

Mode: **APM** | IMM | WSM

Time interval: Years ago | **Time interval**

Start: 2002-11-15 [31] | Stop: 2012-04-08 [31]

Buttons: Info | Search | Clear

Services

Map: 3D

Image 1: ENVISAT/ASAR/APM 2005-08-22
ASA_APM_1PNPDK20050822_20C

Image 2: ENVISAT/ASAR/APM 2005-08-15
ASA_APM_1PNPDK20050815_091

ESA UNCLASSIFIED - For Official Use

Francesco Sarti, Amalia Castro, Raffaele Rigoli | 19/03/2021 | Slide 35



Copernicus (Sentinels) Data Policy

Copernicus Data Policy for Sentinels Missions

- ❑ The Copernicus data policy is adopted via a Delegated Regulation
- ❑ This policy promotes the access, use and sharing of Copernicus information and data on a full, free and open basis
- ❑ One of the main objectives is to support downstream segment and research, technology and innovation communities
- ❑ The European research institutes will be able to make the best use of these data to create innovative applications and services

**Sentinel Data Policy = full and open access
to Sentinel data to all users**

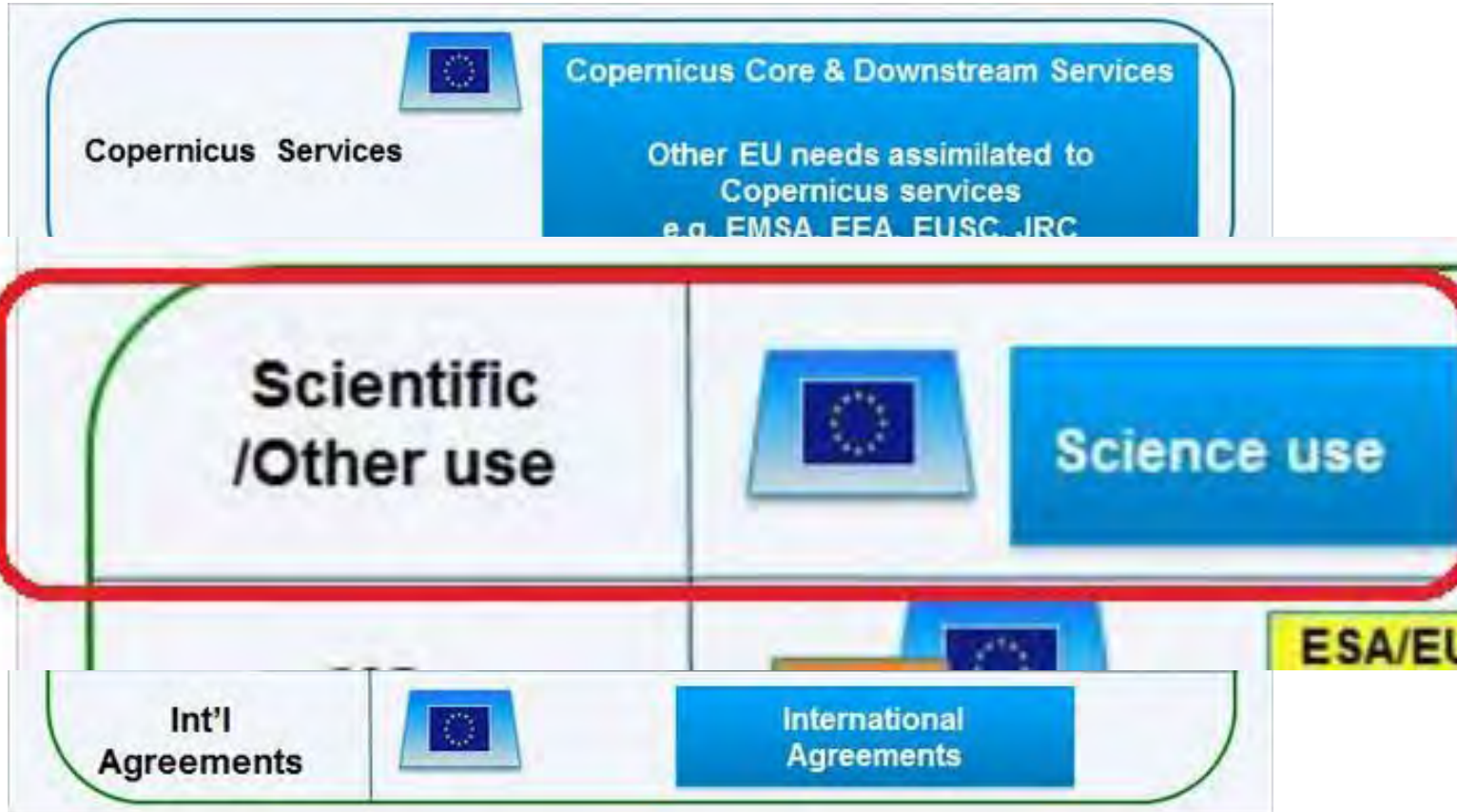
In practical terms

- Anybody can (has the right to) access acquired Sentinel data
- Licenses for the Sentinel data are free of charge
- Online access with users registration including acceptance of T&C*

***TERMS AND CONDITIONS FOR THE USE AND DISTRIBUTION OF SENTINEL DATA
available online on the Sentinel website
(https://sentinel.esa.int/documents/247904/690755/Sentinel_Data_Legal_Notice)**

Sentinel data access : use typologies and the corresponding services/data access (overview)

The following use typologies are defined for access to Sentinel data:



Register for use by Copernicus services via CSCDA → <http://copernicusdata.esa.int/web/gsc/user-tools-guidelines>

Register for Other/Scientific use via Sentinel-1 Scientific Data hub-

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

Sentinel data access for Scientific users- (Copernicus open Hub)

The free, full and open data policy adopted for the Copernicus programme foresees access available to all users for the Sentinel data products, via a simple registration.

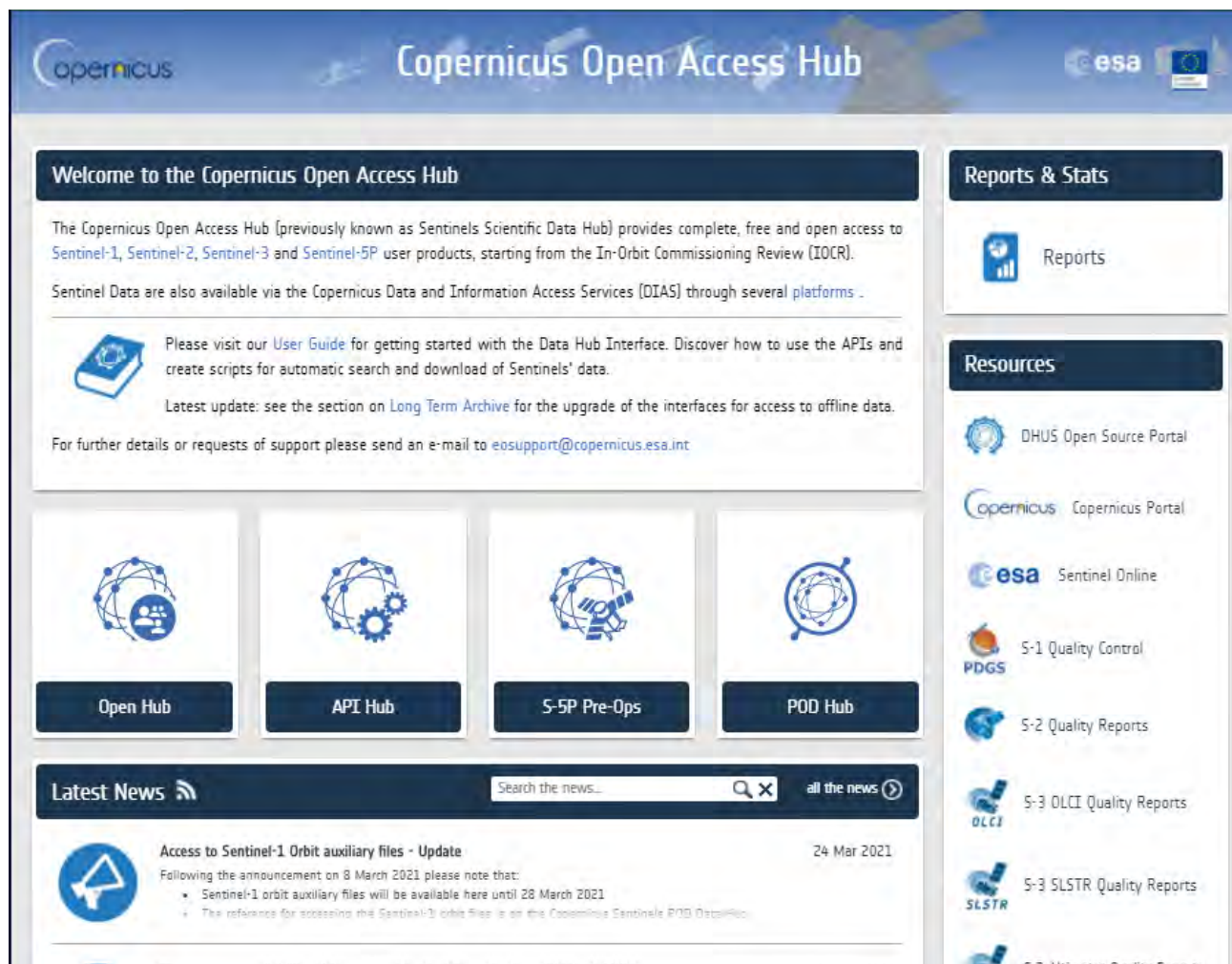
Users can register and download Sentinel-1 -2 -3 data from the online Sentinel Data Hub (<https://scihub.copernicus.eu/dhus/#/home>)

Sentinel-5P Pre-operational Hub : pre-operational access point for all users to Sentinel-5P L1B and L2 data. Login credentials are *s5pguest:s5pguest* (<https://s5phub.copernicus.eu/dhus/#/home>)

Anyone can register online via self-registration. The self-registration process is automatic and immediate. Registration grants access rights for searching and downloading Sentinels products. Sentinel-1 and Sentinel-2 and 3 (coming soon Sentinel-5P) products are available at no cost for anybody. The data available through the Data Hub is governed by the Terms and Conditions of the use and distribution of Sentinel data, which the User is deemed to have accepted by using the Sentinel data.

More technical <https://scihub.copernicus.eu/userguide/>

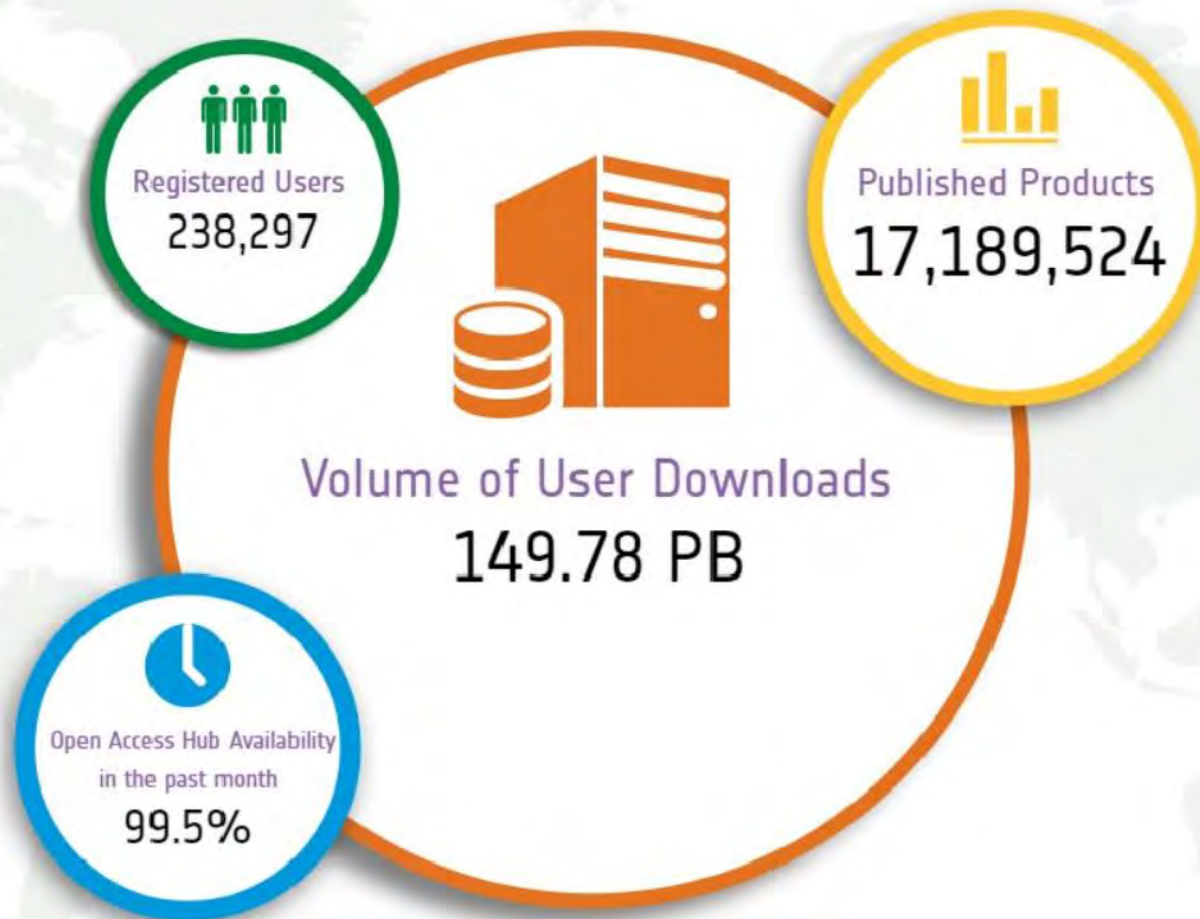
- User self-registration
- Geographical search
- Catalogue query
- Product Browse
- Download



The screenshot shows the Copernicus Open Access Hub website. The header includes the Copernicus logo, the title 'Copernicus Open Access Hub', and the ESA logo. The main content area features a 'Welcome to the Copernicus Open Access Hub' section with a brief description of the hub's purpose and a link to the User Guide. Below this are four large buttons: 'Open Hub', 'API Hub', 'S-5P Pre-Ops', and 'POD Hub'. A 'Latest News' section is visible at the bottom, featuring a news item about Sentinel-1 orbit auxiliary files. On the right side, there are three vertical panels: 'Reports & Stats' with a 'Reports' button, 'Resources' with a list of links including 'DHU5 Open Source Portal', 'Copernicus Portal', 'Sentinel Online', and various quality control reports, and a 'Search the news...' search bar.

Available products, users and downloads (02/2021)

Statistics of all Data Hub Services since start of operations



Copernicus (Sentinel) Open Access Hub (1/5)

S1/S2/S3 and S5P data are available to all users via Sentinel data hub(s)...

<https://scihub.copernicus.eu>

Access Points

Open Access Hub : access point for all Sentinel missions with access to the interactive graphical user interface.

API Hub : access point for API users with no graphical interface. All API users regularly downloading the latest data are encouraged to use this access point for a better performance.

Sentinel-3A Pre-operational Hub : pre-operational access point for all users to Sentinel-3 L1 and L2 Land data. **Login credentials are s3guest : s3guest .**

Sentinel-5P Pre-operational Hub : pre-operational access point for all users to Sentinel-5P L1B and L2 data. **Login credentials are s5pguest : s5pguest**

Sentinels GNSS Rinex Pre-operational Hub : pre-operational access point for all users to the GNSS L1b products in Rinex format of all the Sentinel platforms in operations. **Login credentials are gnssguest : gnssguest**

For more details or request of help support please send an e-mail to eosupport@copernicus.esa.int

user guide

Overview

The Sentinel Scientific Data Hub provides complete, free and open access to Sentinel-1 and Sentinel-2 user products.

Sentinel-1 Data Offer

- The Sentinel-1 data offer for the Scientific Data Hub consists of:
 - Level-0 and Level-1 user products for the following acquisition modes:
 - Strip Map (SM)
 - Interferometric Wide Swath (IW)
 - Extra Wide Swath (EW)
 - Level-2 user products for the following acquisition modes:
 - Wave (WV)
 - Interferometric Wide Swath (IW)
 - Extra Wide Swath (EW)

The Sentinel-1 acquisitions zones with the related mode and polarisation are defined on a cyclic (12 days) basis in the [observation scenarios](#).

The Sentinel-1 ground segment production baseline is described in the [production scenarios](#).

Sentinel-2 Data Offer

The Sentinel-2 data offer for the Scientific Data Hub will consist of Level-1C user products.

The Data Hub Archive

The Scientific data Hub maintains an archive of all the products for download via HTTP.

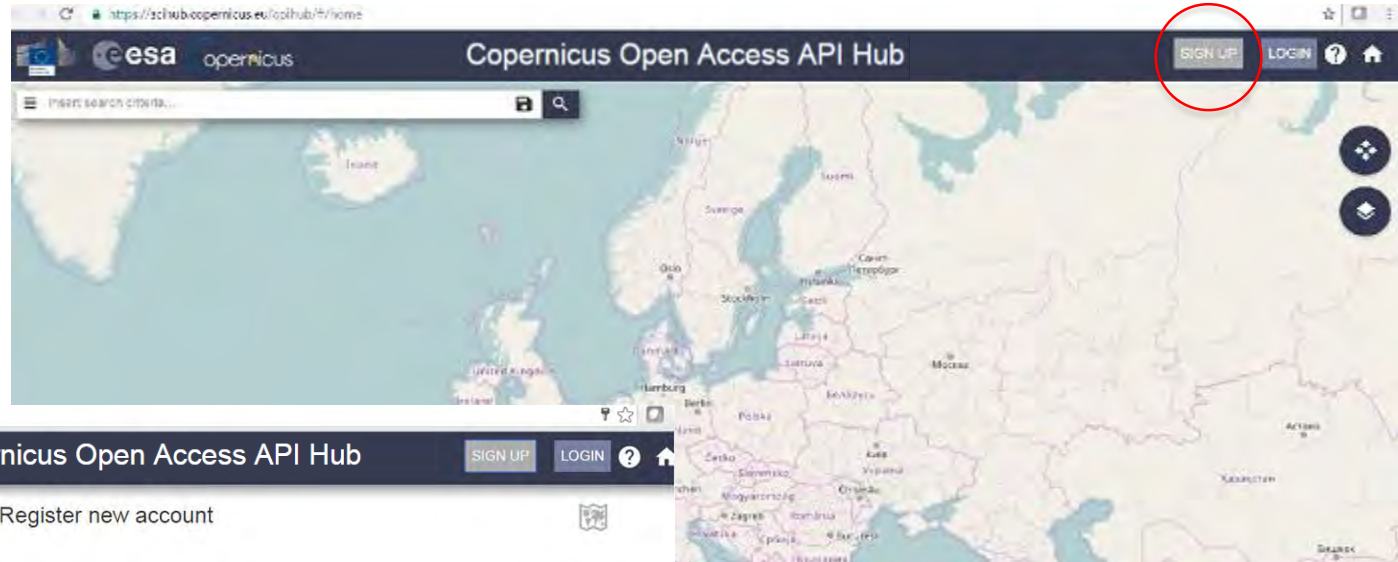
Free and Open data access

Anyone can register online via [self-registration](#). The self-registration process is automatic and immediate. Registration

We will focus on the Open hub!

Copernicus Open Access Hub overview and registration (2/5)

1) If you are already registered log in to start using the Sentinel Hub geographic interface to browse and download Sentinel data, if you are a new user click on the circled red link "SIGN UP" to complete registration



https://scihub.copernicus.eu/dhus/#/self-registration

Copernicus Open Access API Hub

REGISTER new account

Sentinel data access is free and open to all.

On completion of the registration form below you will receive an e-mail with a link to validate your e-mail address. Following this you can start to download the data. Username field accepts only alphanumeric characters plus ".", "-", "_", and "*".

Firstname	Lastname
Username	
Password	Confirm Password
E-mail	Confirm E-mail
Select Domain	
Select Usage	
Select Country	

2) fill this form to start registration procedure (username and e-mail address should be provided in lower case only) then you will receive a mail with a link to validate your mail address. Finally an administrator will be able to let you access to the Sentinel Data Hub. Please note that by registering in this website you are deemed to have accepted the T&C for Sentinel data USE. ([https://sentinel.esa.int/documents/247904/690755/Sentinel Data Terms and Conditions](https://sentinel.esa.int/documents/247904/690755/Sentinel_Data_Terms_and_Conditions))

By registering in this website you are deemed to have accepted the T&C for Sentinel data use.

Copernicus Open Access Data Hub (3/5)

Once completed registration you can log in and use the “Advanced search” criteria , start use Sentinel hub interface to search and download sentinels data .

Search criteria available:

- Draw region of interest
- Full text search
- Advanced search (prod, type, acqu. dates..)

Sentinels Scientific Data Hub

The Sentinels Scientific Data Hub is a web based system designed to provide EO data users with distributed mirror archives and bulk dissemination capabilities for the Sentinels products.

Full details on Sentinels at:
<https://sentinel.esa.int/>

Copernicus Open Access Hub (4/5)

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

Copernicus Open Access API Hub

Insert search criteria...

Display 1 to 25 of 1821 products.

Request Done: (footprint: "Intersects(POLYGON((12.385388494608701 38.14044927445869, 16.668750741018535 38.14044927445869, 16.668750741018535 43.79468250898444, 12.385388494608701 43.79468250898444, 12.385388494608701 38.14044927445869, 16.668750741018535 38.14044927445869)))")

S1A SAR-C S1A_IW_SLC__1SDV_20160202T164105_20160202T164132_009770_00E487_AE9C
 Download URL: [https://scihub.copernicus.eu/dhus/odata/v1/Products\('cb1fa6ca-09cd-4454-99ef-5e753f801b6'\)/\\$v](https://scihub.copernicus.eu/dhus/odata/v1/Products('cb1fa6ca-09cd-4454-99ef-5e753f801b6')/$v)
 Mission: Sentinel-1; Instrument: SAR-C; Sensing Date: 2016-02-02T16:41:05.677Z; Size: 7.63 GB

S1A SAR-C S1A_IW_SLC__1SDV_20160629T050404_20160629T050431_011921_0125CC_9D5B
 Download URL: [https://scihub.copernicus.eu/dhus/odata/v1/Products\('76fc9831-84b8-40fb-8d6c-df501892af1f'\)/\\$v](https://scihub.copernicus.eu/dhus/odata/v1/Products('76fc9831-84b8-40fb-8d6c-df501892af1f')/$v)
 Mission: Sentinel-1; Instrument: SAR-C; Sensing Date: 2016-06-29T05:04:04.707Z; Size: 7.63 GB

S1A SAR-C S1A_IW_SLC__1SDV_20160629T050429_20160629T050456_011921_0125CC_0BE1
 Download URL: [https://scihub.copernicus.eu/dhus/odata/v1/Products\('732ebda4-685c-4d36-9a35-5b6c18bc3103'\)/\\$v](https://scihub.copernicus.eu/dhus/odata/v1/Products('732ebda4-685c-4d36-9a35-5b6c18bc3103')/$v)
 Mission: Sentinel-1; Instrument: SAR-C; Sensing Date: 2016-06-29T05:04:29.538Z; Size: 7.63 GB

S1A SAR-C S1A_IW_SLC__1SDV_20160629T050314_20160629T050341_011921_0125CC_5BF3
 Download URL: [https://scihub.copernicus.eu/dhus/odata/v1/Products\('16786ffb-94d8-413a-8304-084a1f0cde62'\)/\\$v](https://scihub.copernicus.eu/dhus/odata/v1/Products('16786ffb-94d8-413a-8304-084a1f0cde62')/$v)
 Mission: Sentinel-1; Instrument: SAR-C; Sensing Date: 2016-06-29T05:03:14.111Z; Size: 7.63 GB

S1A SAR-C S1A_IW_SLC__1SDV_20160629T050314_20160629T050341_011921_0125CC_5BF3
 Download URL: [https://scihub.copernicus.eu/dhus/odata/v1/Products\('16786ffb-94d8-413a-8304-084a1f0cde62'\)/\\$v](https://scihub.copernicus.eu/dhus/odata/v1/Products('16786ffb-94d8-413a-8304-084a1f0cde62')/$v)
 Mission: Sentinel-1; Instrument: SAR-C; Sensing Date: 2016-06-29T05:03:14.111Z; Size: 7.63 GB

S1A SAR-C S1A_IW_SLC__1SDV_20160628T170549_20160628T170616_011914_01258C_5ESC

Select product of you interest and use the icons to (the **circled red** icons) :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.

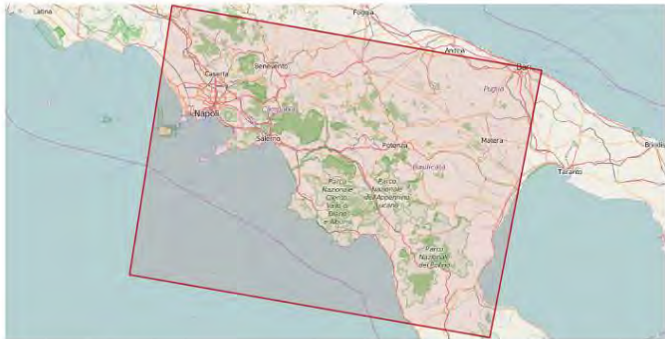
Copernicus Open Access Hub (5/5)

* **View product details** is an online inspection of the searched products by browsing and pre-viewing the product metadata and measurements without downloading it. A preview panel displays information on the product contents and structure.

S1A_IW_SLC__1SDV_20160629T050338_20160629T050406_011921_0125CC_B765

[https://scihub.copernicus.eu/dhus/odata/v1/Products\('c5f8298f-f985-4945-bf7b-5f724985316b'\)/\\$value](https://scihub.copernicus.eu/dhus/odata/v1/Products('c5f8298f-f985-4945-bf7b-5f724985316b')/$value)

Footprint



Attributes

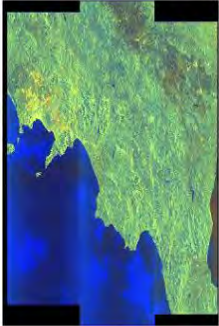
Summary

Date: 2016-06-29T05:03:38.922Z
 Filename: S1A_IW_SLC__1SDV_20160629T050338_20160629T050406_011921_0125CC_B765.SAFE
 Identifier: S1A_IW_SLC__1SDV_20160629T050338_20160629T050406_011921_0125CC_B765
 Instrument: SAR-C
 Mode: IW
 Satellite: Sentinel-1
 Size: 7.93 GB

Product

Platform

Quicklook



Inspector

- S1A_IW_SLC__1SDV_20160629T0503...406_011921_0125CC_B765.SAFE
 - annotation
 - measurement
 - preview
 - support
 - S1A_IW_SLC__1SDV_20160629T050338_20160629T050406_011921_0125CC_B765.SAFE-report-20160629T072914.pdf
 - manifest.safe

← → ✕ ⬇️

API Hub : access point for API users with no graphical interface

APIs And Batch Scripting. The Data Hub exposes two dedicated Application Program Interfaces (API) for browsing and accessing the EO data stored in the rolling archive. The APIs are:

[Open Data Protocol \(OData\)](#)

[Open Search \(Solr\)](#)

The OData interface is a data access protocol built on core protocols like HTTP and commonly accepted methodologies like REST that can be handled by a large set of client tools as simple as common web browsers, download-managers or computer programs such as [ascURL](#) or [Wget](#).

OpenSearch is a set of technologies that allow publishing of search results in a standard and accessible format. OpenSearch is RESTful technology and complementary to the OData. In fact, OpenSearch can be used to complementary serve as the query aspect of OData, which provides a way to access identified or located results and download them

<https://scihub.copernicus.eu/wiki/do/view/SciHubWebPortal/APIHubDescription>



API Hub



S-3 PreOpsHub

Sentinel-3 Pre-operational Hub : pre-operational access point for all users to Sentinel-3 data. Login credentials are s3guest:s3guest .

API Hub : access point for API users with no graphical interface. All API users regularly downloading the atest data are encouraged to use this access point for a better performance.

User Support

The Services Coordinated Interface (SCI) team can be contacted via email at EOSupport@Copernicus.esa.int for support, in particular for:

- Clarifications regarding the registration process
- Sentinel enquiries
- Reporting issues related to products/service quality

Following registration, the user can immediately download Sentinel products generated systematically from all acquired data. Please note that depending on the mission and the acquisition time of the product, the full operational qualification may not yet be completed.

Member States requiring data for national initiatives in the frame of the Sentinels Collaborative Ground Segment. Copernicus Services members and European Institutions, as well as Collaborative Ground Segments need not register on this service, they are served via dedicated access points.

SENTINEL ONLINE WEBSITE

- **Sentinel online website:** technical guidelines for all sentinels, news and events related ,data access info and policy,last scientific result and more... <https://sentinel.esa.int/web/sentinel/home>

EUROPEAN SPACE AGENCY

<https://sentinel.esa.int/web/sentinel/missions/sentinel-1/observation-scenario>

Sentinel-1 Constellation Observation Scenario: Revisit & Coverage Frequency

validity start: 02/2018

PASS	REVISIT	FREQUENCY *	COVERAGE
ASCENDING	6 days	12 days	1 days
DESCENDING	12 days	2-4 days	1-3 days
			2-4 days

* coverage ensured from same, repetitive relative orbits
** coverage not considering repetitiveness of relative orbits

Sentinel Online

Missions

User Guides

Technical Guides

Themes

Home / User Guides / Sentinel-1 SAR / Naming Conventions

Naming Conventions

The top-level Sentinel-1 product folder name is composed of upper-case alphanumeric characters separated by an underscore (_).



EUMETSAT Copernicus Online Data Access (CODA) (1/5)



The Sentinel-3 Marine Products are available through the EUMETSAT Copernicus Online Data Access (CODA) service. CODA is an online rolling archive with https access to Sentinel-3 Level 1 and Level 2 (Marine) global data in different latency modes: Near Real-Time (NRT) – within 3 hours after sensing / 1 month archive ,Short time critical (STC) – only for SRAL instrument , Non time critical (NTC) within one month / 1 year archive

HOW TO ACCESS CODA

Open an internet browser (preferably Chrome or Firefox) and go to <https://coda.eumetsat.int> . Click 'OK' to be redirected to the EO Portal login screen below and if you do not have an account, create an account using the button located in the lower left corner "NEW U

fill this form to start registration procedure (username and e-mail address should be provided in lower case only) then you will receive a mail with a link to validate your mail address. Finally an administrator will be able to let you access to the CODA Hub. Please note that by registering in this website you are deemed to have accepted the T&C for Sentinel data use. (https://sentinels.copernicus.eu/documents/247904/690755/Sentinel_Data_Legal_Notice) Once the registration procedure is over and the account created, log-in.

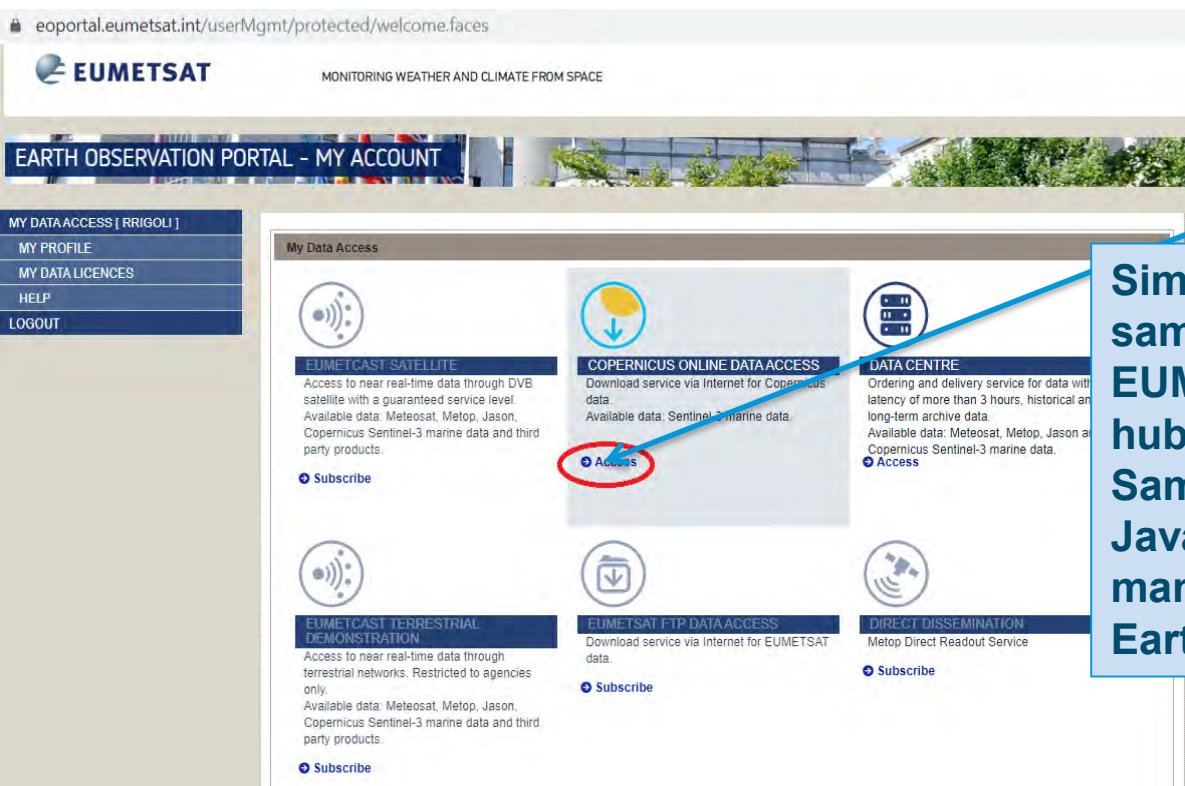


HOW TO ACCESS CODAREP **Online Rolling Archive**

Sentinel-3 data on CODA are always processed using the last available algorithms, but algorithms are periodically updated. So, in order to allow users to be able to access consistent datasets, “older” OLCI and SRAL NTC data have been reprocessed according to the latest standards. These reprocessed datasets are available with the same CODA account via the online archive at this link:

<https://codarep.eumetsat.int>

Once you have confirmed your email and you have received your password you can log in and click on the **circled red link “Access”** to be directed to the CODA GUI* to browse and download Sentinel 3 data



Similar GUI interface for CODArep (same account/registration EUMETSAT) and for Copernicus data hub (different account/registration) Same technology DHUS Data Hub a Java web based system designed to manage the on-line dissemination of Earth Observation Satellites data.

* For more details see the manual available at <https://coda.eumetsat.int/manual/CODA-user-manual.pdf>

The screenshot displays the EUMETSAT CODA web interface. At the top, the URL is `coda.eumetsat.int/#/home`. The header includes the EUMETSAT logo, the European Union flag, the Copernicus logo, and the text "Copernicus Online Data Access".

On the left, there is an "Advanced Search" panel with the following options:

- Sort By: Ingestion Date
- Order By: Descending
- Sensing period: From: [calendar icon] to: [calendar icon]
- Ingestion period: From: [calendar icon] to: [calendar icon]
- Mission: Sentinel-3
- Product Type: [dropdown menu]
- Timeliness: [dropdown menu]
- Instrument: [dropdown menu]
- Product Level: [dropdown menu]
- Cycle Number: [input field]
- Orbit Number: [input field]
- Relative Orbit Start [1-385]: [input field]

The main area is a "Map Viewer" showing a satellite image of Europe. A search bar at the top left of the map contains the text "Insert search criteria...".

At the bottom of the map, there are navigation controls: a coordinate display showing "30.9336, 52.5811", and buttons for "Pan", "Box", "Polygon", and "Clear".

Annotations with blue arrows point to various UI elements:

- "User profile and allowed functionalities" points to the user profile icon in the top right.
- "CODA User Manual" points to the manual icon in the top right.
- "To select Base Map Layer" points to the map layer selection icon in the top right.
- "Map Viewer" points to the satellite map area.
- "holding the left mouse button – mouse wheel to zoom" points to the map area.

EUMETSAT CODA (4/5)



Data ingested on CODA and CODArep can be browsed using the Search Panel providing two different functionality :

- **Full text search** (using also wildcards and operators)
- **Advanced Search** (applying different filters like sensing time instrument ecc...)

Advanced search query example:

- Draw your AOI polygon by holding the left mouse button
- Open the search menu by clicking at the left of the search bar (☰)
- Select your search criteria (Product type ,Sensing time ecc..) and then press the search button (🔍)
- Search results will be displayed on the map* and listed in the tab (☰)

copda.eumetsat.int/#/home

Apps ESA Earth Observati... Imported From IE eo4society - eo scie... Geohazards TEP Acri Disasters Chart... GPS: La guida satell... Registrazione 30-cm WorldView... Wire

EUMETSAT Copernicus Online Data Access

Insert search criteria... 🔍

Display 1 to 13 of 13 products. Order By: Sensing Date ↓

Request Done: (footprint:"Intersects(POLYGON((13.07423342711639 9.92579826507995,18.628922 39.22124480243531,16.941420927116408 5.305770069449366,9.9101709271164 37.06487715212576,13.07423342711639 0.0570096507005 42.07423342711639 30.0570096507005))) AND (hasin:Position:2019.00...)

S3A	SRAL	S3A_SR_2_WAT	20191006T201555_20191006T210018_20191008T120749_2662_050...
NO QUICKLOOK			Download URL: https://copda.eumetsat.int/odata/v1/Products('c4fc9ae1-07d9-4bbc-ade6-fbdfaad6f... Mission: Sentinel-3; Instrument: SRAL; Sensing Date: 2019-10-06T20:15:54.829018Z; Size: 27.4C
S3A	SRAL	S3A_SR_2_WAT	20191006T091340_20191006T100146_20191008T012328_2886_050...
NO QUICKLOOK			Download URL: https://copda.eumetsat.int/odata/v1/Products('6fd750dc-c918-4f47-ab16-e6fa93546... Mission: Sentinel-3; Instrument: SRAL; Sensing Date: 2019-10-06T09:13:39.504951Z; Size: 41.47
S3B	SRAL	S3B_SR_2_WAT	20191005T200239_20191005T204700_20191007T114602_2660_030...
NO QUICKLOOK			Download URL: https://copda.eumetsat.int/odata/v1/Products('f1d75481-058c-4945-b227-724d719a;... Mission: Sentinel-3; Instrument: SRAL; Sensing Date: 2019-10-05T20:02:39.204744Z; Size: 28.45
S3B	SRAL	S3B_SR_2_WAT	20191005T090015_20191005T094819_20191007T013136_2884_030...
NO QUICKLOOK			Download URL: https://copda.eumetsat.int/odata/v1/Products('c9af128c-5b9d-45d5-9adc-bad07710... Mission: Sentinel-3; Instrument: SRAL; Sensing Date: 2019-10-05T09:00:14.508063Z; Size: 41.84
S3B	SRAL	S3B_SR_2_WAT	20191004T092626_20191004T101426_20191006T013700_2880_030...
NO QUICKLOOK			Download URL: https://copda.eumetsat.int/odata/v1/Products('f34149aa-947f-432c-9856-663cb3cd... Mission: Sentinel-3; Instrument: SRAL; Sensing Date: 2019-10-04T09:26:25.515084Z; Size: 42.95
S3A	SRAL	S3A_SR_2_WAT	20191003T195355_20191003T203805_20191005T115258_2649_050...
NO QUICKLOOK			Download URL: https://copda.eumetsat.int/odata/v1/Products('75969ed8-f7d6-46c4-85b4-55220e0f... Mission: Sentinel-3; Instrument: SRAL; Sensing Date: 2019-10-03T19:53:55.366413Z; Size: 28.5f

products per page: 25 << page: 1 of 1 >>

🇮🇹 🇺🇸 🇳🇱 🇩🇪 🇵🇱 🇪🇺 🇷🇺 🇫🇷 🇪🇸 🇸🇪 🇨🇭 🇬🇧 🇷🇴 🇨🇦

🗑️ CLOSE

*In our example we have selected altimetry data (SRAL) so what are visualized on the map are tracks of the satellite that intersect the study area . Generally footprint of available products are showed on the map

Wildcards and Operators (e.g. OR, NOT,AND,*,?) are used to restrict search queries. Wildcards, in particular, are useful when performing a query on the *product filename*. Operators when combining different search criteria. It is also possible to perform full-text queries using search keywords. The syntax format to enter in the Full text search bar is the following:
<keyword>:<values>

EUMETSAT CODA (5/5)

API Hub: access point for API users with no graphical interface

APIs And Batch Scripting. CODA and CODArep Web Services allows two dedicated Application Program Interfaces (API) for browsing and accessing the EO data stored in the rolling archive. The APIs are: :

[Open Data Protocol \(OData\)](#)

[Open Search \(Solr\)](#)

The OData interface is a data access protocol built on core protocols like HTTP and commonly accepted methodologies like REST that can be handled by a large set of client tools as simple as common web browsers, download-managers or computer programs such as [ascURL](#) or [Wget](#) .

OpenSearch is a set of technologies that allow publishing of search results in a standard and accessible format. OpenSearch is RESTful technology and complementary to the OData. In fact, OpenSearch can be used to complementary serve as the query aspect of OData, which provides a way to access identified or located results

Full details and query examples in the CODA user Manual available at:

<https://coda.eumetsat.int/manual/CODA-user-manual.pdf>

`dnusget` script ^{*} → you can download from <https://coda.eumetsat.int/manual/dnusget.sh>

`dnusget.sh` is a simple demo script illustrating how to use OData and OpenSearch APIs to query and download the products from any CODA and CODArep Web Services. It allows:

- Search products over a pre-defined AOI
- Filter the products by ingestion time, sensing time and coordinates
- Filter the products by instrument and product type
- Save the list of results in CSV and XML files
- Download the products
- Download the manifest files only
- Perform the MD5 integrity check of the downloaded products

** In the current DHuS version, there is a known anomaly in the generation of the `.meta4` file. Only 100 products of the cart are inserted in the file, even if the cart contains more.*

ACCESS TO SENTINEL DATA VIA CLOUD

In addition to the download services, the Sentinel Data Products are available in the Copernicus Data and Information Access Service (DIAS) cloud environments. Each DIAS provides processing resources, tools and complimentary data sources at commercial conditions to further facilitate the access to Sentinel data.



OTHER DATA HUB RESOURCE LIST (1/3)



Initiative Name	Provider	Website, Target User Group, Rolling Size
Copernicus Open Access Hub	ESA	<ul style="list-style-type: none"> • URL: scihub.copernicus.eu • All • No rolling
Collaborative Data Hub	ESA	<ul style="list-style-type: none"> • URL: colhub.copernicus.eu • Authorized mirror sites • 30 days
Copernicus Services Hub	ESA	<ul style="list-style-type: none"> • URL: cophub.copernicus.eu • Copernicus Services • No rolling
International Hub	ESA	<ul style="list-style-type: none"> • URL: inthumb.copernicus.eu • Copernicus International Agreements • 30 days
Copernicus Online Data Access	EUMETSAT	<ul style="list-style-type: none"> • URL: coda.eumetsat.int • All • 12 months



Initiative	Website	Initiative	Website
Australia National Mirror	copernicus.gov.au	Italy National Mirror	collaborative.mt.asi.it/#/home
Austria National Mirror	data.sentinel.zamg.ac.at/#/home	Portugal National Mirror	ipsentinel.ipma.pt/dhus/#/home
Finland National Mirror	finhub.nsd.c.fmi.fi/#/home	Norway National Mirror	collaborative.mt.asi.it/#/home
France National Mirror	peps.cnes.fr/rocket/#/home	UK National Mirror	sedas.satapps.org
Germany National Mirror	code-de.org	Sweden National Mirror	swea.rymdstyrelsen.se/portal
Greece National Mirror	sentinels.space.noa.gr		

http://copernicus.eu/sites/default/files/Data_Access/Data_Access_PDF/Factsheet_Data_Access_National_Private_Initiatives.pdf

OTHER DATA ACCESS PUBLIC INITIATIVE (1/2)

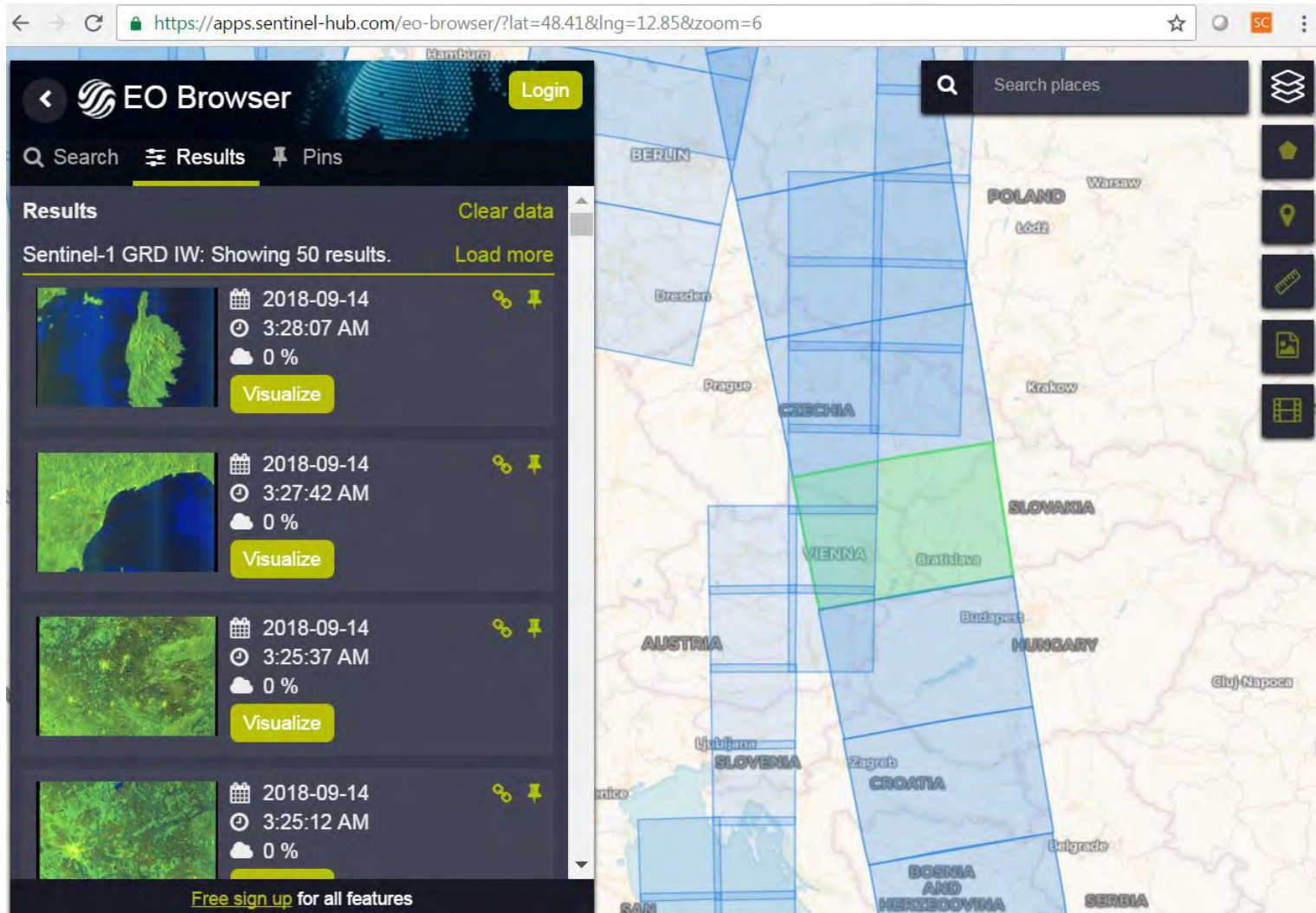


Initiative Name	Provider	Website and Target User Group
CloudEO	CloudEO	<ul style="list-style-type: none"> • URL: cloudeo-ag.com • Users, developers and providers of geo data/ geo services; software developers
Geopedia platform	Synergise	<ul style="list-style-type: none"> • URL: geopedia.world • Users of geo data/ geo services
Geostorm platform	CS-SI	<ul style="list-style-type: none"> • URL: geostorm.eu • Users and developers of geo data/ geo services
Google Earth Engine	Google	<ul style="list-style-type: none"> • URL: earthengine.google.com • Scientists, researchers and developers
Planet platform	Planet	<ul style="list-style-type: none"> • URL: planet.com/products/platform/ • Users and developers of geo data/ geo services
Sentinel on AWS	Amazon	<ul style="list-style-type: none"> • URL: sentinel-pds.s3-website.eu-central-1.amazonaws.com • Developers, private/public downstream players



SENTINEL DATA HUB (EO BROWSER)

<https://apps.sentinel-hub.com/eo-browser/>



The screenshot displays the EO Browser interface in a web browser. The address bar shows the URL: <https://apps.sentinel-hub.com/eo-browser/?lat=48.41&lng=12.85&zoom=6>. The interface includes a search bar at the top right with the text "Search places". On the left side, there is a sidebar with the "EO Browser" logo, a "Login" button, and navigation options like "Search", "Results", and "Pins". Below this, the "Results" section shows "Sentinel-1 GRD IW: Showing 50 results." with "Clear data" and "Load more" options. Four search results are listed, each with a thumbnail image, a date of "2018-09-14", a time, and a "0%" cloud cover. Each result has a "Visualize" button. At the bottom of the sidebar, it says "Free sign up for all features". The main area is a map of Central Europe with a grid of blue search areas. One area over Austria and Slovakia is highlighted in green. Labels on the map include BERLIN, DRESDEN, PRAGUE, VIENNA, BRATISLAVA, BUDAPEST, KRAKOW, WARSAW, LODZ, POLAND, SLOVAKIA, HUNGARY, AUSTRIA, SLOVENIA, CROATIA, BOSNIA AND HERZEGOVINA, SERBIA, and GŁOGÓW.

RUS – Research and User Support (1/3)

RUS - Research and User Support

- a service offering support, guidance and tools to help users get the best out of Copernicus Sentinel data
- **Open to you:** freely available for first-time data users to specialist users such as researchers, scientists, trainers, decision-makers, public authorities and general public
- **Expertise:** support team with strong experience in Earth observation applications and Sentinel sensors to help users tap into and exploit Sentinel data resources



RUS – Research and User Support (2/3)

- **Hardware Configuration of the Virtual Machine (VM)**
 - From 2 to 32 processing cores with 15-240 GB of RAM
 - Disk space from 500GB to 30TB
- **EO Data availability**
 - Sentinel-1/2/3 (via DataHub)
 - CCM (for authorised users)
- **Processing environment**
 - Sentinel-1/2/3 Toolboxes
 - Other tools: Orfeo Toolbox, QGIS, Sen2Cor, Sen2Three, SMOS Toolbox, NEST, BRAT Toolbox
 - GDAL library, NCO, NETCDF, OpenJPG, Image Magick, Rugged library
- **Development environment**
 - Eclipse, GCC, Cmake, Maven, Git, R,
 - Eclipse Mars plugins



RUS – Research and User Support (3/3)

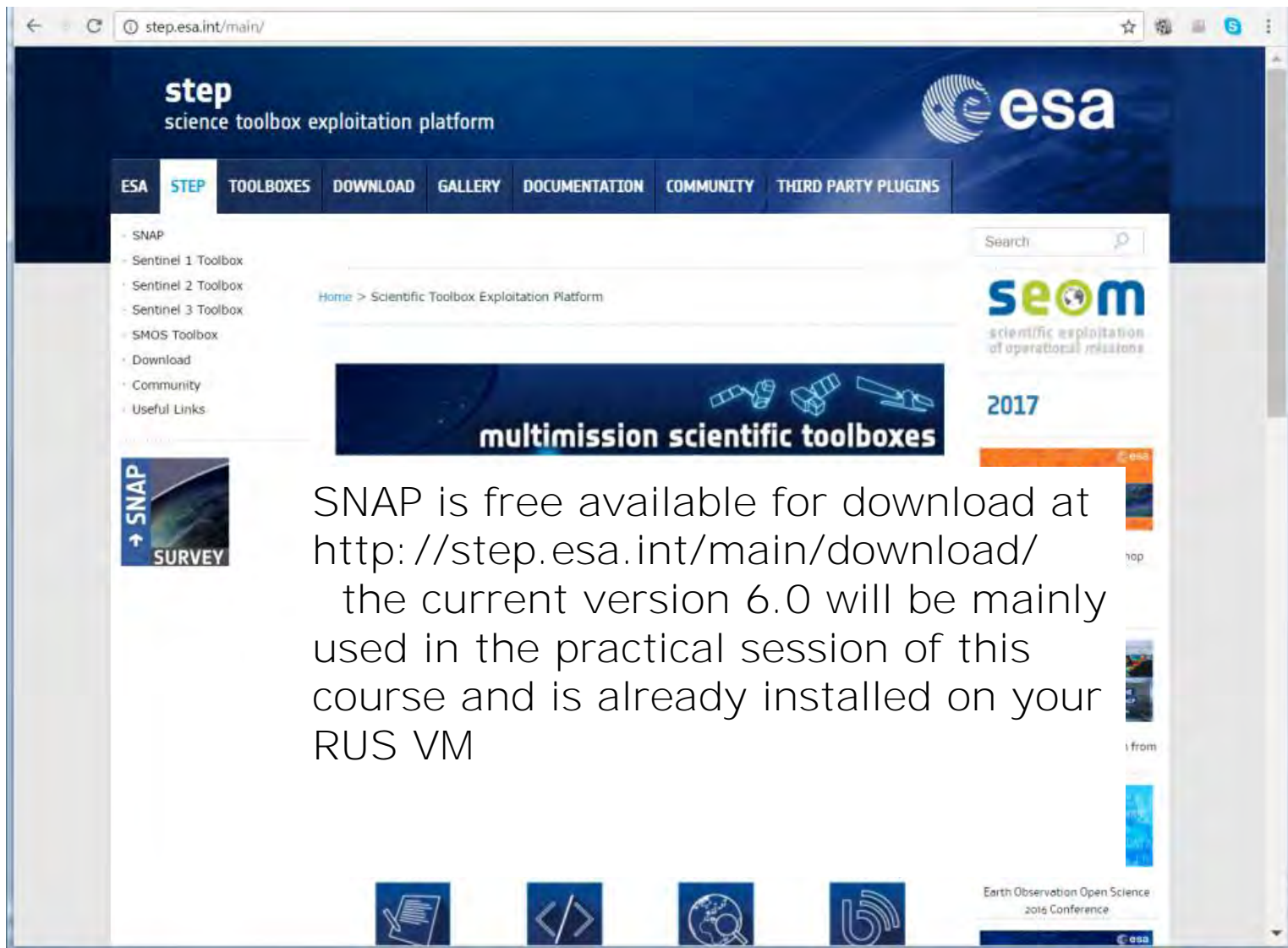
- Virtual Platform open and available to public users (since 25/09/2017)
 - RUS Virtual platform: >1000 users (university and research ~60%)
 - RUS Webinars: >2000 participants
- Communication: ~2155 followers on Twitter
 - <http://rus.copernicus.eu>
 - https://twitter.com/RUS_Copernicus
 - <https://www.youtube.com/channel/UCB01WjameYMvL7-XfI8vRIA/videos>



@RUS_Copernicus

RUS video service presentation:

<https://www.youtube.com/watch?v=OEahrDdG9Lc>



SNAP is free available for download at <http://step.esa.int/main/download/>
the current version 6.0 will be mainly used in the practical session of this course and is already installed on your RUS VM

PoISARpro v6.0 (Biomass Edition) Toolbox



step.esa.int/main/toolboxes/polsarpro-v6-0-biomass-edition-toolbox/

step
science toolbox exploitation platform

ESA STEP **TOOLBOXES** DOWNLOAD GALLERY DOCUMENTATION COMMUNITY THIRD PARTY PLUGINS

SNAP
Sentinel 1 Toolbox
Sentinel 2 Toolbox
Sentinel-3 Toolbox
SMOS Toolbox
Proba-V Toolbox
PolSARpro
Download
Community
Useful Links

The PolSARpro v6.0 (Biomass Edition) Software offers the possibility to handle and convert polarimetric data from a range of well established polarimetric spaceborne missions like ALOS-1 / PALSAR-1, ALOS-2 / PALSAR-2, COSMO-SKYMED, GaoFen-3, RADARSAT-2, RISAT, TerraSAR X, Tandem-X, SENTINEL-1A & B. In order to prepare for the forthcoming polarimetric spaceborne missions, the PolSARpro v6.0 (Biomass Edition) Software is expanded to support the following additional data sources: ALOS-4 / PALSAR-3, BIOMASS, SAOCOM, NISAR, NOVASAR-S, RCM / RADARSAT-3, TerraSAR-L etc ...

Download:
<http://step.esa.int/main/download/polsarpro-v6-0-biomass-edition-toolbox-download/>

General presentation:
http://step.esa.int/docs/extra/PolSARpro_v6_General_Presentation.pdf

techniques for scientific developments and stimulates research and applications developments using Pol-SAR, Pol-InSAR, Pol-TomoSAR and Pol-TimeSAR data.

2017

The Sentinel ESA APP

Developed by ESA and the European Commission, the Copernicus Sentinel App is a free App for iOS and Android mobile devices. It allows users to track the Sentinel satellites in orbit and see when and where they send their data back to Earth, either directly or by laser to the European Data Relay System.

<https://play.google.com/store/apps/details?id=esa.sentinel&hl=en>



The Sentinel App is a gateway to knowing the Copernicus Sentinel satellites. It lets users track the satellites in real-time, discover their key elements, read the latest news and learn more about their products.

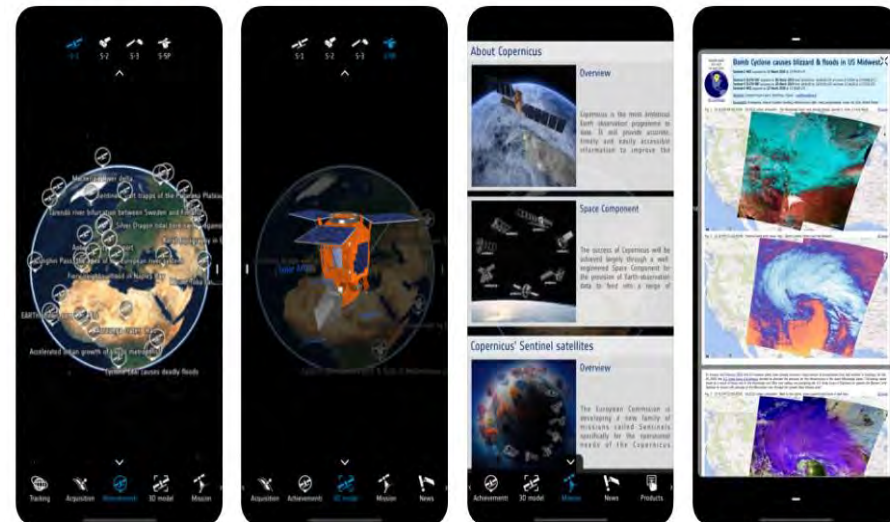
<https://apps.apple.com/us/app/copernicus-sentinel/id1036738151>

App Store Preview

This app is only available on the App Store for iOS devices.



Screenshots iPhone iPad



Thank you!

