Link services and data source

Copernicus data and related databases

Version 2 –July 2019

Copernicus – Data Access
Key Links – Copernicus Services

- **Copernicus Atmosphere Monitoring Service** https://atmosphere.copernicus.eu/
- **Copernicus Marine Services** http://marine.copernicus.eu/
- **Copernicus Land Services** https://land.copernicus.eu/
- **Copernicus Climate Services** https://climate.copernicus.eu/
- **Copernicus Emergency Services** http://emergency.copernicus.eu/
- **Copernicus Security Services** http://copernicus.eu/main/security

Copernicus – Data Access
Key Links 1/3

- The **Copernicus Open Access Hub** provides complete, free and open access to Copernicus Satellite – Esa hub https://scihub.copernicus.eu/dhus/#/home
  Target audience: all users interested in EO data

- **Esa Themathic Exploitation Platform** aims to create an ecosystem of interconnected Thematic Exploitation Platforms (TEPs) on European footing about coastal, forestry, hydrology, geohazards, polar, urban themes and food security (under definition). It provides access to Earth Observation Data, tools and information and communication technology resources. https://tep.eo.esa.int/ e.g Urban TEP : https://urban-tep.eu/#!
  Target audience: all users interested in EO data in particular scientist and researchers

- **Spectator** provides free online tracking of Copernicus-Sentinel Satellite (2A and 2B) and others (USGS/NASA) and free imagery downloading https://spectator.earth/
  Target audience: all users interested in EO data

- **PEPS** French Platform provides free and open access to Copernicus Sentinel Data (S1A, S1B, S2A e S2B, S3A e S3B, except level 0) https://peps.cnes.fr/rocket/#/home
  Target audience: scientific community and public policy decision making to monitor and manage environmental resources

- **Theia** Platform aims to facilitate the use of satellite images and to provide services and spatial data with added value for continental surface www.theia-land.fr
  Target audience: scientific community and public policies aiming to monitor and manage environmental resources

- **Hellenic National Sentinel Data Mirror Site** (HNSDMS) offers searching, cataloguing, sorting and dissemination capabilities of Sentinel products over the region of South & Southeastern Europe, Middle East and North Africa https://sentinels.space.noa.gr/
  Target audience: scientific community, researchers, public policy decision making, space industry

- **Catapult** provides **Satellite Applications** helping organization to enhance satellite based services and market https://sa.catapult.org.uk/
  Target audience: scientific and academic community, public policy decision making, space industry, commercial service providers

LAZIO CONNECT
Copernicus Relays

Copernicus – Data Access
Key Links 2/3

- **CloudEO** is a platform dedicated to delivering meaningful geo-answer for those who use geodata. It offers innovative geo-infrastructure that combines data, software, analytics and apps to allow billions of devices to request, obtain and use geodata. www.cloudeo-ag.com
  Target audience: end users and geoservices developers, geodata & geoservices providers

- **Earth Observation Data Centre for Water Resaurces Monitoring (EODC)** provides collaborative IT infrastructure for archiving, processing, and distributing EO data. Together with multi-national partners from science, the public and private sectors it fosters the use of satellite-derived geoinformation for land and water monitoring, agricultural applications, humanitarian aid and civil security. www.eodc.eu
  Target audience: priviate users, regional autority, non-governmental organizations and environmental agiencies

- **Sinergise** is a GIS company building large turn-key geospatial systems in the fields of cloud GIS, agriculture and real-estate administration. It developed Geopedia, a cloud based crowd-sourcing GIS tool uses by million users annually. https://www.sinergise.com/en www.geopedia.world
  Target audience: priviate users, regional autority

- **GeoStorm** developed by C-S Systèmes information is a simple and ergonomic web application, allowing the creation of enhanced maps. It is the essential tool for decision making and localized data analyzing. http://geostorm.eu/
  Target audience: priviate users, national and regional autority

- **Amazon Simple Storage Service (Amazon S3)** is a service offered by Amazon Web Services (AWS) that provides object storage through a web service interface. It provides access to Copernicus Sentinel Data. Access to Sentinel data is free, full and open for the broad Regional, National, European and International user community. New Sentinel data are added regularly, usually within few hours after they are available on Copernicus OpenHub. https://registry.opendata.aws/sentinel-2/
  Target audience: software developers, end-users

- **Google Earth Engine** is the most advanced cloud-based geospatial processing platform in Google infrastructure for planetary-scale environmental data analysis. Access to Sentinel data and others is free, full and open. https://earthengine.google.com/
  https://developers.google.com/earth-engine/datasets/catalog/sentinel/
  Target audience: software developers, end-users

LAZIO CONNECT
Copernicus Relays

Copernicus – Data Access
Key Links 3/3

- **EO Browser** is a free of charge application for non-commercial use media. It is developed by Sinergise and offers a complete archive of Sentinel-1, Sentinel-2, Sentinel-3, Sentinel-5P and others (ESA's archive). https://apps.sentinel-hub.com/eo-browser/ https://www.sinergise.com/

- **EO Land Viewer** is a simple, intuitive web interface application developed by Earth Observing System (EOS) as a direct market product to the public. LandViewer allows non-expert users to select a geographic area for analysis, an earth observation data types, and then apply their choice of on-the-fly imagery analytics. https://eos.com/lv/ https://eos.com/

- **SeDAS (Sentinel Data Access Service)** is a mechanism designed and developed to allow end users to search and download Sentinel data. The Data Discovery Hub is accessible through the SEDAS portal. This service provides a collection of links to suppliers of satellite derived data and gives users an easy way to find data sources beyond Sentinel. https://geobrowser.satapps.org/#mapviewer:query=2wZM7awkyv86cr2V

- **Sentinel-2 Cloudless Atlas** is a part of the EOxCloudless Product Family developed by EOX which offers source data for viewing and analysis Sentinel 2 and 1 and more data products. https://eox.at/ https://s2maps.eu/ https://cloudless.eox.at/

- **Remote Pixel Viewer** aims to create simple project to `Access, Use, Share` Satellite imagery. Developed by a simple user who has become an Earth observation Specialist and has realised he could help other people to play with it too. https://search.remotepixel.ca/#3/40/-70.5 https://remotepixel.ca https://remotepixel.ca/projects/satellitesearch.html

Copernicus – Data Access
Key Links – Services & Applications

- Exploring the Chile wildfires with Landsat and Sentinel-2 imagery by Timothy Whitehead
- FME Landsat-8/Sentinel-2 File Selector by Safe Software
- Integrate imagery from the Sentinel-2 archive into your own apps, maps, and analysis with the Sentinel-2 image service by Esri
- Python package for working with Sentinel-2 AWS data by Sinergise
- QGIS plugin for Sentinel-2 data by Sinergise
- Sentinel Hub WMS/WMTS/WCS Service by Sinergise
- Sentinel Playground by Sinergise
- Spectator - tracking Sentinel 2, accessing the data and quick preview by Spectator
- Sterling Geo Using Sentinel-2 on Amazon Web Services to Create NDVI by Sterling Geo
- Tutorial for using Sentinel-2 data by Antti Lipponen
- Use the Sentinel Explorer app to explore, visualize, and analyze the entire Sentinel-2 archive by Esri
- Using Vector tiles and AWS Lambda, we can build a really simple API to get Landsat and Sentinel images by Remote Pixel

LAZIO CONNECT

Copernicus Relays

Copernicus – Data Access

Key Links – DIAS

To facilitate and standardise access to data, the European Commission has funded the deployment of five cloud-based platforms providing centralised access to Copernicus data and information, as well as to processing tools. These platforms are known **as Data and Information Access Services** (**DIAS**).

The five DIAS online platforms allow users to discover, manipulate, process and download Copernicus data and information. All DIAS platforms provide access to Sentinel data, as well as to the information products from Copernicus' six operational services, together with cloud-based tools (open source and/or on a pay-per-use basis)

The five DIAS online platforms are:

ONDA **https://www.onda-dias.eu/cms/**

WEkEO **https://www.wekeo.eu/**

sobloo **https://sobloo.eu/**

CREODIAS **https://creodias.eu/**

mundi WEB SERVICES **https://mundiwebservices.com/**

LAZIO CONNECT

Copernicus Relays

Copernicus – Data Access
Key Links – RUS

The Research and User Support (**RUS**) is a service developed and operated by a consortium led by C-S Systèmes information.

RUS is a response to a call made in 2016 by the European Commission that aims to:

- develop an on-line free-access platform to promote the uptake of Copernicus data
- support the scaling up of research and development activities.

The use of Copernicus datasets is a prerequisite to access the RUS Service. Although the RUS software & tools offer is centered around Copernicus products, some of these tools allow (pre-)processing of other datasets. Users can also develop or install their own tools and software, including free open-source and commercial off-the-shelf software.

https://rus-copernicus.eu/portal/

Copernicus – Data Access
Key Links – Software Open Source

- **Esa Toolbox** https://sentinel.esa.int/web/sentinel/toolboxes/sentinel-2
- **SNAP – Sentinel Application Platform** reunites all Sentinel Toolboxes in order to offer the most complex platform for this mission. The basic function includes: opening a product, exploring the product components such as bands, masks and tie point grids. Navigation tools and pixel information functionality also represents some of the basic capabilities. SNAP also provides:
  - Plugin and updates
  - documentation and tutorials for basic user level, end users or developers
  - resources available in the community, forum and latest news on the blog

Download: http://step.esa.int/main/download/

Forum: maintained by the Sentinel Toolboxes project teams who will answer your questions within 24 hours http://forum.step.esa.int/

Github: the world's largest community of developers to discover, share, and build better software: https://github.com/senbox-org

- **Semi-Automatic Classification Plugin –SCP** by Congedo Luca (2016) is a free open source plugin for QGIS that allows for the semi-automatic classification (supervised and unsupervised classification) of remote sensing images. https://fromgistors.blogspot.com/p/semi-automatic-classification-plugin.html
- **IMPACT TOOLBOX** offers a combination of remote sensing, photo interpretation and processing technologies in a portable and stand-alone GIS environment, allowing non specialist users to easily accomplish all necessary pre-processing steps while giving a fast and user-friendly environment for visual editing and map validation. No installation or virtual machines are required. http://forobs.jrc.ec.europa.eu/products/software/
- **Orfeo toolbox** (**OTB**) is an open-source project for state-of-the-art remote sensing. Built on the shoulders of the open-source geospatial community, it can process high resolution optical, multispectral and radar images at the terabyte scale. https://www.orfeo-toolbox.org/ To

Copernicus – Data Access

Key Links – Social Network

Web	http://www.copernicus.eu/
Facebook	https://www.facebook.com/CopernicusEU/
Twitter	https://twitter.com/copernicuseu
YouTube	https://www.youtube.com/channel/UCpuwnbuwGG20enAdE50g6TA
Technical Docs	https://sentinels.copernicus.eu/web/sentinel/home