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esa EOPF SENTINEL ZARR SAMPLES



Setting up the Earth Observation Processing Framework Sentinel Zarr Samples Service

Exciting Updates: Upcoming Plug-ins for ESA EOPF Zarr Data Access

We're thrilled to share that **four new plug-ins** are on the way to **simplify access and interaction with ESA EOPF Zarr data products**! These tools will soon be available, enabling **seamless integration** and **enhanced usability** across different platforms and programming languages.

- **xarray Backend** – Enables direct reading of ESA EOPF Zarr-formatted products into Xarray for analysis and visualization in Python.
(Expected release: mid-April, once the first Sentinel-2 data is available via S3)

- **GDAL Reader** – Extends GDAL with support for the Earth Observation Processing Framework (EOPF), ensuring compatibility with familiar workflows.
(Expected release: end of April)

- **xcube Data Store** – Introduces an EOPF data store for xcube, designed for flexible data cube exploration in Python.
(Expected release: early June)

- **Julia Reader** – Provides seamless access to Sentinel ESA Remote Sensing data in Zarr format for Julia users.
(Expected release: mid-June)

Stay tuned for updates, and visit our **website** to learn more about these plug-ins and how they can support your work with EOPF datasets!

New notebooks and Tutorial Video Available

We're happy to announce that **two new Jupyter Notebooks** have been added to the website, accompanied by a video tutorial guiding users on how to access and run them.

The first notebook, **"Sentinel-2 L1C MSI Zarr Product Exploration,"** walks users through the process of opening, visualising, and plotting Sentinel-2 L1C products in EOPF Zarr format. The second, **"SAFE vs Zarr Metadata,"** provides a hands-on comparison of metadata structures between the SAFE format and EOPF Zarr using GDAL and Xarray on a sample Sentinel-2 L2A dataset.

To access the JupyterHub instance:
- Visit the EOPF Sample Notebooks page.
- Click the rocket icon in the top-right corner of the page.
- In the pop-up window, manually enter https://binderhub.user.eopf.eodc.eu as the URL and click **Launch**.
- You'll be redirected to the JupyterHub authentication portal. Click **Sign in with CDSE IdP**. *Note: You must have a valid CDSE account to log in.*

Once authenticated, the BinderHub instance will launch and automatically load a JupyterHub environment with the EOPF sample service repository pre-cloned.

Whether you're new to working with Zarr or looking to deepen your understanding, these resources are designed to support both learning and practical application.

Webinar recording and Q&A now available

The recording of our first webinar is now available on our website. You'll also find a dedicated document addressing all questions that couldn't be answered during the live session.

Access replay and Q&A

Webinar #2: Working wih Sentinel-2 L2A in Zarr format

This second webinar will offer a hands-on introduction to working with **Sentinel-2 L2A data in the EOPF Zarr format**. Participants will explore the Zarr datatree structure, learn to extract and interpret metadata using Xarray, and see how the format enables more flexible, scalable workflows. A **live demonstration** in Jupyter notebooks will walk through accessing, navigating and analysing data from the EOPF Sentinel Zarr Samples Service. The session will highlight key functionalities, benefits and potential applications, ending with an open discussion for questions and feedback.

📍 **Online**
📅 **Thursday 24 of April, 14:00 PM CEST**

Register

Community Support Platform

To support users of the new data formats, we have launched a dedicated **Community Support Forum,** a space to ask questions, share knowledge, and collaborate. Whether you are looking for help, exchanging tips, or uploading community notebooks, the platform is here to grow a strong network of users.

Community Support Platform

PROGRAMME OF THE EUROPEAN UNION

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