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esa EOPF SENTINEL ZARR SAMPLES



NEWSLETTER #8
October 2025

October EOPF Zarr Updates

Service update:

🚀 **xcube-eopf v0.3.0 is out!** 🎉
We're excited to announce the release of **xcube-eopf v0.3.0**.
You can install it via **conda/mamba** or **pip** and start exploring the new features today.

✨ **What's new?**

Sentinel-3 support — xcube-eopf now provides workflows for generating 3D analysis-ready data cubes from multiple Sentinel-3 tiles.

The workflow includes:
1️⃣ Query tiles using the EOPF Zarr Sample Service STAC API for a given time range and spatial extent
2️⃣ Group items by solar day
3️⃣ Rectify data from the native 2D irregular grid to a regular grid with xcube-

resampling
4️⃣ Mosaic adjacent tiles into seamless daily scenes
5️⃣ Stack the daily mosaics along the temporal axis to build 3D data cubes for each variable (e.g. spectral bands)

Supported products:
sentinel-3-olci-l1-efr — Level-1 top-of-atmosphere radiance from OLCI
sentinel-3-olci-l2-lfr — Level-2 land and atmospheric geophysical parameters derived from OLCI
sentinel-3-slstr-l2-lst — Level-2 land surface temperature from SLSTR

🔗 **Useful links**
GitHub: https://github.com/EOPF-Sample-Service/xcube-eopf
PyPI: https://pypi.org/project/xcube-eopf
Anaconda: https://anaconda.org/conda-forge/xcube-eopf

Docs: https://eopf-sample-service.github.io/xcube-eopf
Example notebook: https://github.com/EOPF-Sample-Service/xcubeeopf/blob/main/examples/sentinel_3.ipynb

New notebooks:

🪶 **openEO Notebook**
Access the notebook
⚙️ **Introduction to Dask Clusters**
Explore the tutorial
📂 **Data Access Tutorial** https://eopf-sample-service.github.io/eopf-sample-notebooks/xarray-eopf-sen3/
View the notebook
🌊 **xarray-eopf Plugin with Sentinel-3 Data**
See the example
🌍 **xcube-eopf Plugin with Sentinel-3 Data**
Try it out
🌿 **Random Forest Land Cover Classification**
Access the notebook

Each notebook is available online for you to explore and experiment with — a great way to deepen your understanding of **EOPF's cloud-native Earth Observation workflows**.

Webinars

We've now reached the 8th session in our webinar series on adopting the new EOPF Zarr data format. Each edition builds on previous insights, providing practical guidance and expert perspectives tailored to diverse user needs. Explore the resources from the latest webinar.

Webinar #8: Access and process Sentinel-1 SLC & GRD in EOPF Zarr



Discover how easy it is to work with EOPF Zarr data!

Join us for a **45-minute practical webinar** introducing how to access and process **Sentinel-1 IW GRD and SLC products** in **EOPF Zarr format** — part of the **Earth Observation Processing Framework (EOPF)** initiative.

This session will showcase how **cloud-native technologies and open standards** are transforming the way **Synthetic Aperture Radar (SAR)** data is stored, accessed, and analysed. Through **live demonstrations**, participants will:

Explore Sentinel-1 SLC and GRD products in EOPF Zarr;
Understand the structure and key differences from the traditional SAFE format;
Apply SAR pre-processing workflows interactively;
Discover sample datasets available through the EOPF Sentinel Zarr Samples project.
A **live Q&A** will follow to answer your technical questions.

📍 **Online**
📅 **Date:** 30 October 2025, **14:00 CET**

Register

EOPF at BiDS25: Advancing Cloud-Native Earth Observation



Co-organised with the **EOPF Toolkit**, two hands-on sessions at **BiDS25** (29–30 September, Riga) showcased the latest cloud-native tools for scalable, user-friendly analysis of **EOPF Zarr Sentinel data**.

The **EOPF Sample Service tutorial**, led by experts from thriveGEO and Brockmann Consult, introduced participants to **Zarr and STAC** for efficient data access and demonstrated new plugins — including the **xarray EOPF backend**, **xcube data store**, and **GDAL/Julia readers** — through a wildfire monitoring exercise in Sardinia.

The following day's **hackathon**, invited participants to develop prototype workflows using the **EOPF Sentinel Zarr Samples Service**, exploring applications of **DGGS/HEALPix**, **metadata harmonisation**, and **performance optimisation**.

All results and notebooks are publicly available in the **EOPF-Zarr-BiDS25 repository**, reflecting the community's commitment to **open science, reproducibility, and interoperability** in Earth Observation.

Read more

EOPF Zarr Community Notebook Competition: Introductory Webinar



thriveGEO recently hosted an introductory webinar for the **EOPF Toolkit Community Notebook Competition**. The challenge invites Sentinel data users and developers to create and submit innovative Jupyter Notebooks that demonstrate cloud-native workflows using the **EOPF Zarr Sample Service**.

Participants have the chance to **enhance their skills**, **contribute to the Earth observation community**, and **win prizes**. Helpful resources, including the *EOPF 101* book, are available to guide you through the process.
If you missed the webinar, you can still explore all the details about the competition, prizes, and how to take part **here**.

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





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