

Austria



Stefan Schneider



Christian Briese



Thomas Geist

The Austrian Collaborative Ground Segment is ...

- ✓ one Cornerstone for the Implementation of the Austrian Space Strategy 2030+
- ✓ an essential Element for Copernicus User Uptake in Austria

The Austrian Space Strategy 2030+ pursues the following six goals:

1. Sustainable development on Earth and in space.
2. Competitive space sector with high added value and sustainable jobs in Austria
3. Scientific excellence for space and Earth exploration
4. Space for all areas of life
5. Talent and diversity for space
6. Space dialogue with the population

<https://austria-in-space.at/en/austria-in-space/austrian-space-strategy.php>



The Austrian Collaborative Ground Segment is ...

- ✓ one Cornerstone for the Implementation of the Austrian Space Strategy 2030+
- ✓ an essential Element for Copernicus User Uptake in Austria

ASAP – Austrian Space Applications Programme ... supporting User Uptake

- ✓ Strategic Focus on Energy Transition, Mobility Transition, Circular Economy, Climate-neutral Cities
- ✓ „Mainstreaming“ of Copernicus in Austria

ZAMG - Data Hub Relay

Stefan Buchberger, Stefan Schneider



ZAMG
Zentralanstalt für
Meteorologie und
Geodynamik

Data Hub Relay

IAT^EX
10.10.2022
Slide 2/8

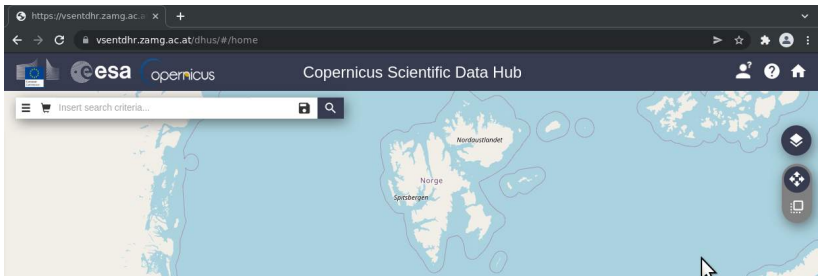


Figure 1: <https://vsentdhr.zamg.ac.at>

Wanted



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Contact Mail: zamg-dhr@zamg.ac.at

National Mirror

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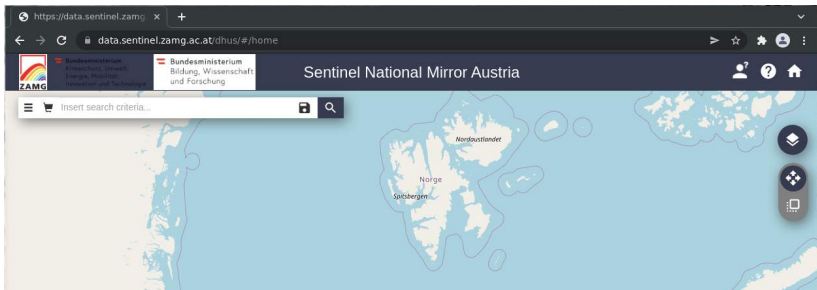


Figure 2: <https://data.sentinel.zamg.ac.at>



Products

- Sentinel S1, S2, S3 (Global)
- Sliding window of 15 Days
- National Mirror: 185 TB served to 1867 Users (2021)

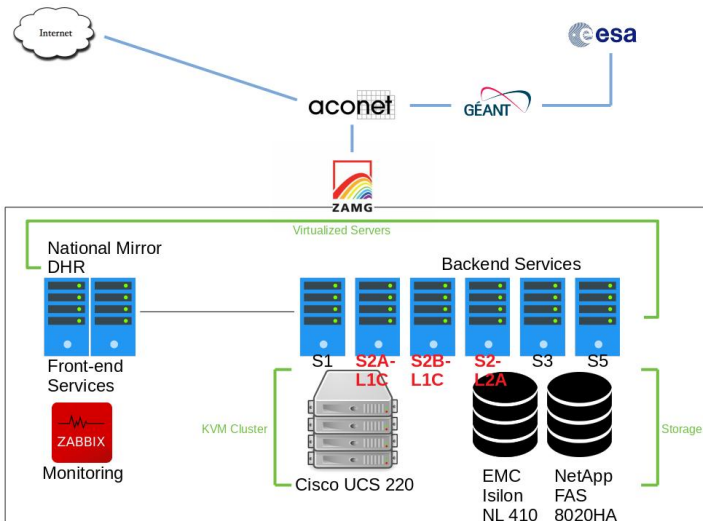
Problems



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Current Infrastructure and Planned Activities



Team



Alexander Jann - Project Lead



Stefan Schneider - Remote Sensing



Matthias Langer - Head of System
Administration



Stefan Buchberger - System
Administration



New System Admin



New System Admin

EODC :: Services based on Sentinel Data

Christian Briese & the EODC Team

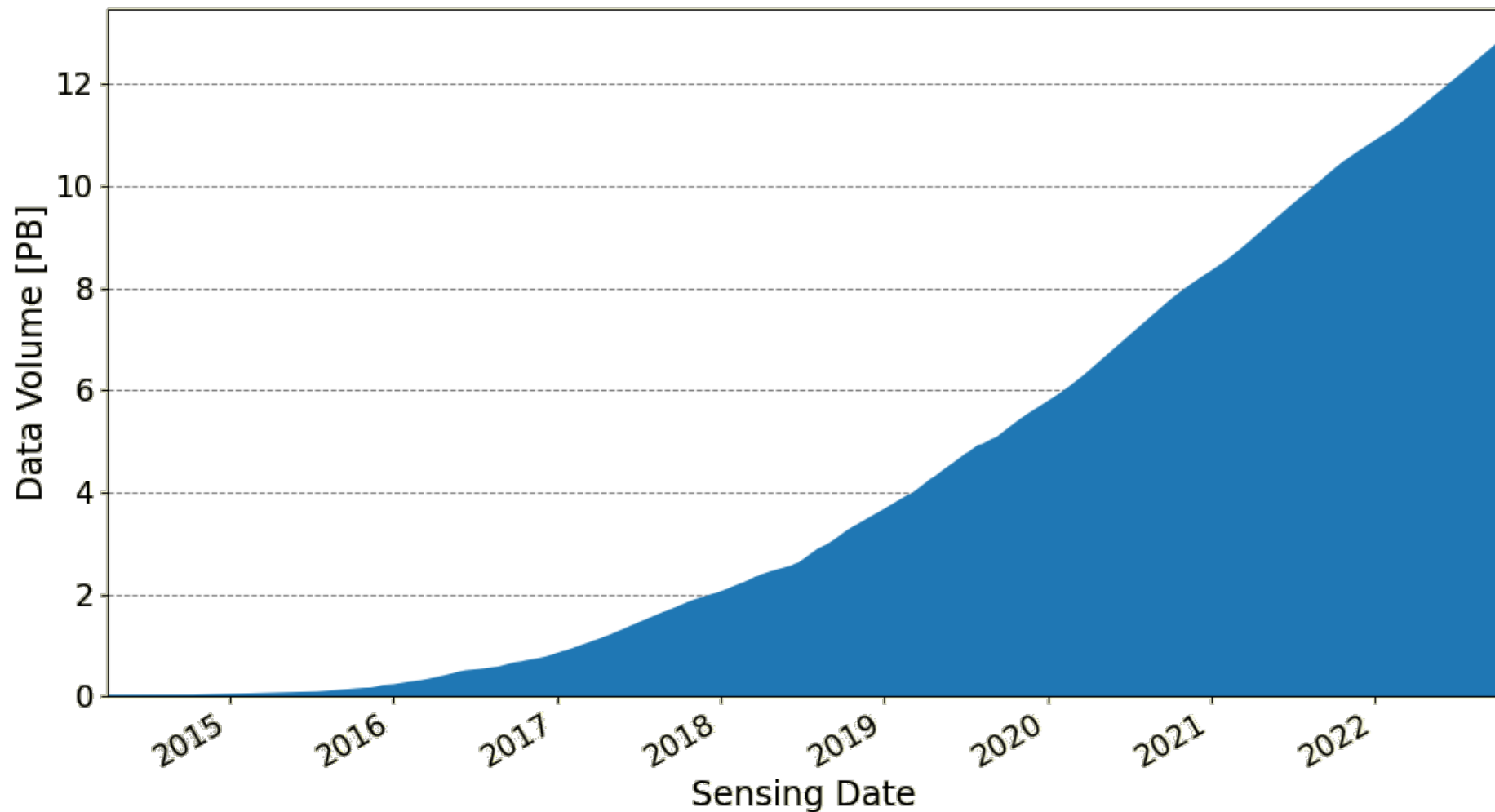
christian.briese@eodc.eu



EODC offers



EO Sentinel Data Archive (Status 10.10.2022)



Services via ESA contracts

- openEO platform



<https://openeo.cloud>



ESA EO Missions
Data Hub Relay

Data Hub Relay operated by EODC

[Access](https://datahub.eodc.eu/)



<https://datahub.eodc.eu/>

- Ended: ESA Missions Data Hub Relay: ESA Missions (contract stopped, service continues)
- New: A(SAR) DATA SERIES OVER AUSTRIA PILOT PROJECT
 - Level-1 ERS-1/2 and Envisat missions Analysis Ready Data (ARD) data
- New: Data Hub Relay Austria
 - ZAMG: Copernicus Data Hub
 - EODC: Evolutions via Advanced Data Services: S-2 pre-processing with Force, Sentinel-5P with ZAMG and advanced cataloguing via STAC

Global Sentinel-1 Data Cube (2015-today)

Sentinel-1 ARD datacube: Concept of **Equi7Grid data structure & time series access** | Example for T3-tile over the USA

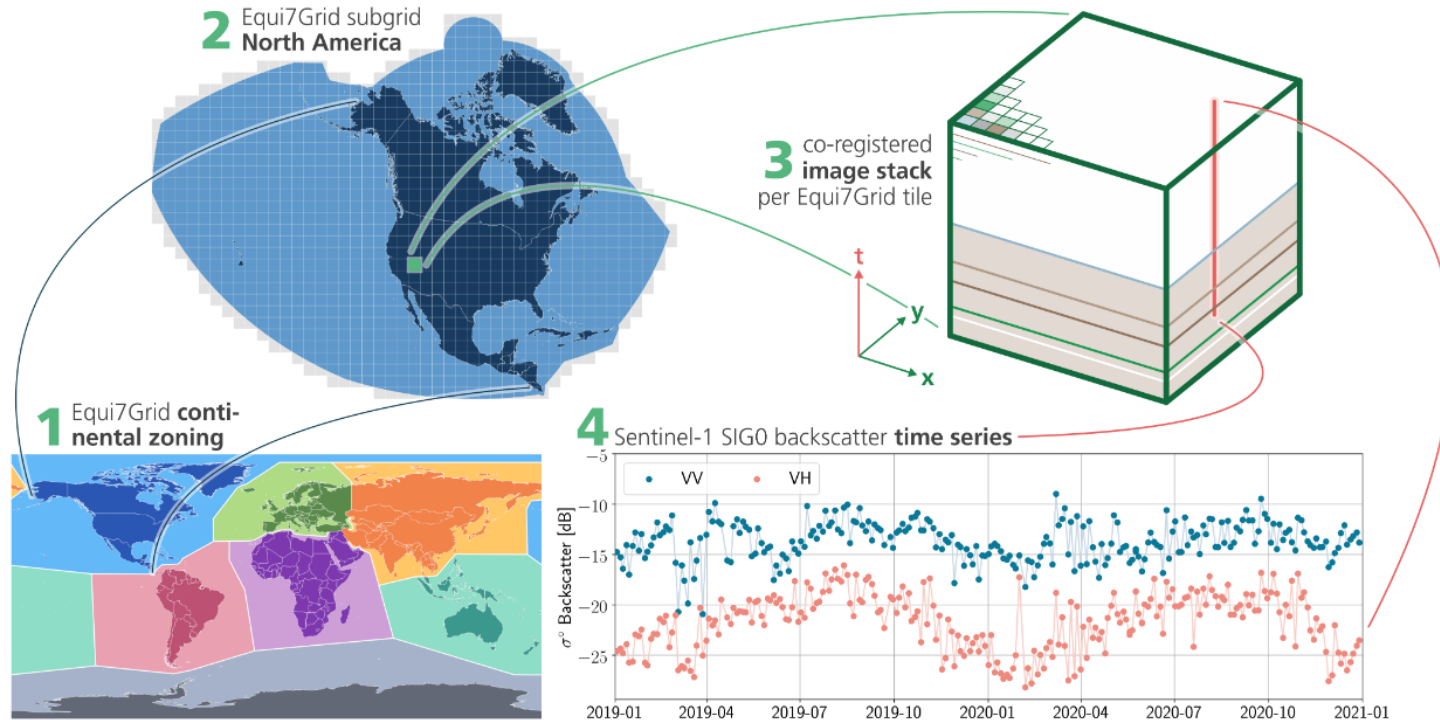


Figure 3. Illustration of the Equi7Grid, its continental zoning, its tiling, and the resulting data structure. Each layer of the individual image stacks corresponds to one Sentinel-1 acquisition with a unique time stamp. Sentinel-1 IW scenes are generally split into multiple tiles (20 m-sampled data into 300 km-tiles [T3], 10 m-sampled data into 100 km-tiles [T1]), and the corresponding tiles are filled up with no-data values where the satellite image has no overlap.

Sigma 0

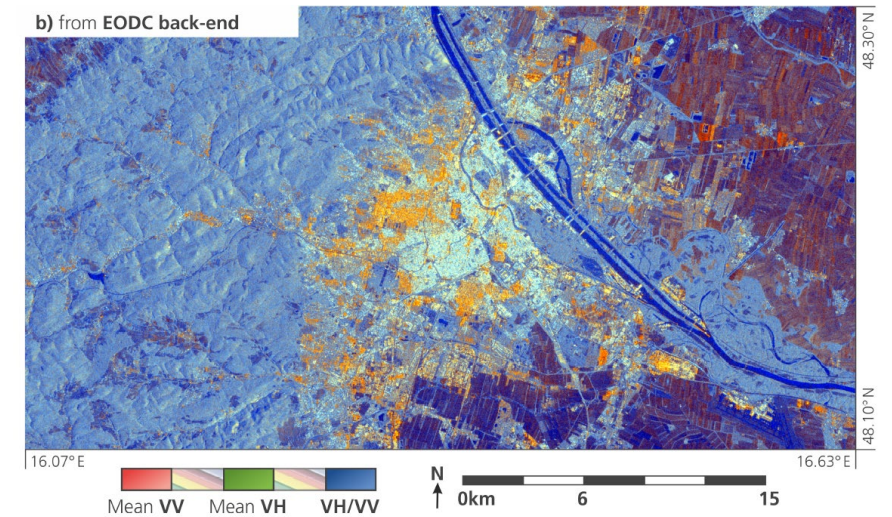


Figure 6. Sentinel-1 VH/VV-polarisation RGB composite (R=daily mean of VV, G=daily mean of VH, and B=VH/VV), showing Vienna on 2nd March 2017, created via openEO, at GEE (top), and at EODC back-end (bottom).



Federation activities

- openEO platform



<https://openeo.cloud/>

Service offering via
ESA Network of
Resources

- EOSC: C-SCALE



C-SCALE

<https://c-scale.eu/>



**EUROPEAN OPEN
SCIENCE CLOUD**



- WEKEO



<https://www.wekeo.eu/>

<https://nor-discover.cloudeo.group/>

EODC: Copernicus



- Copernicus Global Land (C-GLOPS)



<https://land.copernicus.eu/global>

- Copernicus Climate Change Service (C3S2), Lot 4: Land hydrology and cryosphere



- Global Flood Monitoring service

<https://www.globalfloods.eu/technical-information/glofas-gfm/>



EODC activities DigitalTwins, Green Deal

- HORIZON-INFRA-2021-TECH-01: interTwin - An interdisciplinary Digital Twin Engine for science
 - Start: 01.09.2022
 - Prototype of an interdisciplinary Digital Twin Engine (DTE)
 - Disciplinary: High energy physics, Radio astronomy, Astroparticle physics, Climate research, and Environmental monitoring
- Digital Europe Programme (DIGITAL): DIGITAL-2021-CLOUD-AI-01: GREAT: The Green Deal Data Space Foundation and its Community of Practice
 - Start: 01.09.2022 (formal confirmation outstanding)
 - Green Deal Data Space (GDDS) foundation & Community of Practice



interTwin



GREAT

INTERFACE: EODC's contribution to „Mainstreaming“ of Copernicus in Austria

INformaTion accEss seRvice For Austrian CopErnicus and contributing missions data

(INTERFACE)

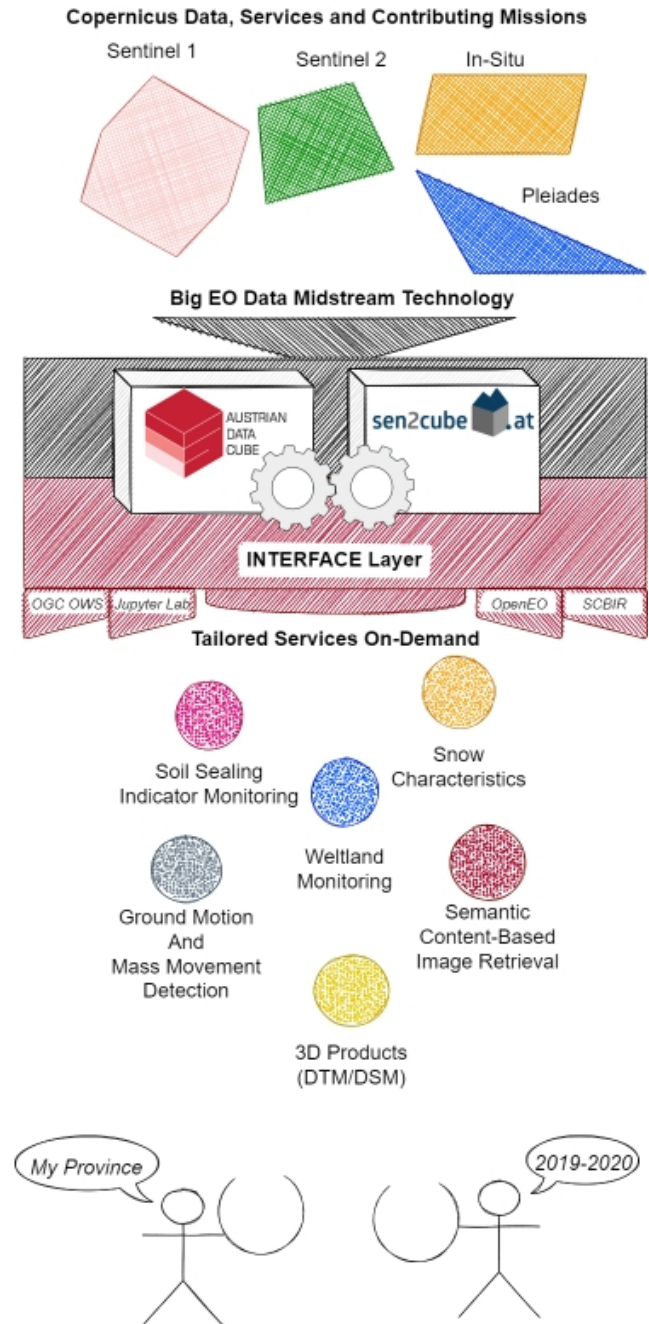
Aim:

Mainstreaming the practical need of Copernicus applications in the Austrian public administration by lowering the entrance barrier to data and products from COPERNICUS and contributing missions.

Result: Easy-to-use national data and information service prototype

Partners

- Earth Observation Data Centre (EODC, Projektleitung)
- Joanneum Research Forschungsgesellschaft mbH
- Paris-Lodron University Salzburg, Department of Geoinformatics (Z_GIS)
- Spatial Services GmbH
- TU Wien
- Environmental Earth Observation IT GmbH
- ZAMG



Thank you for your attention !