

EO data access, infrastructure, challenges & opportunities, applications

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EO Data - Potential

Latest generation of EO satellites enables array of applications:

- Atmosphere
- Marine
- Land
- Climate Change
- Security
- Emergency

...on global scale at high spatial and temporal resolution

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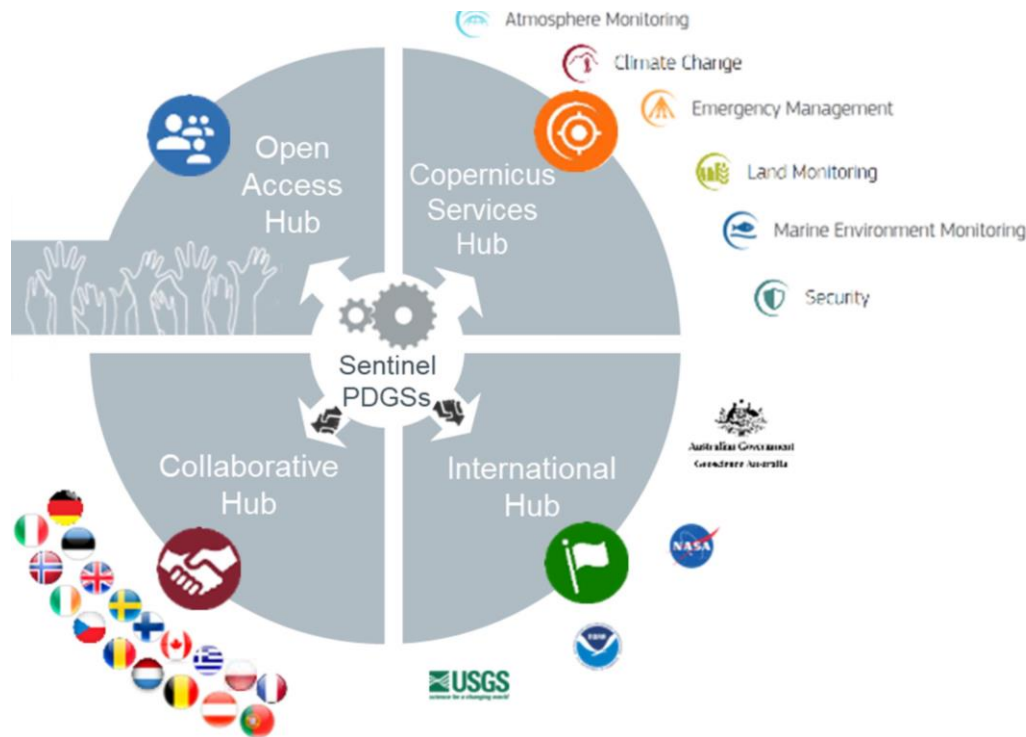
- Atmosphere
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- Emergency



Free and open data access

...on global scale at high spatial and temporal resolution

Data distribution via Copernicus Hubs



National Mirrors

Copernicus Open Access Hub	Collaborative Hub	International Hub	Copernicus Services Hub
Self Registration 	Collaborative Users Data Hub Relay Users 	International agreements 	Registered Users DIAS Partners
Oldest S1 products removed following introduction of LTA	Node 1: 30 days Node 2: 2 weeks Node 3: 3 weeks	3 Weeks	Oldest S1 products removed following introduction of LTA
Sentinel-1 NTC Sentinel-2 Sentinel-3 (PreOps) Sentinel-5P (PreOps)	Sentinel-1 NRT & NTC Sentinel-2 Sentinel-3 SRAL & OLCI	Sentinel-1 NTC Sentinel-2 L1C Sentinel-3 SRAL	Sentinel-1 NRT+ NTC Sentinel-2 Sentinel-3 SRAL & OLCI
Max 2 Concurrent Downloads	Max 10 concurrent downloads per Node	Max 10 concurrent downloads	Max 10 concurrent downloads

**Hubs (will) only provide rolling archives of ALL products
[Historic data in LTA]**

Austrian Initiatives for Copernicus Data Access

National Mirror & Data Hub Relay

- Rolling Archive
- > 15.000 products received/day (11TB compressed data)
- <https://sentinel.zamg.ac.at>



EODC Earth Observation Data Centre

- Long Term Archive (LTA)
- Local, regional and global data
- Cloud computing
- High Performance Computing
- Petabyte-scale data storage
- Added value

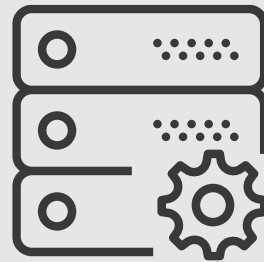


EO Data - Challenges

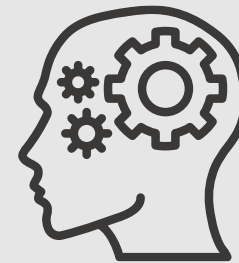
Long journey from data to information...



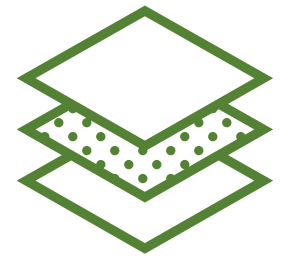
Storage Capacity



Compute Power



Knowledge



EODC

- New Paradigm in EO Data Processing (Wagner et al, 2014)
 - Data volume and data transfer rates
 - Increasing complexity of algorithms with increasing resolution
- Proposed solution
 - Bring software to data
 - Cooperation & specialisation
- Setup a new public-private organisation to develop the required resources
 - EODC foundation 15th May 2014

EODC Cooperation Network

PRINCIPAL COOPERATION PARTNERS



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www.tuwien.ac.at



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Catalysts GmbH
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www.catalysts.cc



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cleantech and sustainable development,
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www.vito.be



BMNT
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ASSOCIATE COOPERATION PARTNERS



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the National Land Survey of Finland**
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www.fgi.fi



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Remote Sensing Laboratories, Winterthurerstrasse 190,
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United Nations World Food Program
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www.wfp.org



Umweltbundesamt
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<http://www.umweltbundesamt.at/>



**Research Institute for Geo-Hydrological
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3800, Australia
www.monash.edu



AW Software und Technologie GmbH
Mariahilfer Straße 47/3/1, 1060 Vienna, Austria
www.awst.at

EODC Offers

- Infrastructure
 - Storage & Processing power
- Data
- Base services to facilitate to work on the EODC infrastructure

that allow

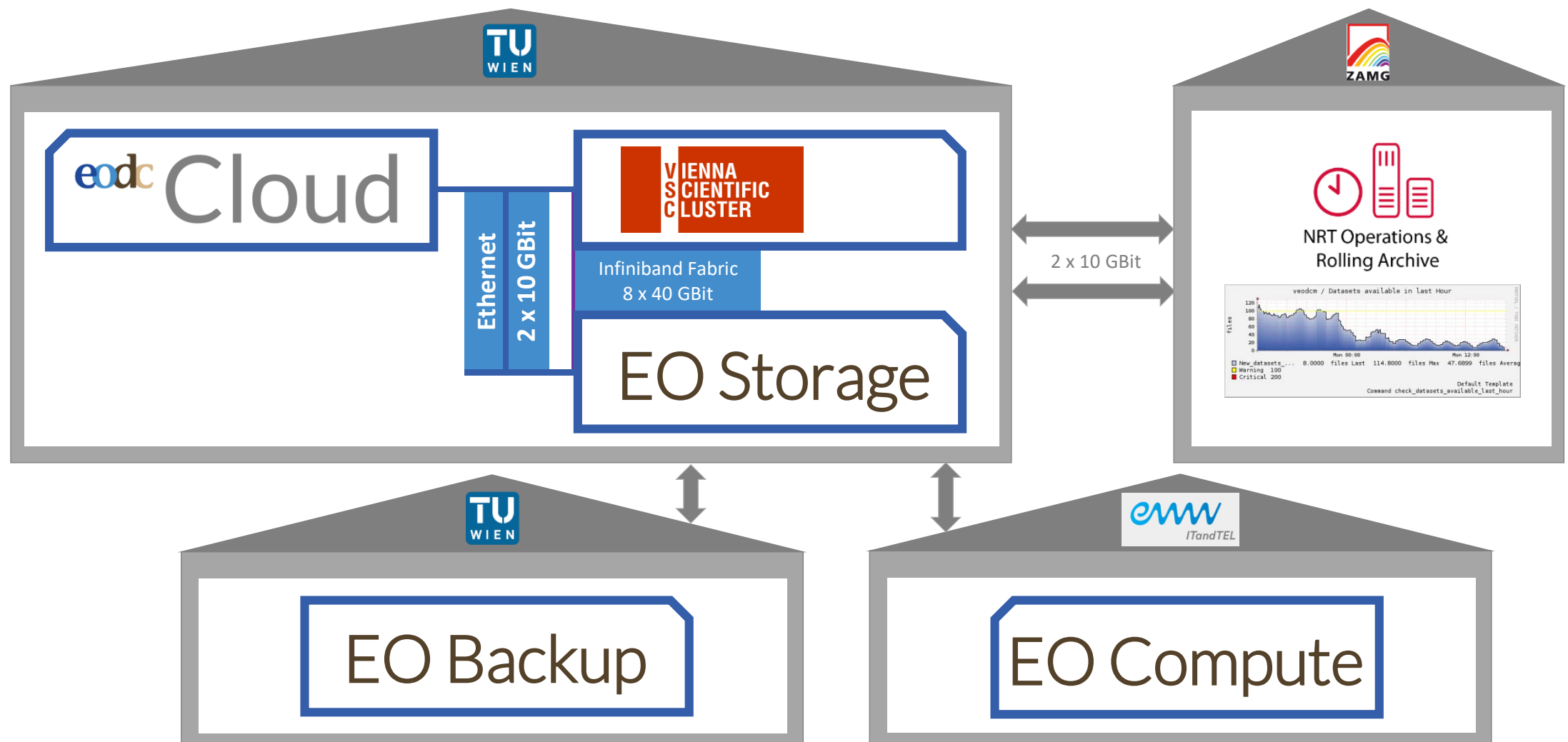
- the development of individual services of the partners and clients
- jointly develop and promote value adding-services

with the aim to

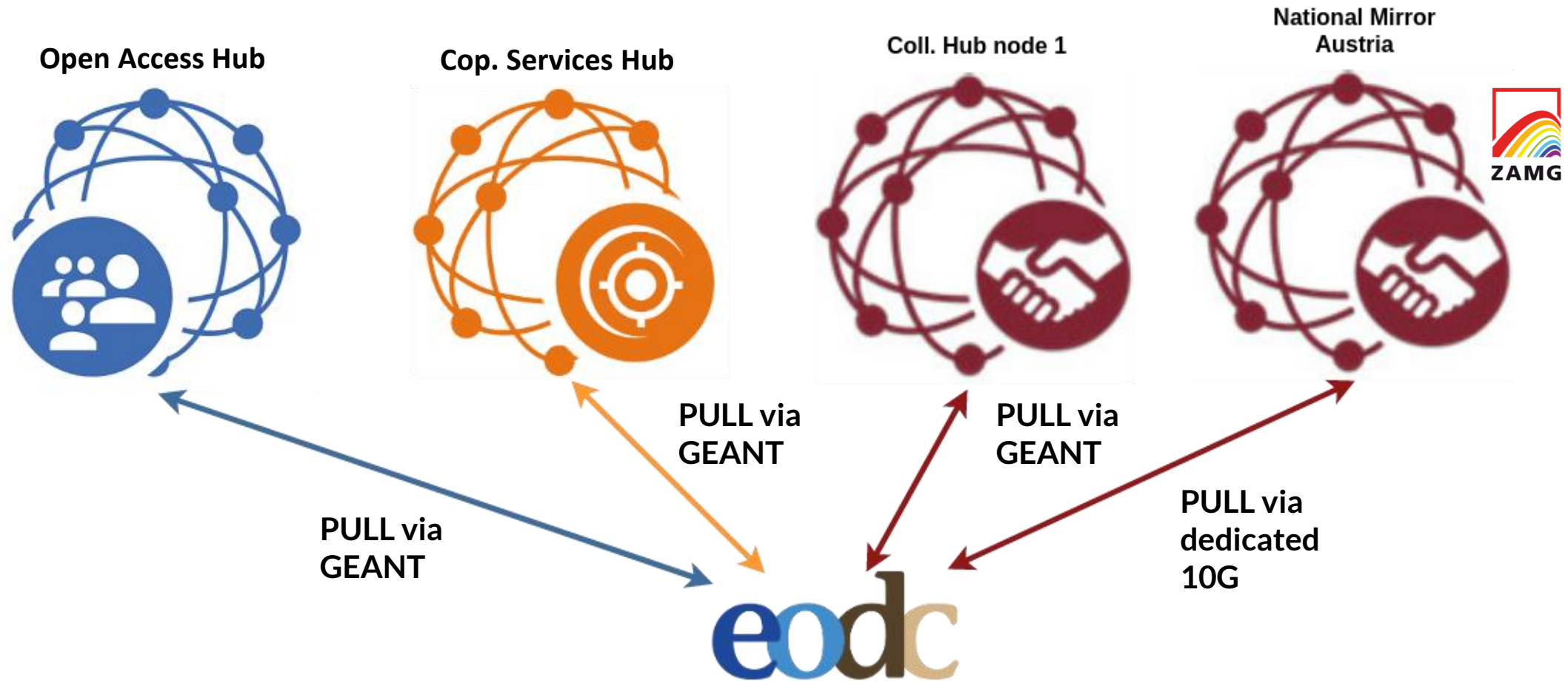
- bring science to operation
- widen the application fields of EO data (national, regional and global applications)

EODC Infrastructure

operated by **eodc**



Current data acquisition scenario



EODC Data Repository

8.180.000

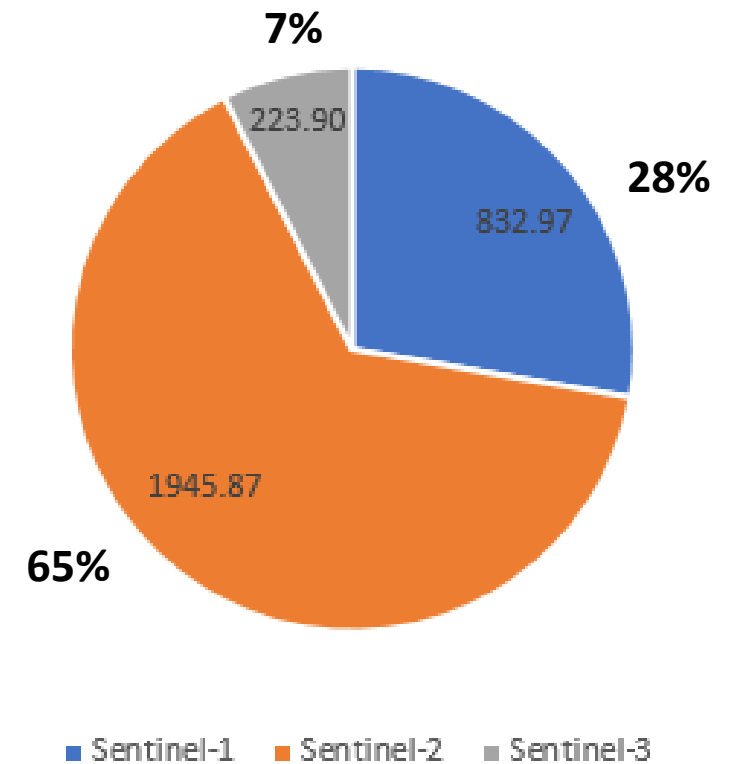
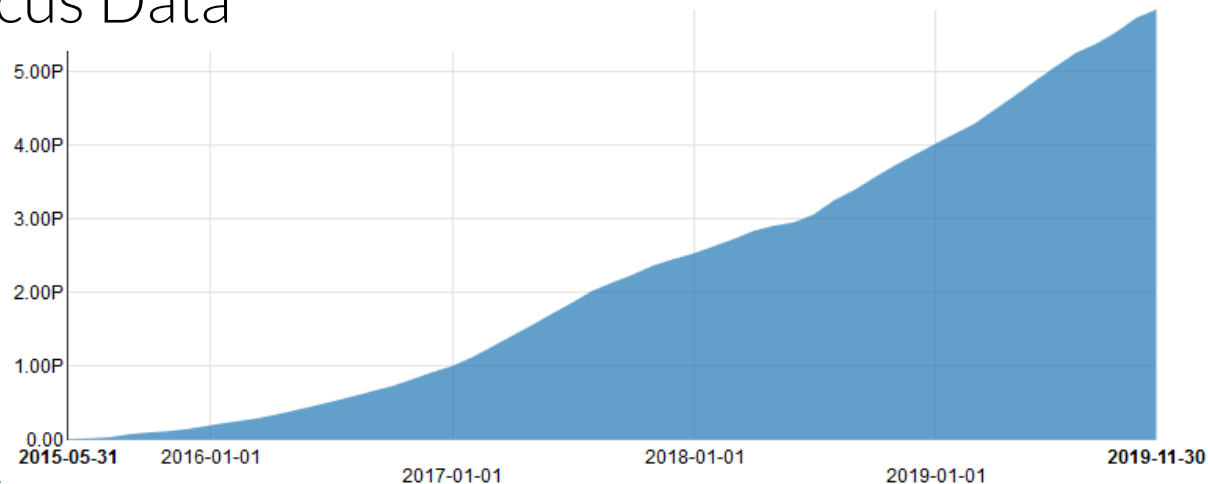
Data sets

5,5 TeraByte

data ingested per day

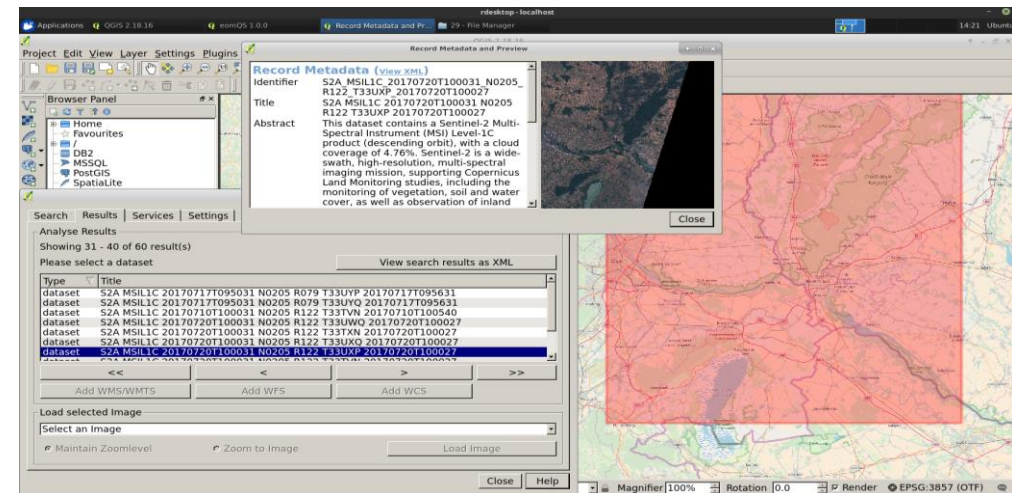
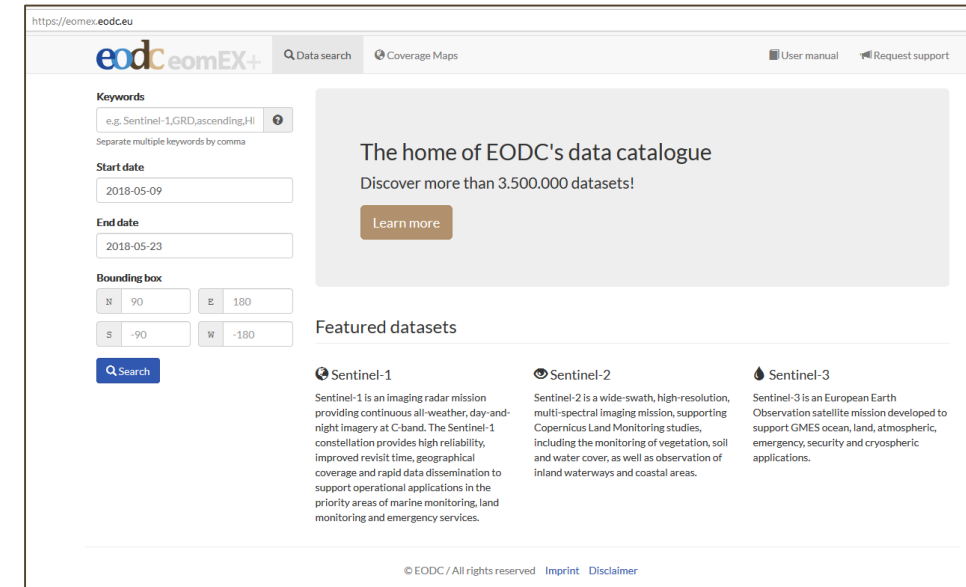
5,42 PetaByte

Copernicus Data

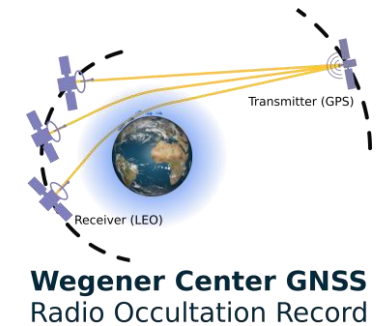


Base Services

- Data status: EO-Monitor
- Metadata Catalogue
 - OGC CSW server: <https://csw.eodc.eu/>
- Metadata Explorer
 - eomEX+: <https://eomex.eodc.eu/>
- Q-GIS plugin
 - eomQS



Data services & tools



Austrian Data Cube:

An EODC service for the Austrian EO user community



 Bundesministerium
Nachhaltigkeit und Tourismus

 Bundesministerium
Landesverteidigung

Project Goals:

- (1) creating **added value data products** for **Austria** (Sentinel-1 and Sentinel-2 composites) following the **regional user needs**, and
- (2) focusing on a **specific realisation** of an **Austrian Data Cube** system providing a **seamless multi-dimensional representation** of the different data products with access possibilities **that simplify the use of the data products**.

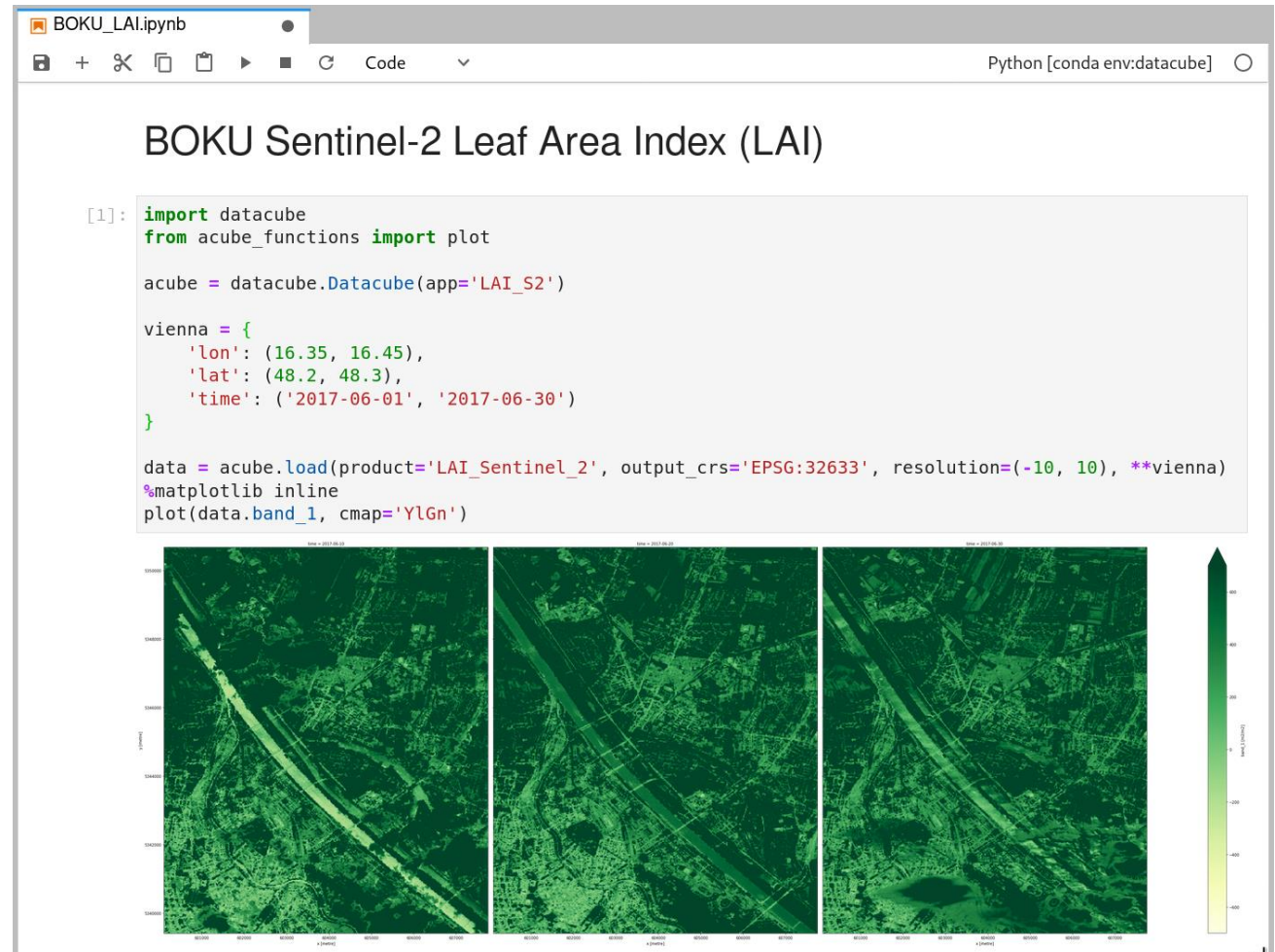
funded by  **FFG**
Forschung wirkt.

Austrian Data Cube

Access to value added products via easy to use interfaces:

- Jupyter Notebooks →
- Geoserver
 - WMS, WCS interfaces
 - QGIS, ArcGIS

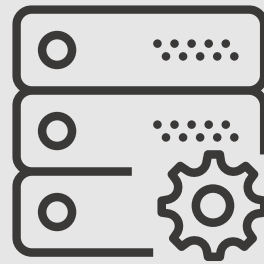
Demo: <https://acube.eodc.eu>



EO Data - Challenges



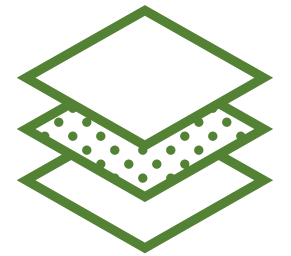
Storage Capacity



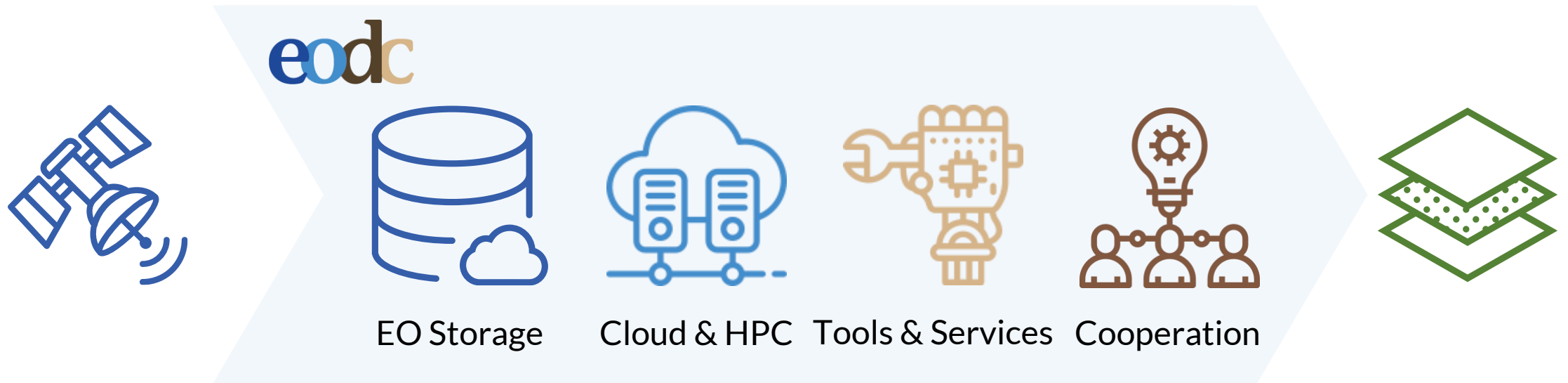
Compute Power



Knowledge



EO Data – EODC Solution



Join us @ EODC!



Partnership

Get on board and support the EODC mission



Individual solutions

Tailored to your needs

More information at www.eodc.eu and office@eodc.eu