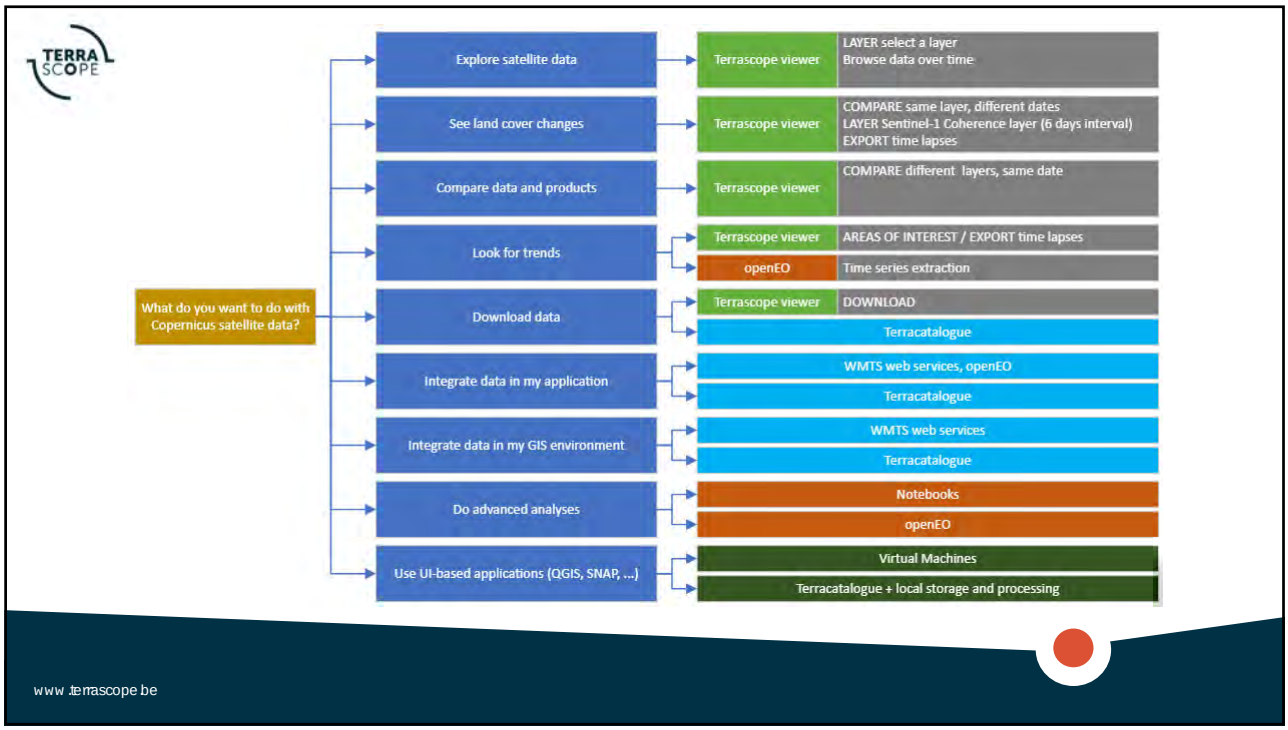
What is Terrascope?

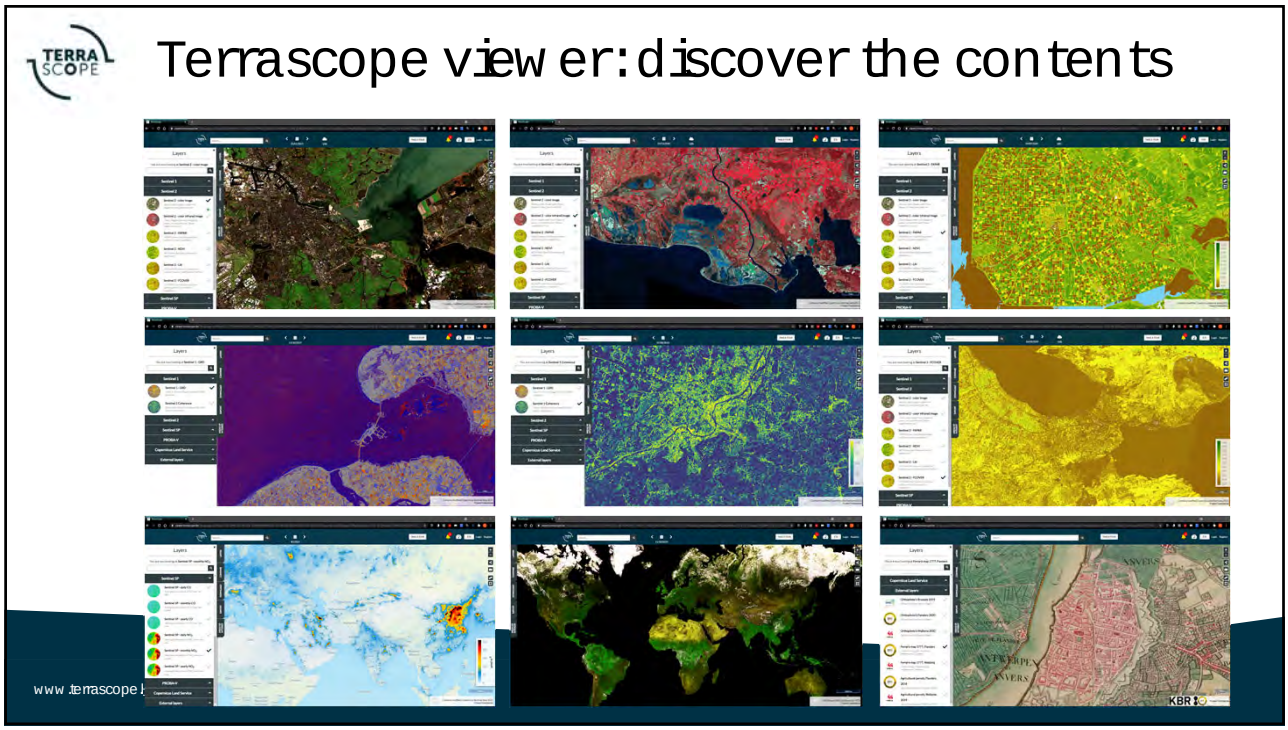
- Belgian Collaborative Ground Segment for Sentinel missions
  Enabling platform
- Easy access to
  - satellite data
  - products derived from satellite data
  - services (OGC web services, time series service)
  - cloud processing capacity (JupyterNotebooks, VirtualMachines, openEO)

  Open for everyone (scientists, public authority, industry, citizens)

  Free to use for everyone
- Funded by BELSPO

www.terrascope.be


What do you want to do with Copernicus satellite data?
Explore satellite data
Terrascope viewer
LAYER select a layer
Browse data over time
See land cover changes
Terrascope viewer
COMPARE same layer, different dates
LAYER Sentinel-1 Coherence layer (6 days interval)
EXPORT time lapses
Compare data and products
Terrascope viewer
COMPARE different layers, same date
Look for trends
Terrascope viewer
AREAS OF INTEREST / EXPORT time lapses
openEO
Time series extraction
Download data
Terrascope viewer
DOWNLOAD
Terracatalogue
Integrate data in my application
WMTS web services, openEO
Terracatalogue
Integrate data in my GIS environment
WMTS web services
Terracatalogue
Do advanced analyses
Notebooks
openEO
Use UI-based applications (QGIS, SNAP, ...)
Virtual Machines
Terracatalogue + local storage and processing
www.terrascope.be


Terrascope viewer: discover the contents
www.terrascope.be

Terrascope product portfolio

- Sentinel-1 – Active – Synthetic Aperture RADAR
  - BENELUX area
  - Ground Range Detected (GRD) sigma 0
  - coherence
- Sentinel-2 – Passive – visible and infrared
  - EEA38 countries + Congo, Burundi, Rwanda
  - Natural color, color infrared imagery
  - Vegetation indicators: NDVI, FAPAR, FCOVER, LAI, CCC, CWC
- Sentinel-3 – Passive – visible, infrared, thermal
  - Global, coming…
- Sentinel-5P -Passive – ultraviolet, visible, infrared
  - Global, CO, NO_2, daily, monthly, yearly
- PROBA-V -Passive – visible, infrared
  - Global; vegetation mission

What makes Terrascope stand out?

Analysis Ready Data
- preprocessed (atmospheric correction, georeferencing, …)
- in Cloud Optimized GeoTIFF format
- not just satellite imagery or data, but also value added products
- ✓ a unique long term global vegetation data set (from 1998 onwards)

Analysis tools
- catalogue – where do I find data of interest
- Comparison – see change or different perspectives
- trend analysis – evolution over time

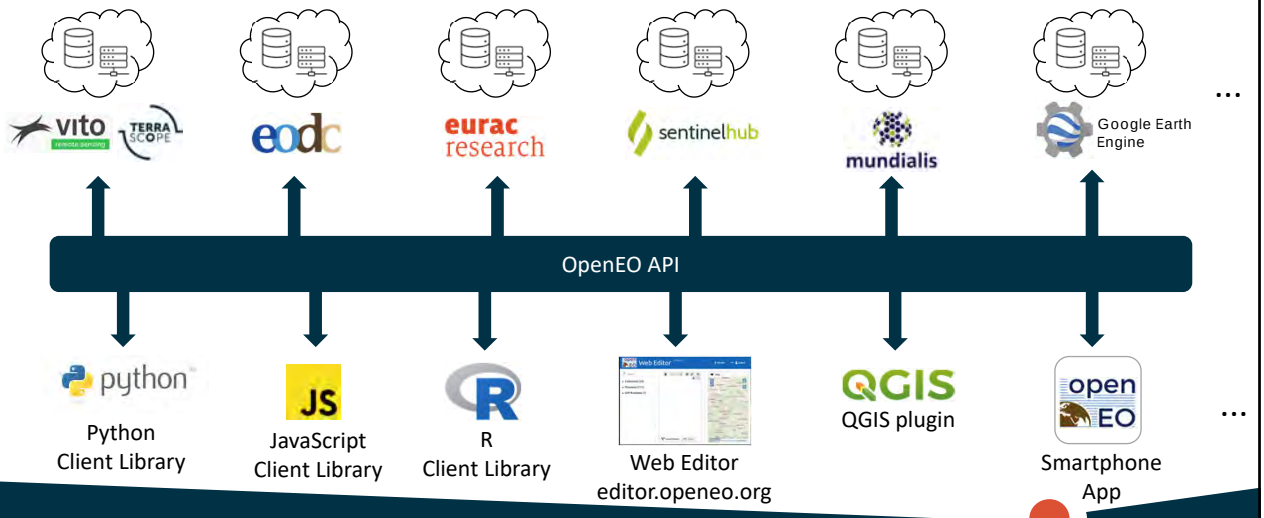
Cloud processing
- bring your analysis to the data
- save on storage and processing power
- free tier, funding opportunity for higher requirements (Network of Resources)

Terrascope is an enabling platform

- Open for all to use
- Open for all to participate in
- Use the data, services, cloud processing for your application
- Offer your application to the public

- But is it still around in two years' time? Can I rely on it? Will I have to change over to another platform and incur more cost?

openEO Ecosystem



Also see https://hub.openeo.org

In summary

- Keep up with paradigm changes
  - Download data, process locally
    >> limited by download, processing power
  - Upload algorithm, process in the cloud
    >> limited by data provision and performance of specific cloud backend
  - Make abstraction of the cloud backend

- Analysis Ready Data is the basis
  - Preprocessing will drive the majority of potential users away
  - But can we generate all of that on-the-fly?