# VAT – VISUALIZING, ANALYZING AND TRANSFORMING BIODIVERSITY DATA

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## VAT - A Summary

- EST. 2013
- Interdisciplinary development team (UMR, Senckenberg)
- Integral component of GFBio for Data Re-use

## An interactive tool for accessing data

- GFBio Data like Pangaea, BioCASe, ABCD
- External Data Sources
  - GBIF
  - Remote sensing data (e.g. SRTM, BioClim)
  - Vector data
- Uploading private data
- Downloading data like the processing results

## Interactively explore and analyze data

- Combination of data
  - Overlays of layers
  - Joining two and more data sets
- Analysis
  - Computation of indicators over time
  - Support for various kind of statistics
- Processing workflows
  - Arbitrary combination of computational operators

## VAT offers synchronized views of the data

- Web-based interface
  - Layers
  - Map panel
  - Data table
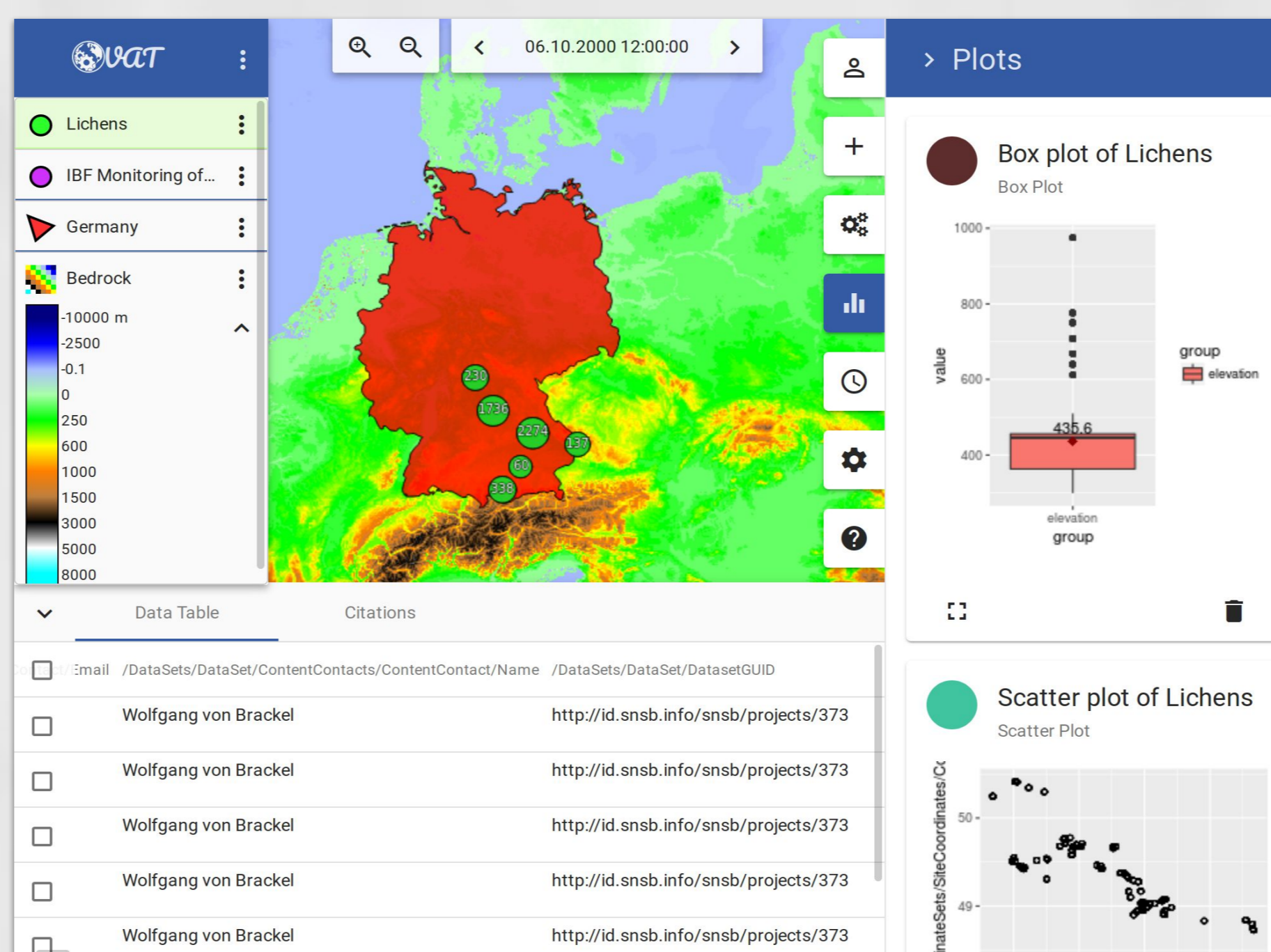  - Plots
  - Provenance & metadata



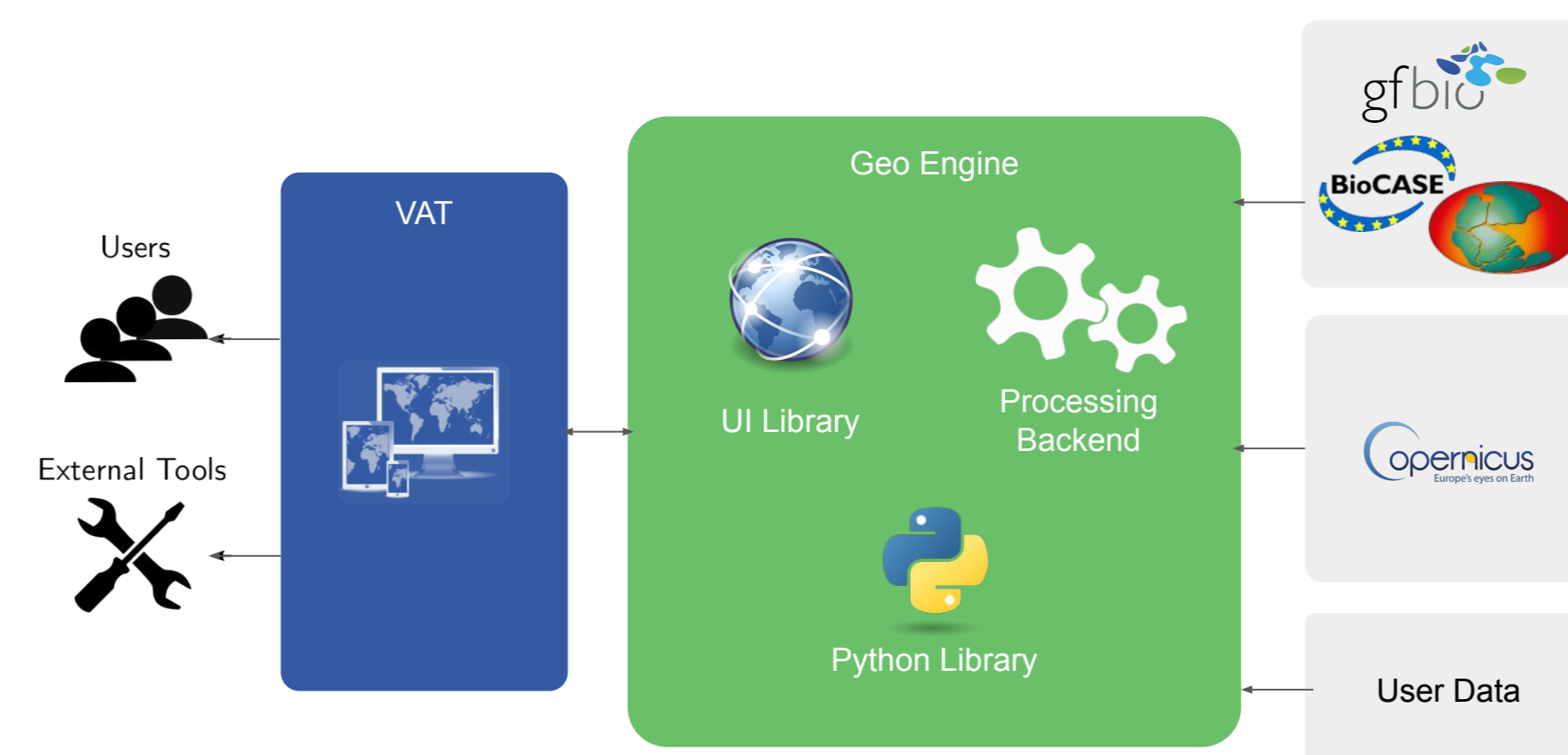*Figure 1: Visualize GFBio data and interactively analyze it*



*Figure 2: GFBio connectivity*

## CONTACT

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## Our Mission in Phase 3 of GFBio

- Maintenance of the system
- Long-term concept for sustainable development
- Community of scientists and developers to use VAT

Our Achievements
- BMWI EXIST research transfer project since 2020
- VAT team members founded Geo Engine GmbH in 2021.



Open-source platform Geo Engine replaces VAT
- Open source
- Offer VAT as Geo Engine app
- Cloud-based platform not only for the GFBio portal
  - Portals for GEO BON, EUMETSAT, Nature 4.0, …
- More functionality available
  - Python library for Juypter Notebooks
  - Linkage with deep learning frameworks
  - Temporal analysis
- Efficient processing
- Geo Engine GmbH steers development of platform

More information: www.geoengine.de

## Next Steps in NFDI4Biodiversity

- Transfer of VAT@GFBio as a cloud-based service in RDC
  - GFBio should be online again in NFDI4Biodiversity

- Integration of Geo Engine as a cloud-based tool for end-users
  - One-click installation of a new Geo Engine instance
  - Connection to the storage layers of NFDI4Biodiversity
  - Customization to obtain a personalized data portal