

Brandenburg 3D- GIS goes underground - a geological 3D model for the public -

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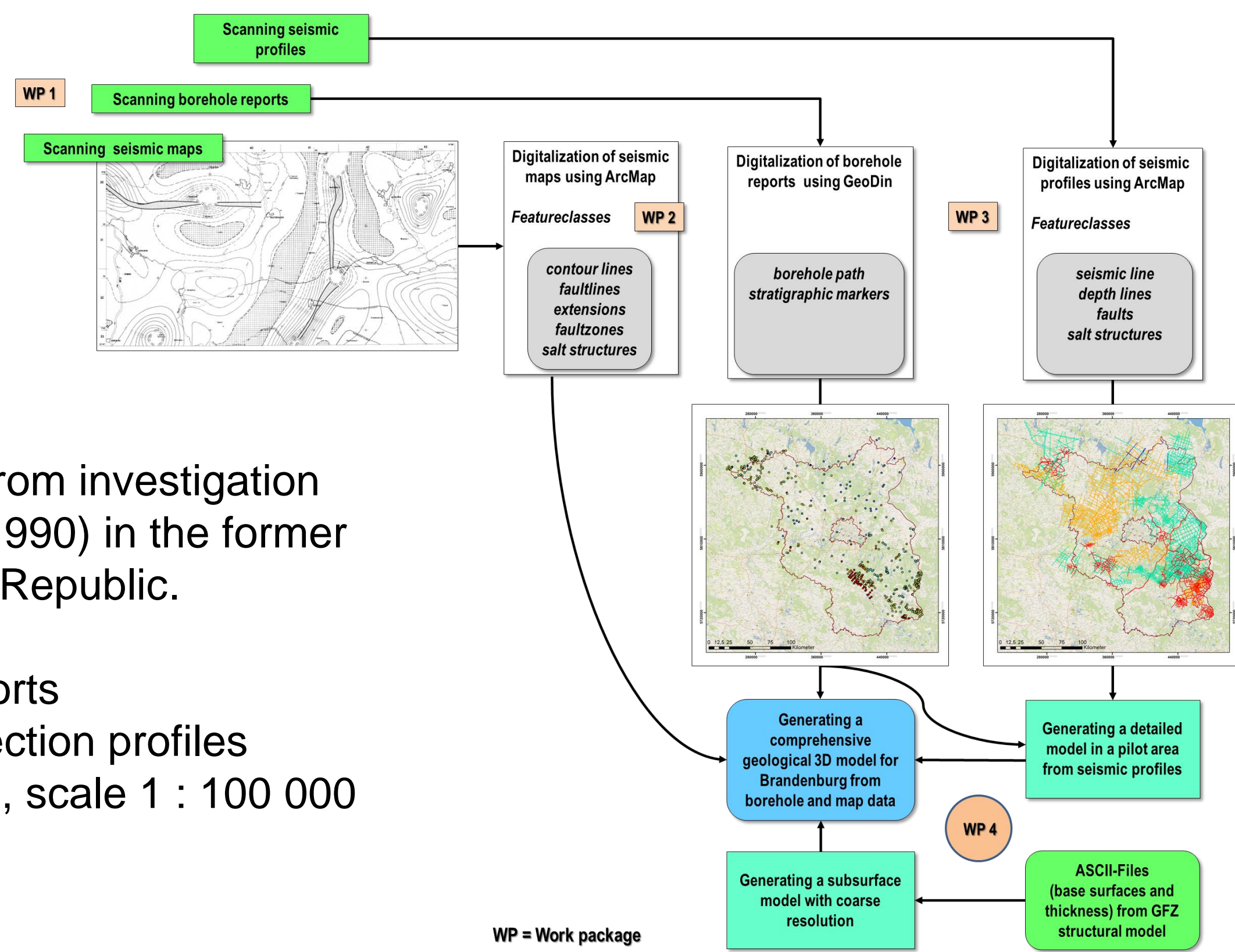
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The Project

To promote the public discussion on issues such as geothermal energy, underground storage or fracking, it is essential to present geological information comprehensible to the public. For that, geological 3D-models are an effective possibility. In addition they can be used as a basis of decision-making on questions concerning the competitive utilization of the subsurface. Within the project Brandenburg 3D (B3D), realized in 2013/2014, the Geological Survey of Brandenburg started digitizing its predominantly analog archive inventory and developed a new 3D model as well as an infrastructure node and a web application to present the results to the public.

Initial Data and Workflow



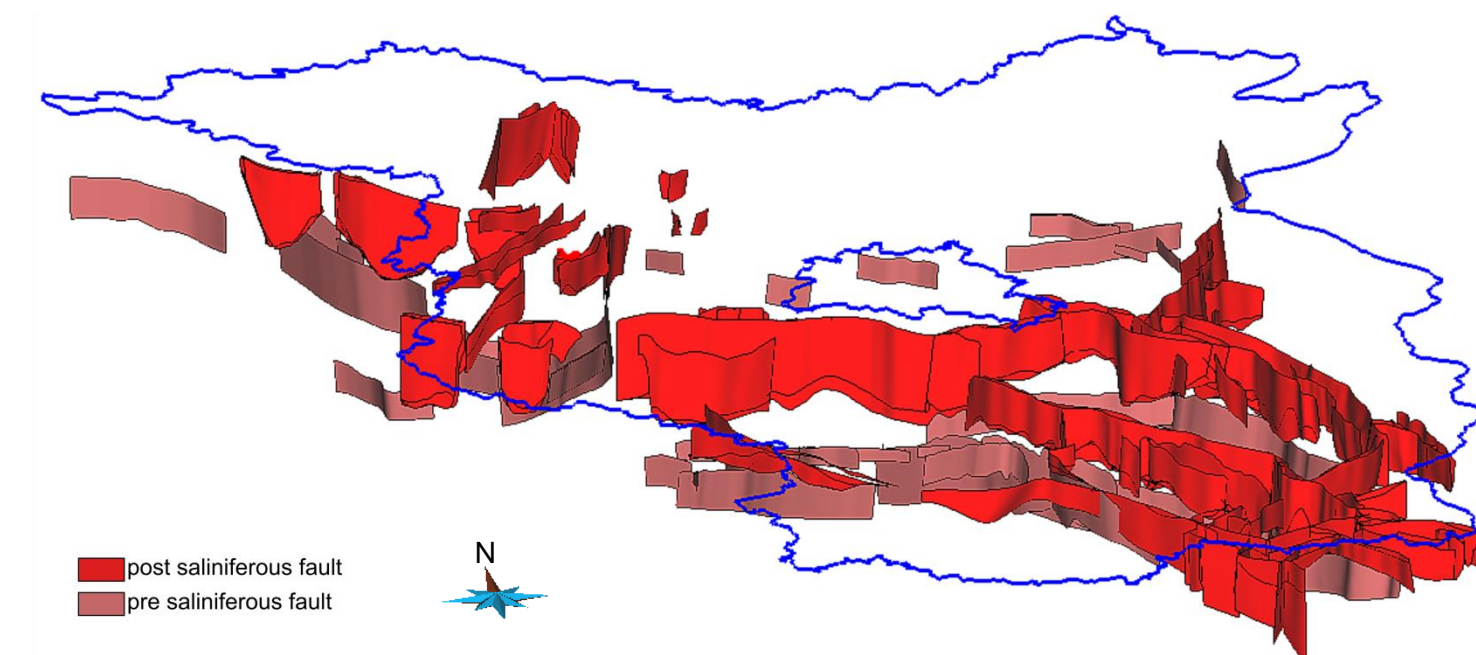
Most data originate from investigation campaigns (1962 – 1990) in the former German Democratic Republic.

- 780 Borehole reports
- 2162 seismic reflection profiles
- 236 seismic maps, scale 1 : 100 000

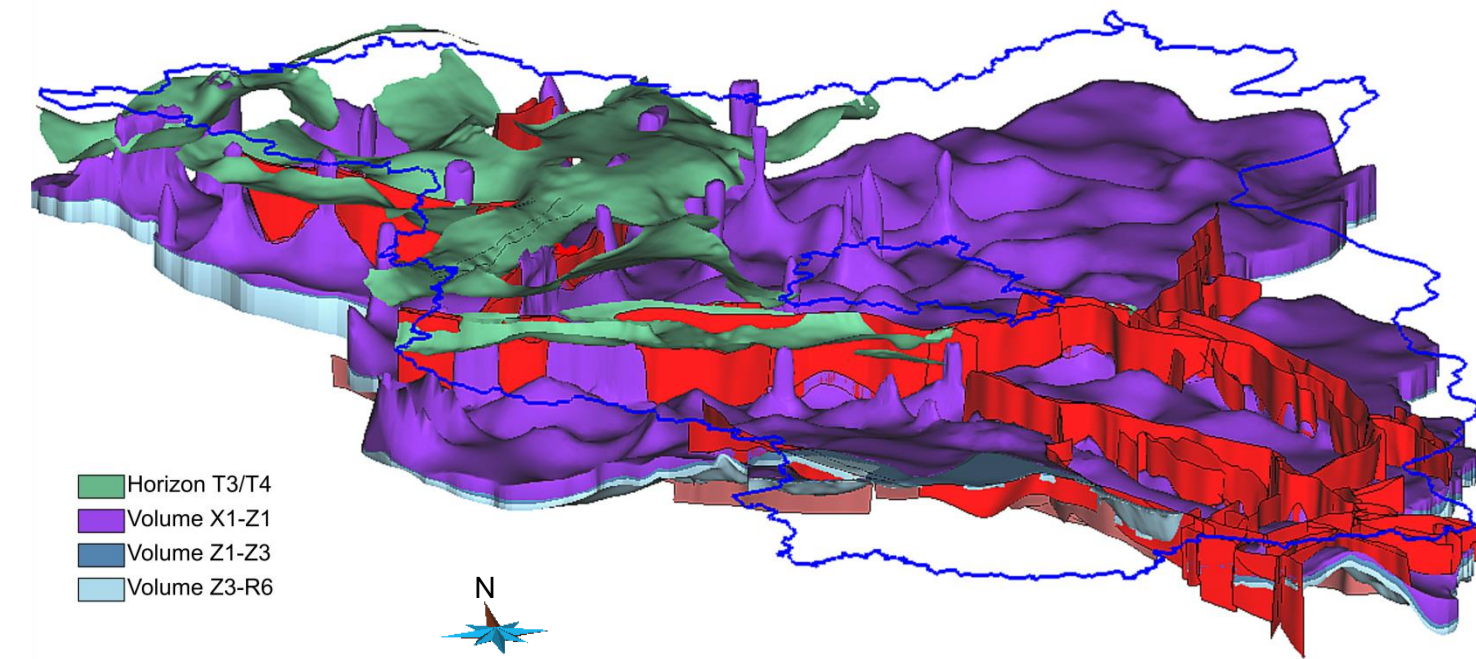
3D Models

comprehensive model

1. Modelling of the pre and post saliniferous fault system

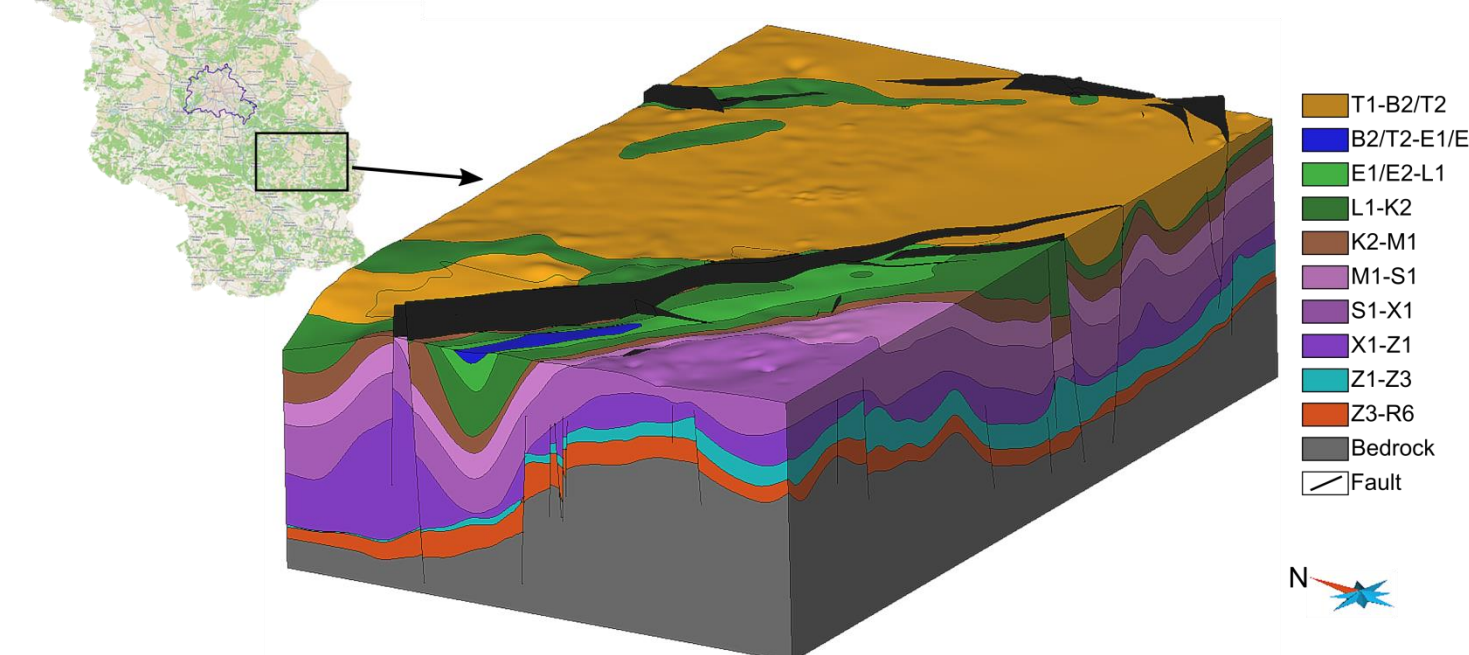


2. Modelling of horizons and volumes considering step 1.

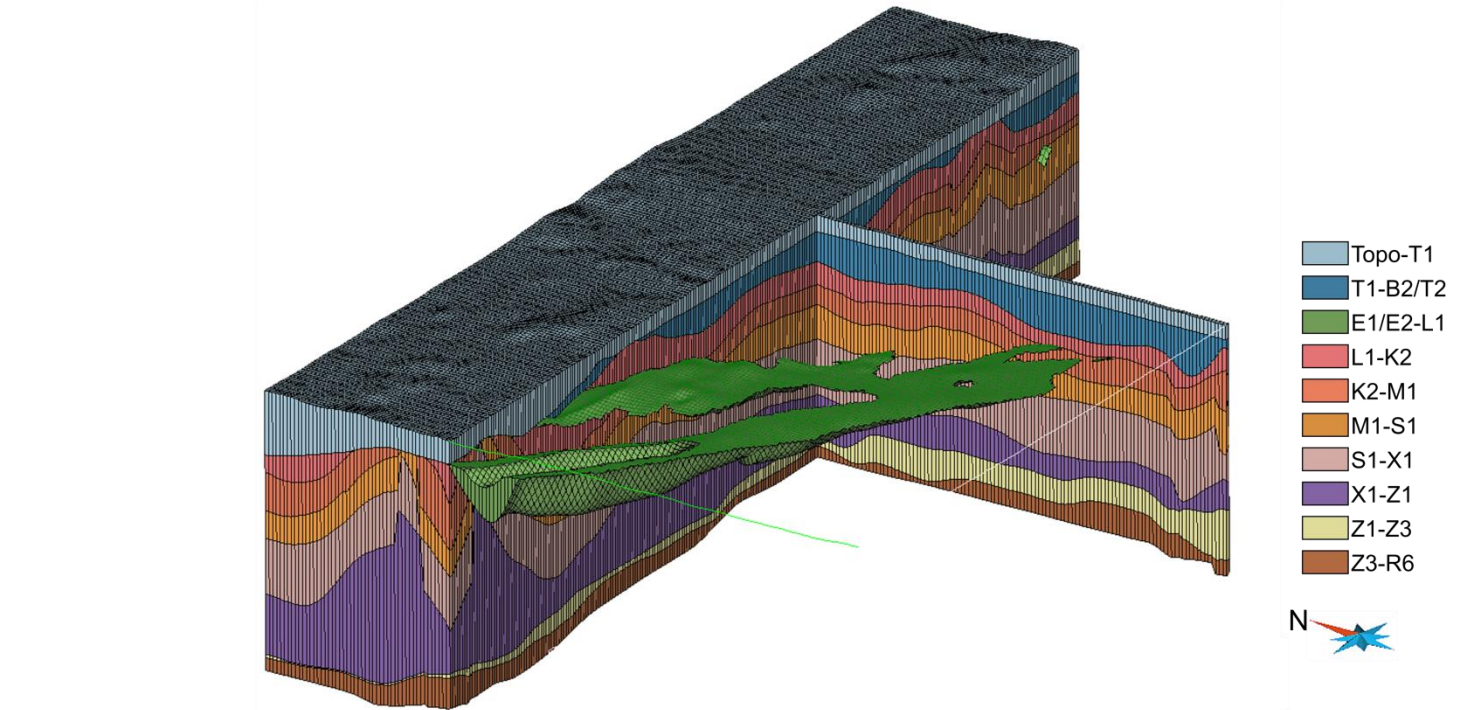


model pilot area

3. Modelling of the pilot area (without cenozoic sediments)



4. Voxelmodel (section of pilot area model)



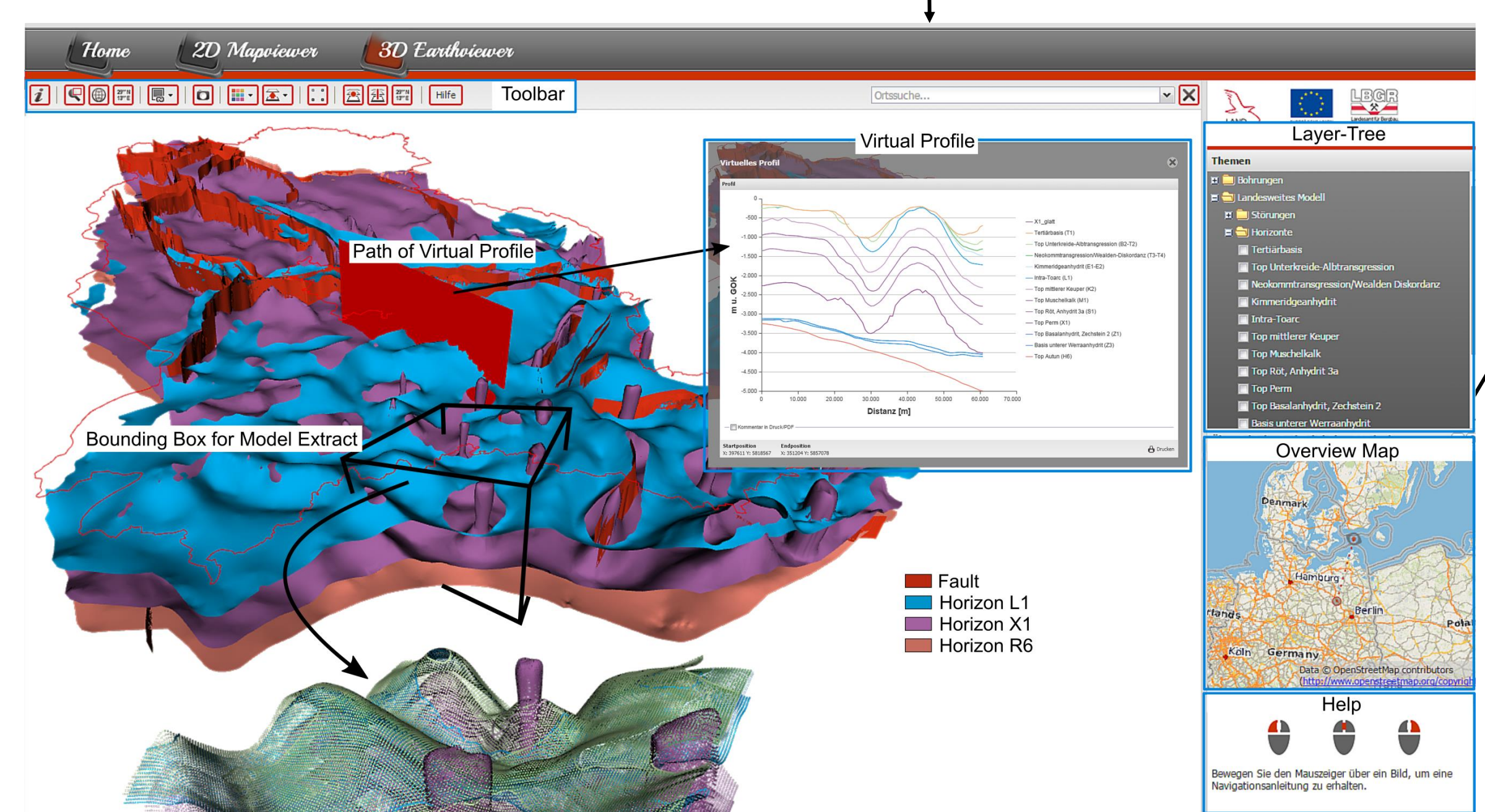
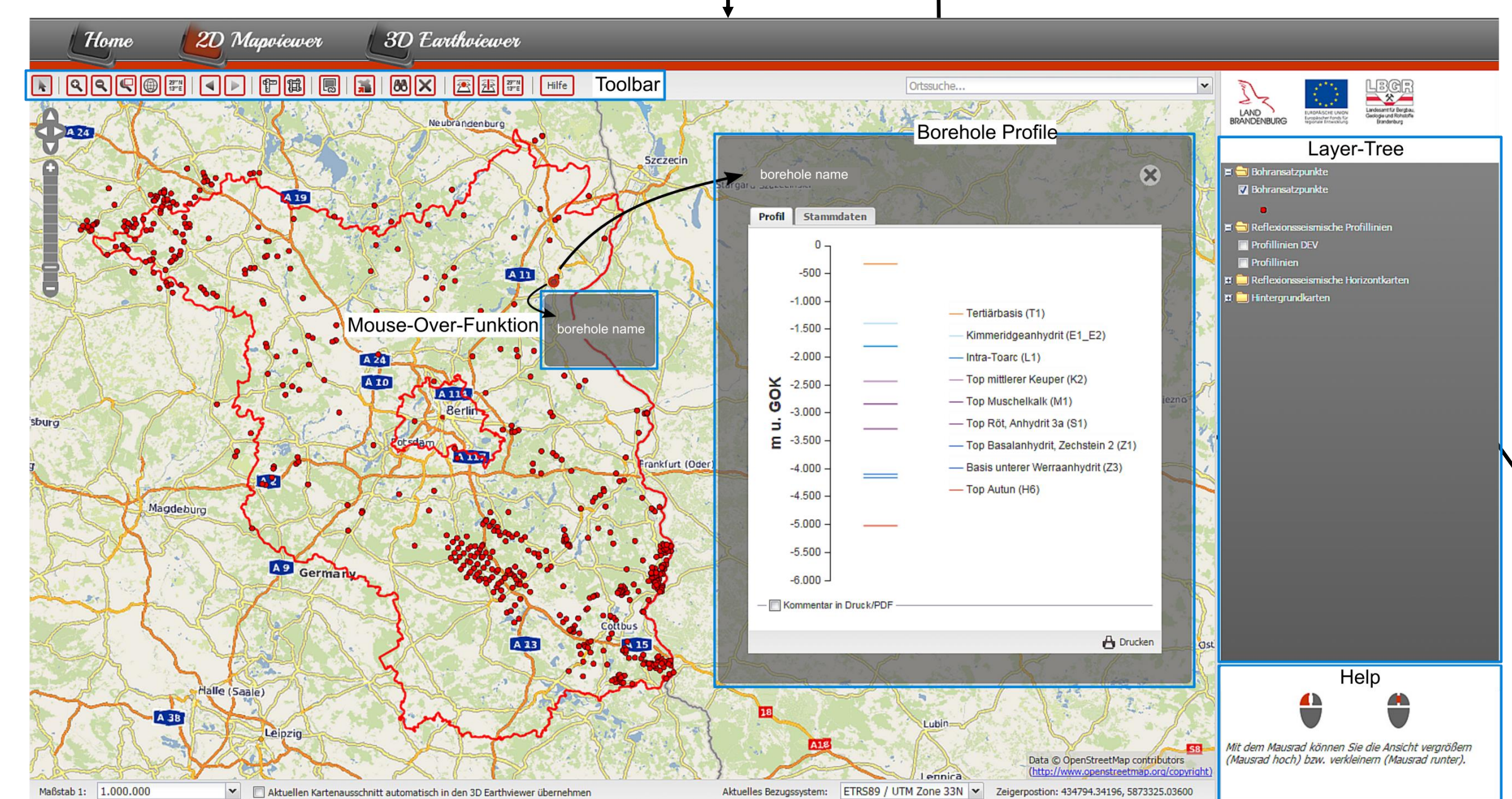
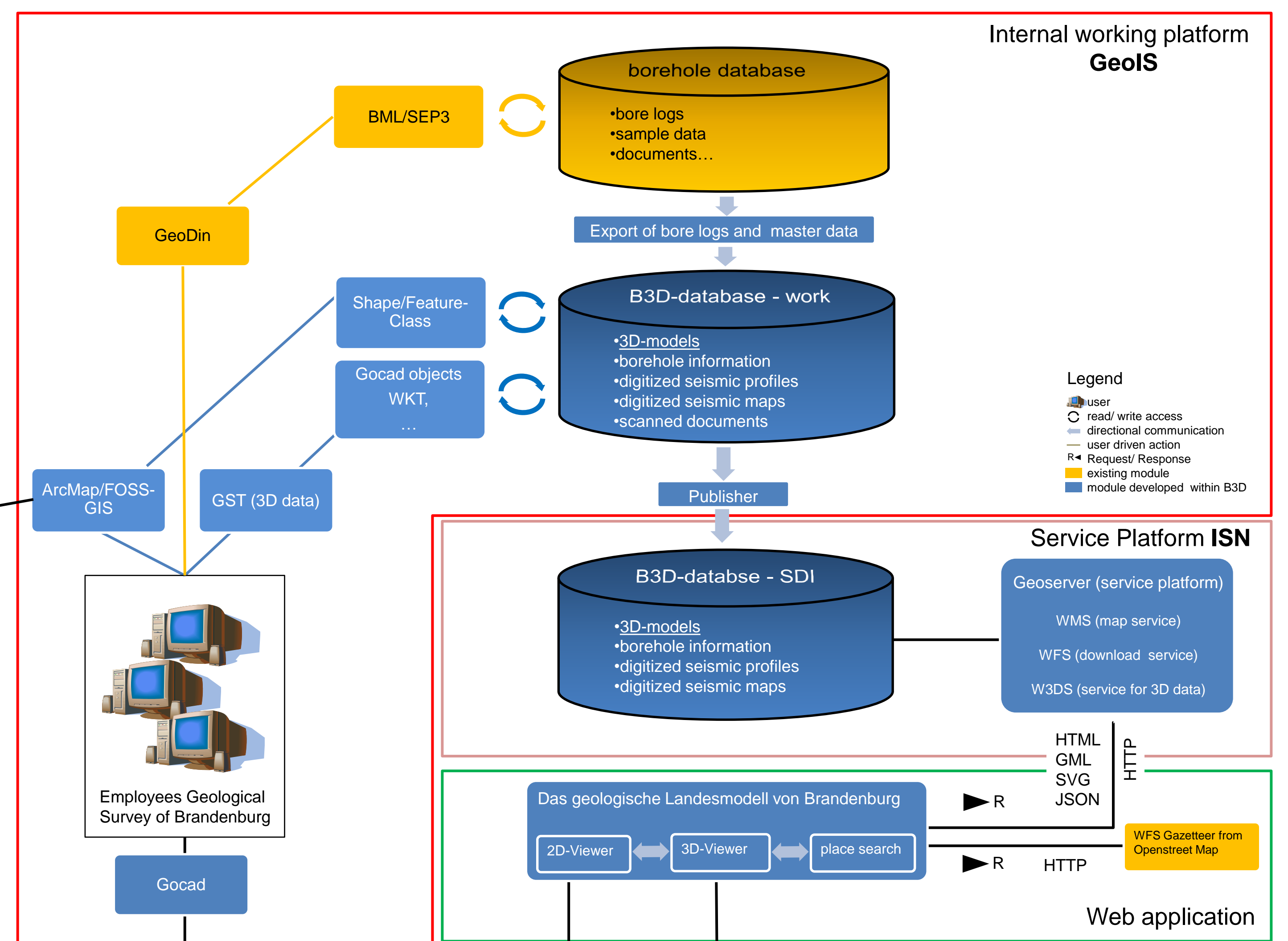
- Comprehensive model containing 13 surfaces (seismic interfaces), along with a large-scale fault-network and a detailed Zechstein-salt surface
- Detailed, regional surface model based on seismic profile data
- Regional voxel model, testing area for parametrization

Legal Aspects

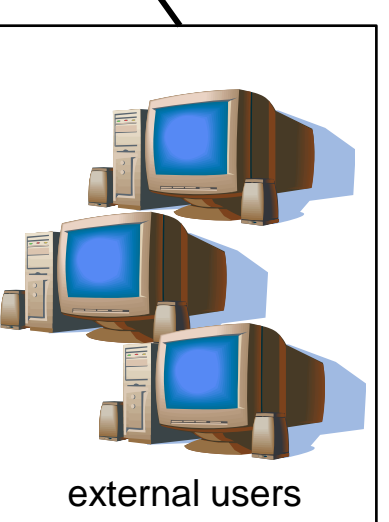
Due to a legal dispute, the online portal is unfortunately not available for the public. Since 22nd April 2014 the Geological Survey is no longer allowed to publish the results of the project Brandenburg 3D via the web application. Under current mining law, a company is the legal owner of the drilling reports and the seismic surveys carried out in the former German Democratic Republic. This company claims that through the use of these data for the development of the 3D model and the following publication of a part of these data, their owner privilege was infringed. By now it is up to the court to make a decision.

Developed IT-Infrastructure

- Composed of free and open source software, e.g. Postgres/Postgis, Geoserver, Javascript Frameworks
- Internal management of 3D data with GST Framework (Giga, Freiberg, Germany)
- Postgres-database containing all digitized data (documents, borehole-data, GIS-data and 3D-data)
- Interfaces to administer and import/export borehole data, GIS Data and 3D models
- Interface to publish validated datasets to database for external users
- Web application with 2D- and 3D-Viewer to present data to the public



Model Extract with original Resolution (Visualization of Nodes)



external users

Partners:



Funded by the European Union - European Regional Development Fund, co-financed by the federal state of Brandenburg and the investment bank of Brandenburg (ILB)

