



**GIGA**  
infosystems

## **GST Framework**

Storing, Managing and Delivering of 3D data



# About us

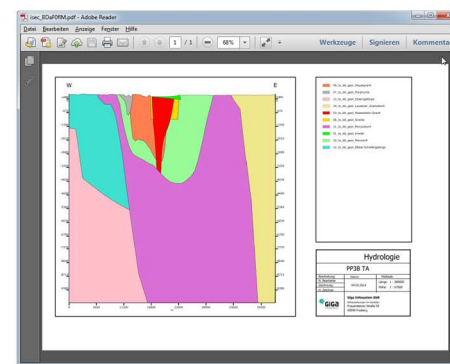
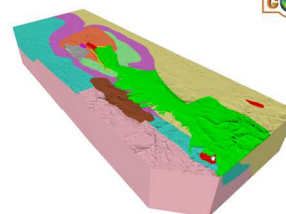
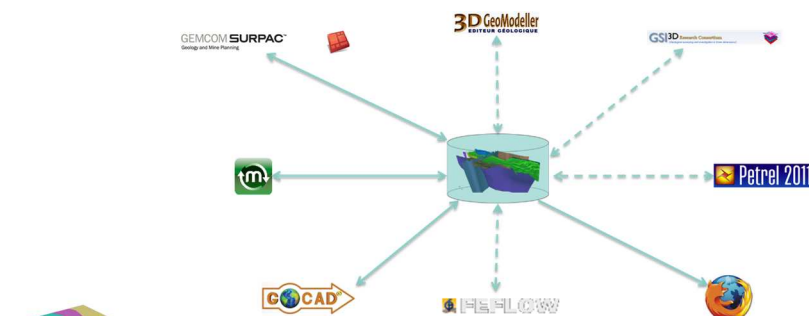
GiGa infosystems

- \* Growing Spin off company from Bergakademie Freiberg
- \* Team of 8 persons (Oct-2014)
- \* **Oracle Partner, Won GIS Award**
- \* Cooperations with
  - \* Midland Valley (MOVE), DHI-Wasy (Feflow), ...
  - \* MIBRAG, Vattenfall, LMBV
- \* Some of our Customers:
  - \* LfU (By), LfULG (Saxony), Swisstopo (Schwizerland), PGI (Poland)



## Database store for 3D geology data

- \* Central storage / high availability
  - \* Access [Formats, Locations, ..]
  - \* Versioning [Progress, Backups, ..]
- \* „Growing“ Models [3D Geology like GIS]
  - \* Extent Models
- \* Realtime coordinate transformation
- \* Section Generation
  - \* Coupling of 3rd party information systems
  - \* Easy information flow

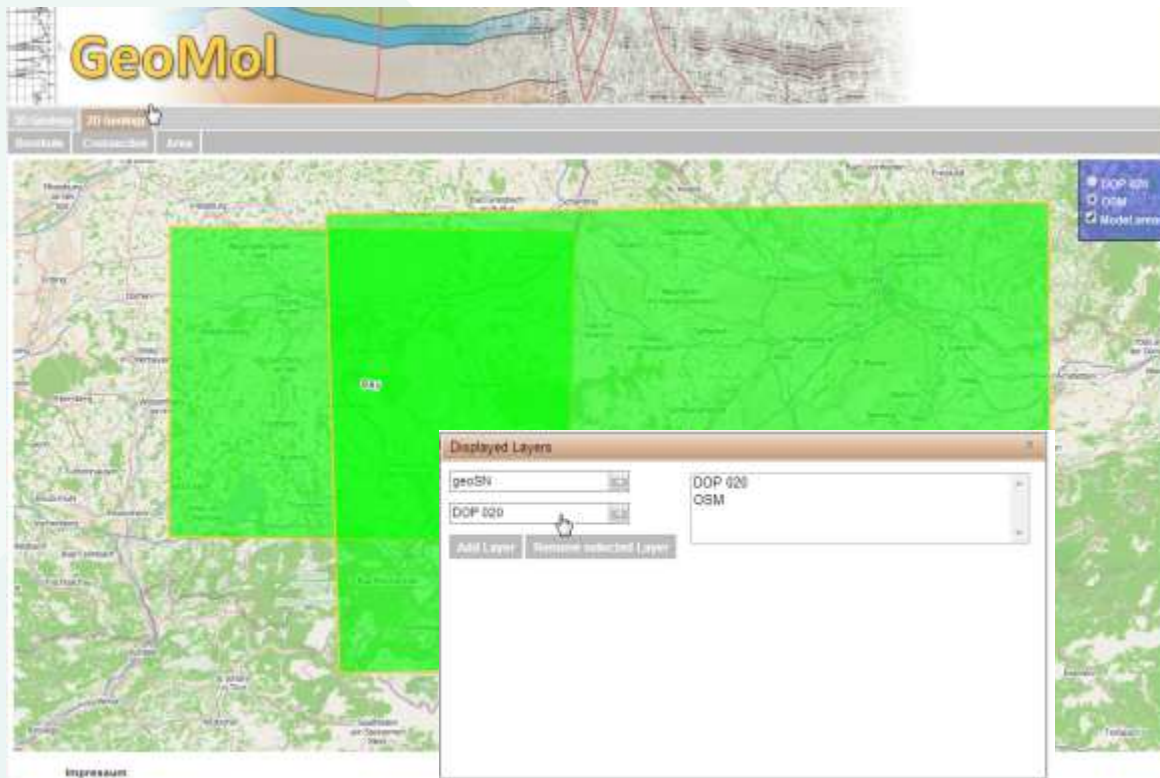






# New: 2D Interface

## **GST** Web



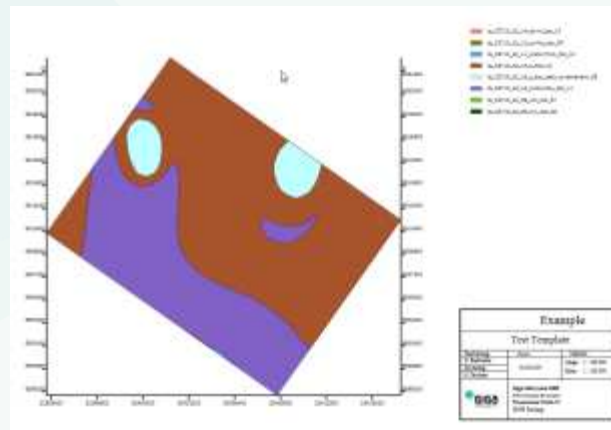
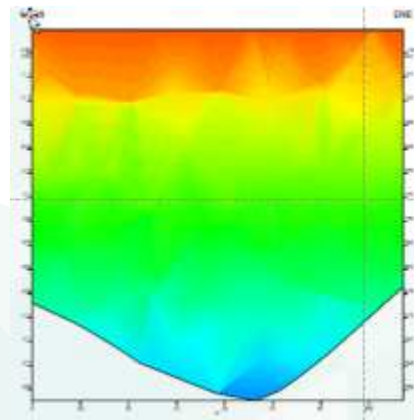
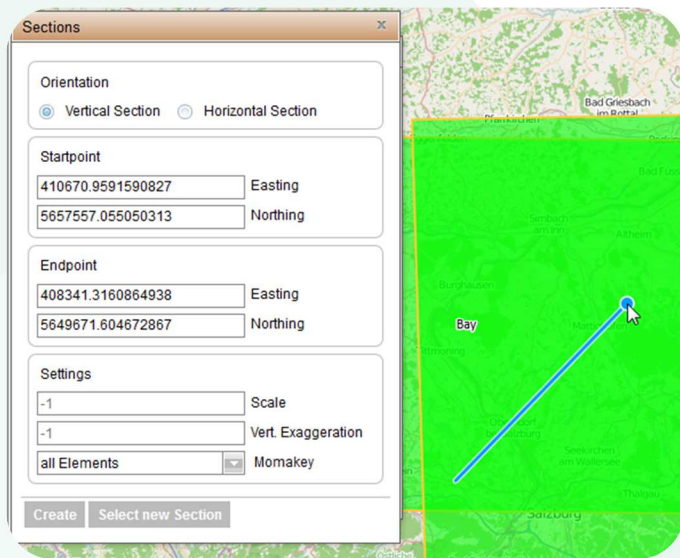
- \* Add a 2D Interface to Web application
- \* Switching from 3D to 2D mode
- \* Add/Remove WMS services
- \* Showing 3D data extent
- \* Check out / Display 3D data

**Integration of 3D Data in  
traditional map platforms**



# Map application extension to third dimension

## Section Generator



- \* Creating on the 2D Interface virtual
  - \* Boreholes
  - \* Sections
  - \* Maps
- \* Output can be customized [Template]
- \* Section 3D Data can show:
  - \* Interpretation Maps
    - \* e.g. Hydraulic conductivity – aquifer, aquitard
  - \* Simplex Colors/Color Maps
    - \* e.g. Temperature Maps



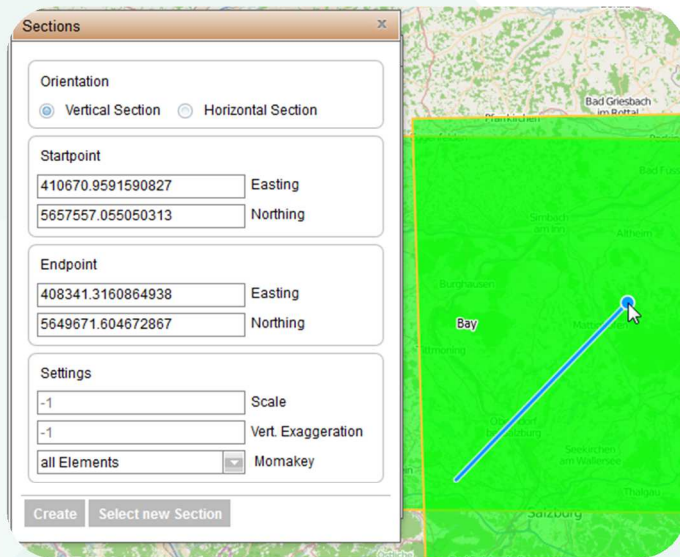


# Map application extension to third dimension

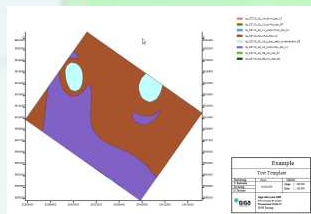
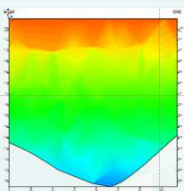
## Section Generator

- \* URL interface

- \* It can't be easier to integrate !



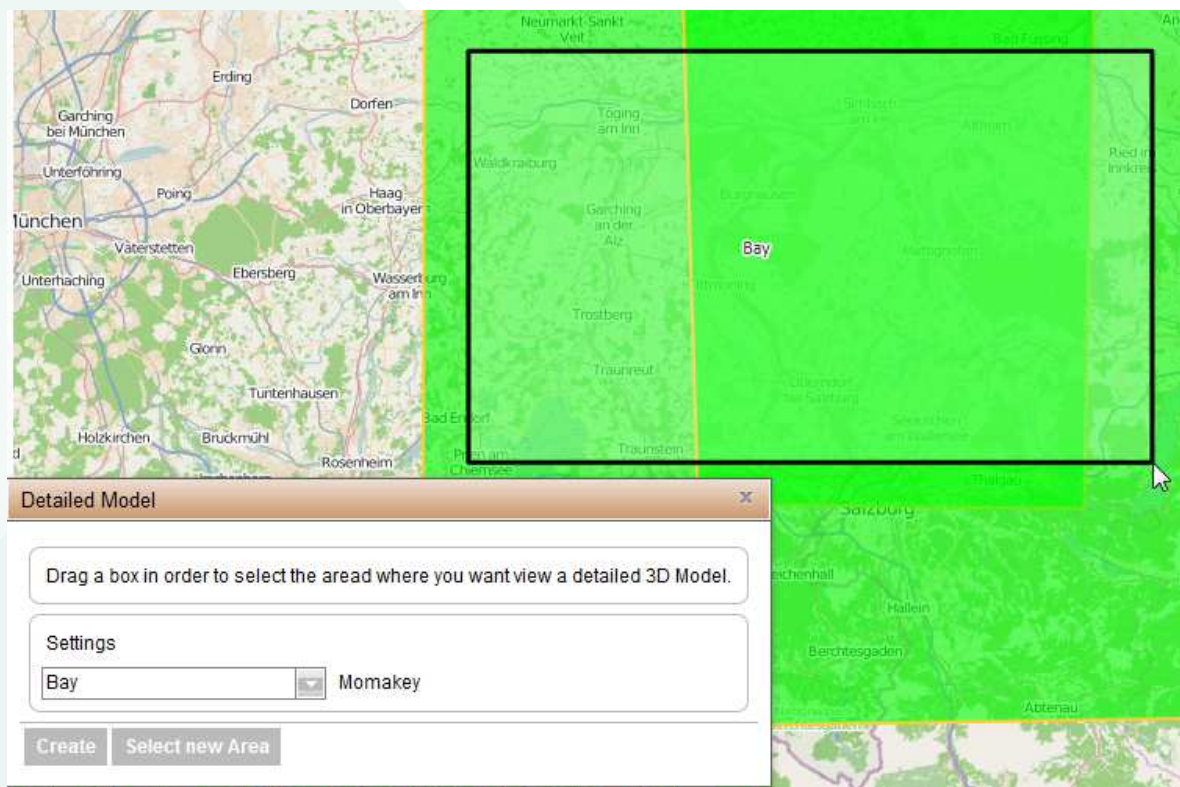
- \* [http://geomol.lfu.bayern.de/geomol/webGUI/createCrossSection.php?intersectionGeometry=multilinestring\(284545700 5355000 0 4545700 5295000 0\)&srs=120021&subtreeRootElement=87&csRootElement=0&csRootScale=-1&propertySelection=&colorMapId=-1&zMin=1e%2B10&zMax=1e%2B10&pointProjectionDistance=0&xScale=-1&verticalExaggeration=-1&templateFile=template\\_example.svg&outputType=SVG](http://geomol.lfu.bayern.de/geomol/webGUI/createCrossSection.php?intersectionGeometry=multilinestring(284545700 5355000 0 4545700 5295000 0)&srs=120021&subtreeRootElement=87&csRootElement=0&csRootScale=-1&propertySelection=&colorMapId=-1&zMin=1e%2B10&zMax=1e%2B10&pointProjectionDistance=0&xScale=-1&verticalExaggeration=-1&templateFile=template_example.svg&outputType=SVG)



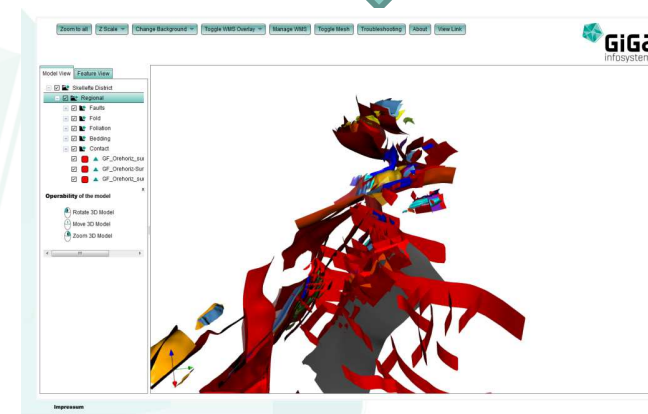
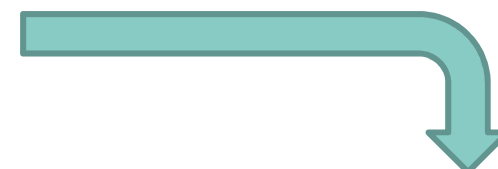


# 2D Interface

## GST Web



- Check out / Display 3D data



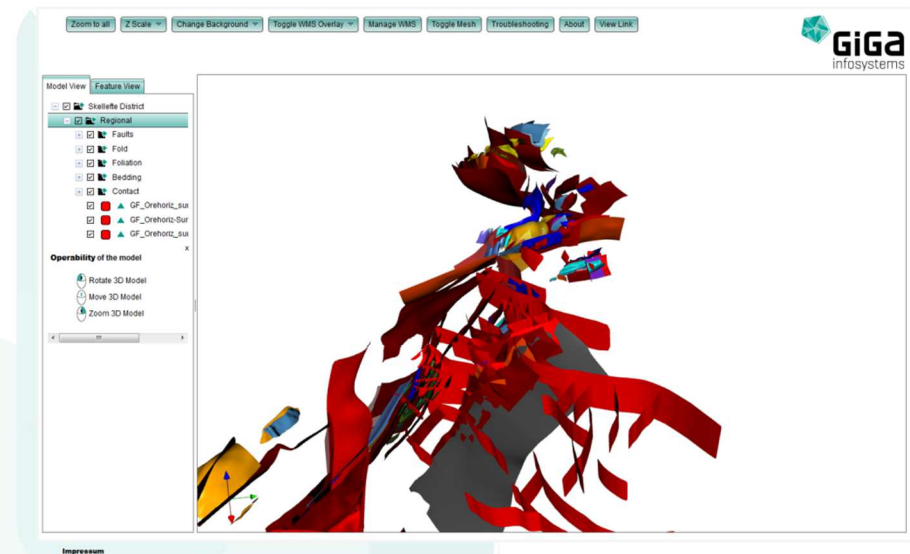




## 3D Realtime Viewer

# GST Web

- \* **Inspect 3D-Models (WebGL)**
- \* **Showing 3D-Details of areas**
- \* **Zoom / Pane**
- \* **Change Background, Exaggerate**
- \* **Include WMS as textured planes**
- \* **Stores scenes to send via eMail**
  - \* **More then just a 3D pdf! Not a fixed model.**





## Central Datastore

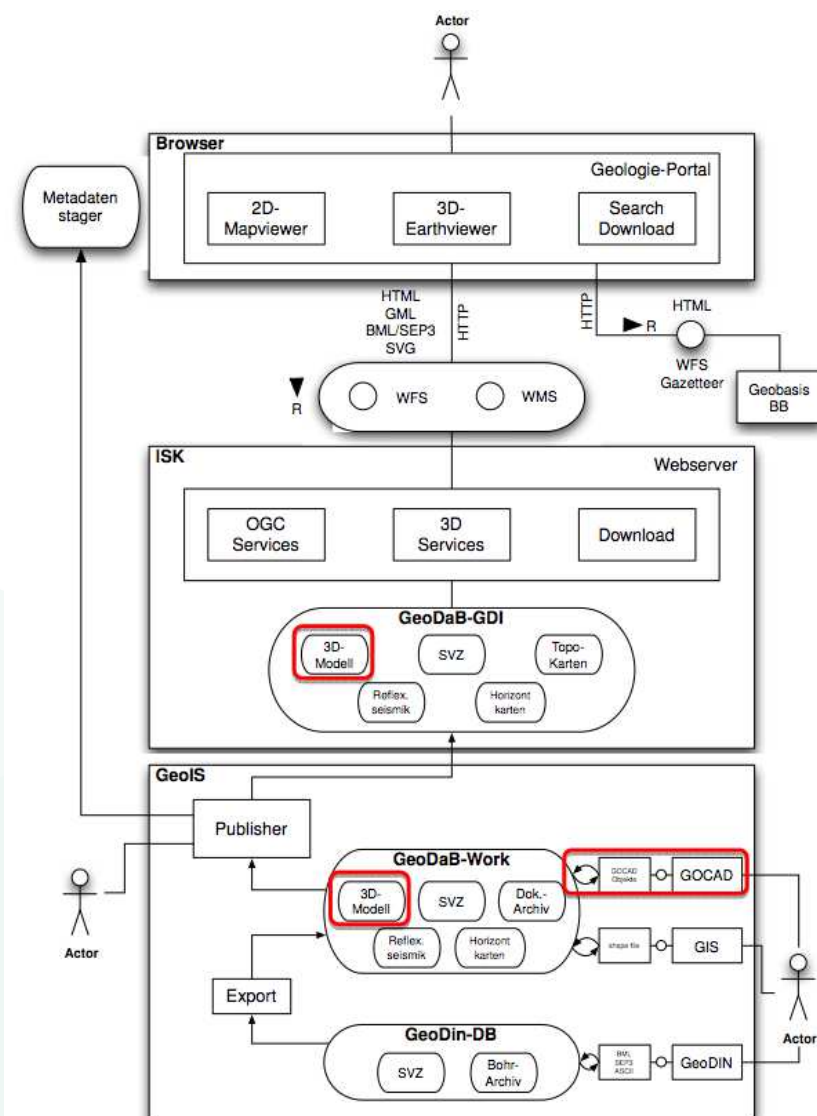
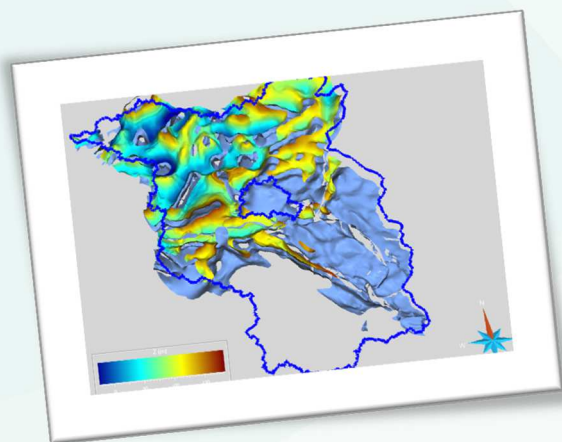
- \* Storage in a relational database
  - \* Easy to integrate
  - \* Oracle, PostgreSQL, Microsoft SQL Server
- \* Storage in a generic format
  - \* Software independent
  - \* No unclear data management
  - \* No costly individual solutions





# Brandenburg 3D

- \* Since 04/2013
- \* Integration of GST in an SDI





# EU Project GeoMol (2012-2015)

## Aims

Creation of 3D subsurface model for the Alpine Foreland basins

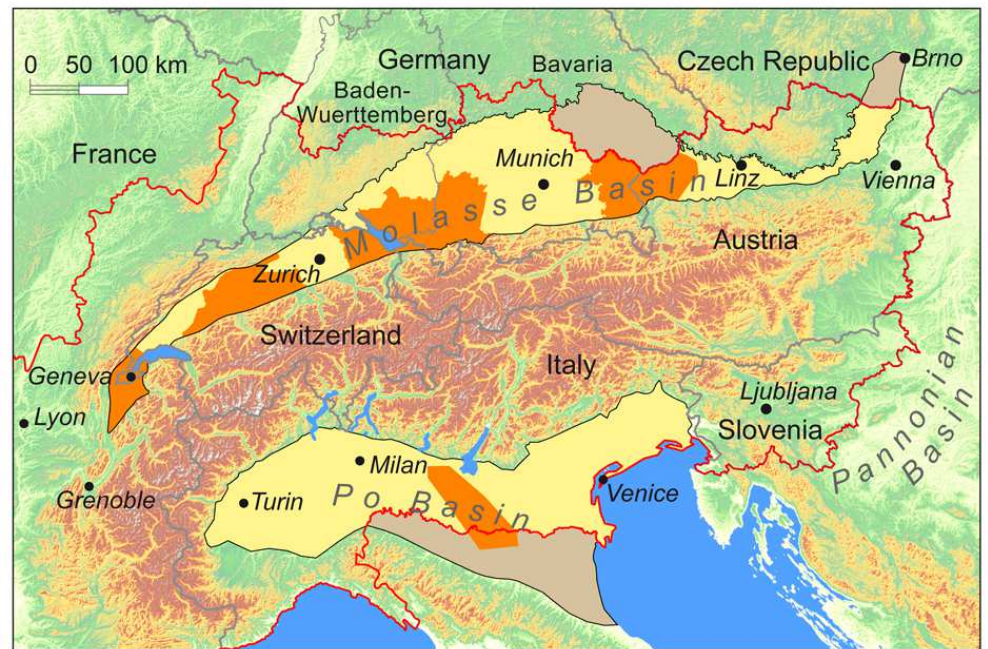
## Partners

Bavaria, Baden-Wuerttemberg, Switzerland, Austria, Italy, Slovenia, France, TU Freiberg

## Infrastructure

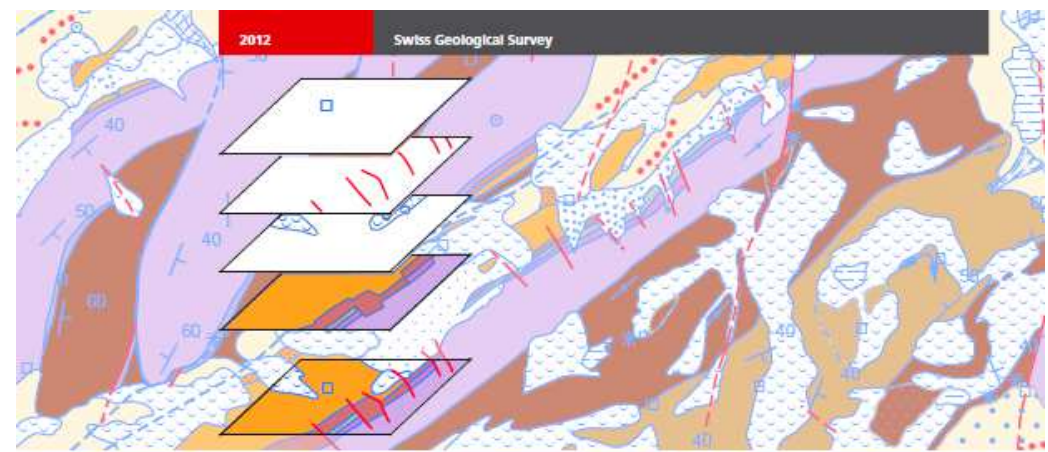
Provided by TU Freiberg and

**GiGa infosystems**

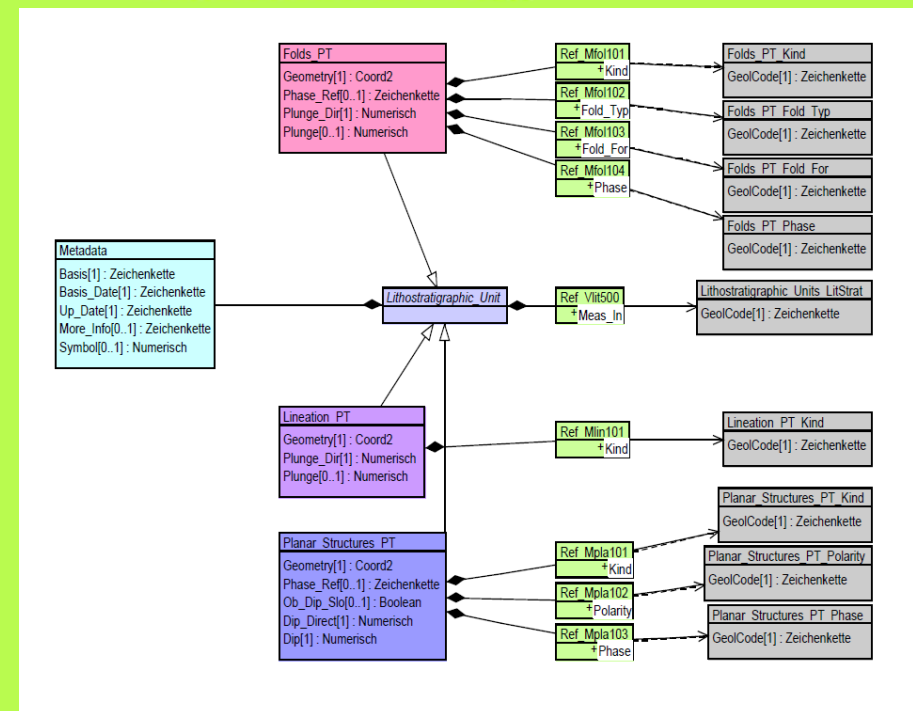


# Swisstopo

- \* Since 03/2013
- \* Integration of data model in GST
- \* cooperation with MVE
  - \* GST Plugin in MOVE



## Data Model Geology



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

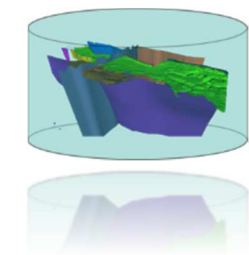
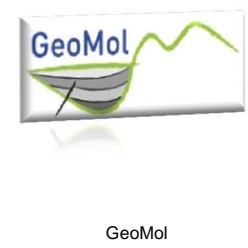
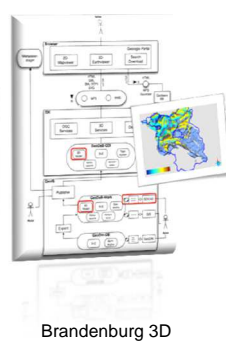
Federal Office of Topography swisstopo





## Conclusion

- \* Relational model
  - \* **Independent storage**
  - \* **Sustainable storage**
- \* **No costly individual solution!**
- \* Compatibility with proprietary systems and OGC
  - \* **Cooperations between GiGa and software vendors**
- \* Multiuser System
  - \* [Inter]national cooperations
  - \* Coordination of large & small projects
  - \* Reporting system/map generation
  - \* Creation & Management of high-resoluted 3D geology
- \* References using GST confirm its benefits





# Thank you!

[www.giga-infosystems.com](http://www.giga-infosystems.com)



Gefördert durch:



aufgrund eines Beschlusses  
des Deutschen Bundestages



EUROPÄISCHE UNION

