



## **Managing and delivering of 3D geo data across institutions has a web based solution - intermediate results of the project GeoMol.**

Jan Gietzel (1), Helmut Schaeben (1), and Paul Gabriel (2)

(1) TU Bergakademie Freiberg - GER, (2) GiGa infosystems - GER

The increasing relevance of geological information for policy and economy at transnational level has recently been recognized by the European Commission, who has called for harmonized information related to reserves and resources in the EU Member States. GeoMol's transnational approach responds to that, providing consistent and seamless 3D geological information of the Alpine Foreland Basins based on harmonized data and agreed methodologies. However, until recently no adequate tool existed to ensure full interoperability among the involved GSOs and to distribute the multi-dimensional information of a transnational project facing diverse data policy, data base systems and software solutions.

In recent years (open) standards describing 2D spatial data have been developed and implemented in different software systems including production environments for 2D spatial data (like regular 2D-GI-Systems). Easy yet secured access to the data is of utmost importance and thus priority for any spatial data infrastructure. To overcome limitations conditioned by highly sophisticated and platform dependent geo modeling software packages functionalities of a web portals can be utilized. Thus, combining a web portal with a "check-in-check-out" system allows distributed organized editing of data and models but requires standards for the exchange of 3D geological information to ensure interoperability. Another major concern is the management of large models and the ability of 3D tiling into spatially restricted models with refined resolution, especially when creating countrywide models. Using GST ("Geosciences in Space and Time") developed initially at TU Bergakademie Freiberg and continuously extended by the company GiGa infosystems, incorporating these key issues and based on an object-relational data model, it is possible to check out parts or whole models for edits and check in again after modification. GST is the core of GeoMol's web-based collaborative environment designed to serve the GSOs concerned and the scientific community. Recently common users spaces have been installed providing a central access point to manage locally stored data at each of the project partners' IT sites. This distributed-organized system allows to keep the data of the live system locally and to share just cleared portions of the data, thus adhering to national regulations on geo data access. GST also allows for a dynamic generation of virtual drilling profiles and cross sections of the stored models. As this enables to deduce classified borehole data, a role based log in giving full access to the live system only for legally mandated or licensed bodies.

The beta version of GeoMol's GST based geo data infrastructure and dissemination tool for multi-dimensional information, implemented incrementally, will be installed on GeoMol's website (<http://geomol.eu>) by end of February. It will be available for testing to further improve the performance and applicability of GeoMol's 3D-Explorer for instant web based access to GeoMol's future outputs.

The project GeoMol is co-funded by the Alpine Space Program as part of the European Territorial Cooperation 2007-2013. The project integrates partners from Austria, France, Germany, Italy, Slovenia and Switzerland and runs from September 2012 to June 2015. Further information on <http://geomol.eu>.