

Geological Information System – Geols



MORE ABOUT THE PROJECT SPONSOR

The State Geological Institute of Dionýz Štúr, as a departmental scientific research institute, is a contributory organisation providing geological research and exploration of the territory of the Slovak Republic, development of the information system in geology as part of the state information system, registration and recording of activities related to the performance of geological work, collection, recording and making available of the results of geological work carried out on the territory of the Slovak Republic, performance of the central geological library, publishing and sale of maps and professional geological publications.

ESPRIT s.r.o. has significantly contributed to the implementation of the geological information system. The aim of the project was to provide geological data (both spatial and non-spatial) to the widest possible range of professional and lay users through an open information system built on the basis of web technologies. This was achieved by :

- By defining the structures of the different geological data streams developed on the basis of an analysis of the current status and needs of all stakeholders.
- The development of the system architecture design.
- Creation and maintenance of a database with a special focus on the spatial aspect.
- Development and implementation of a number of server-based mapping, geoprocessing and standard services.
- Development and implementation of a number of client mainly map applications.

TECHNOLOGIES:

Database server – central data warehouse for spatial and non-spatial data based on the RDBMS system ORACLE using specialized software for multi-user spatial data management ArcSDE.

Application layer:

Application server

- ArcGIS server
- WWW server
- CM (content manager) server for unstructured data – Geofond reports archive

Presentation layer

- Web portal with a number of mainly map applications
- Standard ArcGIS DESKTOP client programs

PROJECT IMPLEMENTATION:

Phase I 2006 – 2009

Phase II 2009 – 2012

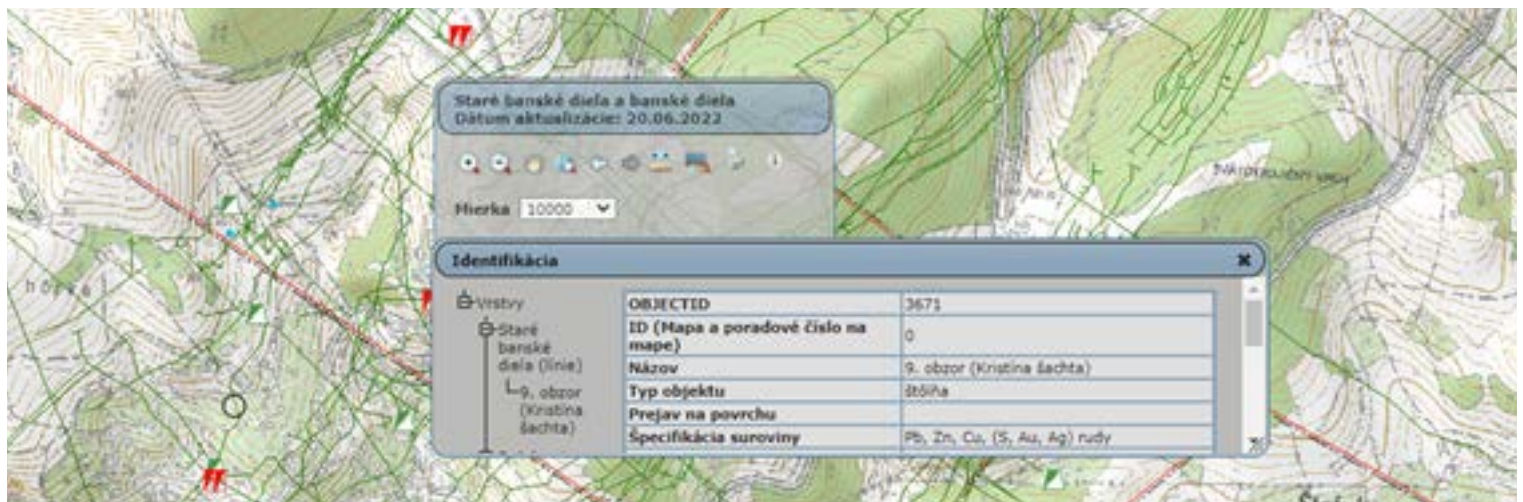
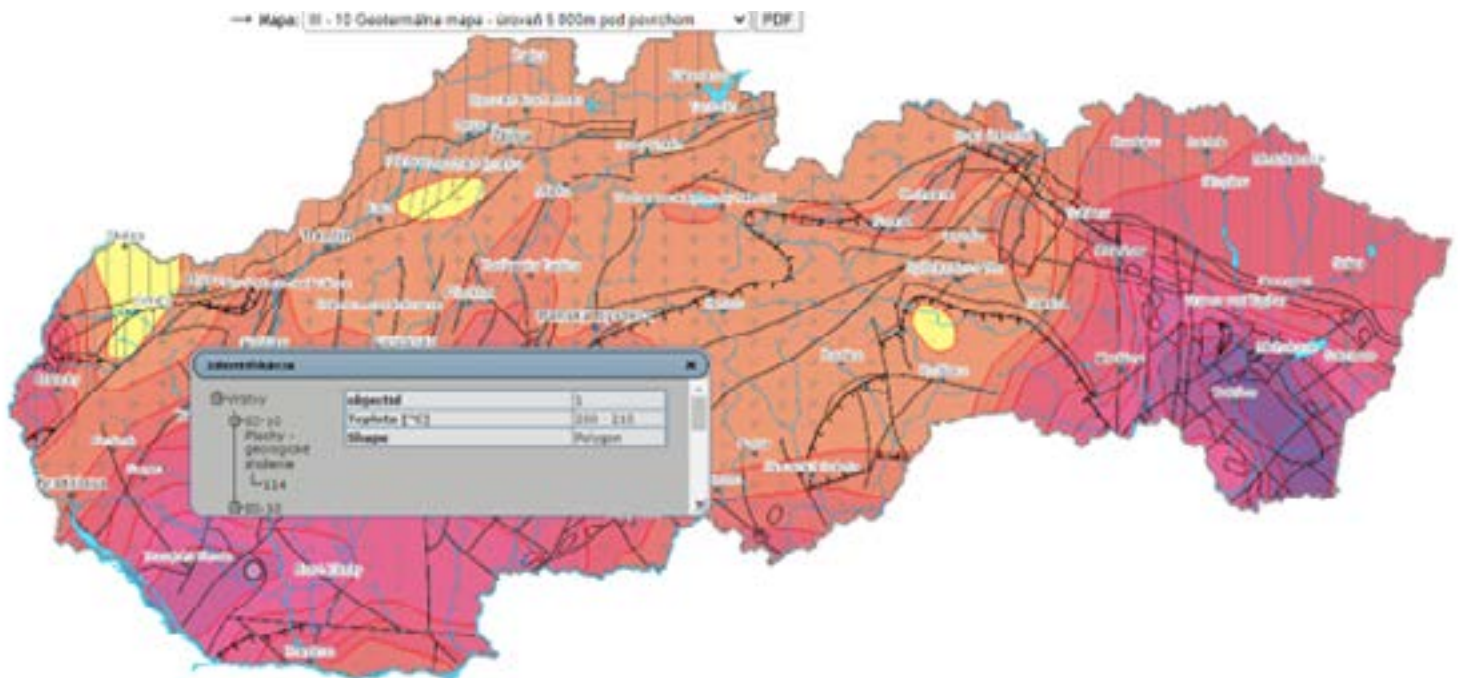


BENEFITS OF THE PROJECT

The system provides comprehensive, spatially harmonised data for the following occupational groups:

- Regional geology
- Hydrogeology and geothermal energy
- Geochemistry
- Engineering geology
- Mineral deposits, occurrences and forecasts
- Geophysics
- Geofund – integration with the geological reports archive

Individual information seekers, whether experts, students or lay people, use the applications made available through the GIS and the application server. The geological maps group provides basic geological, hydrogeological, engineering geological knowledge. It includes the Geological Map of the Slovak Republic, scale 1:50 000, which can be regarded as the basic geological information on the territory and is the result of several decades of work by geologists. Geophysical maps show the physical features of the Earth through natural or artificial physical fields. Educational geology provides new knowledge about the inanimate nature of Slovakia in an accessible form. It focuses mainly on important geological sites and geoparks. The atlases edition is a digital processing of representative book map works (e.g. Geochemical Atlases, Geothermal Energy Atlas, Atlas of Slope Stability Maps). An important part of the application structure are the Geofond Register applications. They represent a complex of spatial information on the geological exploration of the territory and include, among others, information on exploration areas, deposits, old mine workings, slope deformations, dumps and boreholes.



SUMMARY:

We have created an integrated expert system covering the information needs not only of all geological professions but also for educational and lay educational-promotional needs. The complexity of the applications corresponds to such a user structure. From explicitly expert-oriented geological, geophysical, hydrogeological map applications to popular educational applications such as map applications of important geological sites or geoparks.

More than 40 mainly map-oriented, web-GIS applications have been implemented, which would not have been possible without the provision of server support at the level of creation of extensive geodatabases and publishing of server data, mapping and geoprocessing services. Standards supporting access to all activities also enables interoperability and wide data availability.

ABOUT ESPRIT spol. s r.o.

Since its foundation in 1992, Esprit has systematically engaged in research and consulting activities in the field of landscape ecology, geography and hydrology.

The company is also at the cutting edge of technology in the design and development of comprehensive GIS solutions, specialized software applications in natural process modeling and geostatistical spatial modeling

ESPRIT spol. s r.o.
Pletiariska 2
969 01 Banská Štiavnica

tel.: +421 45 692 12 30
e-mail: esprit@esprit-bs.sk
web: www.esprit-bs.sk