The OhmMapper was used to determine the resistivity distribution in the soils up to a depth of approx. 5 m. Layer depths determined by GPR can be used to improve geoelectrics data inversion, while information from geoelectrics measurements help to interpret the GPR signals. The combination of geophysical surveying and remote sensing allows mapping the surface topography and the thickness of the landslide bodies, thus enabling us to create a three-dimensional model of slides.

EuroGeoSource – a web GIS system harmonizing geo-energy and mineral resource databases in Europe

Gruijters S.H.L.L.[1], Maruntiu M.[2] and Vîjdea A.M.[2]

[1]Department of GeoInformatics, TNO Built Environment and Geosciences, Geological Survey of the Netherlands, Princetonlaan 6 / PO box, NL-3508 AL Utrecht, The Netherlands, stephan.gruijters@tno.nl
[2]Department of Geosciences, Environment and Geological Hazard, Geological Institute of Romania (IGR), 1 Caransebes St., RO-012271, Bucharest, Romania, marcel.maruntiu@igr.ro, anca.vijdea@igr.ro

The EuroGeoSource is a project co-financed by the European Union under the Information Communication Technologies Policy Support Programme (ICT PSP), part of the Competitiveness and Innovation Framework Programme (CIP). The project started in 2010 and will last for three years, having the objective of making up a web Geographical Information System (GIS) regarding geo-energy resources (oil, gas, coal etc.), metallic and non-metallic minerals, as well as construction materials (gravel, sand, ornamental stone etc.) from twelve countries: Denmark, the Netherlands, Belgium, Portugal, Spain, Italy, Slovenia, Bulgaria, Romania, Hungary, Poland, Estonia.

The web GIS will incorporate a set of spatial data services according to Open GIS Consortium (OGC) specifications. The system will allow users to identify, access, use and reuse in an interoperable and seamless way and for a variety of uses, aggregated geographical information on geo-energy and mineral resources, covering a significant part of Europe and coming from a wide range of sources.

The project uses spatial and attribute information in GIS format on oil, gas and mineral fields in the participating countries, which is typically maintained and stored by the geological surveys. The data will have to be harmonized by defining a common set of attributes for geo-resources objects of the same type. For the key economic and geological parameters, an exchange format has to be agreed, taking into consideration the recommendations of the INSPIRE Directive 2007/2/EC (Infrastructure for Spatial Information in the European Community), as well as existing operational geo-data exchange formats, implemented in previous geo-data projects (e.g. eEarth, eWater, Geomind, OneGeologyEurope).

The system will include three main layers: 1) a central web GIS application, providing access and visualization of the spatial data sets; 2) data delivery services, including Web Map Service (WMS) and specialized web services for translation and delivery of spatial objects attributes; 3) a national database, storing spatial data sets and spatial object attributes.

Typical usage of the EuroGeoSource system based on preliminary analysis of the potential user needs comprises the following steps:

- starting in the central geo-source data catalogue application, where the user can search the available maps from all countries participating in the project and select the language;
- browsing the search result (a list of available maps), consultation in detail of the metadata associated to the data set of interest, followed by adding the data set as a layer to the geo-data viewer;
- consulting the data set layers at different scales and within different contexts (extent, background layers, etc.) in the map viewer;
- gathering detailed economic/reserve information, accessible either free of charge or based on the ‘data delivery cost recovery’ pricing model, depending on the provider.

A special group of users (e.g. Institute for Energy of the Joint Research Centre of the European Commission or commercial companies) will be able to incorporate the data provided by the EuroGeoSource system into their decision processes or models using special

web services that can be offered based on their needs. This option will be made available using advanced content-specific and user-oriented web services in the system.

By developing web services for sharing spatial data between public organizations and authorities (including EC and EU research and policy making institutions), as well as commercial stakeholders, the project will enable the creation of value-added services (such as demand-supply modelling) for the sustainable geo-energy and mineral supply of Europe.

Sources of base, precious and rare metals during the Tethyan Phanerozoic Evolution of the Caucasus and Pontides

Gugushvili V., Popkhadze N., Beridze T. and Khutsishvili S.

Ministry of Education and Science, Geological legal Entity of Public Law Al. Djanelidze Institute of Geology. 1/9 M. Alexidze str. Tbilisi 0193, Georgia, gugushvili34@yahoo.com, nino_popkhadze@yahoo.com, tamara_beridze@yahoo.com and sofio_sofi@yahoo.com

Base, rare and precious metal deposits are widespread in the Caucasus and Pontides regions. They are the result of the Phanerozoic evolution of the Tethys Ocean, of various geodynamic settings, including oceanic, intra-arc, back-arc and island arcs. The various types of mineralization are discussed in terms of the participation scale of sialic, basaltic crusts and mantle sources. In oceanic settings, cupriferous Cyprus-type deposits occur, where the source of Cu is the mantle. In intra-arc settings, Beshi type Cu-Zn deposits were formed; the source of Zn is interpreted to be basaltic crust. As for the island arc and back-arc settings, Cu-Pb-Zn porphyry, stockwork, VMS and vein deposits are common. The source of Pb is interpreted to be the sialic crust. The rare metals (Hg, W, Sb) are related to post-collisional settings, where sialic crust is important. Mo is also related mainly to post-collisional settings, and it subordinately participates in the island arc settings. Precious metal mineralization (Au and Ag) predominantly developed in island arc and post-collisional settings. Therefore, in the process of mantle depletion and crust formation precious metals (Au and Ag) mainly accumulated in the sialic crust.

Geochemistry and petrogenetic features of the Early Cambrian volcanism inTelbesmi Formation, Mardin-Derik, SE Turkey

Gürsu S.[1], Göncüoğlu M.C.[2] and Köksal S.[3]

[1]*General Directorate of Mineral Research and Exploration, Department of Geological Research, Ankara, Turkey, semihgursu@yahoo.com*
[2]*Middle East Technical University, Geological Engineering Department, Ankara, Turkey*
[3] *Middle East Technical University, Central Laboratories, Ankara, Turkey*

The Late Neoproterozoic/Early Palaeozoic successions in Southeast Anatolian Autochthon Belt, representing the northern edge of Arabian Plate in SE Turkey, occur in Derik (Mardin), Tut-Penbegli (Adıyaman), Samur Dag (Hakkari) and Amanos (Hatay) areas. In the Mardin-Derik area the Early Paleozoic rock-units are composed from bottom to top of Telbesmi, Sadan, Koruk, Sosink and Bedinan formations, respectively. The Telbesmi Formation is made up of slightly metamorphosed fluvial sandstone/ mudstones alternating mainly with andesitic and rarely spilitic lava flows and pyroclastic rocks. The base of the formation includes andesitic/spilitic lavas, tuffs and aglomerates with rarely rhyolitic lavas, interlayered with mudstones. The upper part of the formation includes very thin-layered cherty recrystallized limestones and red, violet meta-sandstones/meta-siltstone alternations. The ichno-fossils (?*Teichnus* isp., *Treptichnus rectangularis*, *Cocchlichnu*s isp.) near the transition to the Sadan formation indicates to the Early Cambrian. Upwards, the formation is transitional to Early Cambrian siliciclastic rock of Sadan Formation. The discontinuous conglomeratic band near the transitional between the Telbesmi and Sadan Formations is a channel-fill and does not correspond to an unconformity, as previously suggested. The succession is conformably overlain by Middle Cambrian Koruk Formation, and Upper