In addition to the work in the field of informatics, a challenging and important task was the development and agreement of a common geological data specification. The project is delivering a specification for geological spatial data and an interoperable 1:1 million scale dataset for the whole of Europe - an essential platform for the whole project. This foundation includes at its core a vocabulary to describe lithology, age and genesis of the rocks and the tectonic structures and term definitions and their relations. Generic and specific geometric and semantic harmonisation issues were identified. Existing national datasets were then "reworked" to make significant progress towards a harmonised dataset – a crucial step towards INSPIRE goals. The standards, architecture and framework developed by the project can then be "upscaled" to more detailed levels and progressively deployed for higher resolution geological data. The Geological Survey of Slovenia is one of more than 24 data providers in the project. To deliver the Slovenian contribution an existing geological map at a scale of 250000 was edited and simplified to fit the requirements of 1:1 million scale target map. The spatial data were mapped into the common data model and were also party harmonized with neighbouring countries. An additional benefit of Slovenia's participation in the project will be a new printed geological map of the country in scale 1:1.

Hydrogeological investigation of the Beysehi Lake and surrounding area

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The Beysehir Lake, which is one of the largest freshwater lake reservoirs in Turkey, is the most important drinking and irrigation water source for Central Anatolia. The lake has an area of approximately 656 km^2 with an average depth of 5 meters. The most important creeks discharging to the Beysehir Lake (Sarısu, Ustunler, Ebulvefa, and Eflatun) and their drainage area form the southeast basin of the lake. The rocks in these basins and their hydrochemical relation with surface and subsurface water will be given briefly in this study.

The Lower-Middle Cambrian Caltepe Formation comprising dolomite, crystallized limestone, and nodular limestone, occurs at the basement and has reservoir rock characteristics. The Upper Cambrian-Lower Ordovician Seydisehir Formation overlies conformably the Caltepe Formation and comprises schist, phillite and shale-bearing limestone and quartzite lenses in places. The Anamasdag Formation, which is the most important reservoir rock in the study area, has widespread outcrops around the lake and rest unconformable on the Seydisehir Formation. It is composed of conglomerate, marl, sandstone, ferric bauxite, dolomite, limestone and is Upper Jurassic-Upper Cretaceous in age. The Hoyran complex comprising serpantinite, pyroxenite, harzburgite, dunite, diabase and chromites emplaced tectonically over the abovementioned units. This unit has outcrops starting from northern part of the Beysehir Lake extending approximately in the NNW- SSE direction up to the Yesildag town located at the south of the lake. Besides, the Eocene Buyukkopru Formation comes unconformable on these units and, begins at the bottom, with the red marl and continues with mudstone – claystone – turbiditic sandstone. The Topraklı Formation is made up of partially consolidated pebble, sand and clay and, covers all the above mentioned units.

The Landsat 5 TM satellite image was used in the interpretation for providing the important hydrological data and individual pollution source in the Beysehir Lake, with its drainage area, which is one of the important water resources in the area. The lineaments and drainage characteristics of the study area have been determined by developing a Digital Terrain Model using filtering methods such as single banded Fast Fourier Transformation and Convolution methods of image enhancement methods. Besides, composites obtained trough hue enhancement and combination in differing ratio of data, in the three visible and three reflected infrared wave lengths occurring of the Thematic Mapper image, give very promising results in differentiating the hydrogeological units and determining pollution spreading in the surface waters. The interpretive linearity and geological maps prepared by supervised and

unsupervised classification methods of the digital image data are seen to be overlap with the geological map of the area after surface controlling.

Karstification and their size in the limestone which are widespread in the basin and which are mostly forming the reservoir rock were interpreted by means of their chemical analysis results. The permeability of alluvial sediments was determined by means of sieve analysis. The variations in the water level of the lake were interpreted statistically. The chemical analysis results of surface and spring water were evaluated in different diagrams and the possibly of these water as being drinkable and usable were searched.

Deformation history of the Outer West Carpathian Flysch Units and Pieniny Klippen Belt (NW Slovakia, SE Czech Republic)

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The project Karpatian Tectonics Slovakia addresses the development of a coherent tectonic model for the Early Miocene in the Vienna Basin and adjacent areas. Studies include 2D/3D seismic interpretation in the Vienna Basin and structural fieldwork in the Outer West Carpathians. Structural data comprises 105 outcrops from the NW-rim of the Pieniny Klippen Belt (PKB) and Outer West Carpathian Flysch units in Northwest Slovakia and Eastern Czech Republic.

Structural data from the Outer West Carpathian Flysch Units (Biele Karpaty-, Magura-, Silesian Unit) depict (N)NW-directed shortening (D_{F1}), which is related to the large scale architecture of the ENE-striking fold-and-thrust-belt. Thrust ages, obtained from the ages of youngest overthrust sediments indicate Eocene to Early Miocene in-sequence thrusting towards the European foreland. Foreland propagating thrusting is also regarded to be responsible for the progressive steepening of thrust units towards the internal parts of the fold-and-thrust-belt, which causes overturning of the innermost flysch units and the PKB.

Crosscutting relationships observed in outcrops give evidence that (N)NW-directed shortening is followed by ENE-striking strike-slip faulting (D_{F2}), reactivating former thrusts of D_{F1}. Strike-slip faults occur at the front of and within the Bystrica and Biele Karpaty Unit close to the PKB. Structures of D_{F1} and D_{F2} are further cut or overprinted by (N)NE-striking sinistral strike-slip faults and fold-thrust structures related to (N)NE-directed shortening (D_{F3}). Structural data and geological maps indicate that (N)NE-striking strike-slip faults and NNE-directed out-of-sequence thrusts coincide with bends at the front of the Magura and Bystrica Unit.

Structures from the NW margin of the adjacent PKB prove a complex polyphase deformation history. Multiple folding events, tilted and refolded ramp-flat structures and overturning of strata complicate deciphering individual deformation events and their relative chronology. However, NNW-directed shortening, which postdates large scale overturning of strata, was identified in the region around the Middle Váh Valley. There, the NNW-directed shortening is followed by NNE directed shortening. Deformation styles are comparable with D_{F1} and D_{F3} in the flysch units. NNW-directed shortening is interpreted as out of sequence thrusting during deformation D_{F1}. In addition, ENE-striking sinistral strike-slip faults are recorded within the PKB, close to the border to the Biele Karpaty and Bystrica Unit.

The outcrop-derived deformation history is compared to tectonics in the Vienna Basin area, where seismic data provide excellent constraints for deformation ages. In the Vienna Basin, out-of-sequence thrusting coeval with NE-striking sinistral strike-slip faulting occurs in the flysch units and Northern Calcareous Alps during the Early Miocene contemporaneously with in-sequence thrusting in the external Waschberg Unit. Early Miocene NE-striking sinistral strike-slip faults are cut by (N)NE-striking Middle to Late Miocene sinistral strike-slip faults. NE- and (N)NE-striking strike-slip faults mapped in the Vienna Basin are related to the eastward lateral extrusion of the Eastern Alps towards the Pannonian region, whereas (N)NE-striking faults are linked to the pull-apart stage of the