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THE ESTABLISHMENT OF A BASIC INTERACTIVE INTERPRETATION AND DATA CORRELATION SYSTEM (IIDCS) AT THE CROATIAN GEOLOGICAL SURVEY

Nikola Belić[1,*], Pavle Ferić[1], Ioannis Abatsiz[2], Lars Juul Kjærgaard[2], Carsten Bo Pedersen[2], Erik Skovbjerg Rasmussen[2], Marko Špelić[1], Marko Budić[1] and Ivan Sokač[1]

[1] *Hrvatski geološki institut – Croatian Geological Survey,*

*corresponding author: nbelic@hgi-cgs.hr

[2] *GEUS Geological Survey of Denmark and Greenland*

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The establishment of a basic Interactive Interpretation and Data Correlation System (IIDCS) at the Croatian Geological Survey is one of the main goals of the GeoTwinn project. GeoTwinn is a Horizon 2020 project intended and designed to twin the Croatian Geological Survey (HGI-CGS) with two world-leading geoscience research institutes; the Geological Survey of Denmark and Greenland (GEUS) and the British Geological Survey of the United Kingdom Research and Innovation (BGS-UKRI), leading to significantly strengthen HGI-CGS's research collaboration (http://projects.hgi-cgs.hr/geotwinn/). GeoTwinn project consists four Work Packages (WPs); (1) 3D geological surveying and modelling, (2) advanced groundwater flow and contaminant transport modelling, (3) geological hazards, and (4) geothermal energy.

Geological modelling of the greater Zagreb area and its deep geothermal aquifer is the main objective of WP1. The model is to be used for modelling of geochemical processes, fluid flow and heat flow modelling in the WP4. Zagreb geothermal aquifer is situated inside Triassic dolostones, dolomitic limestones, and Badenian bioclastic limestones of the Vrapče formation (AVANIĆ et al., 2018). Based on well data, Zagreb geothermal aquifer is situated in depths between (approx.) 800 to 900 meters, while interpretation of seismic data suggests very complex structural and stratigraphic relations.

Halliburton Landmark OpenWorks and DecisionSpace Geosciences software package was used for interpretation, modelling, and storing input data as well as for interpreted data.

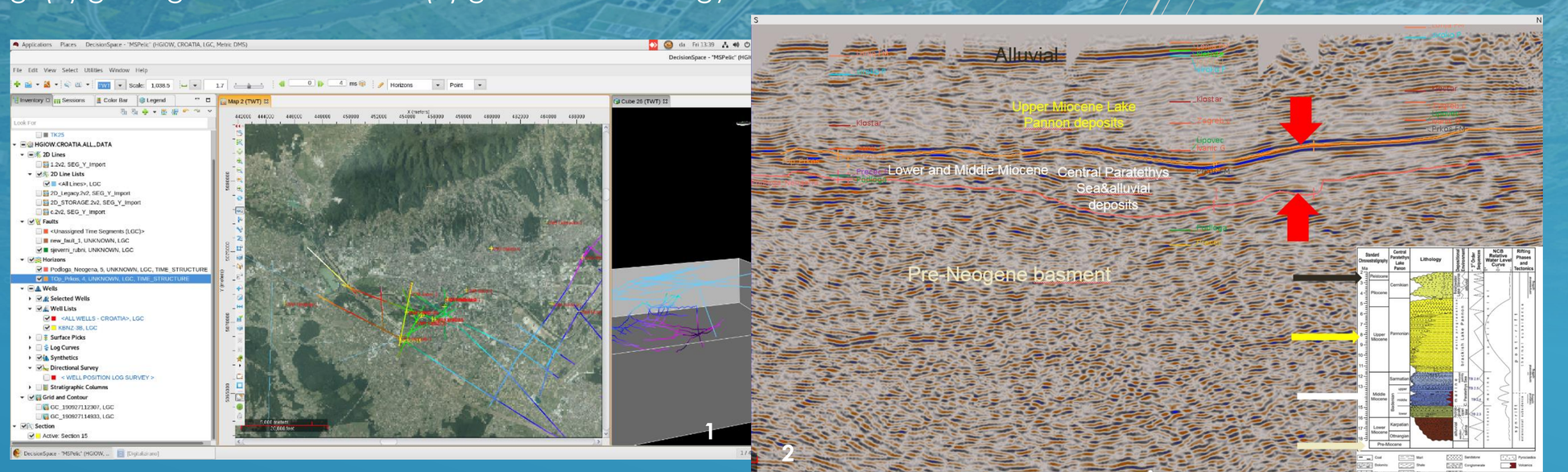

Figure 1: 2D seismic and well data loaded into the Interactive Interpretation and Data Correlation System (IIDCS).

Figure 2: Geological interpretation of the Zagreb geothermal aquifer (stratigraphical chart based on Pavelić and Kovačić 2018).

Figure 2: GeoTwinn participants at the Landmark Geosciences Forum in Budapest; (From left to right), Marko Budić, Pavle Ferić, Ioannis Abatzis, Jakob Lanstorp, Lars Juul Kjærgaard, Peter Britze, Nikola Belić and Carsten Møller Nielsen.

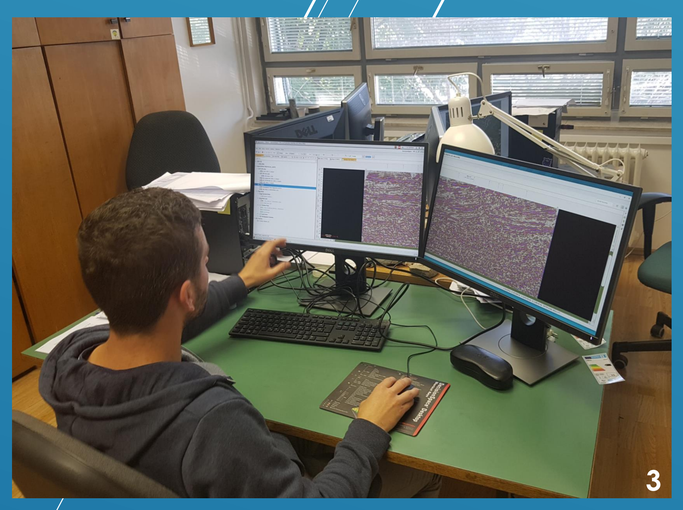

Figure 3: HGI-CGSs Marko Špelić working on Interactive Interpretation and Data Correlation System (IIDCS) at the Croatian Geological Survey.

The IIDCS is built primarily for the GeoTwinn project, and will be used for the interpretation of geophysical and geological data, the advanced reservoir modelling, and finally, for building an Initial 3D reservoir-properties model for the greater Zagreb area. It is also the intention of GeoTwinn to use the IIDCS for introducing the digital storage, organization and management of all kinds of geophysical, geological and petrophysical data available at the Croatian Geological Survey. Modelling of Geological Basins is typically based on integration of deep seismic and borehole data. In order to have systematically arranged data needed for the interpretation and modelling, it requires establishment of a basic Interactive Interpretation and Data Correlation System (IIDCS).

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Google Sat. Images: https://www.google.hr/maps

Aerial Images: https://geoportal.dgu.hr/wms?

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