GeoTwinn: Twinning of the European Geological Surveys

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GeoTwinn
TWINNING OF THE EUROPEAN GEOLOGICAL SURVEYS

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HORIZON 2020

GeoTwinn
HGI - GEUS - BGS

GeoTwinn

The GeoTwinn is the Horizon 2020 Twinning project funded by European Commission fully entitled: Strengthening research in the Croatian Geological Survey: Geoscience-Twinning to develop state-of-the-art subsurface modelling capability and scientific impact. The project twins the Croatian Geological Survey (HGI-CGS) with two world-leading geoscience research institutions: the Geological Survey of Denmark and Greenland (GEUS) and the British Geological Survey of the United Kingdom Research and Innovation (BGS-UKRI).

Key objective...

Strengthening HGI-CGS research in four important geoscientific areas:
1) 3D geological surveying and subsurface modelling - WP1;
2) Groundwater flow and contaminant transport modelling - WP2;
3) Geological hazards: data collecting and analysis - WP3;
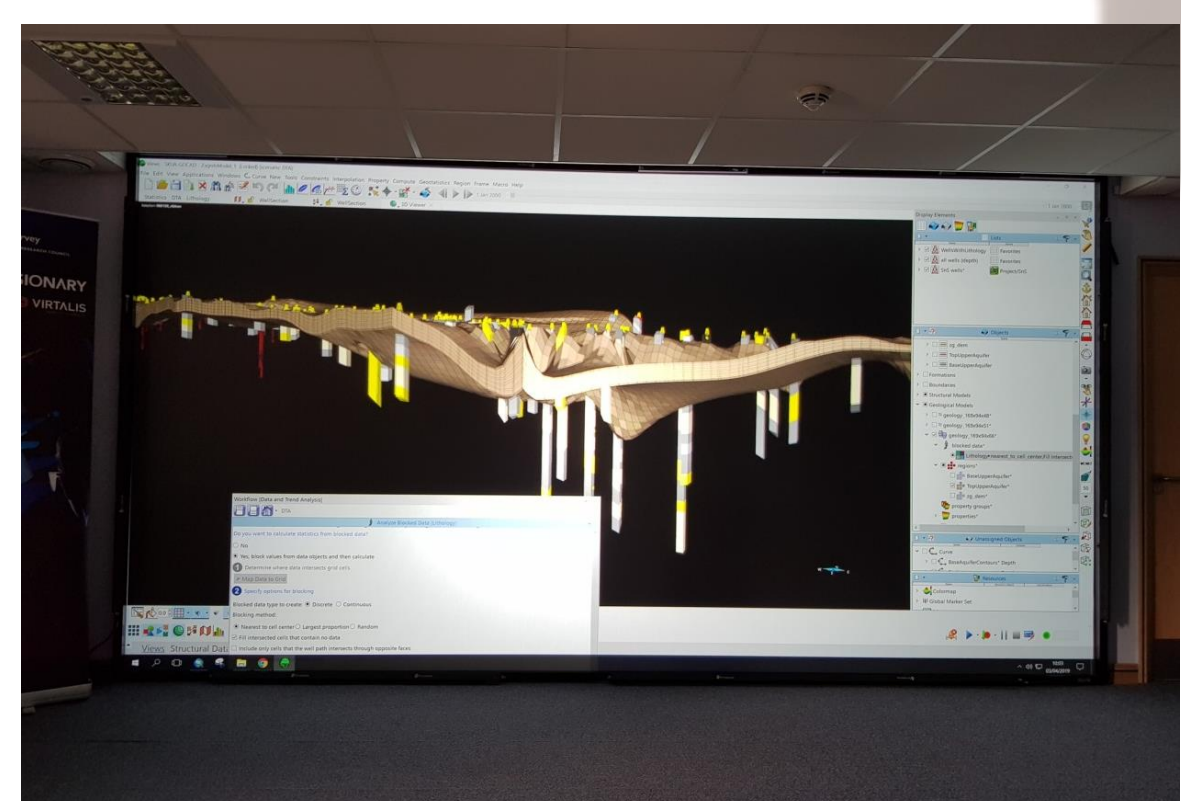4) Geothermal energy: fluid and heat flow - WP4

WP1 Seismic data interpretation

Training in automated calibration of groundwater flow models for WP2.1

WP2

Advanced groundwater flow and contaminant transport modelling (WP2) - to understand, simulate and predict the movement of groundwater and contaminants in the subsurface. It comprises two activities, the first of which deals with strengthening HGI-CGS's capacity to undertake cutting-edge numerical groundwater flow in porous aquifers, incorporating the robust assessment of uncertainty. The second activity deals with groundwater flow in the karst aquifers of Dinaric karst region of Croatia using advanced statistical time-series analysis methods. It will also introduce research methods to identify and analyse emerging groundwater contaminants.

Field inspection of WP3 pilot area 2 (wider Pazin area, Istria) on October 25, 2018

WP1

3D geological surveying and modelling - to embed state-of-the-art geological surveying, interpretation and modelling. In the first activity, modern digital geological workflow and subsurface modelling capabilities including 3D virtual reconnaissance will be introduced. Also, digital field data capture, geological databases and 3D geological modelling are introduced. The second activity will reinforce these 3D visualization and modelling skills by applying them to pilot areas using deep seismic reflection and borehole data.

WP1 SIGMA training in Croatia (October 30-31, 2019)

3D geological modelling training for WP1 at BGS-UKRI offices in Keyworth, UK (March 31 - April 6, 2019)

WP3

Identification and analysis of geohazards (WP3) – to introduce cutting-edge remote sensing methods for hazardous geological processes detection, monitoring and analysis. Training also includes the interpretation and visualisation of stereo imagery, processing of satellite imagery, INSAR interferometry and satellite detection of small-scale movements. The project also contains training on heuristic, statistical and geostatistical techniques to enable production of landslide susceptibility mapping.

WP4 Numerical and stochastic modelling training at the British Geological Survey (BGS-UKRI) held from May 28 to June 07, 2019

WP4

Geothermal energy - scientific exchanges and training that will lead to new research into geological controls on subsurface heat flow and geochemical processes operating in hydrothermal systems. HGI-CGS staff will attend training on sampling and analytical methods of noble and dissolved gases from hydrothermal systems. The training is also directed toward interpretation of hydrochemical data and geochemical modelling of hydrothermal systems. Second segment of the training develops fluid and heat flow modelling capability through numerical modelling of geothermal systems.

WP3 Statistics course in R software (January 21-25, 2019)

WP4 Water sampling

Project Information

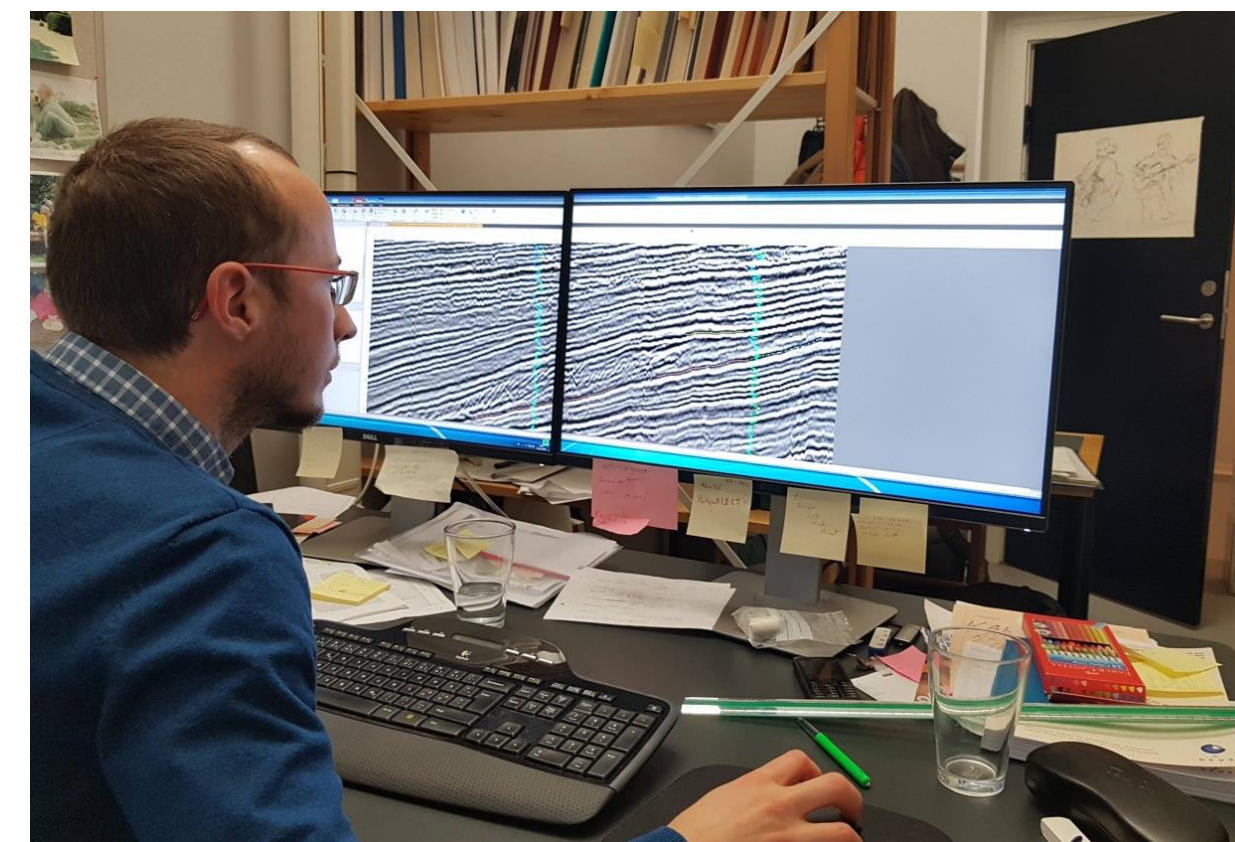Grant Agreement with: Research Executive Agency delegated by the European Commission

Project Start Date: 01/10/2018
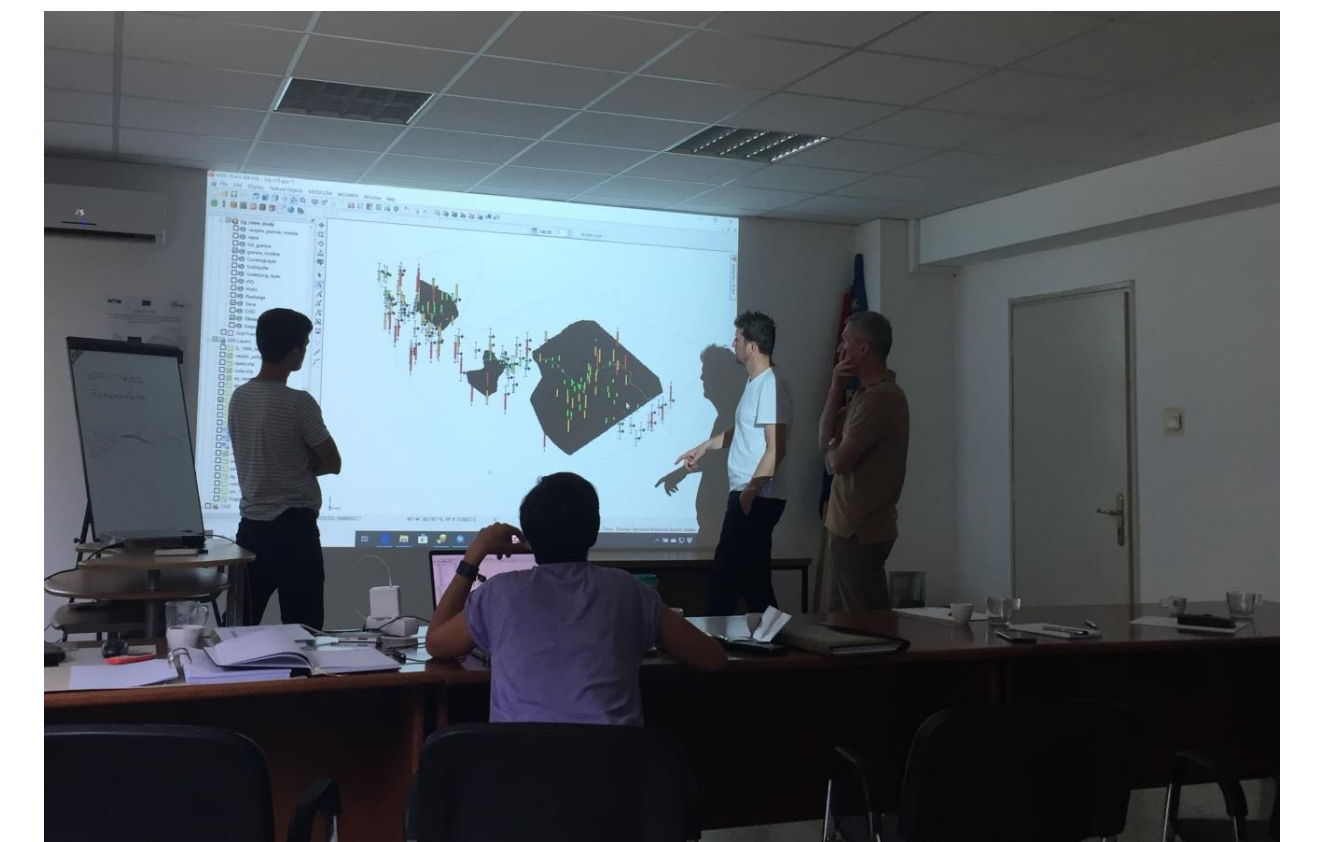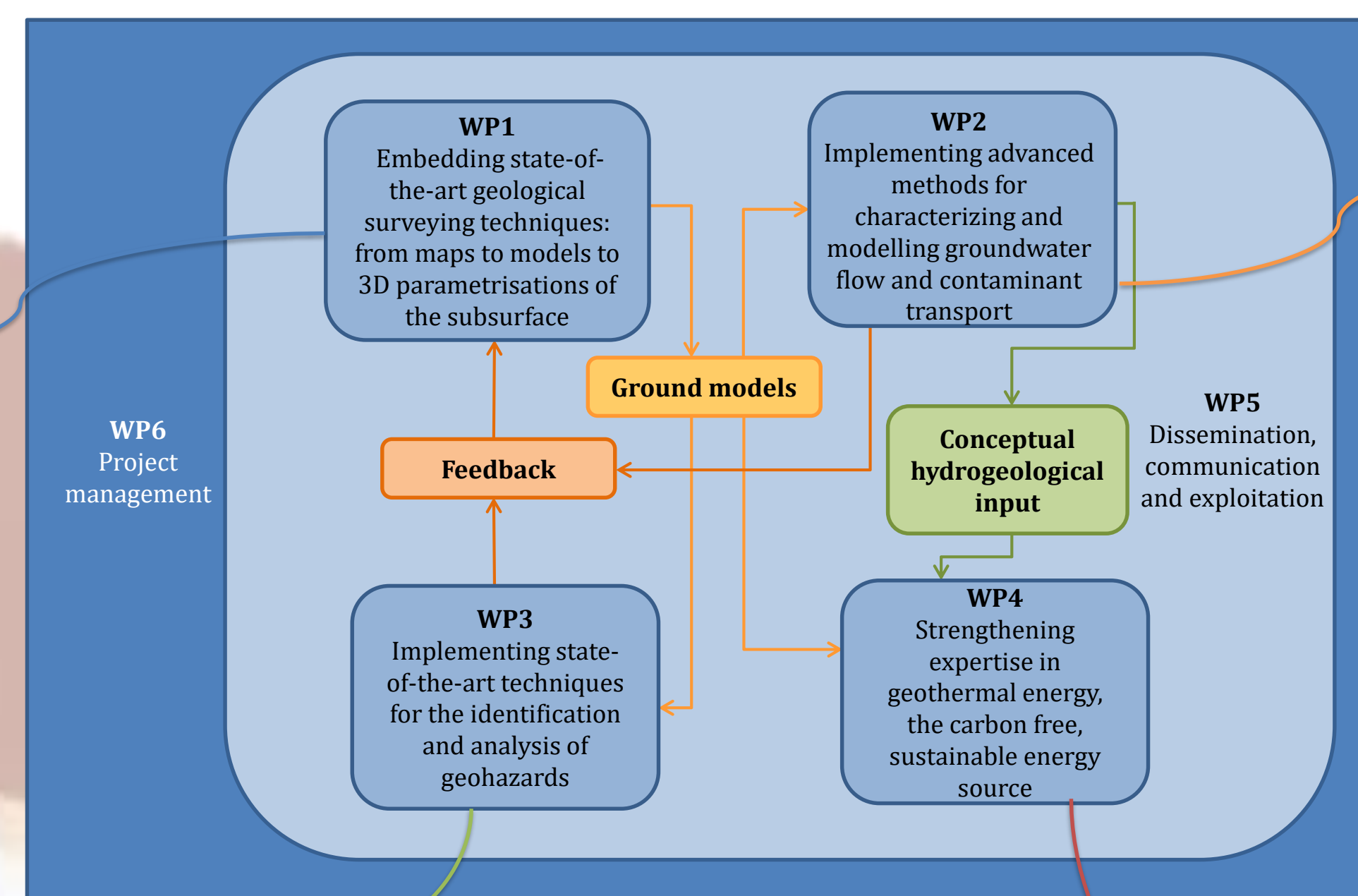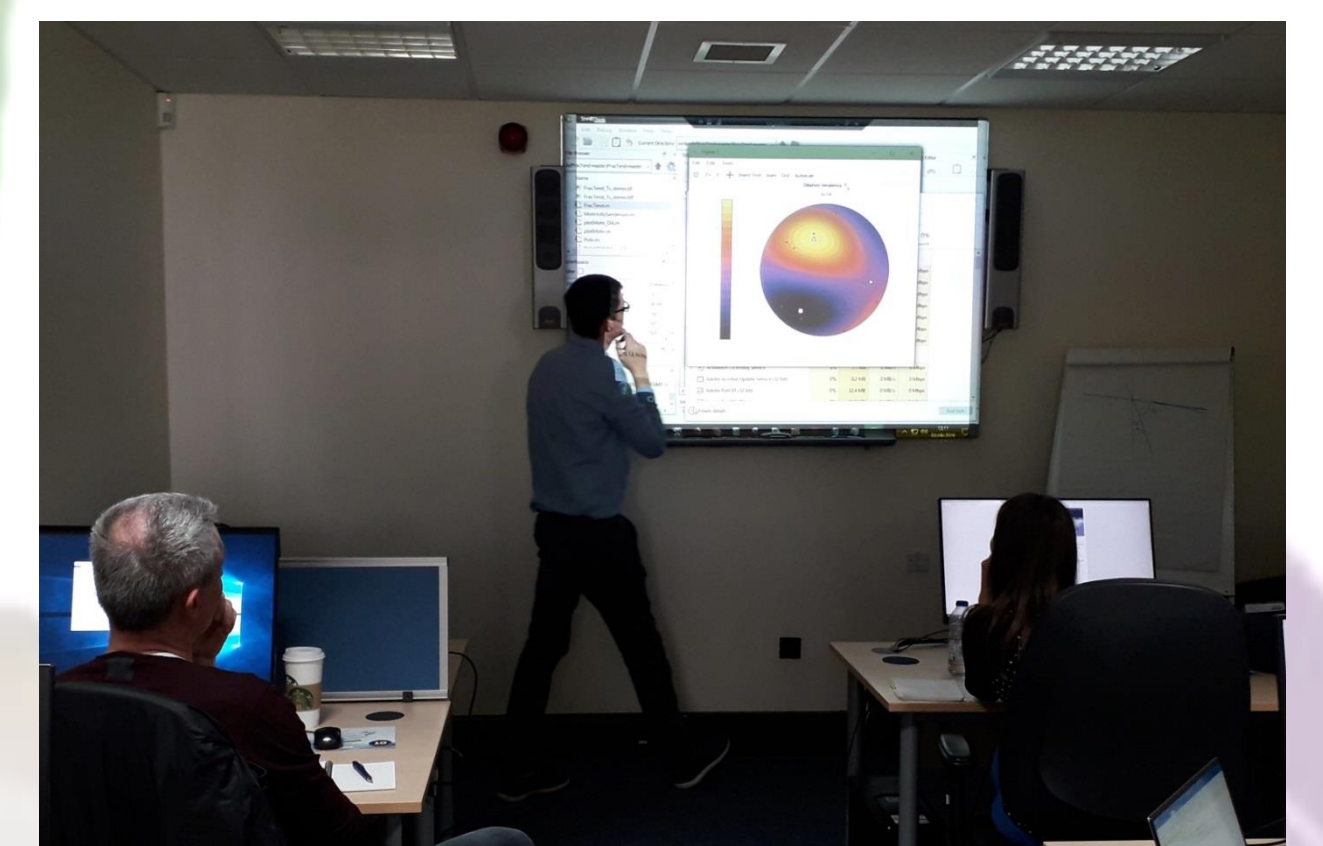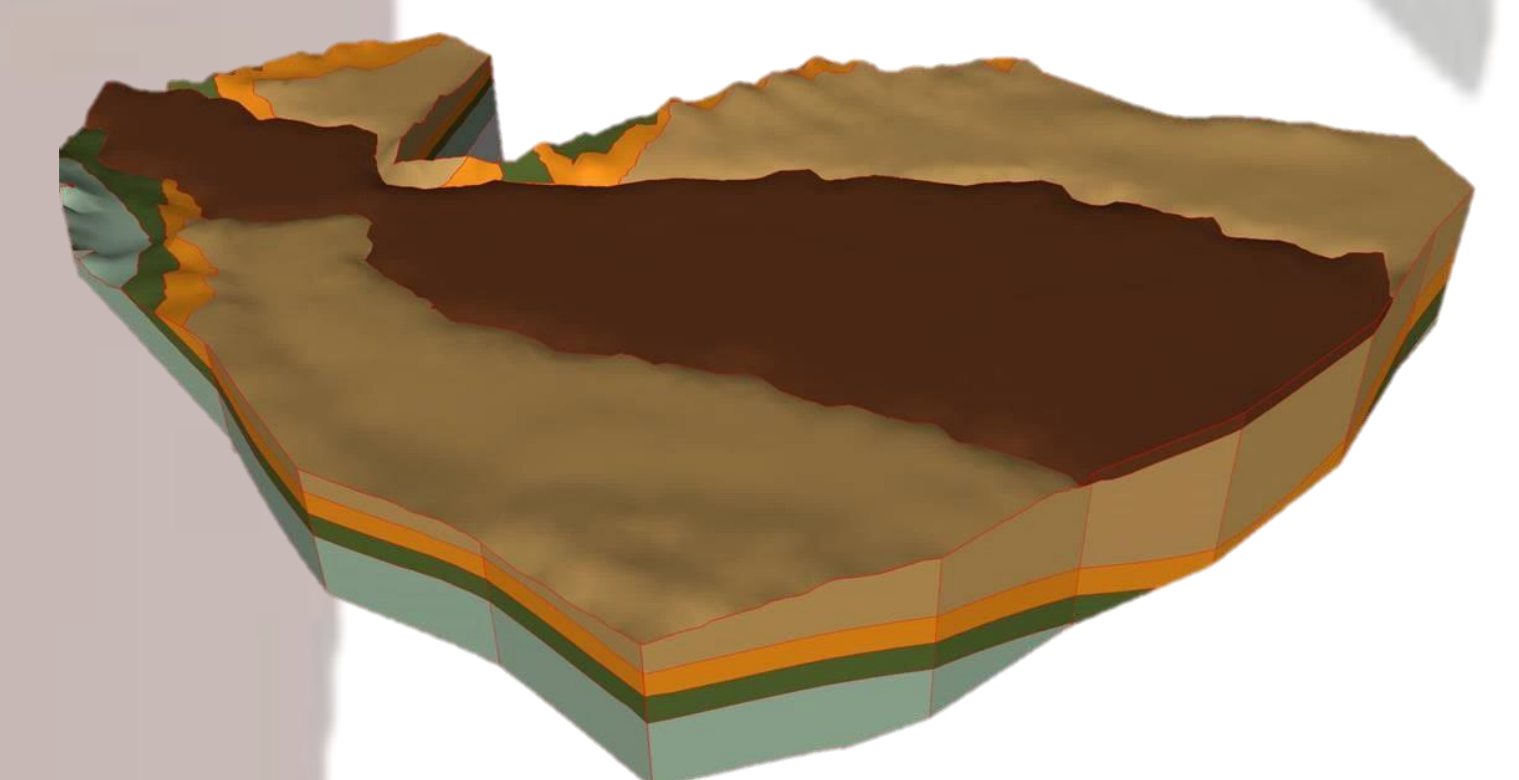Project End Date: 30/09/2021

Reporting periods:
1. duration 15 months, 01/10/2018 - **31/12/2019**
2. duration 21 months, 01/01/2020 - **30/09/2021**
Maximum grant: €996,717.50

More information can be found at:

http://projects.hgi-cgs.hr/geotwinn/
https://www.facebook.com/GeoTwinn/

GeoTwinn project Kick-off meeting group photo (23rd October 2018)

WP1 Geological model of Zagreb aquifer system and surrounding area prepared by HGI-CGS and BGS-UKRI scientists during training in BGS-UKRI offices in Keyworth, UK (31 March - 6 April 2019)

Project Partners:

HGI 1909
HRVATSKI GEOLOŠKI INSTITUT
CROATIAN GEOLOGICAL SURVEY
Croatian Geological Survey (HGI-CGS) - COORDINATOR
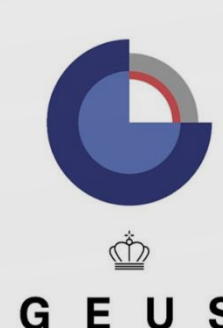
GEUS
Geological Survey of Denmark and Greenland (GEUS)- BENEFICIARY

British Geological Survey
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