

# FROM FIELD DATA TO 3D MODEL OF DEEP UNDERGROUND ENVIRONMENT, MULTIDISCIPLINARY APPROACH AND DATA INTEGRATION FOR FUTURE DEEP GEOLOGICAL REPOSITORY

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During the search for suitable Deep Geological Repository (DGR) site in the Czech Republic an experimental program is being conducted in the environment of former uranium mine 500 m below ground. Czech Geological Survey have been studying the surrounding metamorphic crystalline rock since initiation of excavation works approx. 10 years ago. In that time, our approach to field data collection has changed significantly and the need for comprehensive 3D models is more pronounced than ever. Czech Radioactive Waste Repository Authority (SÚRAO) has assembled a large group of experts from the private and academic sectors to provide necessary data to characterize the Underground Research Facility (URC) and consequently conduct experiments and monitoring program. The common goal is to detect and describe brittle structures such as faults and joints as these are a major concern in safety assessments. This collaboration has resulted in various acquired data such as geophysical profiles, groundwater inflows, seismic tomography, stress field orientation and geotechnical characterization of excavated galleries. We would like to show that by including photogrammetric and LIDAR scanning we can accurately place in-situ measurements and moreover use these in order to build as accurate 3D geological, discrete fracture network or hydraulic models as possible.