



MultiMiner

PRESS RELEASE

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MultiMiner has been launched: the new EU funded project that uses innovative Earth Observation technologies for safer, more efficient and environmentally considerate mineral exploration and mine site monitoring.



MultiMiner addresses a growing problem within the EU; dependency on raw materials. In recent years, the fragility of relying on external sources of critical raw materials has been laid bare. The critical raw material market is subject to influences from many factors including war, sanctions and production restrictions. All of these restrict the EU's options for importation, and they create an unsustainable economic atmosphere for residents. It is essential that the EU investigates its own untapped potential for raw material production and moves towards a more self-sufficient model for critical raw material production.

However, an increase in domestic mining for critical raw materials may produce adverse impacts on the local environment. MultiMiner's outputs will aim to make mining safer, socially more acceptable, more economically efficient and will reduce the negative impact of mining on the surrounding environment.

MultiMiner aims to improve mineral exploration and mining site monitoring practices through its generic, but highly innovative machine learning solutions which do not require any or only little data collected on the ground. MultiMiner uses Earth Observation data from EU's Earth observation Copernicus programme, and commercial and European national satellites. Data from COSMO-SkyMed, EnMAP, PRISMA, TerraSAR-X, as well as high and low altitude drones all feed into MultiMiner's efforts to improve the safety, environmental impact and cost-efficiency of mineral exploration and mine site monitoring. The applicability of the developed algorithms will be demonstrated in four test sites in Finland, Austria and Greece.



The in situ data collection methods are varied also, as Project Lead Maarit Middleton of Geological Survey of Finland (GTK) explains:

"in situ field work for demonstration of the developed algorithms include hand specimen sampling for mineralogy and mineral chemistry, spectral measurements of rocks in the field, water sampling with a drone sampler, water quality measurements and sampling, measurements of ground surface moisture, and utilization of the existing data collected by the mining companies on regular basis for monitoring purposes."

MultiMiner will not only improve mining operations but will also increase their transparency, as potential environmental impacts can be detected as early as possible and digital information of the currently unexploitable raw materials can be stored for future generations. MultiMiner aims to create new, innovative tools utilizing Earth observation data that can be used to discover additional primary resources within Europe, thus ensuring a legacy of EU raw material self-sufficiency.



FACTS

MultiMiner stands for Multi-source and Multi-scale Earth Observation and Novel Machine Learning Methods for Mineral Exploration and Mine Site Monitoring.

MultiMiner is supported by an EU fund of 4,4 million EUR, and will last for 42 months between January 2023 and June 2026.

MultiMiner is a pan-European consortium consisting of 12 partners and 1 associated partner from research institutes, academia, consulting businesses and mining industry with interdisciplinary backgrounds in geology, remote sensing and machine learning. The project partners are Geological Survey of Finland (GTK), Technical Research Center of Finland (VTT), Yara Suomi Oy (Yara), Institute of Geology and Mineral Exploration (HSGME), European Science Foundation (ESF), Czech Geological Survey (CGS), University of Leoben (MUL), Federal Institute for Geosciences and Natural Resources (BGR), Veitsch-Radex GmbH & Co Og (RHI Magnesita), GeoSphere Austria, Hellas Gold S.A (HG), EFTAS Remote Sensing Technology Transfer GmbH (EFTAS), Technical University of Munich (TUM).

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