



MultiMiner: Celebrating One Year of Innovation 🎉

Dear MultiMiner Community,

As we mark the completion of our first year, we're excited to share the journey we've embarked on together in 2023. MultiMiner is more than a project; it's a commitment to revolutionise the European mining landscape for a sustainable and responsible future.

For those just joining us, **MultiMiner is a pan-European project dedicated to transforming the mining landscape.** Funded by the European Commission, our mission is to make mining safer, more efficient, and environmentally considerate. From dam stability to ground moisture monitoring, we're at the forefront of cutting-edge solutions.

EU Supercluster Conference



One of the highlights of our inaugural year was our participation in the EU Supercluster Conference in October 2023. The SuperCluster Event unfolded against the enchanting backdrop of Rovaniemi, Finland, providing a fitting atmosphere for delving into the complexities and opportunities in the exploration and exploitation of raw materials. This gathering brought together visionaries, innovators, and projects dedicated to Earth Observation. It was a platform where MultiMiner had the opportunity to showcase our progress, engage in insightful discussions, and gain valuable perspectives from like-minded pioneers in the field.

We are looking forward to a new year for further cooperation with sister-projects and partners across Europe. The EO innovation community in mining continues to grow, and we are delighted to be a part of it!

Field Works Spotlight: Tailings Dam Stability and Beyond

At the heart of our mission lies a steadfast commitment to tangible advancements in mining practices. Throughout the year, our dedicated team has been actively engaged in conducting fieldwork aimed at acquiring field data for validation of the EO data processing products.

One noteworthy endeavor has been our exploration of EO based ground moisture monitoring. Leveraging state-of-the-art SAR data, we've pioneered new ground moisture monitoring methods. At the Ihalainen mine (Finland), our ground moisture measuring sensor stations have been meticulously collecting time series data, offering invaluable insights into the complex dynamics of ground moisture status. Simultaneously, multispectral and thermal imagery was acquired as background information for upcoming satellite SAR data interpretation. These data could serve as a cornerstone for enhanced monitoring and management strategies of dam stability and dust emissions.

In Hochfilzen (Austria), a crucial aspect of MultiMiner's vegetation monitoring efforts was orchestrated by VTT through the meticulous design of a comprehensive sampling scheme for in situ measurements. The fieldwork,

conducted in August 2023 centered around the vegetation test site adjacent to the Weissenstein open pit. This site was meticulously classified into distinct plots, each representing areas of vegetation cover, including recultivated meadows, pastures, and control plots reflecting various stages of vegetation succession.

Preliminary findings reveal a fascinating variation in species richness across the study area. Simultaneously, GeoSphere conducted multispectral drone imagery acquisition, covering the entire vegetation study area with meticulous precision. Utilising a quadcopter equipped with an AIRPHEN multispectral camera, the data acquisition process facilitated the calculation of various vegetation indices crucial for analysis. This endeavor, conducted over three days and divided into seven subareas, employed top-notch technology to ensure pixel resolution higher than 5 centimeters, supplemented by the GNSS measurement of 22 ground control points for topographic correction. Looking ahead, a comprehensive field measurement campaign is planned for summer 2024, expanding the scope to encompass 60 to 75 quadrats, with a focus on species abundance alongside in situ measurements, further augmented by hyperspectral drone imagery.



2024 will have more fieldworks, teamwork and exploration of what the future of mining could look like. Stay up to date with us on our website, LinkedIn, and Twitter pages to be the first to hear of MultiMiner's latest activities.

[Visit our Website](#)



Teamwork Driving Innovation



None of these achievements would be possible without collaboration. The collaboration between our consortium partners exemplifies the power of collective expertise. Together, we're driving positive change in the mining sector.

[Read More About our Consortium](#)

Thank You to Our Community

To our team, community, partners, and supporters; thank you for being a vital part of MultiMiner's success. Your commitment fuels our journey, and as we celebrate our first-year anniversary, we're more determined than ever to continue pioneering innovation in the mining industry.

Stay tuned for more updates and groundbreaking achievements as we enter the next phase of our journey. The future of mining is bright, sustainable, and responsible – and MultiMiner is leading the way.



