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ROBOMINERS Project to Conduct Field Trials in Estonian Open-Pit Mine

The EU-funded ROBOMINERS project is set to embark on field trials from 31 July to 4 August 2023 in Kunda, Estonia. The trials will take place in an open-pit mine and will mark a significant milestone in the project's mission to enhance European access to mineral raw materials and reduce import dependency.

The primary objective of the EU-funded [ROBOMINERS project](#) is to facilitate the extraction of mineral resources, including strategically important metals crucial for the ongoing energy transition, from domestic sources within the European Union. To achieve this goal, ROBOMINERS is developing a bio-inspired robot specifically designed for mining deposits that are challenging to access or relatively small in scale.



RM1 assembly at the test site in Kunda. Credit: K. Nikolov

During the upcoming field trials, the ROBOMINERS project will put its full-scale prototype, RM1, to the test

in excavation activities under real-world conditions and targeted rock properties. The demonstration aims to showcase the prototype's selective mining capabilities, particularly in following the oil-shale layer in between limestone layers.

The field trials will play a pivotal role in validating key functions of the RM1 prototype, ultimately advancing its Technology-Readiness-Level (TRL) to level 5. By conducting various tests and demonstrations relevant to future mining operations, the project seeks to provide tangible evidence of its successful completion and potential impact.

The main institutions involved in the campaign are Tampere University, through the demonstration of the RM1 robot, and TalTech University which is in charge of the RM1 control and tactile sensing development as well as the event organisation, in cooperation with Kunda Nordic Tsement AS. Other partners involved are the Royal Belgian Institute of Natural Sciences (mineralogical and geophysical sensors), KUTEC (slurry management system), Universidad Politécnica de Madrid (robot AI and coordination), Montanuniversität Leoben (production tool), RCI (data management), La Palma Research Centre (roadmapping) and the European Federation of Geologists (public relations).



Kunda test site: Environment for the ROBOMINERS field trials.

This significant step forward in the ROBOMINERS project promises to revolutionise the mining industry by tapping into domestic resources and reducing Europe's reliance on imports. The successful execution of the field trials will lay the foundation for future mining operations, where the RM1 prototype can be deployed for effective and sustainable mineral extraction.

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Media contact:

Project coordinator, Universidad Politécnica de Madrid (UPM-Car):
Claudio Rossi - claudio.rossi@upm.es

Communication Manager, European Federation of Geologists (EFG):
Anita Stein – anita.stein@eurogeologists.eu