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The ROBOMINERS project: a promising tool for the re-evaluation of “non-economical” deposits. Aiming at the development of a joined European database of potentially suitable ore deposits for the utilization of the Robominers technology.

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The ROBOMINERS (Resilient Bio-inspired Modular Robotic Miner) project aims at developing new methods and technologies (prototype automation and robotics technology) to locate and exploit underground mineral deposits and is funded under the European Union’s Research and Innovation programme Horizon 2020. The project targets mineral deposits that are generally considered “non-economical” either because they are not accessible anymore for conventional mining techniques, or they have been previously explored but exploitation was considered uneconomic due to the small size of the deposits or the difficulty to access them (abandoned, small, ultra-depth deposits).

The European Federation of Geologists (EFG) is part of the Robominers consortium and its role includes the collection of publicly available data at a national level on mineral deposits which are potential targets on the developed mining technology. The Association of Greek Geologists (AGG) is participating as an EFG Linked Third Party in the project aiming, among others, at the creation of a European database of potentially suitable ore deposits for the utilization of the Robominers technology.

The creation of an ore deposits’ European database is a crucial procedure for the best possible design of exploration and exploitation applying the Robominers innovative approach. The AGG has contributed in the building of a database at a national level (for Greece), of the major and most important mineral deposits, according to the project requirements. A number of ore deposits in which Robominers advanced technology may provide a unique solution to mineral extraction, include porphyry and epithermal deposits and especially vein-like types, but volcanogenic massive sulphide (VMS-type) and lense-like or layered orthomagmatic deposits can

also be of high importance. From the above mentioned ore deposits the most abundant in Greece are epithermal deposits, deposits in hydrothermal veins, porphyry copper, as well as chromites in ophiolite complexes. Regarding the spatial distribution vein-type or metasomatic deposits are located mostly in Northern Greece (Western Macedonia and Thrace regions) while significant variable-mineralization deposits are related with the Attico-Cycladic belt volcanism (mainly Lavrion, Evia, and islands in the Aegean Sea). Finally, PGE bearing chromite deposits and bauxite deposits, located mainly in Central Greece, may also be significant for the project.

The establishment of a joined European Robominers database is of great significance for the progress of the project since it will provide essential information on key outputs such as the deposit type and commodities, the host rock, and the spatial distribution of the project's targeted ore deposits and will provide valuable knowledge regarding the future planning of the exploration and exploitation from the developed Robominers innovative technology approach.

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