



**illuMINEation**  
THE FUTURE OF MINING

## PARADIGM SHIFT IN MINING: NEW EU-PROJECT TO SET THE FOUNDATIONS FOR A HOLISTIC DIGITAL TRANSFORMATION OF EUROPE'S MINING INDUSTRY

The Horizon 2020 project titled “illuMINEation” with a budget of 8.9 Million Euro commenced in September 2020. The project’s vision is to tap the full potential a “digital mine” offers by embedding digital thinking into the heart of the mining businesses, by improving digital skills of mining personnel and by enhancing the cooperation along the entire digital mining value chain.

Europe urgently needs to reduce its import dependency in respect to a multitude of raw materials. In order to do so, Europe’s mining industry must completely redesign the process of traditional mining via the adoption of pioneering innovations, accompanied by extensive use of data analytics and new types of Industrial Internet of Things (IIoT).

Under the coordination of the Montanuniversitaet Leoben in Austria, the EU-funded illuMINEation project will highlight significant aspects of digitalisation in underground mining activities with the core objective of improving the efficiency as well as health and safety of European mining operations and its personnel. The project will establish a robust multi-level distributed IIoT platform including cloud/edge computing and distributed data-management, with data sourced from large sensor networks. Advanced user interfaces, dashboards and AR/VR applications will allow for an optimised information flow. A rigorous cyber security approach will ensure that all data is properly protected.

Via digitization of important mining aspects, such as the mineral deposit, rock mass stability, equipment condition monitoring, safety of mining personnel as well as the working and mining environment, the illuMINEation project addresses all of the three key factors that influence the sustainability and profitability of mining operations: Occupational Health & Safety performance (incl. health & safety aspects of the nearby community), environmental impacts and efficient resource extraction.

### Project partners

The high quality and multidisciplinary project consortium consists of 19 partners from six European countries (AT, SE, PL, DE, ES, FI), constituting a well-balanced assembly of world leading industrial and academic players from a multitude of technical fields and applications: Montanuniversitaet Leoben (AT), Joanneum Research Forschungsgesellschaft MBH (AT), Epiroc Rock Drills AB (SE), ams AG (AT), KGHM Cuprum sp. z o.o. (PL), DMT GmbH & CO. KG (DE), GEOTEKO Serwis Sp. z o.o. (PL), Lulea Tekniska University (SE), Universidad Politécnic de Madrid (ES), KGHM Polska Miedz SA (PL), Minera de Orgiva SL (ES), RHI Magnesita GmbH (AT), DSI Underground Austria GmbH (AT), Retenua AB (SE), IMA Engineering Ltd Oy (FI), Fundacion Tecnalia Research & Innovation (ES), Worldsensing SL (ES), Instytut Chemii Bioorganicznej Polskiej Akademii Nauk (PL), Boliden Mineral AB (SE).

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