A Holistic Digital Mine 4.0 Ecosystem

HORIZON-CL4-2022-RESILIENCE-01-06
Project start 01/01/2023

GA No: 101091885

Project Consortium (25 partners)

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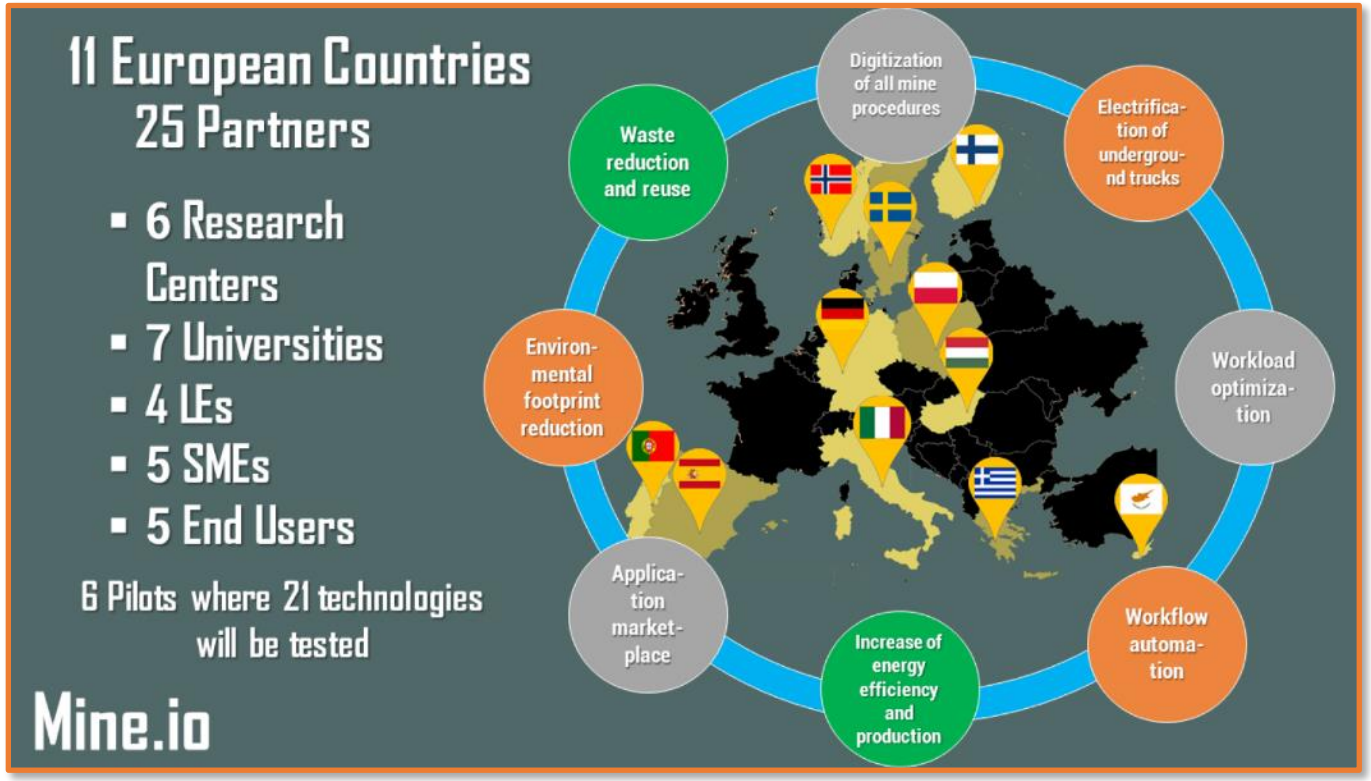
Main Goal



Mine.io aims at

- enhanced systematization of basic processes of the mining industry
- asset and process equipment optimization, based on completely data-driven processes and integrated cyber-virtual and cyber-physical systems
- automation and robotization of mining exploration and production processes
- sustainable mining and post mining management.

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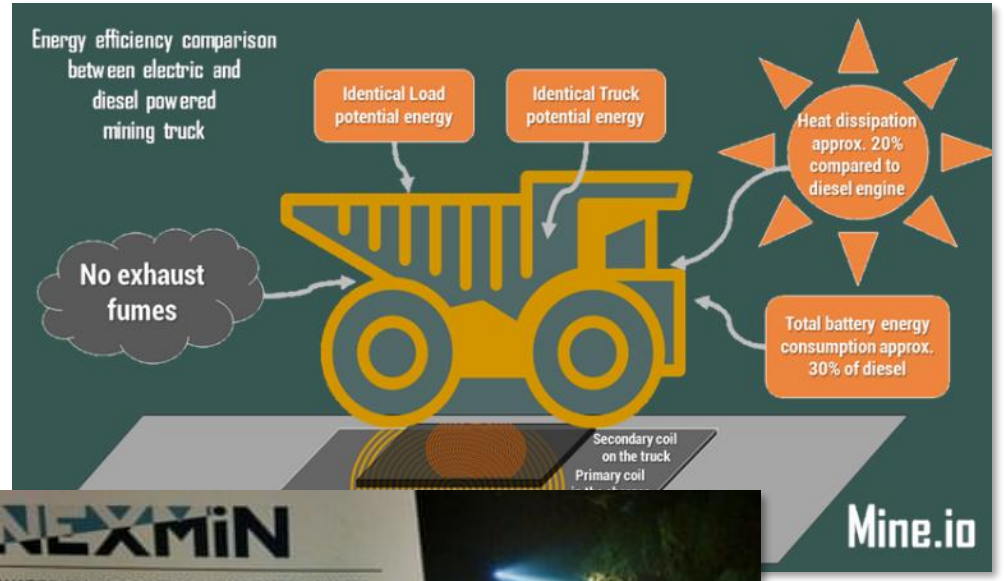
Objectives

OBJ#1: Build an open, digital and sophisticated digital infrastructure and the foundation of the "hyperconnected business" in the Mining 4.0 production

OBJ#2: Develop advanced, low-impact, smart integrated solutions to boost the sustainable discovery of strategic raw materials in Europe

OBJ#3: Advance Mobility, Logistics and Supply Chain Operations

OBJ#4: Digitalization of Assets and Process Equipment.



Objectives

OBJ#5: Advance Sustainable Mining

OBJ#6: Demonstrate, evaluate and all Mine.io concepts & solution in real-scale regional-scope pilots

OBJ#7: Organize and facilitate the uptake, replication and upscaling of the technological solutions developed by Mine.io

OBJ#8: Plan and facilitate the exploitation of project results

OBJ#9: Communicate and disseminate the project's scientific and technical results

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- **Optimization of operations**
- **Resource management**
- **Employee safety**
- **Supply chain management**

Increased speed and security of data acquisition compaigns in the field (Muon and X-RAY rock tomographies and stockpile volume analysis). Hyperspectral imaging for the evaluation of the fragmented ore

Mining planning tool with end-to-end value chain visibility to manage energy supply ,waste recycling and ore exports

Ore transportations monitoring and automation to reduce journey time

Control centers aimed at optimizing mining operations, maintenance activities, production and improving safety conditions

Electrification of underground mobility means to reduce CO2 emissions

Real time monitoring and optimization of the drilling process

Environmental monitoring to ensure air quality

Indoor drone and underwater robots to inspect abandoned areas in the mine

Automation of processes for estimating ore reserves and deposits, based on big data and AI

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Pilots

6 Pilots in 5 countries:

- Finland
- Poland
- Germany
- Greece
- Portugal

21 Technologies will be tested