

COMPETITIVE ADVANTAGE

The AI services are supported by a Digitalization framework that allows the capture of data using IoT and mobile networks, the storage of big amounts of information in any format, a big data analytics framework based on standard tools using the most advanced security technologies.

Finally, data representation can be done with almost any standard tools available in the market. In the project, POWER BI is being used to generate Dashboards.

digiecoquarry.eu



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AI

DEQ

DIGIECOQUARRY
INNOVATIVE DIGITAL SUSTAINABLE
AGGREGATES SYSTEMS



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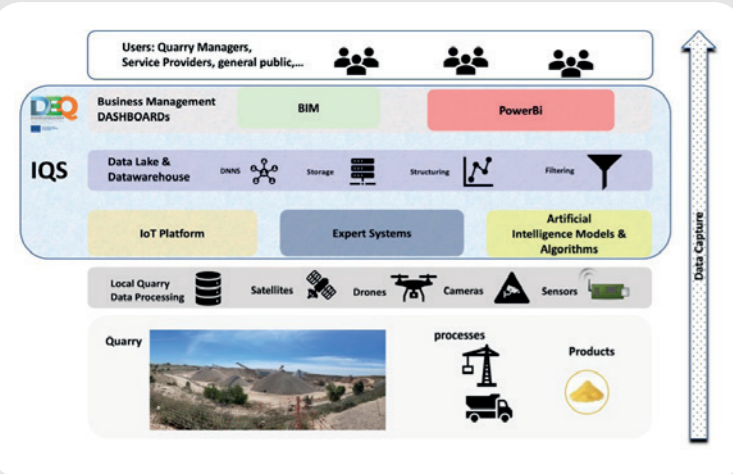


Horizon 2020 research and innovation programme (N° 101003750)

DIGIECOQUARRY

Artificial Intelligence Services

Like many industries, mining can benefit from the power of digitalization and artificial intelligence (AI). But less than 1% of the data produced by quarries is being used. DigiEcoQuarry aims to design, develop, and implement an Innovative Quarrying System (IQS) comprising of sensors, processes, tools and methods for data capture, processing and sharing to provide integrated digitalized, automatic, and real-time process control for aggregates quarries.



DEQ's Digitalization Framework

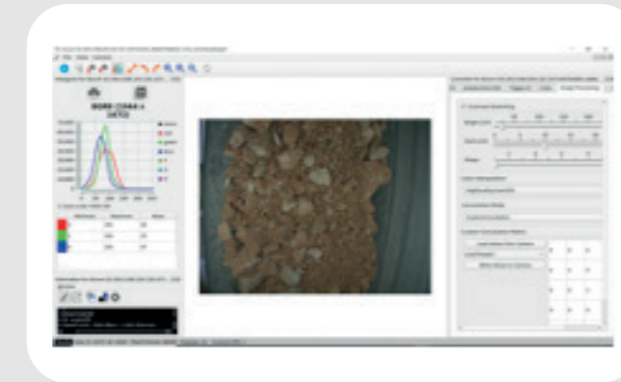
OBJECTIVE

DEQ's AI services are conceived to improve mining processes from different perspectives taking always in consideration actual needs from the 5 pilots involved in the project. They are meant to help solving the following needs:

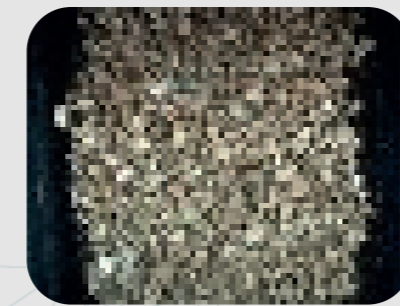
1. Material Quality determination
2. Granulometry of produced material
3. Stockpile volume calculation
4. Machinery failure detection via sound and vibration measurements
5. Production forecast and cost optimization
6. Advanced Document processing using NLP techniques

AI Services

Quality Determination



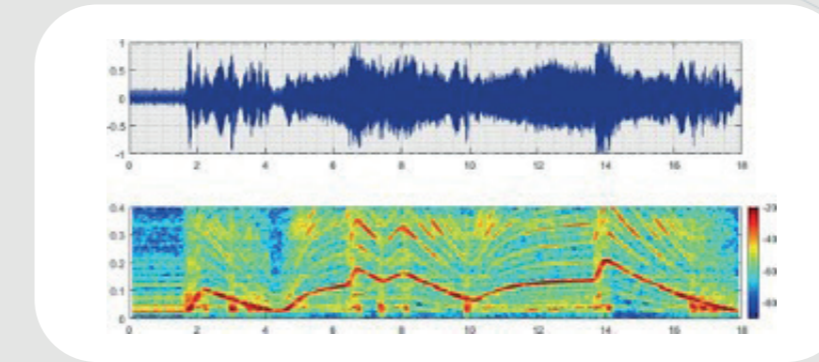
Granulometry



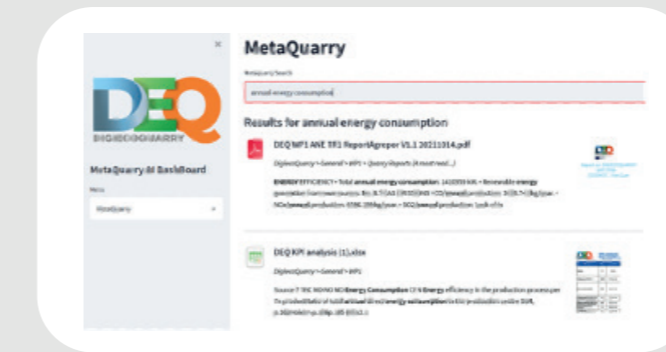
Stockpile Volume Calculation



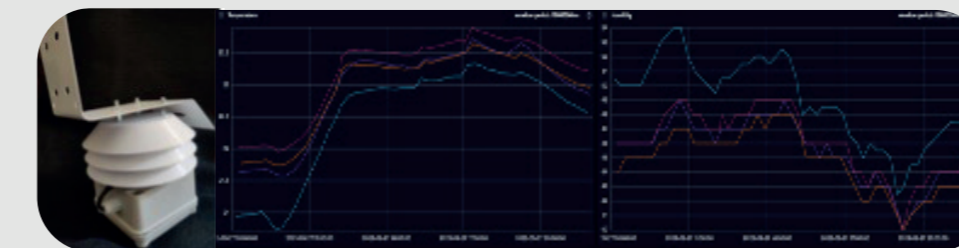
Failure Detection



Metaquarry



Production forecast and Prediction



Applied AI Technologies

Data is being processed from different formats: Video, audio, sensor readings, IoT data, multimedia files, internet resources (Energy costs, meteorological data), etc.

Computer Vision solutions using different algorithms and techniques to analyze colors, shapes, volumes.

Natural Language Programming techniques to manage large amounts of data and find information in different languages.

Deep Learning and statistic analysis to predict cost values and provide insights on how to improve efficiency in the quarries.

