e-mining

Efficient Mining Operations

IoT business tool to increase efficiency of underground and surface mining operations

Accelerate performance

- Measures remote mining operations (excavation, loading/unloading, transportation) offering fine-grained visibility of transactions to ensure accurate calculation of KPIs for performance, cost, product quality and safety
- Validates excavation, loading and transportation contract terms and assists the resolution of claims. Calculates contractual and real costs. Supports electronic assignment of orders to operators
- Supervises safety rules and extracts operator profiles
- Supports real-time collection of data, based on human transactions (e.g. geocoded daily check-list filled by operators and field engineers)
- Ensures product quality traceability
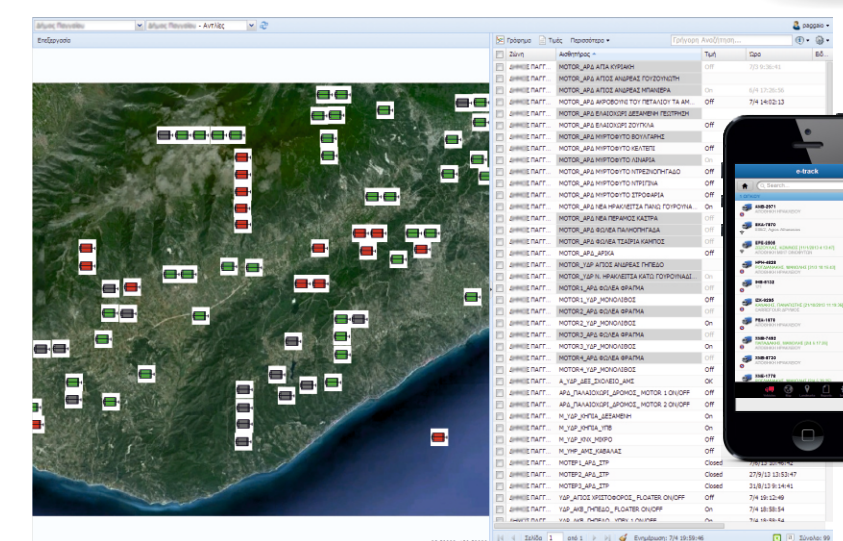
IoT technology

- e-TRACK on-board unit integrating a network of sensors is installed on the equipment (e.g. dozers, loaders, trucks) to automatically acquire real-time operations data
- Sensor data is filtered and aggregated to a higher level of abstraction to supervise and measure field transactions. For example: Trace product quality through automated measurement of loader location in the mine, identification of the loaded truck and of its unloading location
- Mining operations data are used to provide fine-grained cost analysis (fuel, loads, work effort, equipment use and maintenance)
- e-MINING Web/Mobile tools, provide corporate users, being responsible for operational, tactical or strategic decisions, with the appropriate business process visibility and decision-making support

Business Model & Corporate IT Infrastructure
- Contracts
- Cost model
- Operations schedule

Field Operations Sensor Data & Mobile Transactions

Sensor data
- Asset localization
- Asset utilization
- Energy consumption
- Operator profile

Mobile data
- Work assignment
- Check-list

KPIs Evaluation
- Production volume versus asset utilisation
- Contractual vs actual cost

Operations Support
- Daily schedules deviation
- Dispatch new job assignment
- Report on exceptions

Notifications
- Wrong unloading procedure with product quality impact
- Unsafe process conditions

emphasis TELEMATICS