PIMM
Pilot for Industrial Mobile Communication in Mining

2015-09-04

Photo: Boliden
PROJECT GOALS

To evaluate new mobile communication infrastructure in an industrial context where we can validate the technology, applications and business models.

The project will work with the tough requirements for safety, robustness and productivity required of operations in underground mines.
REQUIREMENTS IN FOCUS

Safety

Productivity
REQUIREMENT: SAFETY

How can safety be improved by using a 5G mobile system?

- Robustness
- Coverage ratio
- Applications
REQUIREMENT: PRODUCTIVITY

How can the productivity of a mine be improved by using a 5G mobile system?

• Bandwidth
• Flexibility
• Coverage ratio
• Efficient network expansion
PROJECT PARTNERS

ABB will work on interfaces for monitoring and control using mobile based communication.

Boliden will participate with domain knowledge, test site and experts on mine environment, applications and installation.

Ericsson will participate with the latest mobile technology and with knowledge of technology and business models.

Luleå University of Technology will contribute with domain knowledge of mobile communications in confined environments.

SICS will lead the project and will provide expert knowledge of industrial digitization, business models and complex systems as well as information dissemination.

TeliaSonera will provide core network as well as contribute expertise and business innovation.

Volvo Construction Equipment will adapt and provide equipment for testing automation and remote control.

Wolfit will contribute system knowledge of installation and operation in mining environments.
SCHEDULE

Project start: August 2015
Installations start: January 2016
First pilot: August 2016
Second pilot: January 2017
Project end: June 2017
HOW?

• The project will build a state-of-the-art mobile network in the Kankberg mine.

• Several applications will be implemented, tested and evaluated. From voice communications to control of machines.
EXPECTED RESULTS 1(2)

• Safety
  - Fewer people underground
  - More connected equipment
  - Seamless above-below ground integration in critical situations

• Productivity
  - Enables automation and remote control
  - Seamless above-below ground integration with mobile systems
  - Monitoring of equipment
  - Preventive maintenance through remote diagnostics
EXPECTED RESULTS 2(2)

- Determining requirements for industrial 5G
  - Environmental requirements
  - Technical requirements
  - Latency
  - Bandwidth

- Business models and roles
  - Technology provider and operator
  - The industry
  - Contractors etc.