

# Driving Reliable Communications Deep Underground with Private LTE

Athonet Mobile Core Delivers High Performance and Resiliency



The customer is Zinkgruvan Mining, an international mining company.



MINING,  
OIL AND GAS

## the challenge

Rising labor costs, increasing safety requirements, non-availability of skilled personnel and the need for greater operational efficiencies are leading to massive digitalization of mine operations. These digital changes include video-enabled communications for health and safety and the need for a high performance and low-latency communications network for remote operations and monitoring of mining equipment, asset and human tracking. Additionally, the mine wishes to achieve greater energy conservation for example through efficient use of energy intensive equipment such as ventilators. The mine needed a secure, highly reliable wireless network to support these efforts.

## the solution



ATHONET'S 5G CORE NETWORK



IMS FOR INTERNAL VOLTE COMMUNICATION AND MC-PTT



CGW (CHARGING GATEWAY)



EMBMS FOR DATA BROADCAST SERVICES

## the result

- Coverage for 48 kilometres of underground tunnels
- High performing and resilient
- Monitoring of mining equipment
- Local control and visibility of the data network
- Network segmentation
- Control, self-service and affordability

## INTRODUCTION

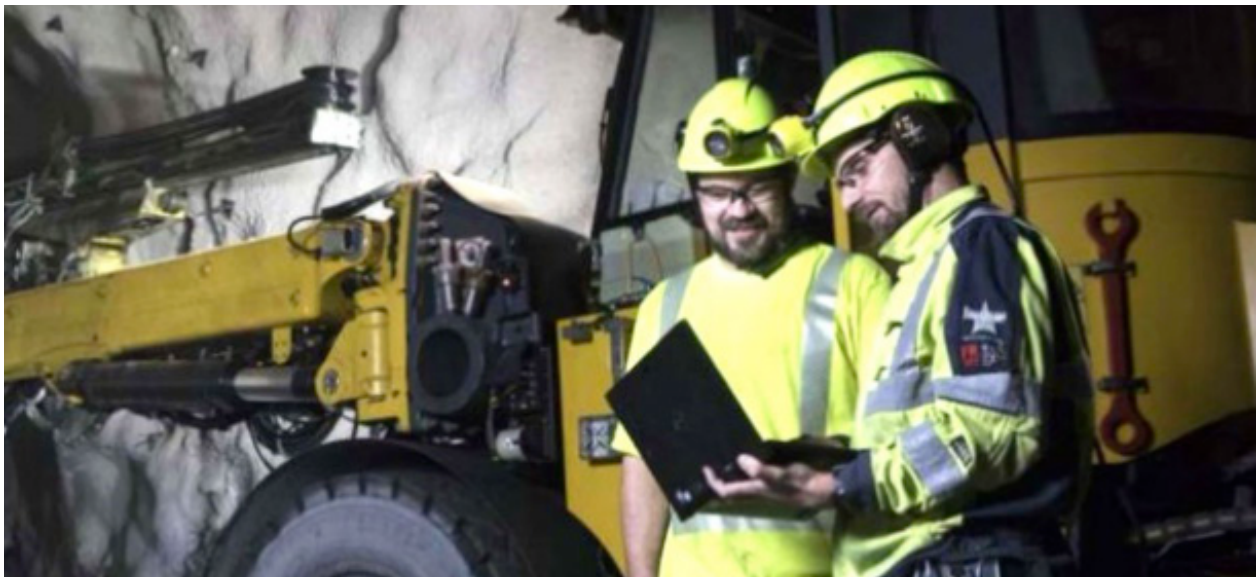
Underground mining is a dangerous and complex human activity, where digitalization using mobile technologies can bring large benefits in worker safety, operational efficiency and return on investment. This international mining company operating a northern European underground mine partnered with a leading European mobile operator to provide Private LTE connectivity at the mine, which employs over 400 people. This international mining company partnered with a leading European mobile operator to provide Private LTE connectivity at one of its northern European underground mines it operated. This mine employs over 400 people.

## SOLUTION

The mine adopted a private LTE network. After over a year of trials, it was able to demonstrate that the solution clearly met its broadband communications, full mobility, reliability, and security requirements. It provided local control and visibility of the data network, including user-defined IP addressing, network segmentation and access all of which would have been too difficult for a macro network to provide to them. Interestingly, one additional requirement that came out of the trial was the need for a mobile core network platform that was both highly reliable but also offered a high degree of self-service capability for the mine's own IT consultants.

## BENEFITS OF DEPLOYMENT

- **Remote control mining** – Reliable broadband video and telemetry for remotely controlled mining equipment such as haulers and excavators reduces the need for skilled operators to traverse underground tunnels. Working from a safe and above-ground control room increases worker safety and attracts employees who were otherwise put off by underground working conditions.
- **Sensor connectivity** – Digitalization and automation of large and complex crushing, processing and extraction plants, movable machinery, and haulage equipment through massive deployment of sensors with backhaul or direct communications over LTE.



- **Real-time inspection** – Real-time AR applications in the field for construction, inspection and maintenance use cases using LTE for backhaul.
- **Environmental optimization** – Monitoring employees and assets to optimize air conditioning, heating, and other environmentally sensitive operations according to the presence of assets and people.
- **Health and safety performance** – Reliable video communications supports “man-down” alarms and remote incident analysis to improve safety.
- **Improved surveillance** - Improved perimeter and spatial security through AI-influenced video surveillance via drones and stationary cameras.

### CONCLUSION

Athonet’s core network allowed the mobile operator to provide the mine with a solution that delivered on all its reliability and performance needs, while also giving the mine its required level of visibility, control, self-service, and affordability.

*“To be able to operate as safely and efficiently as possible, we want to automate and remotely control production to a greater extent. said Staffan Sandström, CEO, Zinkgruvan Mining. The Athonet mobile core and the private 5G/LTE network give us the communications performance and reliability we need to carry out our digitization plans.”*

— Staffan Sandström, CEO, Zinkgruvan Mining

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know more?

contact us to discover how we can improve your  
services thanks to our Core

contact us

**Athonet, a Hewlett Packard Enterprise acquisition is a leader in private cellular network technology delivering a mobile core to enterprises and communication service providers to connect applications, devices and radios.**

With more than 18 years of experience in delivering 4G/5G mobile core solutions to customers and partners in every region of the world, Athonet supports key industries where network control, mobility, security, performance, and cost are important for business outcomes.



a Hewlett Packard Enterprise acquisition

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