CASE STUDY:

Extreme Cold Temperature Success

MAKING MINING SAFER

EXTREME WEATHER SUCCESS - DEPLOYMENT IN RUSSIA'S EXTREME COLD TEMPERATURES

Two sites in South Western Siberia - Chernigovets Coal Mine and Zarechnaya Coal Mine - trialled our SSR-XT radar system throughout an extremely harsh winter, which saw the system functioning at -40°C temperatures autonomously without a shelter.

Siberia's climate and weather is very extreme. The summers are short, whilst the winters are long, harsh and have an annual average temperature of 0.5°C with thick layers of snow remaining on the ground for at least six months of the year.

Utilising over 12 years of experience of operating our radars in arctic conditions in Northern Canada, GroundProbe was able to engineer our radar systems to overcome Siberia's extreme climate, and function at -40°C without a shelter, any external power, or other external systems.

In the absence of this 240V power supply, all the heater assemblies were powered from the Continuous Power Supply (CPS) system of the radar.

"Initially, the sites were going to provide mains power in order to power up the heater assemblies, however due to various reasons this did not occur."

Simon Pitt, Senior Technical Specialist, GroundProbe.

Data sensors were fitted to the various radar components to verify the running temperatures and aid in fine tuning the heater settings, so that the heaters run with the least power consumption possible for the radar to function, conserving power and reducing the frequency of refuelling.

GroundProbe achieved the objective of running all the radar heaters from the CPS with acceptable charge cycles during the coldest months of winter in Siberia, consequently allowing all of the on-site GroundProbe radar systems to run smoothly.

Another vendor's radar system was also on-site during this time but was forced to be switched off and stored for three months, unable to function in these extreme cold conditions.

Following this successfully deployment, GroundProbe has now proven to provide 24/7 reliable radar usage in -40°C temperatures and lower, across some of the coldest parts of the world including Russia, Canada, the United States of America, and Mongolia.