

# **SIMS**

## **Sustainable and Intelligent Mining Systems**



Unlike other research projects, SIMS was a demonstration project. The focus here was on demonstrating the functionality of technologies that will soon be launched on the market. Two key technologies used in the project, which AMT has been working on adapting for mining for many years, are ultra-wideband technology (UWB) and infrared thermography (IR).

The UWB technology was applied in the localization and positioning of vehicles and thus creates the basis for underground automation. UWB technology, unlike GPS and other systems, can also be used in harsh underground environments. The SIMS project was able to demonstrate the positioning in underground routes and entire mine areas in combination with other technologies such as inertial navigation.

Infrared thermography was used for two applications within the SIMS project. Firstly, infrared cameras were used to detect the material composition and the layering at the joint. On the other hand, this technology was used to detect impending ridge fractures, which are already indicated by very small cracks. In both cases, the detections have so far been carried out manually. With the help of the IR camera, people can carry out the necessary analyses outside the danger zone. This increases the safety of man and machine.

## **SIMS Videos**

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