CASE STUDY

IBIS-Rover in complex pit geometry
Introduction

The Anagold Çöpler Gold Mine in Turkey takes advantage of the flexibility of the IBIS-Rover to cover multiple critical areas in complex pit geometry.
Rapid deployment, enhanced mobility, fast scanning time and a widened field of view (up to 270°) are the key features that made IBIS-Rover the most suitable monitoring choice at Çöpler Gold Mine. The radar unit was installed in February 2016 to cover 180° with an outstanding 2 minute scan time and sub-bench resolution at a distance of up to 1100m. Equipped with the optional winter kit, which provides an operating range down to -30°C (-22°F), the radar was fully operational despite the cold winter climate and freezing temperatures as low as -20°C (-4°F).

The Çöpler operation is characterized by a complex geometry where two small pits are located next to each other and connected by a pushback that encompasses the entire extent of the mining area. The main goal for the local geotechnical engineers was to achieve maximum coverage over the areas of concern without compromising the resolution or the sensitivity of the movement detection.
The main areas of concern, which are located in the two separate pits, are indeed simultaneously covered by the IBIS-Rover with the best possible line of sight as a result of the ability to rotate the acquisition unit. Immediately after deployment two previously identified major moving areas were picked up by the radar, one in each pit, showing a cumulative displacement that exceeded 200 mm over the following 24 hours. The high density of the detail provided by the radar map guaranteed the perfect delineation of the extension of the moving area and the safe execution of mining operations.

The enhanced algorithm for automatic atmospheric removal provided an extremely high data quality; the entire dataset was indeed unaffected by the massive accumulation of snow in the pit.