

CASE STUDY

Digging deep

How one autonomous mining company's commitment to prioritizing safety is paying off—in more ways than one



Autonomous productivity and safety

Some companies talk about 'safety first', others live it. For Sandvik Mining and Rock Solutions, a global supplier of the equipment, tools, parts, services and digital solutions that empower mining companies around the world, safety has become synonymous with success—you can't have one without the other.

Sandvik is known for enabling safe and sustainable mining environments—in part due to its autonomous capabilities in AutoMine® surface drilling solutions, which is where Trimble® comes in. In its perseverance to find partners that prioritize safety and sustainability as much as Sandvik does, they reached out to Trimble and have been collaborating with the team and using Trimble components since 2012.

Today, Sandvik uses Trimble BX992 GNSS receivers with antennas and cabling—a complete GNSS receiver package. "These products and services are focused on drill navigation and high precision positioning of holes," says Ty Osborne, Acting Director, Global Product Line and Customer Projects Automation.

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Tackling two key challenges in mining, precision and accuracy, as a team

Sandvik's partnership with Trimble addresses two of the biggest challenges in mining: precision and accuracy. With proper precision and accuracy, operations can assure mineral recovery without much dilution or loss. In addition, every mining operation promotes safe production and works toward ensuring that every person (whether mining or construction, an industry Sandvik Global also serves) goes home safe and in one piece every single day.

Although GNSS is not the only tool, it is a core factor in ensuring productivity and safety through providing precision for autonomous, machine guidance, material recovery and safety solutions. As pits get deeper, GNSS and its technologies become even more vital (although ensuring that there is GNSS positioning throughout the pit is important in any mining operation).

For Sandvik and its partners, this unflinching commitment to safety is a big driver behind all of the work it does—and safety is directly related to a mining company's ability to achieve highly accurate positioning data. Without that, accident rates increase, productivity drops and the shift toward autonomy slows. "Incorrect positioning leads to inaccurate results, safety risks and the inability to meet customer requirements, which could ultimately drive operations out of business due to low profits due to high rework costs and lower mineral recovery," says Osborne.

"In addition, the future of mining is heading towards autonomous operations. Surface operations without GNSS technologies will definitely be left behind because without GNSS there is no remote automation."

When it came to choosing a GNSS provider, Sandvik took its lead from its customers. "Some customers mentioned that the choice of Trimble is related to the support that they receive from Trimble," says Osborne.

"Others highlight that the technology provided by Trimble surpasses that of other GNSS suppliers in the market. As for Sandvik, when customers utilize Trimble, we are able to lower the risks related to GNSS positioning because we know the positioning results will be accurate and precise. Additionally, mining environments can be harsh and we have had good experience on the reliability of the Trimble unit in the mining environment, specifically for the autonomy developments."



Trimble response time put to the test

Trimble's support and responsiveness is impeccable, says Osborne, recalling one example that stood out in his mind: "On one occasion, one of Trimble's sales managers located in Germany agreed to meet with our team in Florida to discuss the newest technologies within Trimble's latest GNSS base station and receiver. The amount of detail that they were able to cover was impressive. In my view, when a company's sales team can clearly communicate the technology, its use and capabilities—that company is winning."

Osborne also noted some other pleasant surprises, namely that "the improvements made with Trimble BX992 GNSS receivers have proven to be beneficial in deployments where customers experience GNSS challenges such as solar scintillation or satellite coverage."

At the end of the day, Osborne says that when deploying Sandvik's AutoMine Surface Drilling remote automation and high-precision navigation solutions at customer operations, using Trimble GNSS solutions, "success is the common outcome".



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