



Nornickel has tested a private LTE/5G network in cooperation with Nokia, Ericsson, Huawei, MTS, and Megaphone. Tele2 Russia also provided frequencies for the pilot project.

Control room operators at the Skalisty mine

The testing was conducted at Nornickel's Skalisty Gluboky, the deepest mine in Eurasia, at a depth of 875 m using 1.8GHz—2.6GHz frequencies for LTE and 28 MHz for 5G. The private LTE/5G technology has proved effective in ensuring robust and safe high-speed data transmission and communications in difficult mining conditions underground.

The installation of a process network at production sites is a way to tap into a range of digital technologies such as high-precision machine guidance and employee condition monitoring systems, push-to-talk solutions, intelligent video analytics for mining and machinery, two-way talk, video surveillance, and telemetry (data transmission from sensors at production sites). The potential rollout of a 5G/LTE network can accelerate digital transformation in production, facilitating the implementation of autonomous mining projects provided by Nornickel's digital transformation strategy.

"As we are exploring the possibility of deploying a private Wi-Fi network at our mines, the testing confirms that the technology can be used in mining operations. With transmission rates of up to several gigabits per second, 5G offers high levels of data security. A system of this kind can be particularly effective for remote control, unmanned equipment operation and production automation, contributing to higher labour productivity and improved operational safety," said Liana Ermishina, Director of the Information Technology Department at Nornickel.

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