

Mining Innovation News

Mine-Ready Radar for Fracture Detection



CRIS is used to detect fractures in rocks



MIRARCO staff explains the power of Virtual Reality in the mining industry at Inco's Centennial celebration

MIRARCO's collaborative effort with RST AG, of Salem, Germany, to develop a mine-ready radar for fracture detection is now entering its third development stage. It all began with a technology transfer programme directed specifically at the resource sector, supported by the European Space Agency's Harsh Environments Initiative. MIRARCO recognized the potential of the stepped frequency radar (SFR) technology developed for planetary exploration by RST. The first prototype crack identification system (CRIS) was developed in 2001.

In contrast to classical pulse radar systems in which amplitude modulation is employed, SFR systems operate with amplitude-continuous radar signals; it is the frequency that is modulated. The result is enhanced radar range and resolution.

Upon learning about the capabilities of CRIS and this new radar technology, the Potash Corporation of Saskatchewan, Inc. (PCS), approached MIRARCO regarding its applicability to their operations. This led, in early 2002, to field trials with CRIS in local potash mines near Saskatoon. The success of these trials prompted Agrium and IMC to join PCS to collectively investigate this technology's potential. The next set of trials in potash mines will better define the desired operational characteristics, commencing in early October.

Visit www.mirarco.org for the full story.

Virtual Tour of Creighton Mine at Inco's Centennial Celebration

In June of this year, Inco Limited celebrated its 100th birthday, at Sudbury's Science North. MIRARCO was proud to be a part of this event by hosting Virtual Reality (VR) demonstrations of Inco's Creighton Mine. Approximately 200 people experienced the Virtual Underground Tour at Laurentian University's VR facility, the only technology of its kind specializing in mining and mineral exploration applications.

The VR laboratory was transformed into an amazing virtual vehicle to quickly communicate the highlights of Creighton Mine. Sudburians of all ages were wowed by the high-tech 3D glasses and vibrant images on the 22-foot wide screen. Visitors were impressed with how effectively the facility communicated a large amount of information in such an efficient and user-friendly manner.

Visit www.mirarco.org for more on VR in mining.

Mark your calendar and register:

Professional Development Course: November 13 - 15

MIRARCO will be hosting a professional development course on "*Brittle Failure of Excavations in Highly Stressed, Rockbursting Ground.*" The instructor Dr. Peter Kaiser, Chair for the Geomechanics Research Centre, has designed a course that is intended for practicing engineers and geologists faced with challenges while tunnelling at depth in brittle rock. The content of the course will be of value to those involved in the design of underground mining excavations, large underground caverns and repositories in massive rock.

For program details and to register please go to www.mirarco.org.

Engineering Seminar Series: Once again, MIRARCO, in association with Laurentian University's School of Engineering, will be hosting the Engineering Seminar Series. This will be comprised of lectures from a select group of professionals and graduate students on timely topics in mining. The lectures are scheduled for every Thursday at Laurentian University, room F228 from 4:30 – 5:30 pm starting October 10, 2002.

Please visit www.mirarco.org for program schedule.

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