# Ideon Delivers High-Resolution Void-Mapping with No Drilling

VANCOUVER, BC, CANADA, June 13, 2024 /EINPresswire.com/ -- Ideon Technologies recently showcased its high-resolution void-mapping capabilities at the NORCAT Underground Centre in Sudbury, Ontario, locating and mapping a 100 m (328 ft)-long section of a mine conveyance tunnel measuring at metre (yard) scale. This outcome was achieved using the new Ideon in-mine imaging solution, imaging upwards from the existing mine adit, with zero drilling required to map a subsurface volume of over 300,000 m3 (10.6 million ft3) and clearly delineate the linear low-density feature sitting approximately 35 m (115 ft) below the surface.

Unexpected subsurface voids cost mining companies hundreds of millions of dollars each year in equipment, time, remediation, and opportunity. Whether naturally occurring or man-made (such as historic mine workings), voids can lead to considerable ground instability and operational risk. They can cause sinking or sudden collapse, resulting in property, equipment, and environmental damage – even loss of life. Ideon offers mining companies the ability to confidently and safely locate and map voids before any equipment or personnel are deployed in a target zone.
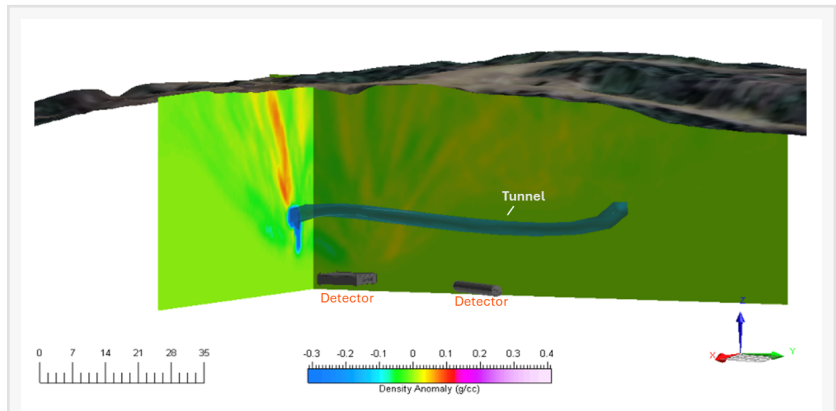
Section view of the density model showcasing the linear tunnel feature (blue), as imaged above the Ideon muon detectors positioned in the mine adit beneath, mapped to metre-scale accuracy. Note that the resolved tunnel density is 0 g/cc.
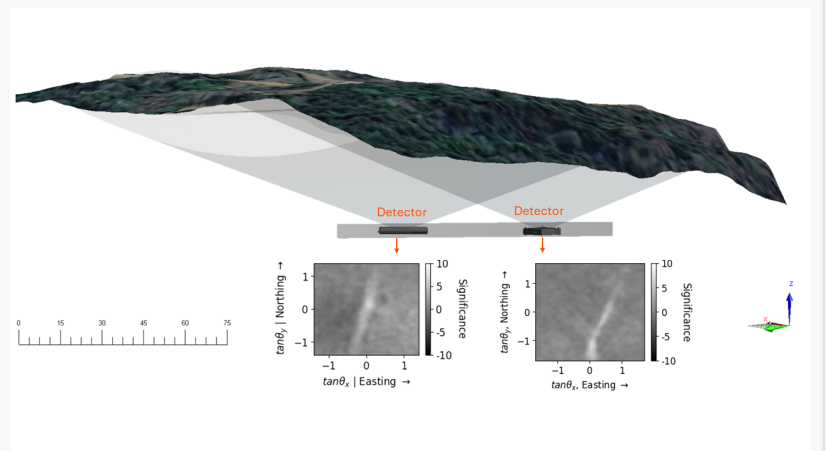
Positions of the in-mine imaging equipment in the mine adit, the fields of view covered as the muon detectors image upwards towards the surface, and the radiographs outlining a low-density anomaly corresponding to the conveyance tunnel above.

The NORCAT Underground Centre is hosted in the former Fecunis Adit Mine north of Sudbury, previously owned by Falconbridge (now Glencore) and closed for operations in 1977. Ideon installed its in-mine imaging solution at the Centre in February 2024, gathering data targeting the overburden above the main tunnel of the facility.

This imaging program was conducted blind: no geological information was available for the area. During analysis, a strong low-density feature emerged that – when compared with hand-drawn maps of historic subsurface workings in the area – aligned directly with a conveyance tunnel measuring approximately 2.5m x 2.5 m (8 ft x 8 ft) that once carried ore to the surface of the mine.

Earlier this year, Ideon's ability to accurately map similarly small (1 m, or 3 ft) subsurface voids was featured on [The History Channel](#) program The Curse of Oak Island, where historic tunnels (including some that are water-filled and partially collapsed) hold clues to an ancient mystery off the coast of Nova Scotia.

Ideon harnesses the natural energy from supernova explosions in space to image deep beneath the Earth's surface. Using sub-atomic particles called muons, the company creates high-resolution 3D density models that help geologists identify, map, characterize, and monitor mineral deposits, subsurface voids, and other geologic anomalies across the full mine life cycle – from exploration to operations, into reclamation and aftercare. Ideon subsurface imaging solutions include an advanced suite of hardware and software, including multi-physics data fusion capability, analysis, and geological interpretation services.

[About NORCAT](#)
NORCAT is a global leader in skilled labor training and development and innovation services. The NORCAT Underground Centre serves as the world's only operating underground mine designed to enable the development, testing, and demonstration of emerging technologies poised to transform the global mining industry.

[About Ideon Technologies](#)
Ideon Technologies uses the energy from supernova explosions to image deep beneath the Earth's surface. A spin-off from TRIUMF (Canada's particle physics lab), Ideon is a world pioneer in cosmic-ray muon tomography. By transforming muon data into reliable 3D density maps, Ideon helps geologists identify, characterize, and monitor mineral deposits and other subsurface anomalies with confidence. This reduces risk and cost of traditional methods, while saving time, optimizing return, and minimizing environmental impact across the mining value chain. In turn, this is helping accelerate the world's transition to low- impact mining and transform how companies find the critical minerals required to power the global shift to clean energy.

Kim Lawrence
Ideon Technologies

+1 403-708-5350
[email us here](#)

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