



INTERNATIONAL
MINERALS INNOVATION
INSTITUTE

Advancing Underground Safety with AmbDrift

Ensuring safe conditions in underground mining is critical to protecting workers and maintaining efficient operations. Traditional inspection methods, while effective, can be time-consuming and disruptive. That's why we are partnering with AmbAI to develop and deploy a commercial-ready version of **AmbDrift** — an innovative multi-sensory platform for continuous monitoring of underground drifts.

AmbDrift integrates AI-powered visual inspection and analysis of non-visual data, such as stress and movement within geological formations, collected through a network of sensors. Cameras mounted on service vehicles gather real-time visual data, while sensors monitor structural indicators — all processed through advanced AI algorithms. The system identifies visible and invisible defects, prioritizes areas needing attention, and recommends timely remedial actions without interrupting daily operations.

The outcome will be a ready-to-deploy version of AmbDrift, complete with data collection tools, operational sensor networks, customized decision-making rules, user-friendly interfaces, and expert guidance for installation and fleet preparation. Beyond mining, the technologies developed through this project have the potential to support safety monitoring in other sectors such as oil, gas, and infrastructure.

By combining cutting-edge monitoring with proactive risk management, AmbDrift aims to make underground mining safer, more efficient, and better prepared for the future.

***Smarter safety through real-time
underground monitoring.***

We are working to deliver AmbDrift, an AI-powered multi-sensory platform that continuously monitors underground drift conditions — enhancing worker safety, minimizing disruptions, and advancing the future of mining operations.

Proponent: Ambitionner AI Solutions Inc.

Project Duration: April 2025 to March 2027

Project Cost:	\$609,541
IMII Members Contribution:	\$169,435
Ambitionner Contribution:	\$246,579
IRAP & SAIF Contribution:	\$138,794
Industry In-Kind Contribution:	\$ 48,333
SaskTel In-Kind Contribution:	\$ 6,400