

## **MINING TECHNOLOGY INNOVATION CHALLENGE**

### **For Canadian Organizations**

Canadian organizations are invited to pitch, build, and test a proof of concept using Rogers Wireless Private Network, edge technologies by Dell, and the NORCAT Underground Centre test bed to accelerate innovation in the mining sector.

#### **The Challenge**

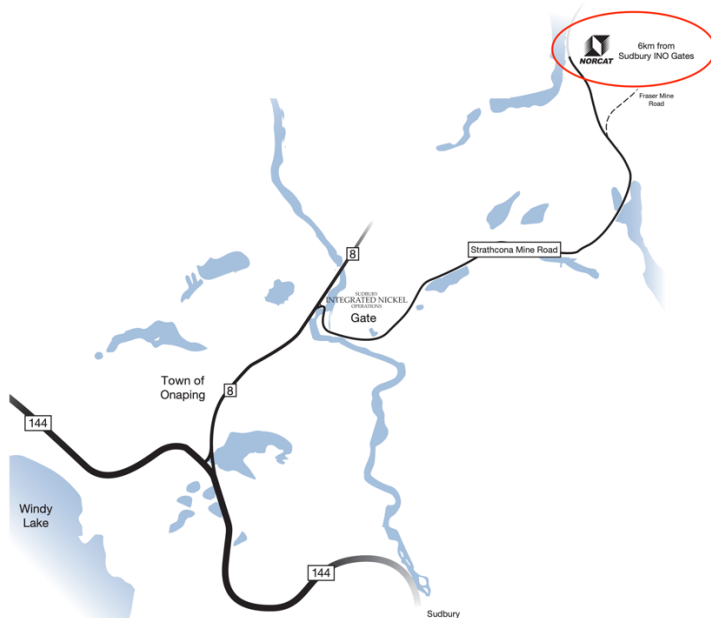
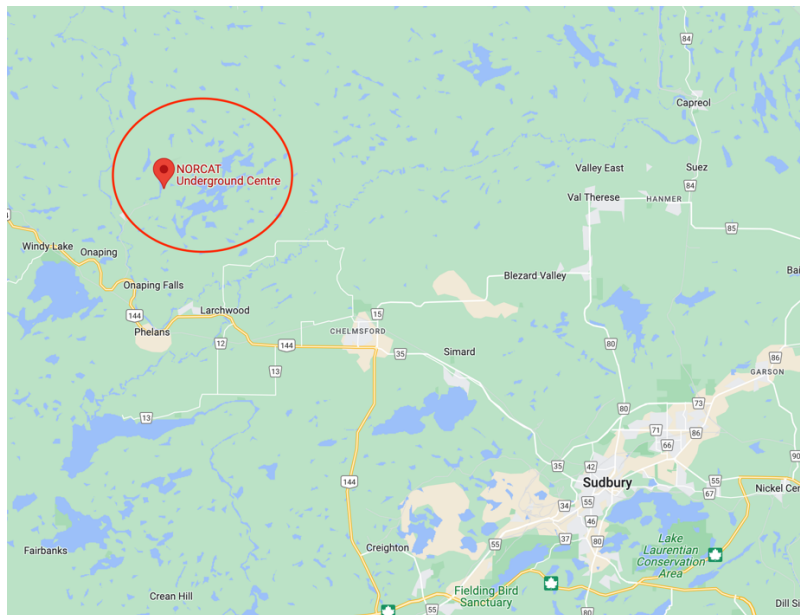
- The deployment of Rogers Wireless Private Networks opens the door for the Canadian mining industry to take advantage of new technologies and enhance existing products/services or create completely new products/services.
- In collaboration with NORCAT, the Mining Innovation Commercialization Accelerator (MICA), the Ontario Vehicle Innovation Network (OVIN), and Dell Technologies, Rogers will leverage the Rogers Technology Centre of Excellence at the NORCAT Underground Centre test bed in Sudbury, ON to provide multi-access edge computing and enhanced coverage, ultra-low latency, and critical connectivity over a Wireless Private Network. This will demonstrate scalable technologies such as tele-remote and autonomous operations, industrial IoT, asset monitoring and tracking, and drone mapping among many other use cases.
- NORCAT, MICA, Rogers, Dell Technologies, OVIN and OCI welcome **organizations that operate in Canada to submit how they might use the Rogers Technology Centre of Excellence at the NORCAT Underground Centre in Sudbury, ON for an innovative application which leverages multi-access edge computing, ultra-low latency, and critical connectivity that would enhance their mining technology business in the areas of productivity, energy efficiency, environmental impact, safety and/or automation, and could be demoed within a 3-month period.**
- Participants must outline how they might use the characteristics offered by the Rogers Wireless Private Network and edge technologies by Dell for critical connectivity and ultra-low latency.
- Ideas can be enhancements to existing products/services or new products/services and should be demonstrable within a 3-month period.
- End-user devices for use cases must be SIM-enabled devices.
- Winners must agree to the terms and conditions applicable to the various service providers in order to participate in the proof-of-concept.

#### **The Prize**

- The winning idea(s) will receive up to CAD \$100,000 worth of support, including CAD \$25,000 in funding to develop their proof-of-concept within the Rogers Technology

Centre of Excellence at the NORCAT Underground Centre for up to three months, with access to edge technologies by Dell as well as leverage the support of the OVIN Northern Regional Technology Development Site to commercialize their solution. Throughout the three-month development period, winners will receive up to 100 hours of direct support from challenge partners, industry experts, and engineers. Winners must agree to the terms and conditions applicable to the various service providers in order to participate in the proof-of-concept.

## Test Bed Overview



Source: <https://www.norcat.org/downloads/norcat-underground-centre-map.pdf>

**Location:** Rogers Technology Centre of Excellence at the NORCAT Underground Centre - Strathcona Mine Rd, Onaping, ON P0M 2R0

**Extension:** over 3km of underground drifts

- Rogers Technology Centre of Excellence at the NORCAT Underground Centre is the targeted test bed area to POC a winning idea
- 5G NR operation would be supported in NSA (Non-stand-alone) mode with LTE band as anchor
- Underground test bed area has radio coverage with the following NR bands: 1900/2100MHz and 3.5 GHz
- Rogers would be providing SIMs cards to enterprises for connectivity
- Enterprises should make sure that 5G modules/TCU can connect to the Rogers 5G network using frequency bands mentioned above

### **Edge Technologies by Dell**

Dell Technologies, a partner of Rogers, will be providing edge technologies to host the winning idea application in edge.

- MEC Platform would reside inside the Rogers Wireless data centre collocated with user plane function to optimize user plane path and latency

Note: The test bed is continuously expanding. If your idea requires network functionality beyond what is articulated in this section, define your requirements in your response to the questionnaire document and we will try to accommodate them.

### **Working at NORCAT**

#### **Training Courses:**

- #770225 - Basic Underground Hard Rock Mine Service Types Common Core
- Sudbury INO General Orientation
- WHMIS (Workplace Hazardous Materials Information System)
- Other training requirements may be needed based on scope of project

#### **PPE:**

##### **Head Protection**

- Hard hat - ANSI approved completed with earmuffs attached and reflective tape placed on hat and muffs
- **NOTE: WHITE HARD HATS ARE ABSOLUTELY NOT ALLOWED.**

##### **Eye Protection**

- CSA Z87, Approved Safety glasses, plastic frame, with polycarbonate or equivalent lenses (no glass lenses) complete with side shields. Wire Frame glasses are not permitted.

##### **Foot Protection**

- CSA Z195 Grade 1 compliant. Such footwear can be identified by the green triangle bearing the CSA logo.
- Safety footwear shall incorporate electrical shock resistant soles as defined by CSA Z195. This symbol can be identified by the "ohm" symbol.

- Footwear must be high top 8 inch minimum, water resistant, steel or composite toe boots completed with internal metatarsal guards.

### Hearing Protection

- Double hearing protection must be readily available. Ear plugs will be supplies.

### Visibility Apparel

- High visibility safety apparel must be made of fluorescent or bright-coloured orange background material with 2” (50mm) wide retro-reflective striping.
- Striping on visibility apparel must be arranged;
  - Completely encircling the waist, each arm, and each leg below the knee.
  - In two vertical lines on the front of the garment, extending from the shoulders down to the waist.
  - In an “X” on the back of the garment, extending from the shoulders down to the waist

### Hand Protection

- Leather gloves are the minimum standard.

### Timeline

Date	Milestone	Description
March 6, 2023 <i>(T -29 days)</i>	Challenge Launch	Applications are open.
April 11, 2023 <i>(T -17 days)</i>	Launch Webinar	Challenge Presentation and Q&A Session with Rogers and Partners on challenge and test bed infrastructure.
April 18, 2023 <i>(T -10 days)</i>	Submit Written Questions (by 17:00 EST)	Participants have the option to submit questions about the challenge/ test bed to <a href="mailto:innovationchallenge@rci.rogers.com">innovationchallenge@rci.rogers.com</a>
April 21, 2023 <i>(T -7 days)</i>	Q&A Question Distribution	Questions and answers submitted/ discussed during the Q&A sessions to be distributed to all participants.
April 28 (T)	Challenge Submission Deadline (by 17:00 EST)	Deadline to enter challenge. Interested parties to complete questionnaire and submit required documents.
May 10-12, 2023 <i>(T +12-14 days)</i>	Finalists Announced	NORCAT + Rogers Technology team will review and score all applications.  Scores will be used to determine the top teams that will pitch their ideas to the judges live.

w/o May 30, 2023 (T +32 days)	Final Pitch Presentations & Winner Selected	Shortlisted applicants will present their ideas to the panel of judges (hybrid model; option of virtual or in-person) and the winning idea will be selected.  During the Final Pitch Presentation, judges will have the opportunity to ask questions, discuss/ debate/ gut-check before the final winning idea is selected.
June 1 to August 31, 2023	POC Planning and Implementation	The winning team(s) will work with Rogers, MICA, NORCAT, and Dell Technologies to develop their POC at the NORCAT Underground Centre test bed.
August, 2023	Demonstration at UG Centre	The winning team(s) will showcase their technology at the NORCAT UG Centre.

### The Judges

Ideas will be reviewed by key contributors to Canada’s Mining Technology industry and challenge partners.

	<b>CEMI</b> Charles Nyabeze VP Business Development and Commercialization		<b>MICA</b> Lorelei Ratushniak Mining Engagement Manager
	<b>Rogers</b> Riddheka Salaria Product Marketing Manager - IoT and WPN		<b>Rogers</b> Shaun Mohammed Senior Business Development Manager - Advance Services
	<b>NORCAT</b> Don Duval CEO		<b>Dell Technologies</b> Paul Kingston Advisory Solutions Architect

**Other judges to be announced!**