

Challenge
for SMEs

5G Transportation Challenge

Deadline:
May 2, 2022

INNOVATING TRANSPORTATION WITH 5G: Challenge For Ontario SMEs

Background

- Today's automotive vehicles lack precise localization data which leads to preventable accidents, loss of productivity, declining commuter safety and bad quality of experience for drivers/commuters
- During the last year, the mobile operator/smartphone industry has adopted a set of standards for the delivery of GPS/GNSS corrections through the mobile network to the phone which will improve the accuracy of all smartphones from around 6 metres to approx. 1 metre
- Additionally, network improvements with 5G will allow for lower latency and better positioning, providing the opportunity for new services that were never before possible
- New technologies such as Edge Computing and High Precision Positioning Systems (HPPS) are being developed on the Rogers 5G network. These features have the potential to reduce and, in some cases, eliminate issues and gaps caused by lack of precise localization in vehicles. They will enable advanced automotive, commuter safety, transportation and smart city applications

The Challenge

- The deployment of the Rogers 5G network will open the door for the Canadian transportation industry to take advantage of new technologies and enhance existing products/services or create completely new products/services
- In partnership with OVIN, Rogers is building a test bed in the David Johnston Research + Technology Park on the University of Waterloo Campus to provide multi-access edge computing and precise location-based services in combination with Rogers 5G capabilities. This will demonstrate advanced use cases such as dynamic map sharing, more accurate navigation, smart infotainment, real-time/dynamic traffic updates and infrastructure-assisted autonomous vehicle perception
- OVIN & Rogers welcome companies that operate in Ontario to submit **how they might use the Rogers 5G network for an innovative application which leverages precise positioning and low latency that would enhance their transportation/mobility business and could be demoed within a 3-month period**
- Participants must outline how they might use the characteristics offered by the Rogers 5G network for precise localization and low latency (defined as < 20ms)
- Ideas can be enhancements to existing products/services or new products/services

OUR PARTNERS



FEATURING



Challenge
for SMEs

5G Transportation Challenge

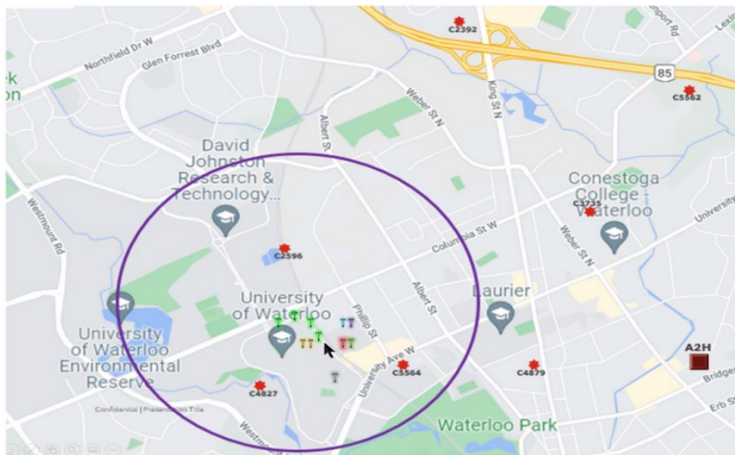
Deadline:
May 2, 2022

- Use cases do not have to be strictly related to automotive vehicle interactions and can include pedestrians, bicycles, scooters, motorcycles, etc.

The Prize

- **The winning idea(s) will receive some funding to develop their POC** on the test bed in the David Johnston Research + Technology Park at the University of Waterloo and be supported by Rogers and its partners throughout the development. As part of the submission, applicants must outline how they would develop a POC of their idea in roughly 3 months

Test Bed Overview



Location: University of Waterloo: David Johnston Research + Technology Park – Hagey Blvd / Wes Graham Way
Distance: 1km

OUR PARTNERS



FEATURING



- David Johnston Research + Technology Park at the University of Waterloo 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
- Test bed area has Rogers 5G coverage with the following NR bands:
3.5Ghz(n78)/2.5Ghz(n41)/600Mhz(n71)
- 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

Hyper Precise Positioning Service

Hexagon, who is a partner of Rogers, will be providing GNSS corrections data (nRTK/PPP-RTK) within the coverage of UW test bed for precise positioning for outdoor use cases.

- GNSS corrections data will be provided both in 3GPP standardized (release 16) format over LPP/SUP protocols and Hexagon proprietary format
- Consumption of 3GPP standardized data formats by client positioning engine is recommended
- As an alternative to developing your own positioning engine, Hexagon has a beta positioning engine for Android that can be made available to challenge participants with instructions on how to request and receive the corrected, high accuracy position
- Hexagon will be providing a reasonable amount of support for challenge participants who want to develop their own positioning engine or use the Beta one from Hexagon

MEC – (Multi access edge computing)

Rogers would be providing AWS Outpost as MEC platform 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
- The following link describes the AWS Outpost services which can be used for low latency application to be hosted on MEC <https://aws.amazon.com/outposts/rack/features/>

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 question B.2 of the “INNOVATING TRANSPORTATION WITH 5G CHALLENGE” document and Rogers will try to accommodate.

OUR PARTNERS



FEATURING



Challenge
for SMEs

5G Transportation Challenge

Deadline:
May 2, 2022

Timeline

| Date | Milestone | Description |
|--------------------|---|---|
| April 4, 2022 | Challenge Kickoff | Question template distributed that is to be completed by Ontario SMEs |
| April 15, 2022 | Submit Questions (by 17:00 EST) | Participants have the option to submit questions about the challenge/test bed. |
| April 20-22, 2022 | Q&A Sessions | Q&A Sessions with Rogers on test bed and challenge (Optional) Request a meeting, via innovationchallenge@rci.rogers.com |
| April 26, 2022 | Q&A Question Distribution | Questions and answers submitted/discussed during the Q&A sessions to be distributed to all participants. |
| May 2, 2022 | Challenge Submission Deadline (by 17:00 EST) | Deadline to enter challenge. Completed question template and required attachments must be submitted in a zip file to: innovationchallenge@rci.rogers.com |
| May 24, 2022 | Finalists Announced | Rogers Technology team will assess the feasibility of a POC prior to passing ideas to the judges to be scored. Scores will be used to determine the top teams that will pitch their ideas to the judges live. |
| w/o June 6, 2022 | Final Pitch Presentations & Winner Selected | Shortlisted participants 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. |
| H2 2022 | POC Planning and Implementation | The winning team(s) will work with Rogers and Rogers' partners to develop their POC on the test bed at David Johnston Research + Technology Park at the University of Waterloo |

OUR PARTNERS



FEATURING



Challenge
for SMEs

5G Transportation Challenge

Deadline:
May 2, 2022

The Judges

Ideas will be reviewed by key contributors to Ontario's 5G ecosystem in the transportation and mobility sector.



AWS
Ajay Rane
Global Head, IoT Strategy
& Business Development



Ontario Centre of Innovation (OCI)
Amanda Sayers
Director, Skills, Talent
Workforce Development



Ericsson
Yasir Hussain
CTO for Rogers



Hexagon
Adrian Stimpson
Director, Business
Development, Positioning
Services



Rogers
James Tantram
Director DC Product
Management



University of Waterloo
Amir Khajepour
Professor, Tier 1 Canada Research
Chair in Mechatronic Vehicle
Systems, Senior NSERC/General
Motors Industrial Research Chair in
Holistic Vehicle Control



Ford Motor Company
Khaled Islam
Senior Manager,
Enterprise Connectivity

OUR PARTNERS



FEATURING

