

5G-Assisted Autonomous Vehicles

Challenge Launch Date	February 26, 2019
Challenge Deadline	March 26, 2019
Challenge Statement	Among the new functionalities promised by the 5G New Radio (NR) standard, is the support of Ultra-Reliable Ultra-Low latency communication (URLLC) and the evolution of vehicle-to-everything (V2X) communication. URLLC and V2X are expected to be key enablers to support autonomous vehicles. The main objective of this project is to investigate the suitability of the current NR functionalities for autonomous vehicles and develop new NR functionalities to support future autonomous vehicles that are expected to be developed in the coming 5 to 10 years.
Project Partner	<ul style="list-style-type: none"> Ericsson Canada Inc.
Timeline	<ul style="list-style-type: none"> 2 years
Available funding	<ul style="list-style-type: none"> 50,000 CAD/ year * 2 years = 100,000?
Applicant Type	<ul style="list-style-type: none"> Ontario based College/University
Location	<ul style="list-style-type: none"> The work can be completed jointly in University labs and Ericsson's Ottawa site.
Project Details	<p>In this project, the applicants are required to:</p> <ul style="list-style-type: none"> - Assess the suitability of current NR standard in supporting autonomous vehicles. - Propose new enhancement to NR standard to support autonomous vehicles to be developed in the coming 5 to 10 years. - Develop test-bed to evaluate existing and proposed enhancement to NR standard. <p>The project is of high strategic importance to ENCQOR as it strengthens the competence in both NR and autonomous vehicles technologies and help define the future standardization releases of 5G NR.</p>
Project Goals/ Outcomes	<p>Deliverables of this project include the followings:</p> <ul style="list-style-type: none"> • Test-bed that can be used by Ericsson personnel in the future to demonstrate existing and proposed NR functionalities • One or more standard contributions to influence future NR standard releases, in particular in the areas of URLLC and V2X. • Scientific papers in reputable journal and international conferences • Patents <p>Note: the test-bed and the patents will be owned by Ericsson.</p>
Applicant Capabilities	<ul style="list-style-type: none"> • The research team should be experts in areas of autonomous vehicles, communication technologies, embedded systems, and building test-beds. • It is recommended to have at least one PhD holder devoting at least 50% of his/her time into the project (e.g., a professor or a post-doc), in addition to full-time PhD students. • A team of interdisciplinary researchers is highly recommended (e.g., communication experts and embedded system experts).

