

5G (ENCQOR) Technology Development Challenge - E2E Real Time Machine Learning Analytics & Network Intelligence

Challenge Launch Date	January 15, 2019
Challenge Deadline	February 14, 2019
Challenge Statement	<ul style="list-style-type: none"> • With the evolution of 5G standards, big mobile data analytics will no longer be an afterthought, and it will play a significant role in enabling the intelligence across network, applications and business. 3GPP has recently identified the need for a dedicated data analytics function in latest specs. Although it is still not adequate and evolving, it gives much room to innovate and much urgency to evolve. • Data analytics and Machine Learning/AI are both challenged and blessed with 5G's data volume, velocity and variety. They will play a triple-role in the context of ENCQOR: <ul style="list-style-type: none"> ○ Continue to support various business applications/use-cases (new or old) over 5G networks ○ More than ever in demand for 5G roll-out and network operations due to its unprecedented complexity and capabilities ○ Particularly essential to test bed to have first-hand data not only for existing operation but also for further innovation and evolution. • An E2E data analytics and AI platform and solution is required for 5G roll-out, network operation, application and network intelligence, as well as further innovation and evolution.
Project Partner	Ericsson Canada Inc.
Timeline	<ul style="list-style-type: none"> • 1st year: achieve the E2E 5G mobile data collection/ transportation/ storage/ preparation/ analytics/ reporting solution using latest big data technologies with focus on E2E correlation and real-time or near-real time steaming analysis • 2nd year: achieve the close-loop automation platform using ML/AI for network and application intelligence
Available funding	<ul style="list-style-type: none"> • 1st year: 250,000 (including both cloud service and SW development) • 2nd year: 250,000 (mostly SW in ML/AI development and close-loop automation)
Applicant Type	Ontario based SME scale company
Location	<ul style="list-style-type: none"> • Most work can be completed remotely, except the HW need to be co-located with core nodes for security, management and efficiency.

<p>Project Details</p>	<ul style="list-style-type: none"> • 3GPP has only recently start to identify and discuss dedicated data analytics function (NWDAF) in latest specs for release 16 (for 5G Stage 2). Both functions and interfaces can be used as starting reference, but it is not adequate for implementation and practice, as well as what we want to achieve in ENCQOR. We'll focus on an implementable, practical and advanced solution prototype that not only provide actionable insights but also a platform for innovation and evolutions. • Ericsson has expertise in this area, and will help in data selection, architecture design and use cases etc. • Phase 1: An E2E data analytics solution is critical to collect/transport/store/prep/correlate/analysis/report a selected types of data from UE/Cell/Node/Network levels using latest industry technologies on database and machine learning. • Phase 2: This solution is targeted for real-time (or near-real time) and close-loop automation. And ML/AI is also expected to allow innovations in development of application intelligence and network intelligence. • More detailed milestones will be established during the statement of work formation
<p>Project Goals/ Outcomes</p>	<ul style="list-style-type: none"> • A solution prototype will be implemented and operational (at small scale of network or data type/set) • Real-time streaming analytics and close-loop intelligence will be demonstrated • The new function developed can be a new product or is likely to evolved into a new product.
<p>Applicant Capabilities</p>	<ul style="list-style-type: none"> • R&D team of 3-5 in areas of data science, IT admin, ML/AI development • Expertise and application development to cloud services (e.g. Microsoft or Amazon) or experience in running enterprise private data centre would be asset • Expertise in areas of big data analytics, Machine Learning, and AI would help execution of the project
<p>Additional Information</p>	<ul style="list-style-type: none"> • This project need familiarity with 4G/5G network architecture • close collaboration is required with Ericsson in requirement defining and architecture design and analytics stages