

Networked Video Analytics Project

Challenge Launch Date	September 25, 2018
Deadline for Open Call Applications	<p>October 23, 2018 at 2PM EST</p> <p>Deadline extended to November 13, 2018 at 2PM EST</p> <p>Late submissions will not be accepted</p>
Challenge Statement	<p>With the connection of new devices and applications that will produce and consume massive volumes of video content on the digital networks of the future how can video quality on a network be improved by leveraging new artificial intelligence solutions?</p> <p>The Network Optimized Video Analytics Project aims to model a variety of video traffic sources and map them to a network topology and identify how to best solve video delivery problems using artificial intelligence and machine learning.</p>
Project Partner	<ul style="list-style-type: none"> • Ciena
Timeline	<ul style="list-style-type: none"> • 1 year
Available funding	<ul style="list-style-type: none"> • Up to \$500 000 CDN
Applicant Type	<ul style="list-style-type: none"> • Ontario based SME scale company (less than 500 employees)
Location	<ul style="list-style-type: none"> • Ontario
Project Details	<p>The Network Optimized Video Analytics Project will leverage a combination of network analytics, multi-domain service orchestration, and service and network management measurement to improve video quality on current network infrastructure and could be adapted for use on 5G networks in the future.</p> <p>The project will utilize both wireless and wireline test networks.</p> <p>The selected team will present a solution to leverage artificial intelligence (AI) to optimize the speed and accuracy with which one or more AI techniques can identify video flows and video problems on the network and solve these problems.</p> <p>After defining their proposed approach, the selected team will develop a detailed test plan and a testbed of network and video equipment to prove or disprove their hypothesis by simulating real network scenarios.</p> <p>This test plan should include a wide variety of network impairments including different types of equipment, different video types, different video players, different videos and network-based impairments.</p>

	<p>The team will then have the opportunity to test and refine their approach through successive iterations of their AI software solution in collaboration with the Anchor Firm partner on the network test bed to optimize performance for future customer needs.</p> <p>Suggested project timeline: Month 6- Review of the benefits of applying AI to the Challenge Month 9– Review of how to optimize results and roll out an optimal AI solution Month 12– Final Review & Report, Transfer of Knowledge, and software</p> <p>Before project approval the applicant will be required to develop a plan for the ownership of intellectual property with the project partner company.</p>
<p>Project Goals/ Outcomes</p>	<p>Ciena, the Anchor Firm supporting this Challenge Statement has two goals for the project:</p> <ol style="list-style-type: none"> 1) learn to identify root cause for video QoE (Quality of Experience) deterioration with deep neural network classifiers consuming thousands of video and network performance monitoring inputs 2) learn how to best fix video problems with network actions using reinforcement learning. <p>The team will be expected to deliver a final report that shows the performance of their solution by analyzing the results of their test plan on the network traffic model.</p> <p>The project will develop new expertise in over the top video technologies, big data analytics, and the latest visualization technologies for the selected team and the Anchor Firm and could lead to collaboration on future market opportunities.</p>
<p>Applicant Capabilities</p>	<p>Artificial Intelligence (AI) Expertise</p> <ul style="list-style-type: none"> • Minimum 3 employees available to engage in the project • Comprehensive understanding of AI & Machine Learning • Applicant companies should have knowledge of Software Architecture, Big Data Analytics, Data Analysis and Modeling, Artificial Intelligence coding. • Technical background with the ability to understand a wide variety of technologies, standards, and product applications • Experience with software and complex systems test • Experience with Java, Python, GoLan, Linux • Understanding of cloud development environments, OpenStack, vmware/Xen • Understanding of networking concepts (IP/MPLS, Ethernet, virtual and physical networks) • Experience with IP, IP routing, IP troubleshooting techniques, congestion management, and ISP network architecture • Strong insight into competitive philosophies and strategies <p>Artificial Intelligence and Machine Learning Expertise</p> <ul style="list-style-type: none"> • Data analysis, data modelling, trending/extrapolation • Experience with software and complex systems test • Experience with Analytics Systems including Machine Learning, Hadoop, Cloudera, and Hortonworks

	<ul style="list-style-type: none">• Familiarity with database warehousing principles and database systems• Experience in Understanding of cloud development environments, OpenStack
--	--

Statement about next steps with links to program guidelines and application portal- TBC