



Fiscal Year 2020
April 1 2019 - March 31 2020



Vision

Advancing global technology innovation for the prosperity of all Canadians.

Mission

CENGN, Canada's Centre of Excellence in Next Generation Networks, drives technology innovation and industry growth through our test bed, technical expertise, talent development, and partner ecosystem.

Accomplishments

100

SME Projects

1684

People Trained

201

Internships

21

Members &
Partners

4389

Jobs Created

\$423M

Contributed to
GDP*

*per Nordicity Group Limited

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Letter from the Chair



After reviewing CENGN's annual report for the Fiscal Year 2020, I hope you will be as encouraged as I am about CENGN's accomplishments to date, and share my continued optimism as the company grows its positive impact on the Canadian innovation economy.

As all industries become more reliant on connectivity and digital technology, CENGN's mission to accelerate innovation and commercialization in Canada's networking and ICT sectors becomes ever more important. We believe embracing technology is the key to elevate Canada to the next level in its economic development and competitiveness across all industries and regions. Being an important part of Canada's global leadership in advanced networks and in the creation of tech jobs, CENGN strives to be a driving force in enabling diverse industries to harness the potential of new technologies.

FY 2020 saw many achievements, including a major milestone of 100 commercialization projects with small and medium sized enterprises (SMEs), the continued success of our student program that has brought hundreds of professionals to Canada's tech sector, and the addition of new promising programs, like the CENGN Smart Mining and Smart Agriculture Programs.

CENGN saw the growth of its professional training program, CENGN Academy, launch fully online self-paced courses, expanding the opportunity for students and industry professionals across the country to level up their skills and augment their experience, accessing the CENGN Testbed from the comfort of their home. CENGN also seized the opportunity to use its infrastructure and expertise by working with the Ontario and Federal government to enable Canada's tech community to validate solutions that fill the products and service gaps caused by COVID-19.

I would like to thank our two government funding partners, the Federal government and the Ontario government, for their continued partnership and support toward fulfilling our mission. Through their investments, our funding partners continue to allow us to improve Canada's and Ontario's innovation capacity and technology adoption, as well as create a return on investment that has a positive impact on the economy of the country, our jobs and our social well-being.

It is also important to thank our Members and acknowledge their impactful contributions to CENGN. Their support and guidance provide a solid foundation for our organization. With our new programs and services expanding our impact and our reach, becoming a CENGN Member is the best way to impact the Canadian networking sector.

Last, but not least, I would like to thank the CENGN staff. All of our programs and achievements would not be possible without the strong determination found in our organization's employees. CENGN's team embodies the same innovation, expertise, and success our organization seeks to cultivate in the Canadian tech sector. Together, CENGN and its partners are growing Canada's leadership in the digital economy.

Tom Astle,
Chair of the Board of Directors

Letter from President & CEO



Over the course of FY20, the ICT industry dove deeper into the opportunities and challenges that come with deploying the next generation networks that will enable 5G in Canada and globally. According to IDC Canada the transformative power of 5G on digital technologies is projected to add \$330B to Canada's GDP. Beyond the economic opportunity, connectivity advancements are set to revolutionize our way of life. Canada's key industries, including health, manufacturing, natural resources, education, and smart cities, to name a few, stand to gain significant competitive advantage from digital transformation. For example, our health sector will be able to harness the full potential of artificial intelligence and IoT to enable increasingly accurate diagnoses and remote medicine. We can expect to see compelling use cases in every industry as connectivity, computing, and data analytics open a world of new potential.

CENGN continues to position itself as a driving force in enabling Canada's many industries to harness new technologies and solutions. Through the continued advancement of our CENGN Testbed and the expertise of our engineers, more Canadian businesses have been able to harness our services to reach their next level of commercial success. By targeting specific sectors directly, like Smart Mining and Smart Agriculture, we have been able to amplify our impact on driving industrial innovation forward.

Currently, the world is united in facing the major challenge in COVID-19. The pandemic has changed the way we live, communicate, and work together as a community. Staying connected now has a different meaning, overcoming self-isolation measures through technology to maintain both business and community. In response to this global crisis, CENGN and our partners have banded together to address the product and service gaps highlighted by COVID-19. This has been a cause we have not taken lightly, bringing our infrastructure and expertise to bear in order to accelerate Canadian-made solutions for virtualizing businesses so they can operate smoothly remotely, as well as validating products that directly address the tracking and testing of the virus.

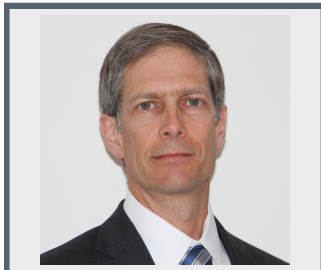
While large urban centres across Canada have the highest speed service offerings available, rural and northern communities often struggle to get basic high-speed connectivity. This lack of broadband high-speed internet connectivity strains communities in terms of economic growth, education, health, and overall quality of life. The COVID-19 pandemic brings a new perspective to our way of communicating, amplifying the importance of connectivity in times of self-isolation. Over the year, CENGN has continued its focus on innovative projects across Northern and Rural regions to demonstrate technology solutions that offer flexible, lower cost, higher performance residential broadband access for Canadian communities.

With CENGN Academy now offering fully online self-paced courses, we have broadened the opportunity for learners across the country to acquire new skills and expertise from home. In fact, the catalogue of online CENGN Academy courses is set to grow throughout the coming year, allowing engineers and aspiring professionals the learning they need to level up their skills and grow their careers.

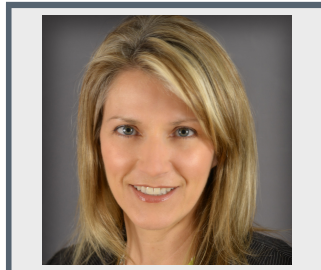
As a nation, we may be facing many challenges, but through this time we continue to see the strength that comes from the ingenuity and collaboration of our tech ecosystem. Technological advancement plays a major role in shaping our country's future, and this potential is only made possible through the talented and innovative people that work in our industry. The CENGN team is dedicated to supporting Canadian innovators in driving growth and allowing our country to continue its leadership in the tech sector.

Jean-Charles Fahmy,
President & CEO

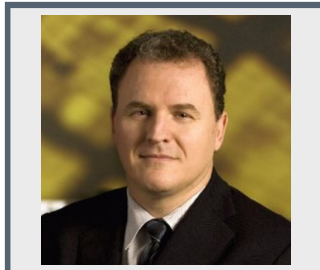
Board of Directors



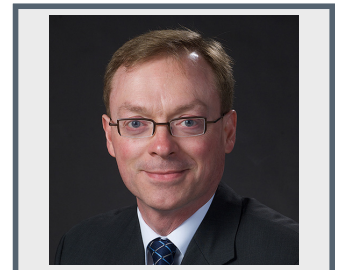
Tom Astle
Chair



Stephanie Ratza
Vice Chair



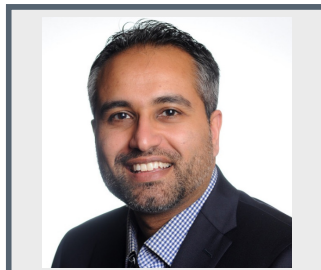
Sam Bucci
Senior VP and GM
IP Transport Division
Nokia



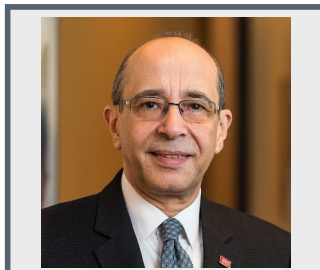
Tom Bursey
CFO & VP
Council of Canadian
Academies



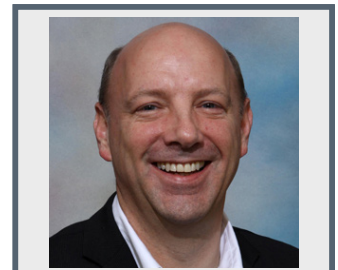
Code Cubitt
Managing Director
Mistral Ventures



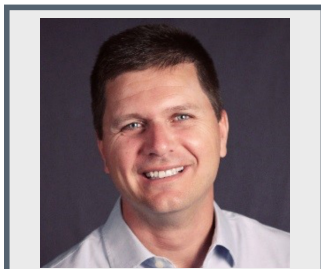
Sacha Gera
Senior VP & Cloud
Products
Ribbon Communications



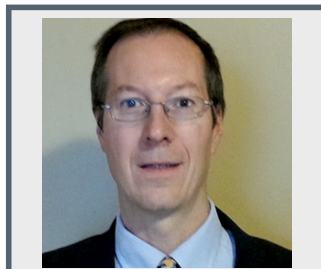
Rafik Goubran
VP & Chancellor's
Professor
Carleton University



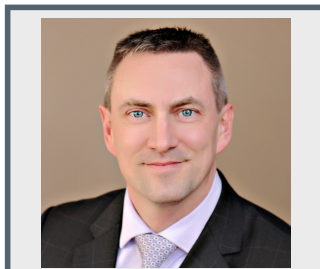
Joe Hickey
Founder & CEO
Rock Networks Inc.



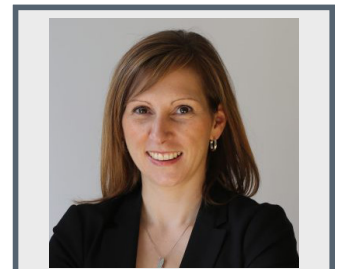
Al Hurren
Senior VP Research &
Development
Mitel



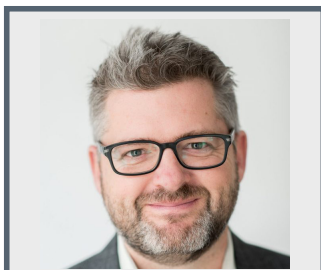
Rob Keates
Manager of IP/Optical
Standards
TELUS



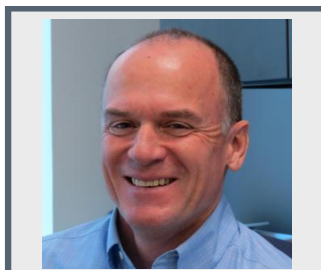
Matt Pearson
Technology Sector Leader,
SR&ED, & Business
Incentives, Ernst & Young



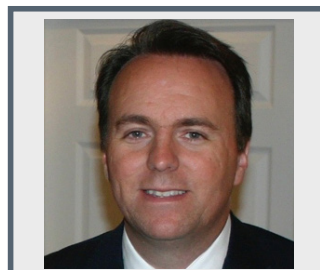
Michelle Simms
President & CEO
Genesis



Frank Sullivan
VP of Sales & Canadian
Country Manager
Juniper Networks



Peter Wilenius
VP Business
Development
CANARIE



Steve Wood
Principal Engineer,
Enterprise Architecture
& SD-WAN, Cisco

Members

CENGN draws its strength from the combined contributions and commitments of its members. Our members put their expertise and equipment on the table to lower the barrier to market entry for promising businesses and innovators. Our members are responsible for 90% of Canada's research and development in the telecommunications industry. These companies are working together to ensure the growth and sustainability of the communications industry in Canada and to expand the International Centre of Excellence.

Member Benefits

Access to a pipeline of complimentary technology and solutions

Access to a talent pool of trained professionals

Co-creation and incubation opportunities

Connectivity to the innovation ecosystem

Brand exposure



Student Program

CENGN collaborates with colleges and universities across Canada to host approximately 40 student interns every year. Internships are offered in the fields of engineering, project management, marketing, human resources, finance, and administration to provide students with valuable hands-on experience. Throughout their term, each intern contributes greatly to CENGN's success, augmenting their academic learning to make a valuable impact on the industry while developing their professional skills.

201
Internships

98%
Employment Rate



Student Spotlights

Contact us at student-hr@cengn.ca to see how your organization can benefit from CENGN alumni



Siena Testa

University of Victoria
Human Resources Student
CENGN CEO Wow Award
University of Victoria Student of the Year Award



Vinay Venkataramana Chary

Carleton University
Solutions Engineering Student
Currently Employed at Solace Systems



Ryan Davis

University of Ottawa
Project Management Student
CENGN WOW Award
Currently Employed at CENGN



CENGN Academy offers a variety of training opportunities that will enable the Canadian talent pool to move innovation forward, particularly in open source intelligent networking technologies. CENGN Academy focuses on self-paced training with hands-on labs, delivered with live learner support, and validated through digital badge and certification exams. By arming professionals and students with the most relevant skills in one of the most faced paced, growing industries in the world, CENGN is solidifying the global competitiveness of the Canadian ICT workforce.

381
Learners in
FY 2020

22
CENGN Cloud
System Specialist
Certified in FY 2020

Types of Training Offered by CENGN:

Self-paced online courses

Virtual instructor-led workshops

CENGN Cloud System Specialist Bootcamp

Meetups

Digital badge exams

FY 2020 Accomplishments

Visit www.cengn.ca/academy/ for details on our course offerings and additional training opportunities.

FY 2020 started with a deep dive into market analysis to identify key skill gaps that CENGN Academy could address. This led to a clear strategy focused on CENGN-developed content, delivered online with multi-faceted learner support. Moving forward with this strategy, CENGN Academy identified key topics for course development, built remote access learning capability, produced its first professional quality eLearning courses and exams, and successfully delivered them to both internal and external learners. Some highlights of FY 2020's training program:

CENGN Academy selected Ottawa company, dominKnow, as its eLearning authoring tool provider, developed several professional quality courses and delivered them to both internal and external learners through our Absorb LMS portal

To enable learners anywhere to perform hands-on lab exercises on CENGN's cloud infrastructure, CENGN built its first-generation cloud training lab infrastructure with remote access capabilities

When a planned training roadshow was cut short by COVID-19 restrictions, CENGN Academy pivoted immediately to remote classroom delivery, leveraging our purpose-built training delivery studio (the "Kube") and remote lab access capabilities

FY 2021 Direction

Moving forward, CENGN Academy has multiple new courses under development, planned for launch in FY2021. To better deliver training throughout our ecosystem, lab capacity is being expanded, remote learner access is being enhanced, and our new digital badging program is being built. Stay up to date for more training deliveries and new partnerships in the coming months.

Driving Economic Growth Across Canada

CENGN's mission is supported by the Networks of Centres of Excellence's (NCE) CECR Program and the Government of Ontario's NGNP. Through both program's support and funding, CENGN is able to provide its services to promising businesses in Ontario and across Canada.

The Centres of Excellence for Commercialization and Research (CECR) Program



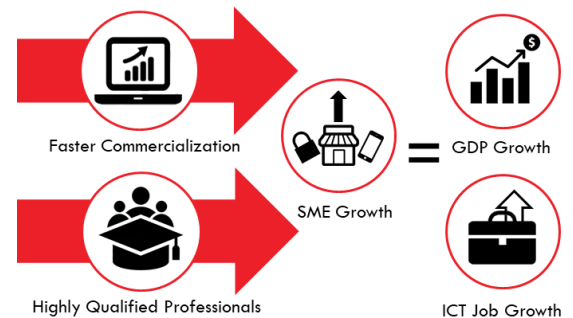
CENGN was founded as part of NCE's CECR Program to fill the gap between innovation and commercialization in the ICT sector. With NCE's support and funding, CENGN continues to accelerate the commercialization of Canadian tech businesses and drive the continued development of advanced networking in Canada.

The Next Generation Network Program (NGNP)



NGNP, funded by the Ontario Government's Ministry of Economic Development, Job Creation and Trade, supports Ontario's innovation economy through its focus on the expansion of digital infrastructure across the province, development of talent and high quality jobs, and overall enhancement of Ontario's global competitiveness and economic strength. Partnering with OCE, CENGN works on behalf of the Ontario Government to supply our services in order to expand and improve all sectors through network technology.

Both the NGNP and CENGN CECR Program are designed to promote economic strength and growth in Canada's ICT sector. CENGN delivers services to startups and scaleups, as well as develops talent through student and industry training, to allow for increased commercialization and growth of Canada's pool of highly qualified professionals. By enabling the success of promising Canadian businesses and professionals, CENGN strengthens the innovation economy and develops job growth in Canada's tech sector.



Rural and Northern Ontario Residential Broadband Programs

Broadband connectivity is a fundamental driver of economic and social prosperity for rural and remote communities and enables digital transformation for critical industries and services such as agriculture, mining, eHealth, and distance learning. The divide between remote communities and urban centres in Canada continues to widen in terms of connectivity, and it has become evident that having reliable and high-performance internet access is a question of equality of opportunity and a key determinant of prosperity.

Through the NGNP, CENGN funds innovative projects across northern and rural Ontario that demonstrate technology solutions that offer flexible, lower cost, higher performance residential broadband access for remote Ontario communities. These live technology projects are designed to test new technologies and validate business case solutions that can work as a blueprint to improve high-speed internet access to residences across remote communities in Ontario.

West Parry Sound and the Township of Carling

CENGN has partnered with service provider Vianet to provide enhanced connectivity from the Town of Parry Sound to nearby Carling Township. This project features the use of a 13.5 km microwave radio link to transmit high-speed broadband from a tower in Parry Sound to a new tower in a small community, then using buried fibre-optic cables to distribute the service to individual homes.

This project brings the local residents high-speed and reliable internet access through future-proof fibre-to-the-home (FTTH) optical technology. Vianet will also provide high-speed services to homes up to a 10 km away through a fixed wireless access (FWA) service. This project will cut costs by 85%, validate a lower fibre installation cost method, and is viable for use in forest or lake terrain.

Extending broadband capacity to a remote secondary Point of Presence that is 3-10 km away.



vianet



Huron Shores Community of Iron Bridge

To address the needs of the Huron Shores community of Iron Bridge in Northern Ontario, CENGN is funding a project with service provider, Leepfrog Telecom. Leepfrog Telecom is currently working with the community of Iron Bridge to implement a solution that uses a combination of WIFI and new Television White Space (TVWS) technology to bring 50/10 Mbps broadband internet access service to residences of the community.

This is a last kilometer access project including hybrid wireless access, high-speed microwave 24GHz unlicensed radio links, and TVWS radio technology to penetrate dense forests to access homes. This project includes a new low-cost installation non-ground penetrating tower design, and solar-powered equipment shed to reduce power consumption. These innovations will result in 25% cost savings, with 30% expanded community coverage and 10 times the internet access performance.

Providing wireless access to homes with limited to no broadband access 1-3 km away from an existing Point of Presence.



Canada's Digital Lag



Canada is **33rd** for Internet Speed Globally



of Canadian businesses believe we **lag behind other countries** when it comes to technology adoption



1 in 5 Canadian enterprises struggle because of lack of digital competencies

Digital Skills Shortage in Canada



10th
in attracting talent



18th
in retaining talent



1 in 4
Canadian STEM graduates opt to work outside of Canada



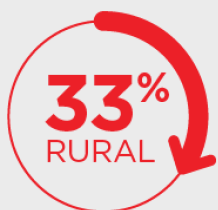
2/3
software engineering graduates are leaving the country



3X
the number of computer engineering graduates are needed in Canada

Rural and Indigenous communities represent **30%** of Canada's economy

Access to high speed internet



1.5M

the estimated number of Canadian households that are underserved, with no or poor internet service

Canada's prosperity and competitiveness are linked to the digitalization of our economy and society. By 2022, at least **60%+** of global GDP will be based on digitalization.

Connectivity Drives
Economic Prosperity

NGN technologies and digital business strategies

will
drive
over

52%

of enterprise
spending in
the global

\$4.8T

ICT sector
within two
years

Wider adoption of digital technologies by Canadian industries could add

↑\$330B to



Municipalities with ultrasfast broadband

had
almost

↑5%

more
start-up
firms



Smart Mining

The mining market is expected to exceed more than **\$24 billion** by 2024.



Precision Agriculture

An individual grain producer that adopts precision agriculture with Big Data could boost its average income by almost **10%**.



eHealth

Canada Health Infoway estimates that digital health technologies result in annual savings of **\$2.5 billion**.



Smart Cities

Initiatives in Canada attracted tech investments of more than **\$1.4 billion** in 2018, and is set to grow to **\$2.8 billion** in 2022.

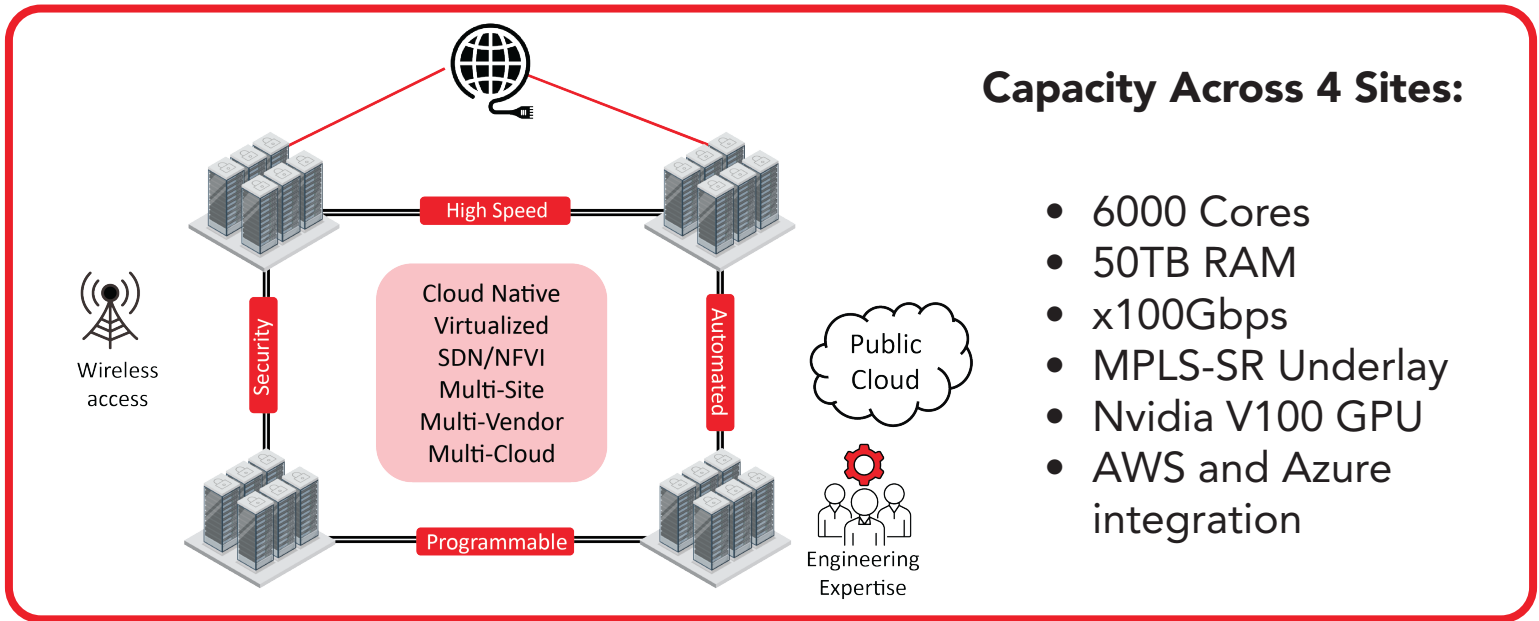
The Next Generation Network Imperative

During FY 2020, CENGN commissioned a study on the rationale of advanced networking and the critical importance for its adoption and ongoing development in Canada. The study explores all facets of network technology based on ongoing Canadian and global research.

To learn more about Canada's current position in the global ICT space, download the White Paper: <https://www.cengn.ca/the-next-generation-network-imperative/>

CENGN Testbed

All CENGN projects are carried out through the multisite CENGN testbed. The testbed is made up of 4 data centres: CENGN HQ (Kanata), Invest Ottawa (Ottawa), MaRS (Toronto), and Communtech (Waterloo), all leveraging ORION network connectivity. It employs interoperability between software, hardware, open source technology, and a multitude of products from CENGN's many vendors. The unique multi-vendor physical and virtualized lab enables companies to test and validate new and emerging SDN and NFV technologies, cloud native applications, IoT deployments and services before moving them to production.



Our priority is your privacy and security

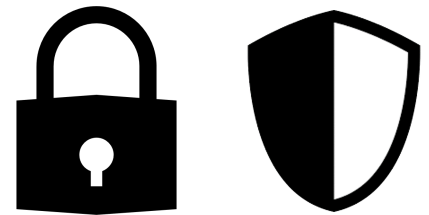
All infrastructure within Canada, no data leaves national borders

Mutual non-disclosure agreement

Intellectual property protection

Secure Infrastructure

Isolated project space, secure from other projects, Members, and partners



CENGN Infrastructure Contributors

COMMUNITECH

Invest Ottawa | Investir Ottawa

MaRS

ORION

CLOUD NATIVE COMPUTING FOUNDATION

eleven-x

kubernetes

THE LINUX FOUNDATION

openstack™

WIND™

Project Offerings

CENGN is committed to removing barriers to commercialization, accelerating product introduction to the market, as well as reducing product development time and costs for growing Canadian tech businesses. By working with CENGN's cutting edge infrastructure and expert engineers, our clients are able to undertake high-value market readiness projects that would otherwise be out of reach. The unique physical and virtualized offerings from CENGN enables companies to test, containerize, and validate new and emerging technologies.

Project Areas

Companies carrying out a CENGN project will have a solution or product related to network technology:



SDN / NFV /
SD-WAN



Internet
of Things



Data Centre
& Cloud



Security



Mobile
Networks



Network
Transport



Network
Applications



Artificial
Intelligence

Project Types

Companies utilize CENGN's services for many different project objectives:

Interoperability Testing

Validating a product's ability to interoperate with new systems or components

Load and Stress Testing

Determining system performance and resource requirements at given levels of load and determining what happens when maximum loads are exceeded

Functionality Testing

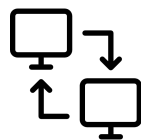
Validating a product or one of its features is operational for market introduction

Demonstration

Demonstrating key product capabilities in a customer-like environment for the benefit of a specific strategic customer or partner

Service Offerings

While every client project is unique, they are built up from a common set of CENGN service offerings. Beyond infrastructure offerings, CENGN works with each of its customers to provide technical expertise as well as business exposure to its ecosystem of multinationals.



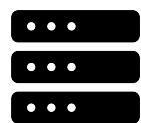
Traffic Generation

Tools for generating system loads



Cloud Tenancy

Virtual machines on CENGN's OpenStack cloud



Bare Metal

Fully dedicated high-performance servers



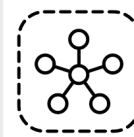
Hardware Hosting

Hosting client hardware in CENGN's data centres



LoRaWAN Network

Access to a nation-wide LoRaWAN network



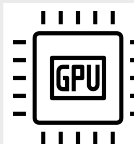
Virtual Network Functions

CENGN provides VNFs from Cisco, Juniper Networks and others



Custom OpenStack

A fully dedicated OpenStack cloud based on Wind River Titanium Edge or OpenStack-Helm



GPU Testing

Highest performance data center-grade GPU, provisioned as part of bare metal or virtual machines

Project Highlights



Providing Better Internet Service Performance

Aterlo is a networking software company focused on building network solutions for Wireless Internet Service Providers (WISPs) by collecting and measuring real-time metrics from subscriber traffic and networking elements. Their solution, named Preseem, then analyses the raw

data into impactful insights to help operators identify low performing parts of their network. With its optimized traffic management, Preseem resolves network issues such as congestion, misconfiguration, and wireless interference.

Aterlo completed a CENGN project to validate that Preseem could inspect different types of incoming traffic with a speed over 10 Gbps, to scale test their solution at incoming traffic speeds of at least 15 Gbps, and identify any product shortcomings. With this completed project, Aterlo can bring a solution to market that measures, analyzes, and optimizes the correct metrics, allowing WISPs to provide their subscribers with a higher quality of internet experience.



Network Applications



Waterloo, ON

Facility Management in Real Time



Mero Technologies has developed a full Internet of Things (IoT) solution including sensors, hubs, and multi-user access platform, to monitor facility management, focusing on restroom supplies and maintenance. Mero enables property managers to maintain buildings and have insight into their labour with real time status alerts, saving employees time and providing service exactly when needed.

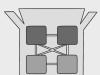
To reach the next level of growth, the startup needed to validate their solution at scale, identifying any bottlenecks or performance issues the Mero Server may have as the number of sensors are increased. Mero took their requirements to CENGN and developed a project testing the Mero Server's ability to perform receiving data and requests from 100,000 sensors and 2,500 concurrent users. Through completing this CENGN project and proving their product supports a commercial level of users and sensors, Mero was able to seal two major business contracts.



Internet of Things



Kingston, ON





Improving the Quality of Life For Senior Living Facilities

Welbi is a software company driven to improve processes and the quality of life of residents and staff in retirement communities and senior living facilities. Welbi's cloud platform SaaS solution assists retirement home staff by automating processes to boost efficiency

while also providing valuable insights that can be used to increase resident engagement and satisfaction, allowing staff to spend less time on administrative tasks and more time providing better care and support to their residents.

Welbi used CENGN's infrastructure to identify and resolve issues with their application so they can reach their 2020 scaling goal of a projected 250 retirement homes, 5,000 users, and 50,000 residents. Using CENGN's expertise, they were also able to overcome application bottlenecks and validate that their solution can operate in a Kubernetes Cloud environment under heavy load conditions.



Data Centre and Cloud



Ottawa, ON

Reliable Communication for First Responders



Radio IP is a longstanding developer of mobile virtual private network (MVPN) solutions and is a well-established leader in Mission Critical solutions software. The communication technology required to suit the needs of First Responders and the Public Safety sectors are rapidly advancing. Their solution, named Armada,

is specifically designed for first responders, keeping the user-friendly platform Radio IP is known for and adding much needed seamless compatibility with LTE, 5G, Legacy Cellular, and Wi-Fi. A much needed feature for professionals who are on the go and rely on constant connectivity.

Radio IP's CENGN Project validated the robustness and high performance of their solution on open standards, shedding any reliance on one network environment. They confirmed that, while using an open standard network deployment, Armada can connect 10,000 clients, within 25 seconds with a 2 core CPU, and within 20 seconds with 4 and 8 core CPUs. Radio IP was also able to determine their average connection rate at 200 users per second. The company is looking forward to introducing this new feature to their product in the near future.



Network Applications



Montreal, QC



CORTERA.AI



Smart Mining & Smart Agriculture Programs

CENGN continues to support all industries in harnessing the potential of digital technology. By targeting network innovation in specific sectors, CENGN can accelerate commercialization of new technology products and solutions in Canada, driving the growth and sustainability in any industry. During FY 2020, CENGN has made great strides with their Smart Mining and Smart Agriculture Programs.

The CENGN Smart Mining Living Lab

Canada ranks in the top 5 for global production of 13 major minerals and metals, with Ontario having the most active mines of any province or territory. Making up over \$57 billion of our country's GDP, the mining sector is crucial to Canada's economy. As this industry continues to grow in Ontario, it has become a hotbed for innovative new technologies to optimize its efficiency, sustainability and worker safety.

In FY 2020, CENGN collaborated with its partners NORCAT, Nokia and Northern Light Technologies to create the CENGN Smart Mining Living Lab. This Ontario Government funded initiative provides Canadian businesses access to commercial grade network infrastructure and state-of-the-art wireless communications within a working mine to develop, test and commercialize innovative mining technology, such as autonomous mining equipment and vehicles, wearable safety devices, productivity enhancement software, and artificial intelligence applications. This will help companies bring to market new technologies for the mining industry.

The CENGN Smart Mining Living Lab installation is now complete with private LTE and WIFI technology in the NORCAT Underground Centre in Onaping, Ontario.



The CENGN Smart Agriculture Program

The agriculture sector is crucial to Canada's economy, accounting for 6.7% of Canada's total GDP and providing Canadians over 2.3 million jobs. Growth and success in this sector has an extensive impact on the lives of all Canadians. By connecting the innovations of the ICT sector with the substantial agriculture industry, we can supercharge Canada's farming revenue, efficiency, and environmental friendliness. CENGN hosts Smart Agriculture projects to validate technology solutions that improves agricultural efficiency and productivity.

CENGN is planning to launch a Smart Agriculture Living Lab within the next fiscal year.

Event Highlights

CENGN presented/sponsored/exhibited at **86** events in FY 2020

April 2	TechNata 2019 - Ottawa
May 8-9	IOT 613 Conference 2019 - Ottawa
May 13-14	OCE Discovery 2019 - Toronto
May 14-16	Advance Ontario Conference 2019 - Toronto
May 16	Fundica Roadshow 2019 - Toronto
May 29	GKE GPC 2019 - Ottawa
May 30	Future of Telecom Networks in Canada 2019 - Gatineau
June 3-5	Canadian Telecom Summit 2019 - Toronto
June 4	Open Source Networking Meetup 2019 - Ottawa
June 11	Cloud Native Day 2019 - Montreal
June 19-20	True North Conference 2019 - Waterloo
June 20	CENGN's True North Innovation Mixer - Kitchener
Sept 9-10	CAV Canada 2019 - Ottawa
Sept 12	AGM 2019 - Ottawa
Sept 16	Open Source Networking Meetup - Ottawa
Sept 19	Driving Dreams 2019 - Mississauga
Sept 26	OpenStack Meetup - Ottawa
Oct 1-2	CANARIE Summit 2019 - Montreal
Oct 31-Nov 1	TiECon 2019 - Ottawa
Nov 4-6	Canadian ISP Summit 2019 - Toronto
Nov 13	CENGN Summit 2019 - Ottawa
Nov 21	Sarnia Lambton IT Symposium 2019 - Sarnia
Nov 28	Startups and Beer Nov 2019 - Waterloo
Dec 5	Palo Alto Cyber Defense Summit - Ottawa
Dec 10	Secure IoT Accelerator Showcase 2019 - Ottawa
Jan 29-30	Precision Ag Conference 2020 - London
Feb 4-6	BDT Mining Conference 2020 - Sudbury
Feb 7-9	uOttHack 2020 - Ottawa
Feb 11	Vaughan Business Expo 2020 - Vaughan
Feb 12	CITM Feb 12 2020 - Mount Hope
Feb 19	Employers Appreciation Reception 2020 - Victoria, BC
Feb 19	IEEE Lunch Feb 19 2020 - Ottawa
Mar 2-4	CanWISP 2020 - Gatineau
Mar 1-4	PDAC Convention 2020 - Toronto
Mar 5	Product Dev Cloud Forum Mar 5 2020 - Kitchener
Mar 31	SaaS Showcase Mar 31 2020 - Ottawa



In addition to participating in tech events across the globe, CENGN continues to connect with Canada's innovation drivers and top talent. CENGN hosts Info Sessions to promote our services, as well as recruitment events showcasing our student program.



Website & Social Media

CENGN's ecosystem of engaged innovators, professionals, and top talent continues to grow. CENGN has experienced a consistent increase in interactions with the Canadian tech community since its founding. In FY 2020, CENGN saw 486,800 Twitter impressions, 143,295 website visits, and an open rate of 19% from the 3,419 newsletter subscribers during the year.

Our platforms saw significant growth in engagement:



+38%



+25%



+20%



+26%



Media Coverage

During FY 2020, CENGN appeared in the media 38 times, being featured in articles from a variety of provincial, national, and international sources.

"For the Ottawa-based Centre of Excellence in Next Generation Networks, success is all about connections and networking. That's true of its technical side – as a platform for its startup and enterprise partners to experiment with the latest in 5G technology – as well as for its upcoming summit, where the organization looks to connect Canada's key stakeholders in industry, academia and government to advance networking across the country."

- Ottawa Business Journal / November 2019

"Nokia will be participating in several ways, we're looking forward to working with small and medium enterprises all across Ontario that are looking for a testbed to test their innovations before they can go out and commercialize that solution and we're hoping that the investments Nokia, along with CENGN and NORCAT, have made here will enable this ecosystem of devices to be brought to the market."

- Calin Miculescu, Sales Director at Nokia, interviewed by CTV News / March 2020

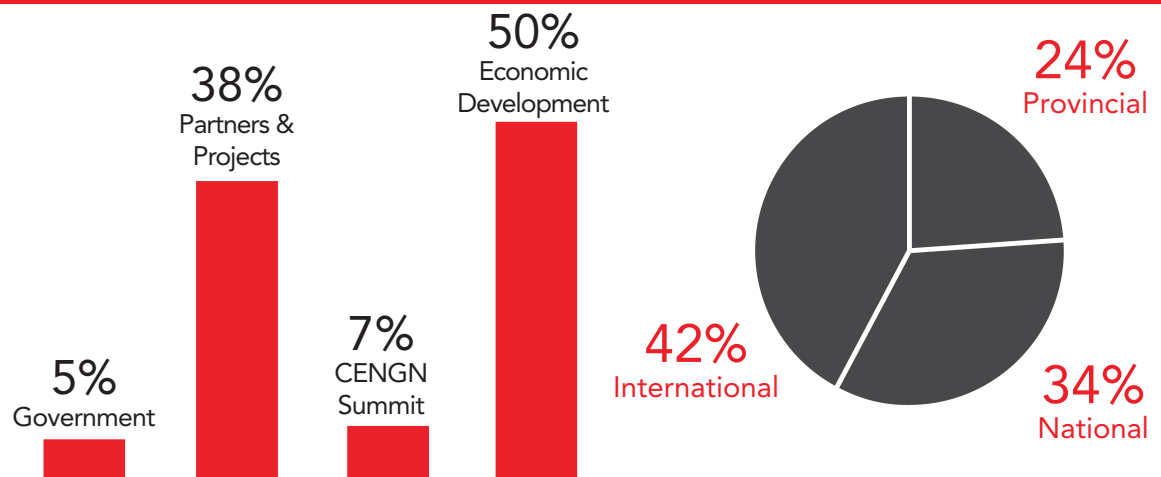
"The government's Next Generation Network Program is delivered through a partnership between the Centre of Excellence in Next Generation Networks (CENGN) and the Ontario Centres of Excellence. The program helps Ontario companies develop and commercialize innovative wired and wireless technology, products and services. Other projects in the program are focused on broadband, smart agriculture and autonomous vehicles."

- Post Online Media / March 2020

"It has been an exciting road to get to where we are today, and many individuals and organizations have been walking it together with us. I want to thank all those with whom we've built these projects: ORION's hard-working staff, as well as our community partners, including CENGN, ENCQOR 5G, and Compute Ontario. And finally, thanks to our funders, the Ontario Government, OCE, and CANARIE, without whom we could not have travelled this great distance."

- David Smith, CTO, ORION Networks / April 2020

Media Coverage Breakdown



CENGN Summit 2019

The CENGN Summit is a full day event for any business or technical professional working in network technology looking to understand how the market is preparing for the oncoming wave of ultra-high-speed connectivity, smart cities, and the growth of disruptive technology. It brings together an innovation ecosystem of multinational companies, start-ups and scale ups, government, and academia to build partnerships and discuss the latest trends in the networking and ICT sectors. Summit 2019 saw the introduction of a split track afternoon dividing the program into technical and innovation streams. The event explored how new and transformative technologies and innovative thinking can benefit all enterprises, sectors, and citizens, strengthening Canada's economy and improving our way of life.

Summit 2019 Topics

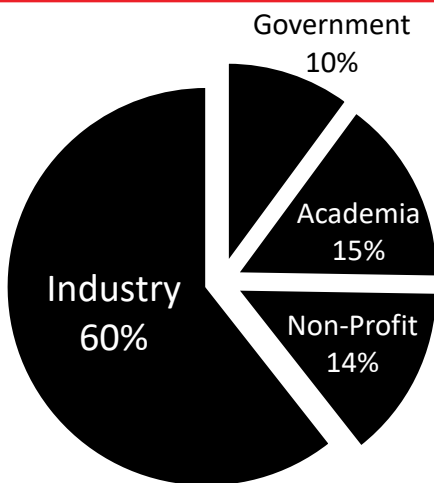
Accelerating 5G and Open Source Tech in Canada

The Opportunity of LEO - Solving the Canadian Connectivity Dilemma

Harnessing Transformative Technology



Attendance Breakdown

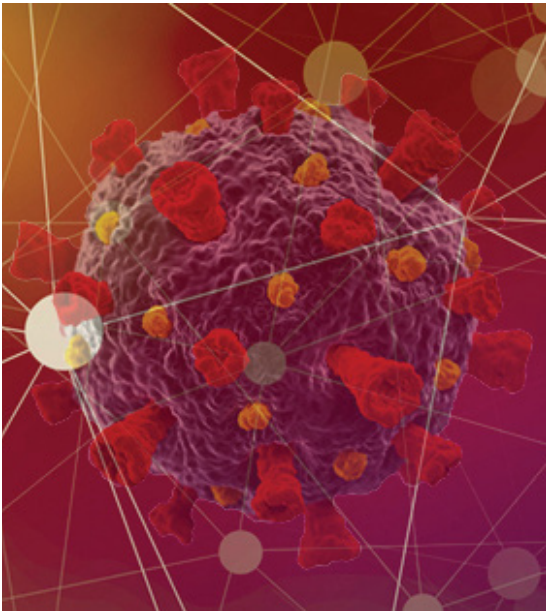


SUMMIT 2020

Join us **November 12, 2020** for the 5th annual CENGN Summit, going virtual for the first time. www.cengnsummit.ca



Addressing a Pandemic



As we adjust to the challenging and fast-changing global situation brought on by COVID-19, it is clear that we are all in this together.

CENGN is committed to helping companies fill the product and service gaps related to the pandemic. CENGN, along with other members of Canada's innovation network, are providing their resources to Canadian businesses that require infrastructure services to validate their networking solution. This call to action includes but is not limited to solutions in the following two categories:

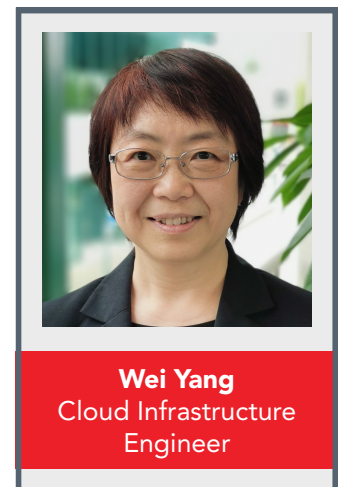
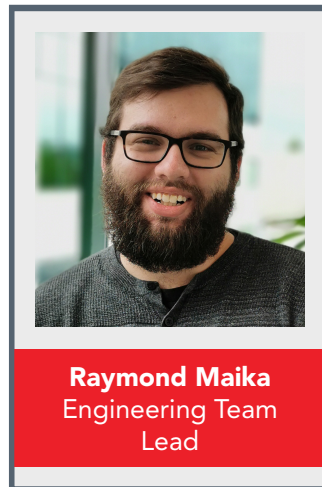
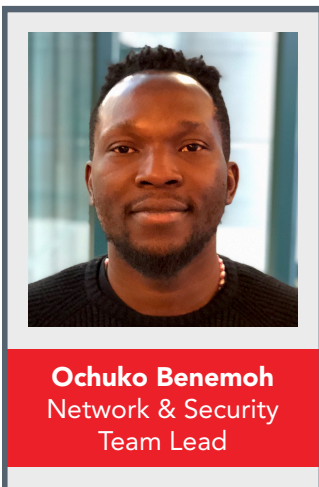
- Products using cloud computing and big data solutions to support research and solutions addressing COVID-19 issues
- Products enabling remote work and that allow workforces to operate more effectively and securely in a remote setting

Together, we can respond to the global pandemic and make an impact locally and globally.

To submit a project, visit our projects webpage: www.cengn.ca/projects/

Celebrating 5 Years

Congratulations to all CENGN staff who celebrated a half decade contributing to CENGN's success!



Interested in making an impact on Canada's innovation technology sector?
Join our team: www.cengn.ca/contact/careers/



CENGN Headquarters
555 Legget Drive, Tower A, Suite 600
Ottawa, ON, Canada, K2K 2X3

Sources: cengn.ca/about-us/agm-directory

All information pertaining to CENGN as of March 31, 2020

www.cengn.ca | info@cengn.ca
[@CENGNCanada](https://twitter.com/CENGNCanada)

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