



# Cementing Ontario's Leadership in the Automotive and Mobility Sector

May 2022

# About Ontario Centre of Innovation

- ❖ In 2003, 7 sector-focused Centres merged to achieve greater program efficiency and outcomes, OCE Inc. (now OCI)
- ❖ Funded primarily by the Ministry of Economic Development, Job Creation, and Trade (MEDJCT), with program funding matched by industry.
- ❖ Governed by an independent volunteer Board of Directors and observers from MEDJCT.
- ❖ OCI partners with Regional Innovation Centres (RICs), universities, colleges and research hospitals, industry, across Ontario.

# OCI's ROI metrics – FY2021

## OUTCOMES ACHIEVED FY2020–2021

As at March 30, 2021

**\$233.9M**

Total Program Investment  
into Collaborative R&D and  
Commercialization Projects

**\$164.9M**

Total Co-investment  
from Industry (and other)  
Partners

**2.4x** Leverage

**898**

Ontario Companies  
Supported

**5,644**

Jobs  
New & Retained

**\$265.2M**

Incremental Sales  
Revenues  
by OCI-supported  
Companies

**\$503.3M**

Private Sector  
Follow-on  
Investment



# The Ontario Advantage

100+

Years as a leading automotive manufacturing and supply jurisdiction

2nd

largest vehicle assembler in North America (1.9M vehicles in 2019)

5

OEMs including FCA, Ford, GM, Honda and Toyota

700+

supplier companies and more than 500 tool, die and mold makers

2nd

largest information and communication technology (ICT) cluster in North America, with more than 20,000 ICT firms



Extensive network of post-secondary institutions, world class talent, R&D centres, innovation hubs and testing facilities

# The Right Ingredients



## Automotive Minerals Cluster

- 18 Critical Minerals Significant Project and Operating Mines
- 28 Advanced Mineral Projects in Northern Ontario

## IT and Technology Cluster

- 2<sup>nd</sup> largest tech cluster in North America with
  - 20,000 ICT firms
  - 5,000+ start-ups
  - 400,000 tech workers

## Automotive Manufacturing Cluster

- #2 North American assembly
- Only sub-national jurisdiction globally with 5 OEMs
- 700+ supplier companies (including Magna, Linamar, Martinrea, Woodbridge and more)

## Financial Services Cluster

- Toronto is the 2<sup>nd</sup> largest Financial Services hub in North America

# Ontario Vehicle Innovation Network (OVIN)

- ❖ OVIN captures the economic potential of automotive and mobility technology to shape the future of Ontario's sector
- ❖ OVIN helps enable Ontario's transportation and infrastructure networks to plan for and adapt to this transformation
- ❖ OVIN includes support for SMEs to :
  - ❖ develop, test and commercialize new automotive and mobility technology
  - ❖ hire new talent
  - ❖ gain access to test and demonstration sites

\$112  
million

in co-investment secured

1,880  
Jobs

created and/or retained

473  
R&D job  
placements

facilitated through internships  
and fellowships

68  
Commercialization  
partnerships

supported

372  
SMEs

supported

\$108  
million

in follow-on investment  
generated

\$38  
million

in Ontario SME revenue  
growth catalyzed

\*As of March 30, 2021

# OVIN's Objectives



- Bridge Ontario's automotive, technology and manufacturing clusters to support the growth of Ontario's ecosystem
- Advance the growth of regional clusters and world-class testing locations to drive the deployment, adoption, and piloting of smart mobility technologies across the province, including electric vehicle and power train technologies
- Ongoing support for SMEs in commercializing technologies, scaling-up, attracting investment, and accessing global markets
- Execute on opportunities and tactics to strengthen Ontario's automotive and mobility workforce and talent pipeline
- Drive public education, research, analysis, thought leadership activities, and raise awareness around the potential and the opportunities for Ontario
- Convene stakeholder groups, acts as a bridge for collaborative partnerships, and serve as a concierge for new entrants into Ontario's thriving ecosystem
- Ensure that Ontario remains a global leader in the automotive and mobility sector

# OVIN SCOPE

“Public and Private transportation of  
people and goods on public roadways  
and railways ...  
safer, cleaner, and more efficient”

*a.k.a. “mobility”*



# MOBILITY'S FOUR TRENDS: "CASE"

## Connected Vehicles



- V2V and V2X communications
- Navigation Systems
- Infotainment Systems
- Telematics
- Cloud computing and data analytics
- Cybersecurity

## Shared : Multimodal and Integrated Mobility



- Ride sharing and car sharing
- Parking and mobility optimization solutions
- First and last mile solutions
- Fleet management

## Autonomous Vehicles



- Perception (Sensor data fusion)
- Localization
- Driver assistance systems
- Human-Machine Interface
- Safety
- AI-powered Operating System

New theme for OVIN



## Electrified : Zero-Emission Vehicles

- Plug-in hybrid and battery EVs
- Hydrogen fuel cell EVs
- Electric powertrain
- Critical minerals
- BEV supply chain

# OVIN Funding Programs ... at a glance

## Electric Vehicle (EV)

ON SMEs + Partner with market pull  
Integration and demonstration  
Max **\$1,000,000** = 1/3 of budget  
Up to 24 months

## WinterTech Development

ON SMEs + Partner with market pull  
Integration and demonstration  
Severe winter conditions  
Max **\$500,000** = 1/3 of budget  
Up to 24 months



## C/AV & Smart Mobility

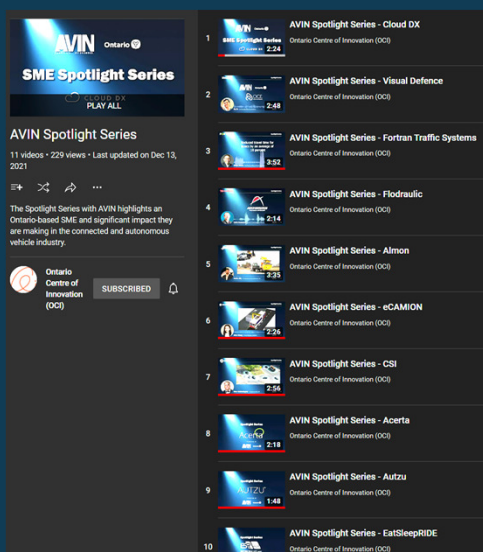
ON SMEs + Partner with market pull  
Integration and demonstration  
Max **\$1,000,000** = 1/3 of budget  
Up to 24 months

## Talent Development

SMEs & MNEs doing internal R&D in ON  
Students and recent graduates,  
college to Post-Doc Fellows  
**\$30,000 & \$35,000**  
12 months & 24 months

# Some Program stats ...

- In operation since November 2017
- 70+ CAV & WD projects; 8 EV projects
- 170+ Talent Development projects



**AVIN Spotlight Series**  
11 videos • 229 views • Last updated on Dec 13, 2021

The Spotlight Series with AVIN highlights an Ontario-based SME and significant impact they are making in the connected and autonomous vehicle industry.

Ontario Centre of Innovation (OCI) **SUBSCRIBED**

- 1 AVIN Spotlight Series - Cloud DX
- 2 AVIN Spotlight Series - Visual Defence
- 3 AVIN Spotlight Series - Fortran Traffic Systems
- 4 AVIN Spotlight Series - Floodraic
- 5 AVIN Spotlight Series - Almon
- 6 AVIN Spotlight Series - eCAMILION
- 7 AVIN Spotlight Series - CSI
- 8 AVIN Spotlight Series - Acerta
- 9 AVIN Spotlight Series - Autzu
- 10 AVIN Spotlight Series - EatSleepRIDE



### News Releases

**Talent Strategy & Roadmap**  
for Ontario's Automotive and Mobility Sector

**New Talent Strategy & Roadmap Aims to Strengthen Ontario's Automotive and Mobility Sector, with a focus on Diversity, Equity and Inclusion**

The Ontario Vehicle Innovation Network (OVIN) is committed to strengthen and grow Ontario's automotive and mobility sector with a responding to the needs of its labour force.

Source: Ontario Government, November 21, 2021

**Thales, Invision AI and MetroLinx Successfully Advance Autonomous Rail**

Invision AI, a Toronto-based technology start-up, Thales, a global leader in digital technologies, and MetroLinx, the regional transportation agency for the Province of Ontario, today announced the successful completion of the 30 InterTech Program, an 18-month co-operation to test the functionality and reliability of cutting-edge rail systems, including enhanced situational awareness, safety enhancements and operational benefits, through an on-track test.

Source: The Star, November 21, 2021

**SalesChoice**

SalesChoice, in partnership with Purolator, received support from the Ontario government to commercialize a ground-breaking AI-powered driver health and safety solution.

Cloud-based AI-based startup, SalesChoice, is partnering with Purolator, one of North America's leading courier and logistics companies and the Government of Ontario, through Ontario's autonomous vehicle innovation network (OVIN), on a new driver health and safety initiative that will test the effectiveness of an AI-based predictive model training and prescriptive mobile application.

Source: The Star, November 22, 2021

**Four DRobotics Corp. Leverages Government of Ontario Support to Enhance Sensor Capabilities of Snow Plows**

In partnership with Ontario's autonomous vehicle innovation network (OVIN), as well as the

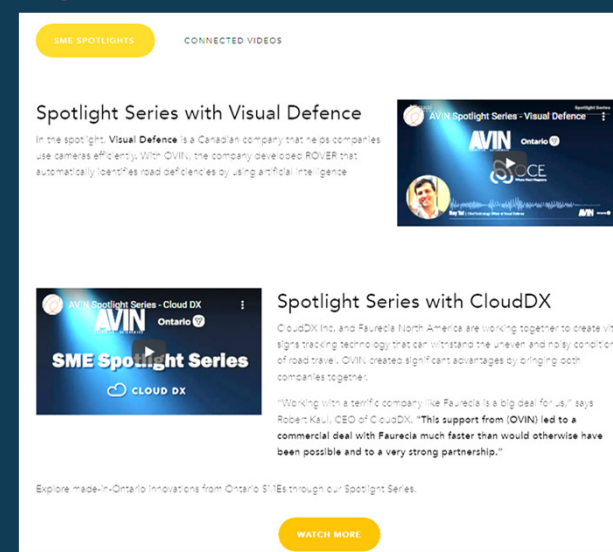
**eLeapPower - Powering e-Mobility**

eLeapPower, founded in 2016 as eLeap Canada, together with the University of Toronto's Electric Vehicle Centre (U2EC), is co-located in the Ontario Centre of Innovation (OCI) the autonomous vehicle

**Ecopia**

**Ecopia AI Creates HD Map of Toronto for Autonomous Vehicles through Partnership with Government of Ontario**

Ecopia is commercializing a centralized hub for the HD Map data needed in the advancement of autonomous vehicle operations. The partnership



**SME SPOTLIGHTS** CONNECTED VIDEOS

### Spotlight Series with Visual Defence

In the spotlight, **Visual Defence** is a Canadian company that helps companies use cameras efficiently. With OVIN, the company developed ROVER that automatically identifies road deficiencies by using artificial intelligence.

### Spotlight Series with CloudDX

CloudDX Inc. and Faurecia North America are working together to create vital signs tracking technology that can withstand the uneven and noisy conditions of road travel. OVIN created significant advantages by bringing both companies together.

"Working with a terrific company like Faurecia is a big deal for us," says Robert Kaul, CEO of CloudDX. "This support from (OVIN) led to a commercial deal with Faurecia much faster than would otherwise have been possible and to a very strong partnership."

Explore made-in-Ontario innovations from Ontario SMEs through our Spotlight Series.

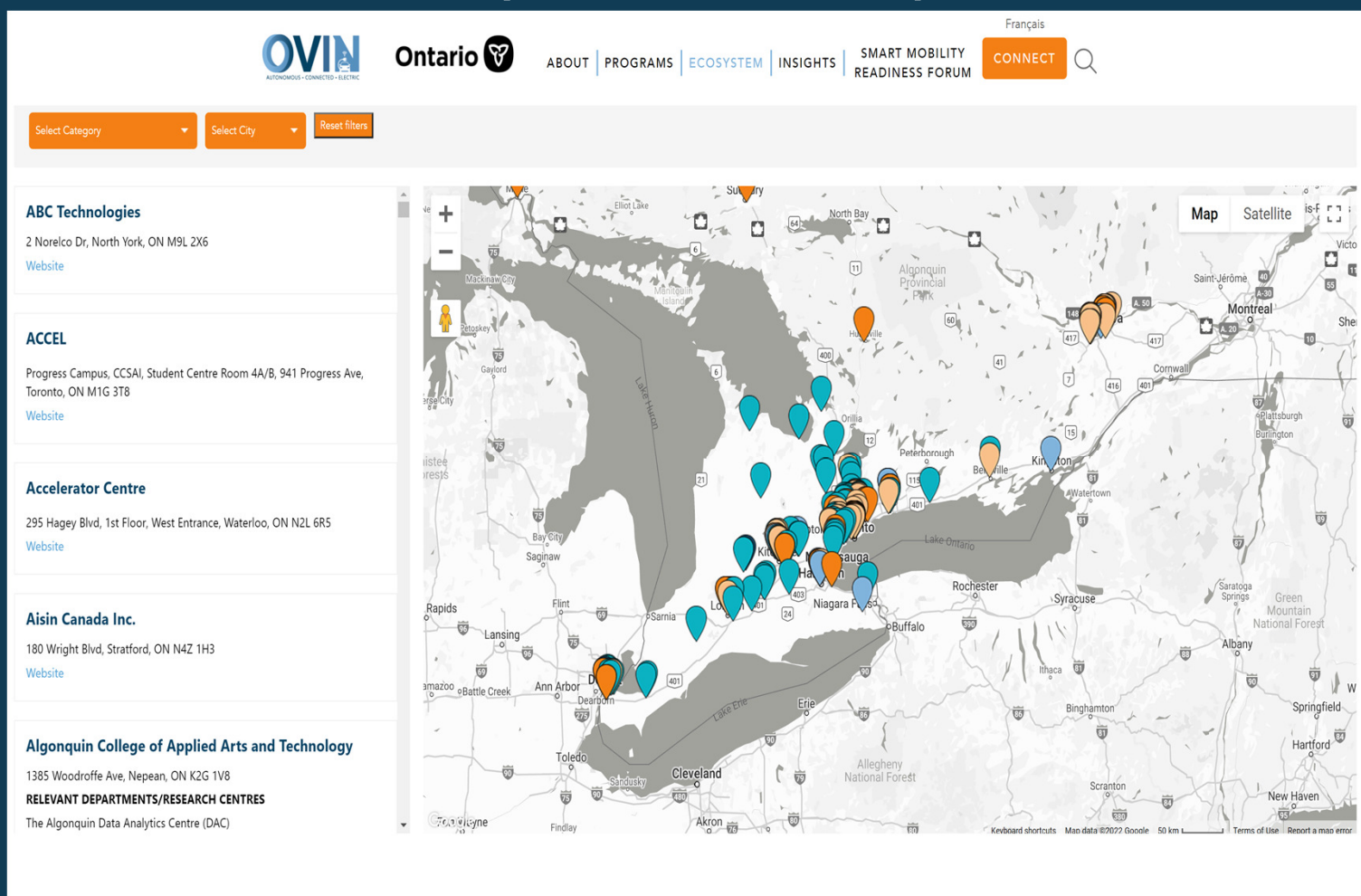
**WATCH MORE**

# Ecosystem map

Innovation:  
Ontario's Unique  
Autonomous and  
Mobility Cluster  
connected,  
autonomous,  
electric

## Automotive and Mobility Cluster

- 300+ firms active in C/AV with major investments in Ontario
- Over \$1B of investment in automotive technology and smart mobility solutions since 2016
- Seven regional sites across the province that leverage regional assets and engage local industry





# Canada's 1<sup>st</sup> Zero-Emission EV Concept: Project Arrow





# Connected & Autonomous & Cybersecurity

- SAE Level 3+ autonomous technology
  - LiDAR, RADAR, Optical sensors
  - AI/ML software intelligence
- COMPLETE cybersecurity protection – software/hardware on-vehicle, around vehicle, V2X ecosystem
- CyberBio patented technology



## Vehicle-as-a-Caregiver VaaC



Vital  
Monitoring

Speech  
Analytics



Biometric  
Sensors



Facial  
Recognition



# REGIONAL TECHNOLOGY DEVELOPMENT SITES

- ❖ A network of support and expertise for **start-ups and SMEs** to develop, test, prototype, and validate new technologies
- ❖ Physical sites in regional innovation incubators, accelerators, post-secondary institutions, economic development offices
- ❖ Access to specialized equipment and tools
- ❖ Business and technical advisory services
- ❖ Seven Sites with twelve nodes across Ontario



# New: Northern Regional Technology Development Site

## Focus Area:

- ❖ The Northern RTDS (NRTDS) will support SMEs to develop BEV and EV technologies across the value chain, from critical minerals extraction to EV technology manufacturing.

## Scope:

- ❖ The Northern RTDS will serve as a location to test and validate technologies, support prototyping, and provide access to equipment and services to support the development and commercialization of technologies. Typical project activities include technology development, product/service validation, testing, proof of concept, demonstration. Projects can also include advisory, networking, education, and financing activities.

## Process Timeline:

- Call for applications on December 2nd, 2021.
- Two proposals received.
- New site announced on April 22nd, 2022.
- Over to Don!



# Thank you!



## Questions?

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