Canadian Automated Vehicle Initiative

CAV Update May 2025

From the Editors

CAVI is calling on Canada to launch a Trans-Canada Autonomous Truck Demonstration Project. A driverless tractor-trailer would drive itself from Halifax to Vancouver in 2028.

There are four reasons why this proposal should be a priority for Canada.

First, Canada has extensive expertise in Connected and Automated Vehicles (CAVs), but in separate pockets across the country. These areas of excellence include AI, communications, CAV pilots and testing, and more. There are also existing CAV truck demonstration projects, but on a limited geographic scale. The proposed project would integrate all these separate innovative initiatives into a nation-building project.

Second, this synchronizes very well with the federal government's vision of increasing inter-provincial trade, which is made challenging by the critical shortage of long-distance truck drivers. According to the Canadian Trucking Alliance, there are currently over 25,000 unfilled positions.

Third, this also aligns with Canada's broader strategy to establish leadership in artificial intelligence and position the country as a global competitor in autonomous vehicle technology with other nations. Prime Minister Carney's appointment of a Minister for AI and Digital Innovation signals the government's commitment to these emerging technologies. Innovation has a substantial impact on the economy; it drives productivity, and higher productivity leads to economic growth. GDP per capita as a measure of living standards increases with economic growth. and will benefit all Canadians. The Government of the UK is a strong advocate of this approach and says *both the self-driving vehicle and artificial intelligence (AI) sectors bring huge potential for economic growth as they develop*.

Finally, this project builds on Canada's existing strengths while addressing public concerns about automated-driving safety. The demonstration would showcase Canadian leadership in developing robust CAV systems and promote public understanding of the benefits and limitations of CAV technology and foster social acceptance.

The full media release is here. If you would like to be added to the project mailing list, please write to Barrie Kirk at cav_truck@cavi-icva.ca

Canadian CAV News

On May 4, 2025, the **Canadian Broadcasting Corporation** (CBC) published a report on the plans by **Magna International Inc**, based in Aurora, Ontario, to deploy self-driving 3-wheeled delivery robots in certain areas of Toronto. The project has provoked some controversy. According to the CBC report, the proposed project by Magna has been approved by the Province of Ontario's **Ministry of Transportation**, and apparently the **City of Toronto** has little or no say in it going forward. Magna says that a similar pilot project was successfully undertaken in a suburb of Detroit in 2022 and 2023. If the project goes ahead, it will see up to 20 self-driving delivery robots under the supervision of human handlers fan out across Parkdale-High Park, York South-Weston, Davenport, University-Rosedale, and Toronto-St. Paul's neighbourhoods where speed limits are 40 kilometres per hour or lower. The deployment is scheduled for the second quarter of 2025. The CBC report can be viewed at this link.

Bern Grush, Executive Director of the Toronto-based **Urban Robotics Foundation**, commented that "the province should provide clear guidance as to what will be independently observed from a study perspective (since it is a provincial permit), as opposed to simply "watch and see." Further, there should be a minimum understanding of the potential for scaling this technology. If it cannot be scaled from a small trial number, there is no point in doing this work. The manufacturer does not want to manufacture 10 or 20 of these, and the city -- that will eventually need to enforce the deployment of this technology -- will need equipment and training."

On May 20, 2025, an article titled *The 50% Problem* was published by Andrew Miller of Toronto-based **Paladin Consulting**. The article examines several scenarios where the share of automated vehicles in the traffic mix is less than 30%, is increased to 30% to 45%, increased further to 45% to 55%, and finally to 55% to 70%+. The concept of *hybridity* is introduced and presented as a realistic way the traffic mix will evolve over time. In this concept, the traffic mix will be made up of automated/driverless vehicles, vehicles equipped with conditional autonomy, vehicles equipped with ADAS, human operated vehicles, cyclists, pedestrians, emergency vehicles and other traffic. The author also presents three different paths that the transition to large scale automated driving might take. The major challenge will be designing road infrastructure, regulation, and protocols on the assumption that both human, partially automated, and wholly automated driving will coexist for the foreseeable future. The article can be viewed at this link.

On April 20, 2025, the **National Post** newspaper published an article titled *Canada moving to the forefront of driverless trucking, with one autonomous rig already rolling*. The article did a roundup of some of the Canadian companies currently active in the automated truck sector. **Waabi**, **Gatik** and **NuPort Robotics** are featured in the article. Since 2020, Gatik has been working with **Loblaws** to prove the feasibility of using driverless trucks for delivering groceries from Loblaws distribution centres to its retail stores. NuPort Robotics has partnered with **Canadian Tire Corp. Ltd.** on a pilot project that aims to move goods within a distribution centre north of Toronto. Waabi's work in Canada and U.S. with **Volvo Trucks** and other partners/investors is highlighted in the article. One common element among along these companies' efforts to bring autonomous trucking to the mainstream is to address the truck driver shortage in Canada. According to projections by **Trucking HR Canada**, there will be a driver shortage of more than 40,000 by 2030. The National Post article can be viewed at this link.

The auto industry is one of the biggest economic drivers in the **Province of Ontario**. As of 2023, approximately 700,000 people worked for the auto industry in Ontario. The need for skilled workers in this industry is never ending. Recognizing the technological advances such as electric, connected and autonomous vehicles, the province has most recently allocated another $3 million through its *Skills Development Fund* (SDF) in partnership with **Automotive Industries Association of Canada** (AIA Canada), for training workers who are planning to join the industry now or in the future. More details are at the province's site at this link.

ITS Canada held its Annual Conference and Expo in Ottawa on May 21-23. Congratulations to Omar Choudry of the **City of Ottawa** and the conference organizing team - it was excellent.

Andrew Miller of Paladin Consulting and CAVI's Barrie Kirk explored how the present moment is pivotal for Canada's development of Connected and Automated Vehicle (CAV) technology. They examined how Canada can transform from a technology adopter to an innovation leader in the global CAV landscape. The conversation wove between two critical themes: Canada's current position in the international CAV ecosystem and the strategic pathways forward.

Photo credit: Reba Molotsi, Invest Ottawa

The discussion also explored elements of CAVI's proposed national strategy for Canada, including the establishment of a national CAV Centre of Excellence, the development of comprehensive federal legislation, and creation of an expanded testing network specifically designed for extreme weather conditions.

Pointe-Claire, Quebec-based **FPInnovations** is a not-for-profit Research & Development (R&D) private organization engaged in R&D in the pulp and paper industry, forest operations, wood products, and bio-sourced products. The company employs more than 400 specialists throughout Canada and has a total membership of 180 industry companies. One of the research areas that FPInnovations is working on is automated transportation for logging trucks. In partnership with **Kratos Defense & Security Solutions**, it successfully demonstrated automated leader-follower platooning on forest roads in Quebec. One reason for undertaking this project was to address the familiar issue of the shortage of qualified truck drivers. According to the company, in some instances, the driver shortage has led to plant shutdowns. More information about the project and its outcomes are at FPInnovation's site at this link.

Staying with **FPInnovations**, the company recently tested automated truck technology developed by Toronto-based **NuPort Robotics**. NuPort retrofits Class 8 trucks (18-wheelers) with the necessary hardware and software to make them self-driving. The tests took place in March 2025 on a gravel road in Northern Canada. During the test, the automated truck drove under dry and snow fall conditions with a safety driver behind the wheel. The automated truck successfully navigated on a single-laned bridge, performed obstacle avoidance maneuvers (avoiding a log placed on the road), and adjusted its speed and

trajectory upon detection of oncoming traffic or vehicles parked on the side of the road. Part of NuPort's motivation for developing its automated technology is to address the issue of truck driver shortage. This is especially challenging in the forestry industry where the job often entails long hours, cold climates, difficult road conditions and other factors. These all combine to make recruitment for this industry a challenge. More information is at NuPort's site at this link. A short YouTube video of the NuPort automated truck in action can be also viewed at this link.

International CAV News

Uber is the leading ride-hailing company in the United States. It was once developing its own self-drive technology through *Uber Technology Group*. However, after a March 2018 fatal pedestrian incident in Arizona involving one of its automated vehicles, it terminated its own R&D program and sold that business in 2020. However, Uber maintains an interest in the self-drive technology through more than a dozen manufacturer partnerships, and investing in multiple self-driving technology companies, including **Waymo**, **WeRide**, **Wayve**, **Motional** and others. During a recent interview, Uber's CEO revealed that **Tesla** has made a corporate decision not to partner with Uber or other ride-hailing companies when its own planned robotaxi business launches in Austin, Texas in June 2025. Uber is currently offering Waymo robotaxi rides in Austin. This in effect will make Uber and Tesla competitors once Tesla launches in Austin and other cities. More information is at this link.

Most technologies can be used for beneficial purposes or for nefarious ones. Autonomous technology is no different. It is deployed in agriculture and mining to cut costs and make operations more efficient. Or it can be a driverless vehicle transporting passengers or goods. On the flip side, autonomous technology has made inroads in military applications and wars. A recent article in the **Economist** magazine focuses on how the Russia-Ukraine war has utilized autonomous technology to produce lethal weapon systems operating on land, sea and air. According to the article, the technology has helped to remove warfighters from direct combat and replace them with *autonomous unmanned systems*. For example, it is reported that in a recent battle, Ukraine deployed dozens of remote-controlled robotic ground vehicles firing machine guns and clearing mines. And, increasingly, software-defined weapon systems are being deployed. The Economist article can be viewed/downloaded at this link.

The recent *GPU Technology Conference* (GTC) organized by the leading GPU producer **Nvidia**, had a good number of automotive attendees at this high-profile annual event. These attendees covered the spectrum of manufacturers and developers producing passenger cars such as **General Motors** (GM) and **Volvo Cars** to automated trucking developers such as **Gatik**, **Torc**, **Uber Freight** and others. Leading delivery robot developer **Nuro**, Canadian automotive company **Magna**, UK company **Oxa**, and many others were also attending. The common thread among all these companies is their use of various Nvidia processors and platforms for their own systems and products. More details are at the Nvidia blog at this link.

Staying with **Nvidia** and the recent GTC developer conference, a pair of robots designed by **Walt Disney Imagineering Research & Development and** powered by Nvidia GPUs were a big hit with the audience. Equipped with cameras and other sensors, the robots could move smoothly on the stage and display emotions such as happiness, shyness, or anger. The robots were trained to navigate the physical world through a process known as *reinforcement learning*. In a virtual simulation, a digital replica of the droid was prompted to walk again and again until it walked perfectly and stopped falling down, receiving positive feedback when it walked correctly and negative feedback when it didn't. The same technique and emotional states created by Disney animation artists taught the robots about different emotions. Nvidia believes the same technique can be used to train autonomous vehicles and other types of robots. More information is at this link.

A San-Francisco-based startup called **INFRA** is planning to build a *Giga Hub* in Los Angeles specifically for servicing driverless cars. The company's vision for the *Giga Hub* is to integrate ultra-fast charging, automated maintenance, and AI-driven fleet coordination. The company believes that this will provide a comprehensive solution for large-scale AV operations. The company website says *Giga Hubs* are equipped with state-of-the-art perception-enabled robotics technology, enabling seamless management of autonomous vehicle infrastructure. It also plans to use its proprietary *Hub-to-Grid* (H2G) system, enabling vehicles to charge during off-peak hours and feed electricity back to the grid when demand surges. The company has so far raised US$3.3 million to finance its plans and operations. More information is at this link.

And finally, an Australian publication called **Australian Paint & Panel** published a recent report titled *Problems of self-driving cars revealed*. The article delves into what it calls *driver dilemma*. This dilemma arises due to all the laws of the road and traffic in

Australia that assume there is a human driver behind the wheel. This obviously is not the case when dealing with driverless cars. Different Australian jurisdictions have different laws and rules when it comes to drivers, vehicles, and enforcement issues. Examples of this are given in the article. At present, there is no national autonomous vehicle framework, though the Australian Government as of last year was developing one. Furthermore, as automation increases, it becomes more problematic who is the driver, in fact and in law, for the purposes of international and national road traffic laws. The article can be viewed at this link.

CAVI Speakers' Bureau

CAVI provides speakers for many different types of events across Canada, the US and overseas. On the one hand, our keynotes and presentations have core messaging on the status of CAVs, their deployment scenarios, and the impact on business plans, government regulations, and almost all aspects of society. On the other hand, each presentation is customized for the audience and the time available.

To inquire about a speaker for your event, please write to speakers@cavi-icva.ca

Upcoming CAV-Related Events

June 3-5, 2025	AutoTech 2025, Novi MI
June 9-11, 2025	CCMTA Annual Meeting, Regina SK
June 11-12, 2025	iVT Expo (Industrial Vehicle Technology), Köln Messe, Germany
June 15-18, 2025	UITP Summit, Hamburg, Germany
June 24-26, 2025	Autonomous Ship Conference, Amsterdam, Netherlands (call for speakers)
June 25-26, 2025	Last Mile Delivery Conference & Expo, Las Vegas
August 27-28, 2025	ADAS & Autonomous Vehicle Technology Summit North America, San Jose CA
October 5-8, 2025	TAC Conference & Exhibition, Quebec City
November 24-25, 2025	Autonomous & AI Summit 2025, Frankfurt, Germany

About CAV Update

CAV Update is a free, monthly summary of news and analysis in the world of connected and automated vehicles, and their impact on the private sector, government, and society.

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The Canadian Automated Vehicle Initiative (CAVI) is an association for all stakeholders in industry, government and academia involved in any aspect of the ever-increasing automated vehicles ecosystem.

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