Canadian Automated Vehicle Initiative

CAV Update July 2024

From the Editors

There is a significant push towards automated transit, especially in Europe, China and the US. Some examples are:

- **CAVForth** is a pilot project in eastern Scotland to develop passenger-carrying autonomous bus services in the United Kingdom. The scheme's first bus route is operated by **Stagecoach East Scotland** with a 20-minute frequency over the Forth Road Bridge. This is described by the UK government as being the first full-size public autonomous bus service in the world. The service commenced commercial operations in May 2023. There is a fleet of five Alexander Dennis buses built to SAE Level 4 requirements, meaning a driver is present in the bus at all times but does not need to control the bus in regular service. Transport Scotland has more details here.
- Further south, in Cambridge, England, there is another trial with a self-driving bus. Councillor Elisa Meschini, Chair of the **Greater Cambridge Partnership's** Executive Board, said: *For Cambridge to thrive now and in the future, the area needs the infrastructure and mass public transport systems to cope with the demand – autonomous vehicles are one part of this solution*.
  There is a Canadian connection for both projects: **Alexander Dennis**, owned by **NFI** in Winnipeg, is a supplier.
- China's WeRide has launched an L4 Driverless Minibus in France.
- **WSP**, the large transportation consulting company, reports that the US **Federal Transit Administratio**n has estimated that dozens of U.S. bus automation tests were under way.
- Two self-driving shuttles that can carry eight seated passengers each will start transporting customers around JFK Airport, according to the **Port Authority of New York and New Jersey**.
- And there are many more examples.

We believe that Canada needs to do more to move forward in automated transit – including microtransit, including a plan and pilot projects. This will need to involve key stakeholders including the Federal, Provincial, Territorial and municipal governments for the required legal and regulatory changes. Also, transit associations and their members have a clear role. We also need to be sensitive to the impact on transit drivers and their families.

As we move forward, CAVI can help – there is an ideal site for a public pilot project right here in Ottawa, and we have written to potential stakeholders.

Canadian CAV News

The Board of Directors of the **Canadian Automated Vehicle Initiative (CAVI)** recently held its first meeting. This is a key milestone. It was excellent and marks -- in the words of Winston Churchill – “the end of the beginning”. Barrie Kirk, who chaired the meeting, said that he is pleased with the geographical diversity (BC to Nova Scotia), the breadth of the expertise (government, private sector, academia, and associations), and gender diversity. CAVI is now set to ramp up the activities to support their members starting in September as we accelerate CAVI's growth and help our members move ahead in the CAV ecosystem.

About CAVI
CAVI is a not-for-profit association that provides an integrated, national perspective for the Canadian CAV ecosystem in all its many aspects. It is a forum for the voices within the ecosystem, and a voice to audiences outside the ecosystem. More information and a link to join are here.

ITS International published an article by *Bern Grush* in its March-April 2024 issue. Bern is the Executive Director of Toronto-based **Urban Robotics Foundation**. The article was titled *The real case for driverless mobility*. In it, the author examines the various claimed benefits of driverless technology such as being a safer mode of transport resulting in less injuries and fatalities, reducing traffic congestion and improving traffic flow, reducing the need for more parking, increasing productivity and convenience, improved mobility for people with disabilities and other perceived or hoped-for benefits. It is suggested that integrating the emerging robotaxi industry into the existing public transportation systems might be the best way to derive the greatest benefit from the driverless technologies. The article can be viewed on ITS International’s site at this link or at this link.

Ontario-based **GlobalDWS** is a developer of robotic solutions for various applications such as delivery, safety/security, social engagement and even robots designed as greeters to help automate some of the repetitive tasks typically performed by receptionists. On June 20, 2024, CBC reported that the federal government had leased a couple of this company’s robots at a cost $39,663. The robots have been deployed at some of the federal government buildings in Gatineau, Quebec. The government says the purpose of these automated robots is to gather data for workplace optimization with an ultimate aim of reducing its office footprint by half in the coming years. The unions representing

federal government employees do not see it that way. They call it an invasion of employees' privacy. According to GlobalDWS, these robots are equipped with about 20 sensors and a 360-degree camera and are able to gather information on air quality, light levels, noise, humidity, temperature and even measure CO2, methane, and radon gas levels. The collected data can then be used to ensure the workplace is not too hot, humid or dim and help reduce heating, cooling and hydro costs. The CBC report can be viewed at this link.

The **Ontario Vehicle Innovation Network** (OVIN) has announced a new funding program called *Content Partnership*. Qualified Ontario-based non-profit companies can apply for grants of $50,000 to develop one or more *micro-credentials* or $100,000 for creating four *micro-credentials*. The aim of this program is to provide upskilling opportunities to Ontario's automotive and mobility sectors. In addition to connected and autonomous vehicle sector, this new program addresses 12 other sectors such as *Advanced Air Mobility*, electrification/batteries and others. More information is at this link.

Two Ontario-based firms have initiated a pilot project for delivering medications by drone to remote communities and to those without their own transportation. Toronto-based startup **Script Runner** has developed the drone delivery system and Thunder Bay-based **Oak Medical Arts** is providing the medications ordered by some of its customers. A recent demonstration delivered insulin to a patient 30 kilometres away. The flight took 40-minutes. Script Runner uses a *DJI FlyCart 30* drone and a winch delivery system to lower the medication package once it reaches the destination. Drone flights can be impacted by ambient conditions such as wind direction and speed, temperature fluctuation and other factors. More information at this link.

On June 5, 2024, **Expansion Solutions Magazine** published an upbeat article by **Vic Fedeli**, Ontario's Minister of *Economic Development, Job Creation and Trade* titled *How Ontario is Seizing Once-In-A-Generation Opportunities* . In the article, Minister Fedeli describes the billions of dollars of investment that Ontario has attracted from **Volkswagen**, **Ford**, **Stellantis**, **Magna International** and others since 2018. Most of these investments are in the production of electric vehicles and the batteries that power them. The Minister partly credits Ontario's auto supply chain which is comprised of more than 700 parts firms, 500 tool, die and mold makers, and over 400 companies working on

connected, autonomous, electric and mobility technologies for this significant achievement. The article can be viewed at this link.

International CAV News

Mesa, Arizona-based **Verra Mobility Corporation** provides smart mobility technology solutions and services in the United States, Australia, Canada, and Europe. In June 2024, the company published a 9-page report titled *Urban Mobility Technology Survey 2024*. In it, Verra makes the startling claim that nearly all U.S. municipalities (93%) anticipate they will need to be ready for driverless autonomous vehicles on their streets within five years. Between May 1 and May 8, 2024, using an e-mail invitation and an online survey, 100 Municipal Chief Information Officers (CIOs) and Deputy CIOs were surveyed. They confirmed that they work on or are familiar with mobility or transportation related topics such as AVs. More than one-third of respondents represented cities with populations of more than 250,000. In addition to autonomy, the cities surveyed were also asked about other trends such as connected vehicles, electric vehicles and the combination of all four, autonomous, connected, electric and shared (ACES); as a way to increase safety and to reduce roadway injuries and fatalities by utilizing ACES technologies and other AI-powered solutions More information is at this link. The 9-page report can be viewed/downloaded at this link.

Much has been reported by the media about the recent emergence of a robotaxi industry. Tesla had originally promised to reveal its latest robotaxi strategy on August 8, 2024. It has now been postponed to sometime in the fall. Given all the hype, on July 9, 2024, **slowboring.com** published an article titled *Robotaxis should be a wakeup call for cities*. The author takes a deep dive into how the industry has evolved till now, and how it may evolve in the coming years. Pros and cons of the proliferation of robotaxis are anaylzed, and issues such as probable increase in traffic congestion, impact on parking and public transportation and other issues are examined. Given the experience with ridehailing services such as Uber and Lyft, and delivery services such as Doordash and Postmates, the issue of congestion at curbs for pickup and dropoff is recognized as a major issue. The author recommends implementing designated pickup and dropoff areas for such services. This may alleviate the double parking for such services by requiring robotaxis and delivery vehicles (manned and/or automated) to pull over in specific areas on each block where the curb is clear. The article can be viewed at this link.

As an aside, in May 2024, the leading robotaxi company **Waymo** claimed to have 50,000 paid trips every week across four major U.S. cities (San Francisco, Los Angeles, Phoenix and Austin).

One of the longest running debates in the AV world has been the issue of liability, i.e. which party is liable if an AV is involved in a mishap. Is it the owner/driver, the vehicle manufacturer, the software development company, the system integrator, the communication company or some other party? Now the issue has finally been settled in at least one country, the **United Kingdom**. UK's *Automated Vehicles Act* (AV Bill) became law on May 20, 2024. It formally transfers liability for crashes from drivers to corporations such as software developers and automotive manufacturers when self-driving systems are engaged. For AV developers, this clearly sets the bar they have to meet in the world's most comprehensive autonomous vehicle laws. The law allows for self-driving vehicles to be deployed on British roads from 2026. More information at this link.

A recent article in **understandingai.org** focuses on what robotaxi businesses need to do with the communities they operate in. The article is titled *Waymo's investments in San Francisco may be paying off*. The author describes his visit to Waymo's main robotaxi depot in a gritty part of southeastern San Francisco where the vehicles get cleaned, repaired and charged. One recent innovation: when a vehicle needs to charge at the depot, it now drives itself to an open charger and shows a "low battery" icon on its dome so a Waymo technician can plug it in. The author personally speaks to many San Francisco residents to see how they feel about two-ton robots on wheels roaming their city. It appears that most people have got used to often seeing them on the city streets and the novelty has somewhat worn off. Waymo has had a difficult relationship with the City of San Francisco and its Fire Department over its robotaxis interfering with the work of first responders. The author interviews a Fire Department official about the past and current issues in regards to robotaxi operations in San Francisco. The author conculdes that relationship building seems to be key for running a successful robotaxi business in any city. The article can be viewed at this link

Amid all the doom and gloom in the automated trucking industry, there is a bright spot. Bloomberg had a recent upbeat report on **Gatik**, a developer of automated trucking for the middle-mile deliveries. The article titled *Autonomous Vehicle Startup Takes Off by Picking Off Easier Routes*, details Gatik's strategy for bringing automated trucking to the market. Unlike its competitors who are trying to solve the automated trucking problem using 80,000 pound 18-wheelers on highways, Gatik uses only medium-duty trucks on a limited number of fixed and predictable routes. This requires less mapping and reduces the number of edge-cases compared to say a robotaxi operating in a large urban environment. Furthermore, Gatik deliberately avoids going past schools, highways, major pedestrian areas and fire stations. This further simplifies the automation problem. Using its 65 trucks, Gatik is already making deliveries for paying customers such as Walmart, Kroger, Tyson Foods, Canada's **Loblaw** grocery chain and others. As a vote of confidence, Japan's truck manufacturer **Isuzu** has made a US$30 million investment in Gatik and the two companies plan to mass-produce self-driving medium-duty trucks starting in 2027. Longer term, Isuzu plans to spend up to US$2.2 billion in the next few years on its automated trucking program. The Bloomberg article can be viewed at this link or this one.

And finally, one of the most influential people in the autonomous vehicle industry – **Kyle Vogt**, the former CEO of GM-owned **Cruise**, is reported to have started a new company for developing robots designed for household chores. Many entrepreneurs and tech companies (including Amazon) believe household/domestic robots are a huge untapped market. Vogt's new startup called **The Bot Company** has already raised US$150 million from a number of venture capital companies. His LinkedIn profile shows him as the CEO of this company. The company has a website at bot.co, however, the site is currently a single page showing the names of the team members and an e-mail address for people seeking employment with this new company. Vogt founded Cruise in 2013. The company was acquired by GM for US$1 billion in 2016. More information 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

August 28-29, 2024	ADAS & Autonomous Vehicle Technology Expo, San Jose, CA
September 10-12, 2024	Simulation, Testing & Validation for Automated Driving L2, L2+, L3 & Beyond, hosted by Automotive IQ, Stuttgart, Germany
September 16-20, 2024	30th ITS World Congress, Dubai, UAE
September 22-25, 2024	2024 TAC Conference & Exhibition, Vancouver, B.C.
September 26, 2024	GCXpo 2024, hosted by Area X.O, in collaboration with the Government of Canada
Fall 2024	IEEE Vehicular Technology Conference (VTC) 2024 Fall, Washington DC
October 22-24, 2024	The Future of Automotive Testing Conference, Novi, MI
November 5-7, 2024	2024 Aerial Evolution Canada Conference & Exhibition, Ottawa ON
January 23, 2025	J.D. Power Auto Summit, New Orleans
March 19-20, 2025	Connected Places Summit, London, England

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 - formerly CAVCOE) 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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