



Canadian Automated Vehicle Initiative

CAV Update

June 2024

From the Editors

CAVI continues to attract members from a wide variety of segments of the CAV ecosystem, far more than transportation and technology companies. The members include two other associations, a law firm, a construction company, the Federal and Provincial Governments, and academia. These illustrate the breadth of the support for CAVI, as well as the understanding that the deployments will impact many different aspects of Canadian society.

The feedback we are receiving is that CAVI will help the CAV ecosystem grow more quickly to the benefit of suppliers as well as society as a whole. In addition, all members can contribute to Canada's profile and competitiveness in the CAV ecosystem.

If you have not already done so, we invite you to join CAVI. To join, please go to www.cavi-icva.ca and click on "Join Us". The *early adopter rates* are \$200/year for individual members, and \$1,000/year for organizations.


Two of the many reasons to join are:

- The *early adopter rates* will end soon.
- CAVI will soon announce committees to address specific topics in more detail. As a member, you will be eligible to participate in a committee.

Canadian CAV News

On May 27, 2024, the **Ontario Vehicle Innovation Network (OVIN)** and the City of Toronto signed a *Memorandum of Understanding (MOU)* for creation of a *Technology Pilot Zone (TPZ)* focused on urban mobility. Under this arrangement, *Small and Medium Sized Enterprises (SMEs)* can use the City's infrastructure and assets to test and develop technologies for connected and autonomous vehicles. Examples include passenger transport, delivery services, EV charging technologies, accessibility solutions for persons with disabilities, and other technologies. While Toronto is focused on technologies suited for an urban environment, another TPZ project focused on cross-border and multi-modal transportation will unfold in the Windsor/Sarnia area. These projects became possible through an \$8 million funding opportunity announced by the federal government in February 2024 for establishing two live-environment piloting sites to support the development and commercialization of new





transportation technologies and innovative solutions in southern Ontario. Qualified SMEs can receive up to \$100,000 under this program. It is expected that over 40 SMEs will participate focusing mainly on the zero-emission vehicle (ZEV) and connected and automated vehicle (CAV) areas. More information is at [this link](#).

CAVI has announced the appointment of an additional three people to its Board of Directors:

- **Laura Finlay**, Manager, Partnerships and Economic Development, Area 55 Advanced Cold Research Facility, Thompson MB
- **Robert Love**, Partner, BLG
- **Terri Johnson**, Manager, Industry Advancement, Alberta Motor Transport Association

They join the five members of the Board announced in May 2024:

- **Brigid Canil**, Director, BC Ministry of Transportation and Infrastructure
- **Burak Kantarci**, Full Professor, University of Ottawa
- **Dana Borschewski**, Regional VP Americas, Aurrigo
- **Keith Fagan**, Senior Advisor, Canadian Automated Vehicle Initiative
- **Lui Greco**, Manager Regulatory Affairs, CNIB Foundation - Halifax

Barrie Kirk, CAVI's President, said "I continue to be pleased with the Board's extensive combined experience and that we are achieving diversification by expertise, geography, and gender. We expect to continue this with additional Board members." The vision is that there will be a 12-person Board; the remaining Board members will be announced soon. The first meeting of the new Board will be in July 2024.

In a major coup for the Canadian CAV industry, on June 18, 2024, Toronto-based **Waabi** announced that it has raised an additional US\$200 million to continue and expand its automated truck technology. While some of Waabi's American competitors have gone out of business (Embark, Starsky Robotics) or have scaled back their development efforts (Waymo Via, TuSimple), Waabi has been thriving. Unlike other companies that rely heavily on physical road testing to train their driverless trucks, Waabi is working on technology that mimics human thought and reasoning. Waabi says this is achieved by bringing *Generative AI* to the physical world for the first time. Waabi also uses advanced simulation techniques instead of extensive and labour-intensive road testing. The latest companies investing in Waabi are **Uber Technologies Inc.**, **Nvidia**, **Volvo Group's** venture wing, **Porsche Automobil Holding**, **Khalsa Ventures** and others. Since 2021, Waabi has raised US\$280 million. More information is at [this link](#).



International CAV News

The **U.S. Congress** has had a patchy relationship with the autonomous vehicle industry over the past several years. Comprehensive federal regulations for testing and deployment of AVs have been mired in partisan politics and competing lobby groups for years. The latest manifestation of this is a recent 7-page letter sent to the **National Highway Traffic Safety Administration**



(NHTSA) by six Senators regarding advertising practices of automakers overpromising on the capabilities of their *Automated Driving Systems* (ADS) as well as *Advanced Driver Assistance Systems* (ADAS). In their letter, the Senators urge NHTSA to use its existing authorities to demand better reporting of crashes caused by ADS and ADAS as well as discouraging the purveyors of these systems from exaggerating the capabilities of their automated systems. Numerous injury and fatal crashes have been reported in the United States in what the Senators call *after-the-fact* responses by NHTSA. They would like to see more proactive action by this agency in addressing the identified issues in their letter. More information is at [this link](#). The 7-page letter from the Senate to NHTSA can be downloaded/viewed at [this link](#).

Many automated trucking companies have chosen Texas for their development and testing projects. Among them are **Aurora**, **Kodiak**, **Torc Robotics**, **Gatik**, and Canada's own **Waabi**. There are multiple reasons for this. One is the relatively relaxed AV regulations in Texas. Another is the volume of truck traffic on Texas road network, the highest in the United States. This has spurred the **Texas Department of Transportation** (TXDoT) to award a US\$1.4 million contract to a technology company called **Cavnue** to instrument a section of Texas State Highway 130 with automated trucks in mind. Typically, an automated truck or car can sense its surroundings via its various sensors up to 300 metres ahead. The so-called *Smart Highway* proposed by Cavnue can extend this to half a mile to a mile. This capability in theory raises the safety margin by alerting the automated vehicle about unseen obstacles beyond the visual line-of-sight. Cavnue has installed a similar system on a 3-mile stretch of a highway between Ann Arbor and Detroit in Michigan. More information is at [this link](#) or [this one](#).



A recent report in the **BBC** titled *Government wants flying taxis to take off in 2 years* describes the efforts being made in the United Kingdom for bringing to the market drones capable of flying passengers in *Electric Vertical Take-Off and Landing* (eVTOL) aircraft. Called the *Future of Flight*



action plan, the main issues at present are identified as the lack of suitable infrastructure for such aircraft and the public perception of them.

In consultation with the UK government, the consulting firm **PwC** prepared a 70-page report titled *Skies Without Limits v2.0* on the feasibility of introducing this type of transport into UK's airspace. The report looks at how drones could impact the UK's economy, jobs, productivity and quality of life. The PwC report assumes a scenario where it takes 10-minutes from arrival at a flying taxi rank to taking off - currently challenging, given the length of time it takes to get through a conventional airport. It is anticipated that the technology will evolve into autonomous (pilotless) drones by 2030. The BBC report can be viewed at [this link](#). A copy of PwC's report can be viewed/downloaded at [this link](#).



Staying with drones, on June 6, 2024, **The Economist** magazine reported that in April 2024, the leading Chinese passenger drone developer – **Ehang**, was granted a *production certificate* for its EH216-S passenger drone by the **Civil Aviation Administration of China** (CAAC). This certificate authorizes EHang to start mass production of this particular model. It appears that the Chinese government is very cognizant of the rapid advances being made in drone technology for all kinds of applications. So much so that, earlier this year, when the Chinese Premier spoke about the new engines of economic growth, he specifically mentioned *the low-altitude economy*, referring to impact of drones on China's economy. The article says that some of China's long experience and expertise in the electric vehicle technologies are transferable to its eVTOL industry. Batteries are especially important. eVTOLs need light and high-capacity batteries. China is home to the world's biggest battery-makers. They are working on unique challenges posed by passenger drones. EHang's website advertises the two-passenger EH216-S as a *Pilotless Passenger Carrying eVTOL* with a retail price of US\$410,000. According to EHang, this aircraft has a cruise speed of 100 Km/h (62 mph), can fly up to a maximum altitude of 3,000 m (9,843 ft) and, has a range of 35 Km (22 miles) with a flight time of 21 minutes. The Economist article can be viewed at [this link](#) or [this one](#).



This technology is coming whether we like it or not. This is according to **New York City** Mayor Eric Adams; speaking about autonomous vehicles. The City's Department of Transportation has developed a tough new permitting system for allowing deployment and testing of AVs in that city. First off, unlike other U.S. cities such as San Francisco, Los Angeles, Phoenix and others where driverless robotaxi services are allowed, NYC will not allow it. Every authorized AV company must have a properly trained *Safety Driver* behind the wheel at all times with his or her hands on the steering wheel. AV companies without a track record in other cities will not be issued a permit. Companies with a permit are required to report any incidents or disengagements of the automated driving system to the City. The City will then publish this information in its *Open Data Portal* to make it public. Despite all the new regulations, it is unlikely that established AV companies will ignore deploying in New York City. The city is one of the biggest taxi markets in the world. More information is at [this link](#).



In the absence of federal regulations in the United States governing deployment and testing of autonomous vehicles on public roads, several states have enacted their own laws which sometimes stand in sharp contrast to one another. Whereas states such as Texas and Arizona are considered autonomous-friendly, Indiana, California and Kentucky are not. A recent partisan political battle in the **Kentucky Legislature** is the latest manifestation of this. Kentucky's *House of Representatives* had passed a legislation known as *The House Bill 7 (HB7), An Act Relating to Autonomous Vehicles*. This bill paved the way for testing and deployment of autonomous trucks on Kentucky's public roads. The bill had the support of the **Kentucky Trucking Association** who saw this as part of the solution to address driver shortage and to reduce costs. The state governor vetoed HB7 saying he did not believe the technology is yet mature. The House then took another vote (58 to 40) to overrule the governor's veto. The 34-page legislation is now law in that state. More information is at [this link](#). A copy of HB7 can be viewed and/or downloaded at [this link](#).



An article in **The Verge** discusses how AV developers have lost public support and confidence over the years. Although incidents caused by AVs are relatively low, these incidents get an inordinate amount of media coverage. This is part of the reason for the declining public trust in AV technology. To try to reverse this trend, the industry's trade organization - the **Autonomous Vehicle Industry Association** (AVIA), has created what it calls the *TRUST Principles* which consists of the following five principles:



- *Transparent interactions with government officials and the public*
- *Responsible integration of AVs into communities and deep engagement with law enforcement and first responders*
- *Upholding the highest cybersecurity and privacy standards*
- *Safety-first culture and governance*
- *Transportation policies that will increase safety and public trust of AVs*

An example of this is AVIA's efforts to form a "national council of law enforcement officials, first responders, and industry representatives" to improve communication between AV operators and emergency responders. More information is at [this link](#). More detailed explanation of *TRUST Principles* at AVIA's site at [this link](#).

The Washington D.C.-based **Institute of Transportation Engineers** (ITE) was created in 1930 amid growing public demand for experts to alleviate traffic congestion and the frequency of crashes that came from the rapid development of automotive transportation. It has an estimated 18,000 members worldwide. ITE's monthly publication is the *ITE Journal*. In its May 2024 issue, the *Journal* had two reports covering a couple of emerging transportation technologies. The first report was titled *A New Mode of Transportation – Drone Deliveries on the Horizon*, and the second report was titled *Robotic Goods Delivery – in My Bike Lane?* It is significant that these new technologies are recognized by this professional body. Both reports can be viewed/downloaded at the ITE's site. The drone delivery report is at [this link](#) and the robotic goods delivery is at [this link](#).



And finally, South Korea's capital **Seoul** has laid claim to being the first city in the world to operate autonomous buses at night. A **BBC** reporter in Seoul rode the bus at night and prepared a 3-minute video report about his experience. Although the bus drives itself, there is still a *Safety Driver* behind the wheel in case human intervention is needed. The bus itself appears to be manufactured by **Hyundai**. The automated driving system is provided by **SUM**, a South Korean company specializing in autonomous driving solutions. The operations head of automated driving team at SUM was onboard the bus to explain and answer the reporter's questions. The BBC report can be viewed on YouTube 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

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| July 9, 2024 | Sharing Public Spaces with Robots , Webinar by Urban Robotics Foundation |
| July 29 - August 1, 2024 | Automated Road Transportation Symposium , San Diego, CA |
| August 28-29, 2024 | ADAS & Autonomous Vehicle Technology Expo , San Jose, CA |
| September 10-12, 2024 | Simulation, Testing & Validation for Automated Driving 2024 , 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 | Automotive Testing Expo , Novi, MI |
| November 5-7, 2024 | 2024 Aerial Evolution Canada Conference & Exhibition , Ottawa ON |



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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We welcome all comments; please send them [here](#)*

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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