



Canadian Automated Vehicle Initiative

CAV Update

January 2025

From the Editors

CAVI's *White Paper on a CAV Strategy for Canada* will be published in a few days. If you are on our mailing list for CAV Update, you will receive the White Paper.

A big thank you to all the members of the Working Group:

Andrew Miller, Paladin Consulting (co-chair)
Marie-France Laurin, CAVI and MFL Consulting Services
Mohamed El-Darieby, Ontario Technical University
Simon Diemert, Critical Systems Labs Inc, Vancouver BC
Tim Gibson, University College of the North, Thompson MB

Thank you also to CAVI's members. They received an exclusive, preview copy of the White Paper and provided excellent feedback.

And a request: we are always looking for Canadian CAV news. If your organization is involved in CAVs in any way, we would like to be on your mailing list for news and media releases. Please use editor@cavi-icva.ca

CES 2025: The Future is Now

The 2025 **Consumer Electronics Show** (CES) was held in Las Vegas on January 7th-10th. CAVI team member Marie-France Laurin attended the show and this is her summary report.

This year, CES delivered yet again, exceeding expectations with its showcase of cutting-edge innovations. As a seasoned attendee - this being my 8th year – it is incredible to witness the rapid evolution of technology adoption since my first visit in 2017. What stood out most is how far we have come from the days of showcasing "new and shiny toys." Today, the technology is real, deployed, tested, and continually evolving to tackle real-world challenges like improving efficiency and addressing workforce shortages across numerous sectors.



One of the most exciting trends this year was the focus on off-road autonomous vehicle solutions. Industry leaders like **John Deere**, **Komatsu**, and **Caterpillar** made a strong impression with AV presentations that seamlessly integrated advanced technology into their traditional products. Their presence highlighted the tangible progress being made in automation for industries like agriculture, construction, and mining.

The automotive sector also brought its A-game, focusing on *Advanced Driver Assistance Systems* (ADAS). While fully-autonomous vehicles that can go anywhere at any time remain on the horizon, automakers showcased the immediate benefits of assistive technologies and the benefits they are bringing to the driving experience. These incremental innovations are paving the way for safer, more efficient travel.

Another noteworthy trend was the approach taken by component providers. Instead of solely highlighting technical specifications, many adopted a business-case perspective, demonstrating the real-world value their solutions bring. This shift was both refreshing and impactful, providing a clear vision of how these technologies translate into bottom-line benefits.

The 2025 CES made one thing abundantly clear: autonomous vehicles are no longer just a promise of the future, they are here now in limited deployments. Companies are not just talking about what could be, they are delivering solutions that add value today. I am excited to see even more projects come to life in the years ahead. The future isn't just bright - it is happening now!

Marie-France Laurin
CAVI Board Member

Canadian CAV News

We have reported in previous issues about airborne deliveries by drones to remote communities and also within urban areas such as rapid live organ transport between certain Ontario hospitals. **Transport Canada**

imposed restrict regulations in 2019 for commercial and recreational drone flights. The rules were much stricter for drone flights *Beyond Visual Line of Sight* (BVLOS). Such flights had to have a special permission from Transport Canada on an individual basis. This proved to be a cumbersome and time-consuming process for

both drone users and Transport Canada personnel reviewing each application. In a major rethink, Transport Canada is updating the 2019 regulations and doing away with requiring an application for each BVLOS flight. There are still some regulations. For example, under the new rules, the drone needs to weigh 150 Kg or less and be operated by a Transport Canada certified drone pilot. The drone industry has applauded the new regulations which will go into effect in the fall of 2025. More information and a video report are at [this link](#).



Canadian skies open up to drones under new regulations

A recent video report on the **CBC** highlighted the work of researchers at the University of Sydney, where a four-wheeled autonomous robot has been developed for the specific task of herding cattle. Packed with sensors and embedded with machine learning technology, the robot dubbed *SwagBot* is designed to make the cattle farming industry smarter, greener and more efficient. *SwagBot* can check the health, type and density of pastures to prevent overgrazing, and even keep an eye on a cow's health. It also addresses the shortage of labour for this kind of activity. The CBC video report can be viewed at [this link](#).



We are very pleased to welcome the **City of Hamilton** as a CAVI corporate member. Hamilton's vision is to be the best place to raise a child and age successfully. Its mission is to provide high quality cost-conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.



With their vision, we look forward to Hamilton becoming more involved in the CAV ecosystem. More information on the City of Hamilton is on their web site at [this link](#).

International CAV News

In its January 3, 2025, issue, the **MIT Technology Review** published a list of 10 breakthrough technologies for 2025. Number 5 is robotaxis. It foresees a bright future for the industry. It says that robotaxis have completed years of beta testing, and they are now finally becoming available to the public. In more than a dozen cities worldwide, riders can summon one whenever they want. Now, the biggest players are ramping up for intense competition as they expand into new cities under regulators' watchful eyes. According to the article, commercial robotaxi business is currently concentrated in China and the United States. The dominant Chinese firms are **Baidu**, **AutoX**, **Pony AI**, and **WeRide**. Advances in technology and intense competition have made a ride in a Chinese robotaxi cheaper than one driven by a taxi driver. In the U.S., **Waymo** is the dominant robotaxi company by a very wide margin. The MIT article can be viewed at [this link](#). The MIT list of all 10 breakthrough technologies can be viewed at [this link](#).



Udacity is an American for-profit educational organization started in 2012 as an offshoot of free computer science courses at **Stanford University**. It currently has an estimated 1.6 million users. Among its many offerings, it offers 39 different courses relevant to autonomous driving. Despite the recent setbacks for the U.S. AV industry such as the shutdown of **Cruise** by **General Motors** in 2024, Udacity believes the loss of enthusiasm for self-driving cars is overblown, and the reality is far from it. While the industry has faced challenges, autonomous vehicles are still on the rise and companies like **Tesla**, **Waymo**, and **Uber** have ambitious expansion plans. According to Udacity's forecast and as the technology evolves, it is projected that the industry will need over 114,000 more workers in the next 15 years. In March 2024, Udacity was acquired by **Accenture** for an undisclosed sum. The Udacity catalog listing all 39 courses in *Autonomous Systems* can be viewed at [this link](#).




On January 6, 2025, **Bloomberg** published an article titled *Don't Shrink the Bus*. The article explored the resurgence of interest in *Personal Rapid Transit* (PRT) whose advocates believe is a better mode of public transport than traditional large buses and commuter trains. This is partly in reaction to Tesla's October 2024 announcement about plans to develop a *Cybercab* with just two seats and a *Robovan* with capacity for up to 20 people. Tesla terms this as *Individualized Mass Transit*. The presumption here is that many people using public transportation are not really happy with sharing the bus or the train with so many strangers. Supporters of PRT say it promises greater privacy. The PRT concept was embraced in the 1960s and 70s and a few demonstration projects were built. However, the very high cost of building the specialized tracks, often elevated, that PRT required put the brakes on further development or deployment. Today, very few PRT systems are in operation in places such as London's Heathrow Airport, the UAE's Masdar City, and Suncheon in South Korea. At present a PRT system is under development in San Jose, California. The company behind it is **Glydways**. When built, it will connect San Jose airport to the city's main transit hub by deploying six-seat autonomous pods running on exclusive at-grade guideways closed to other vehicles, such as cars or buses. The Bloomberg article can be viewed at [this link](#) or [this one](#).




The vast mining operations in the Pilbara region of Western Australia have been a pioneer of automated haul trucks. The biggest fleet of such trucks is owned and operated by the British-Australian company **Rio Tinto Group**. The






BBC visited Rio Tinto's *Greater Nammuldi* iron ore mine and published a fairly long report on Rio Tinto's driverless haul trucks and other automated equipment that are deployed at this particular mine site. Fifty driverless trucks operate at this site. Each is capable of hauling 300 tonnes (300,000 Kg). These trucks and other automated equipment such as drilling rigs are monitored from Rio Tinto's *Operation Centre* in Perth, approximately 1,500 Km away to the south. Rio Tinto operates several mine sites across Australia. In total, there are 360 driverless haul trucks deployed in the field. All are overseen from the *Operation Centre*. Also monitored is a semi-autonomous railway system hauling iron ore to the western ports of Australia for export overseas. According to Rio Tinto, no jobs were lost when hauling operations became automated. The former truck drivers are now working at the *Operation Centre* where each of them oversees 25 trucks or other equipment. The wholesale switch to automation has increased productivity by 15% according to Rio Tinto officials. The BBC article can be viewed at [this link](#).

Staying with the **BBC**, another recent report highlighted the decline in the fortunes of European companies developing flying taxi technology. Two high-profile companies based in Germany – **Volocopter** and **Lilium** have scaled back operations, laid off staff and have sought government assistance to survive. In Lilium's case, its shares were delisted on the NASDAQ stock exchange in November 2024 for failing to maintain a share price of over \$1. As for Volocopter, it is in talks with China's **Geely**, which is interested in taking an 85% stake in Volocopter in return for US\$95m of funding. The deal could mean that any future manufacturing would be moved to China. Also in trouble is the British company **Vertical Aerospace** whose biggest creditor – US-based Mudrick Capital has agreed to inject more cash into company in lieu of taking a 70% stake in the company. The dominant U.S. flying taxi companies **Joby Aviation** and **Archer Aviation** appear to be faring better at the moment. All these companies hope to have big orders from major airlines to provide rapid city centre to airport transportation. The BBC article can be viewed at [this link](#).



San Francisco has been a living lab for the development of robotaxi technology and commercial operation over the past several years. On January 9, 2025, **Bloomberg** published an interview with the outgoing Director of **San Francisco Municipal Transportation Agency** (SFMTA) Jeffrey Tumlin. He had been in this role since 2019 and has had first-hand experience in dealing with all robotaxi companies operating in San Francisco (Waymo, Cruise, Zoox and others) and all their issues. He describes his personal and departmental interactions with robotaxi companies as challenging and frustrating. He also takes issue with how robotaxi



companies define or perceive safety. From the company's perspective, as long as their robotaxi has not hit any other vehicle, pedestrian or object, they consider it safe. They disregard many other dimensions of safety in his view. For example, it is not considered a safety issue when a robotaxi ignores police caution tape or becomes immobilized in the middle of a complex intersection; even though it may create significant safety problems for other roadway users. The Bloomberg article can be viewed at [this link](#) or [this one](#).

And finally, because **Waymo** has so many robotaxis in so many cities, the laws of statistics work against it when it comes to mishaps and misadventures. Three recent cases are described below:



1. On January 8, 2025, a passenger in a Waymo robotaxi in Phoenix was a little traumatized when the robotaxi started going round and round in a circle in a parking lot. The BBC showed a video of this happening shot by the passenger and conducted an interview with him. The BBC video and interview can be viewed at [this link](#).
2. On January 2, 2025, a man got behind the wheel of a Waymo driverless robotaxi and attempted to drive it. A report about this incident can be viewed on the **Los Angeles Times** website at this [link](#).
3. On December 27, 2024, in Los Angeles, a Waymo vehicle trying to make a right turn collided with a **Serve Robotics** delivery robot attempting to cross the street. Neither vehicle sustained much damage. A short YouTube video narrates the incident and shows the collision at [this link](#).

As it is impossible to foresee the huge number of circumstances that a robotaxi or a delivery robot can encounter, there will be more such incidents in the future.

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

February 19-21, 2025	1st International Conference on Drones and Unmanned Systems (DAUS' 2025) , Granada, Spain
March 19-20, 2025	Connected Places Summit , London, England
April 16-17, 2025	DiscoveryX , organized by the Ontario Centre of Innovation, Toronto, Ontario. Prof. Geoffrey Hinton ('Godfather of AI' and winner of 2024 Nobel Prize in physics) is one of the keynote speakers
May 20-22, 2025	ADAS and Autonomous Vehicle Technology Expo Europe , Messe Stuttgart, Germany
May 21, 2025	CSA Group and SAE International will host a workshop on the development of a North American Digital Standard aimed at supporting the performance of connected and automated vehicles and infrastructure. To be held in conjunction with the ITS Canada conference – see below
May 21-23, 2025	ITS Canada 2025 Conference & Expo , Ottawa, ON
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

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) 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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