

## ***From the Editors***

Synergies or silos? That is the question. Canada has many areas of CAV expertise across the country, but there is no entity that ties all this together so that Canada can better compete on a global basis. Other countries have organizations that perform this role and the following describes two: Australia/New Zealand and the UK. The following descriptions are adapted from their respective web sites.

### **Australia/New Zealand**

The **Centre for Connected and Automated Transport (CCAT)** aims to move Australia and New Zealand safely and successfully into the era of connected and automated transport. It is a hub through which government, industry, academia and community bodies with a common interest in facilitating Australasia's transition to connected and automated transport can work together to make this happen. CCAT is a membership organization open to all those companies with a stake in Australia and New Zealand's transport future. Transport agencies within government, innovative local Councils, industry participants big and small, technology and motor manufacturers, mining companies, the agricultural sector, researchers, next-gen technology developers and start-ups are invited to be part of shaping the future – and the 'now' – of mobility.

### **United Kingdom**

**Zenzic** was created by the government and industry to champion the national Connected and Automated Mobility (CAM) ecosystem, and to lead the UK in accelerating the self-driving revolution. Zenzic exists to make champions of others and place the UK at the heart of the global CAM ecosystem. By leveraging the power of innovation, through collaboration, Zenzic promotes and enables UK organizations to play an impactful role in the future of mobility.

In Canada, there are excellent CAV ecosystems in Vancouver, Edmonton, Calgary, Ottawa, Toronto, Waterloo, Kitchener, and Montreal. As part of this, there are wonderful test sites at U. Alberta and UBC and in Ottawa (Area X.O). Thompson MB hosts the SubZero North / Area 55 winter weather testing sites. There are also GM's test sites in Oshawa ON and Kapuskasing ON and the Transport Canada / PMG Technologies site in Blainville QC.

The CAV ecosystem is global and for Canada to compete more effectively, we recommend that Canada's new Transport Minister, Pablo Rodriguez, create an entity that can develop the synergies between these different silos and thus create a more competitive Canada.



## Canadian CAV News

In early July 2023, unionized port workers in British Columbia went on strike. The reasons for the strike include the plans by the **Port of Vancouver** to introduce more automation in its operations to increase productivity and reduce operating costs. Operations that can be potentially automated include equipment such as automated stacking cranes, gantries and guided transport vehicles controlled from remote operating centres. The union representing the port workers – *The International Longshore and Warehouse Union* (ILWU) is concerned that increased automation will result in significant job losses for its members. In 2019, ILWU commissioned a study to quantify the impacts of automation on port operations. The 31-page report titled *Economic Impact Study of Digitization and Automation of Marine Port Terminal Operations in British Columbia* suggests that job losses are likely, as demonstrated in other ports around the world who have invested in container port automation. More information is at [this link](#). The ILWU report can be viewed or downloaded at [this link](#).



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Toronto-based **Untether AI** is a high-tech company that specializes in developing high performance chips for AI applications. The company has partnered with **General Motors** (GM) to develop Next-Generation Autonomous Vehicle Perception Systems based on Untether AI's unique *at-memory computation technology*. As a starting base, Untether AI will use the existing GM-developed perception system and enhance it with its own custom-designed chips and software. Founded in 2018, the company has so far raised US\$152 million in venture funding. The current project with GM is funded by \$1 million from the **Ontario Vehicle Innovation Network** (OVIN) R&D Partnership Fund with an additional \$2.09 million contributed by industry. **CPP Investments** and **Intel Capital** are among other investors in Untether AI. More information is on Untethered AI's site at [this link](#).



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A recent blogpost by the Toronto-based **Urban Robotics Foundation** (URF), highlights some of the benefits of deploying *Public Area Mobile Robots* (PMRs) in narrow streets and passageways typically found in older parts of European cities, i.e., streets and passageways built in the 17<sup>th</sup> or 18<sup>th</sup> centuries, long before the automobile was invented. These narrow streets often lack a conventional sidewalk, and conventional delivery, and maintenance vehicles may have difficulty navigating them. By contrast PMRs can be a very attractive solution in these narrow streets for delivery of food or small items and roadway maintenance. PMRs use their cameras and sensors for security purposes and for collecting waste and transporting it to a local collection point. The URF blogpost can be viewed at [this link](#).



Vancouver-based **Telus Corporation** has been involved in the automotive sector through its partnerships with **General Motors of Canada** and other organizations by



utilizing its 4G-LTE and 5G cellular networks for vehicle connectivity. The company has also been involved in a trial of cross-border interoperability with the *5G Automotive Association (5GAA)*. Telus recently announced a \$30 million investment for expanding and updating its 5G network in the Montreal area. For this initiative, Telus has partnered with **Zú** and the **École de Technologie Supérieure (ÉTS)** to promote innovation and to connect Montreal's businesses, universities and researchers. Telus will leverage its extensive fibre optic network as part of this effort. More information is at [this link](#).

Saskatoon-based **Nutrien** is the largest producer of potash and the third largest producer of nitrogen fertilizer in the world. In common with other resource companies, it has been active in autonomous and tele-remote technologies to increase the efficiency of its mining operations, and to create a safer work environment for its employees. Nutrien has deployed tele-remote technology at its six potash mines in Saskatchewan and says it has successfully mined an entire production wing at its underground Lanigan site without a single human setting foot in the area. Safety has been one of the main drivers behind an ongoing, massive transition toward automation in the industry. According to the 2021 data from **Workers' Compensation Boards of Canada**, there were 51 workplace fatalities in the mining, quarrying and oil and gas extraction industries in Canada. Some of the other Canadian companies using *Autonomous Haulage Systems (AHS)* are **Imperial Oil**, **Suncor**, and **Teck Resources**. Contrary to popular belief, the companies say increased automation and tele-remote work has not led to any job losses. Workers have simply been retrained to do other work. Furthermore, the companies believe increased automation and tele-remote makes the industry mining interesting to a wider range of people. More information is at [this link](#).



## **International CAV News**

Former rivals **Uber** and **Waymo** are now partnering on a couple of projects. The latest is making Waymo's robotaxis operating in the Phoenix area available for hire through Uber's popular ride-hailing app. This applies for both passenger transport and food delivery. This is a non-exclusive deal and potential customers can still summon a Waymo robotaxi through Waymo's own app. There are no details on how revenues will be shared between the two companies. Uber has a similar arrangement with **Motional** (a robotaxi company) in Las Vegas. Previously, Waymo had been working with *Uber Freight* by deploying its autonomous driving technology for some of Uber's long-haul Class 8 trucks. More information is at [this link](#).

The Uber logo, consisting of the word 'Uber' in white text on a black rectangular background.

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For the past two years or so, the AV industry has been in the doldrums with a number of high profile companies going out of business or laying off staff and scaling back.

Notable companies shutting down or falling on hard times are Argo AI (backed by Ford and VW), Uber's AV division, Lyft's AV division, Embark Trucks and others. A recent article in **Arstechnica** titled *The*

*"death of self-driving cars" has been greatly exaggerated* delves deep into this issue and examines the current state of the industry. The article suggests that the peak of AV hype cycle was in 2016. Ever since, expectations have been lowered every year and full commercial deployments keep getting postponed. As things stand, the business side of AVs is not profitable. In fact, it is a huge money pit for the companies still standing, such as **Waymo** and **Cruise**. Back in 2018, Waymo had announced plans to buy 62,000 Chrysler Pacifica vehicles in anticipation of large scale commercialization and deployment. Today, Waymo has only a few hundred of these vehicles in its fleet. The article can be viewed at [this link](#).

The logo for 'ars TECHNICA' features the word 'ars' in a white lowercase font inside an orange circle, followed by 'TECHNICA' in a white uppercase font on a black rectangular background.

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It is no secret that the AV industry has had its share of mishaps ranging from causing a fatality to a minor fender bender while being tested on public roads. It is one thing for a small or mid-size passenger AV to get into trouble and quite another for an 80,000-pound, 18-wheel driverless truck.

Accordingly, lawmakers at the **California State Assembly** have drafted a bill to pry away autonomous truck regulations and enforcements from the California *Department of Motor Vehicles* (DMV). The State Assembly believes that the DMV has been lax in properly investigating and enforcing current legislation for autonomous vehicles operating on California's public roads. Bill AB-316, if passed, will delay deployment of fully driverless trucks (without a *safety driver*) for a period of 5 years. Unsurprisingly, the **Autonomous Vehicle Industry Association** is very much opposed to this bill saying the Assembly lacks the expertise in such matters and is making the issue political. Furthermore, it adds that the bill will hamper advancement of the technology specific to large trucks. The bill is currently going through the approval process. More information is at [this link](#). A copy of the draft bill can be viewed/downloaded at [this link](#).




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Staying with California DMV, **Mercedes-Benz** of America has been granted a permit by the DMV for sale or lease of its passenger cars equipped with a Level 3 automated driving system known as *DRIVE PILOT*. The DMV permit comes with a lot of conditions. These include not allowing *DRIVE PILOT* to be activated on city or county streets, in construction zones, during heavy rain or heavy fog, on flooded roads and during weather conditions that are determined to impact the performance of *DRIVE PILOT*. *DRIVE PILOT* is primarily designed for stop-and-go highway driving at speeds up to 40 MPH (approx.



Mercedes-Benz





63 Km/h). Furthermore, vehicle owners must watch a mandatory video explaining the capabilities of the system and how to engage and disengage the technology before Mercedes-Benz will activate *DRIVE PILOT* in the vehicle. Mercedes-Benz had introduced this system in Germany in 2022. This is the first deployment of *DRIVE PILOT* in the U.S. on public roads. More information is at [this link](#). The actual DMV announcement can be viewed at [this link](#).

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On June 23, 2023, the **MIT Technology Review** published an article titled *Robotaxis are here. It's time to decide what to do about them*. The article suggests that robotaxi companies like **Cruise** and **Waymo** have been given an easy pass so far; such that the cities they operate in have little or no say about what they can do in their jurisdiction. It cites the city of San Francisco where both companies are engaged in commercial robotaxi services, and where the **City of San Francisco** has documented 92 incidents involving robotaxis in just six months. It goes on to advocate a greater role for the public and its elected representatives to play a more active role in shaping the future of this new technology. The article suggests that barring an economic shock, a horrific tragedy, or a dramatic political pivot, the trend towards robotaxis is now set and professional drivers in the livery industry could be out of a job in not too distant future. Longer term, this new technology can also have significant impact on transportation policies by making congestion worse and undermining public transportation. The article can be viewed at [this link](#) or [this one](#).

**MIT  
Technology  
Review**

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And finally, autonomous technology has found its way to exotic Italian supercars such as the **Maserati** brand. The event is the famous **Mille Miglia** (meaning *thousand miles*) endurance race run annually in Italy since 1927. This year's race was from July 13<sup>th</sup> to 17<sup>th</sup>. It started in Rome and ended up back in Rome completing a one thousand mile circuit. The vehicle entered into the race is a Maserati *MC20 Cielo* equipped with self-driving technology by **Politecnico di Milano** (The Polytechnic University of Milan). The promoters claim it took almost a year to secure authorization for this race from the Italian *Ministry of Infrastructure and Transport*. More information is at [this link](#).





## **CAVCOE Speakers' Bureau**

CAVCOE 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 enquire about a speaker for your event, please write to [speakers@cavcoe.com](mailto:speakers@cavcoe.com)

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## **Upcoming CAV-Related Events**

September 20-21, 2023	<a href="#">ADAS &amp; Autonomous Vehicle Technology Expo</a> , Santa Clara CA
September 24-27, 2023	<a href="#">2023 Transportation Association of Canada (TAC) Conference &amp; Exhibition</a> , Ottawa, Ontario
September 27, 2023	<a href="#">TCXpo</a> hosted by Invest Ottawa, at Area X.O, Ottawa, Canada
September 28, 2023	<a href="#">CAV Canada</a> conference presented by Invest Ottawa and the Kanata North Business Association, at Area X.O, Ottawa, Canada
October 19-20, 2023	<a href="#">Last Mile Delivery Conference &amp; Expo</a> (LMD-2023), Las Vegas NV
November 7-10, 2023	<a href="#">Aerial Evolution Association of Canada Conference &amp; Exhibition</a> , Ottawa, Ontario



## **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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**CAVCOE** (formerly the Canadian Automated Vehicles Centre of Excellence) advises the public and private sectors on planning for the arrival of self-driving vehicles.

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