CANADIAN AUTOMATED VEHICLE INITIATIVE

SELF-DRIVING CARS WILL BE SAFER THAN HUMAN DRIVERS – BUT NOT PERFECT

"Self-driving vehicles should be expected to achieve a level of safety equivalent to, or higher than, a careful and competent human driver." This definition is taken from a new Automated Vehicle Bill in the United Kingdom that received Royal Assent on May 20. The AV Bill was based on four years of study and 350 consultation sessions. It is very comprehensive and identifies new legal entities responsible for the safety of self-driving systems, and it creates a new legal status for a driver who has handed control of a vehicle to a self-driving system.

It also sets out details of a new safety framework for self-driving vehicles on roads in Great Britain. "Self-driving vehicles can be rolled out on British roads as soon as 2026, in a real boost to both safety and our economy," UK Transport Secretary Mark Harper said in a statement.

In the past, there has been too much hype about self-driving cars — including about their safety. I have called out the U.S. government, Vision Zero, Volvo and others on this issue. The rhetoric about "the end of traffic deaths" and "crash-proof cars" has been both unfortunate and misleading.

The reality is that self-driving cars WILL be safer than human-driven vehicles because they have an array of sensors including long-range radar, short-range radar, LiDAR, and vision systems that are linked to powerful processors and Artificial Intelligence systems. The sensors will scan around the vehicle many times each second. In addition, the self-driving technology does not get distracted or drunk. If there is an issue, the system can react in a fraction of a second, compared to a few seconds for a human driver.

However, self-driving vehicles will never be totally safe. As an engineer, I know that all hardware and software fail occasionally. Also, there are always "edge case" situations which were not envisaged. For example, there was a recent collision in the U.S. when a robotaxi was confused after it "saw" a car being towed backwards. When these cases are identified, software updates can be distributed over-the-air to self-driving cars so they can all benefit from the upgrade.

People understand that human drivers make mistakes, but they expect that self-driving technology will be perfect — and it won't be. The definition of safety in the U.K.'s AV Bill is much better.

DRIVING AUTONOMY

In Canada, stakeholders — governments, industry, associations and academia — need to do a better job of managing the public's expectations on the safety of self-driving vehicles. At the moment, governments say that they will ensure that self-driving vehicles will be "safe." Many people could easily misunderstand this to mean "totally safe," which will never happen. One result of this messaging is that when self-driving cars are deployed in volume on Canadian roads, there will, sadly, be collisions and deaths. This will bring a huge negative reaction from the media and the public. I encourage Canadian governments to get ahead of this and adopt similar messaging to that of the U.K.

Countries such as the U.K., Australia and New Zealand benefit from national organizations that provide leadership. In the U.K., there are the Centre for Connected and Autonomous Vehicles (CCAV) and Zenzic. In Australia and New Zealand, there is the Centre for Connected and Automated Transport (CCAT). These organizations play a key role in the national conversation and planning for self-driving vehicles.

In Canada, stakeholders from government, the private sector and academia met in January 2024, together with representatives from the U.K., Australia and New Zealand to discuss whether Canada should have a national voice for the self-driving vehicle ecosystem. The consensus was "yes" and this has led to the creation of the Canadian Automated Vehicle Initiative (www.cavi-icva.ca).

The world is witnessing the birth of Cars 2.0, a milestone as momentous as the launch of the Model T Ford in 1908. Canada needs to be at the forefront of this new age, which will help reduce the number of the lives lost on our roads, even as we can never totally eliminate risk.

Barrie Kirk, *P.Eng., is the president of the Kanata-based Canadian Automated Vehicle Initiative.*