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THE AUTOMATED VEHICLE RECORD · PART II

The Car Between Two Governments

What Ontario will need to know about every automated vehicle after the pilot ends, and who should keep it



Ottawa regulates how a car is built and recalled. Ontario regulates how it is driven, registered and insured. When the driver is software that changes after the car is sold, the evidence about each car falls between the two. Ontario's automated vehicle pilot ends on October 13, 2027. This paper sets out what the province collects today, what other jurisdictions require, where the gaps are, and the options for closing them.

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October 2026

Draft for discussion

Summary

1. **The decision has a date.** Ontario's automated vehicle pilot regulation is revoked on October 13, 2027. Driverless ride-hail service has been announced for Toronto in 2028. No successor framework has been published.

2. **No one is assigned to the car after it is sold.** Federal law governs a vehicle until its first retail sale and through recalls. Provincial law governs who operates it. Neither assigns anyone to keep a record of what software an individual automated car is running, or whether a software fix reached it.

3. **The pilot collects little at the level of the car.** Collisions are reported by VIN. Changes to a participant's fleet are reported only by make, model and class. Other reports are made only if the Ministry asks.

4. **Other jurisdictions have moved to the car.** Germany requires the keeper of a driverless vehicle to store its VIN and software version. California requires VINs on permits and in monthly and quarterly reports. Japan requires each vehicle's chassis number in the operating plan. The UN rule on software updates tracks software by vehicle type, not by vehicle.

5. **Ontario has a model for independent records.** It already licenses independent inspection centres and keeps every safety inspection in a digital record anyone can search by VIN.

6. **The driver itself has no record.** In an automated car the driver is a software release, and one release drives every car that runs it. A software recall is in substance the suspension of a release. No register follows a release across its life: the cars it drives, the incidents it was driving in, the recalls that pulled it, the release that replaced it. Part I of this series, *The driver has a version number*, makes that case.

Recommendation in brief. Name the facts an operator must be able to show for each car in the regulation that follows the pilot. Start collecting them now, through the conditions the Registrar can already attach to pilot approvals. Allow the record to be kept by accredited independent keepers under the Ministry's authority, with independence rules, time-limited designation and real audits. Give insurers and police defined access.

1 Ontario's decision

Ontario has allowed automated vehicles to be tested on its roads since 2016. The pilot regulation now in force is revoked on October 13, 2027.[1] The regulation also required the Minister to complete an evaluation of the pilot before January 1, 2026 (s. 3(2)). We could not find a published evaluation.

The date matters because service is coming. Driverless ride-hail service has been announced for Toronto, with riders targeted for 2028, under an approval to test in the pilot.[2] That is after the regulation ends. A separate pilot for automated commercial vehicles runs until 2035.[3] Whatever replaces the passenger pilot will be the first rule in Canada written for driverless vehicles carrying the public. It will have to decide what an operator must be able to show, for each car, before that car carries a rider.

2 Two governments, one car

Canada divides responsibility for a vehicle at the moment it is sold.

Ottawa governs the car as built. Under the Motor Vehicle Safety Act, a vehicle must meet the prescribed standards when its manufacture is complete, and manufacture runs until the sale to the first retail purchaser (s. 5). A company must notify the Minister and owners of a defect "in the design, manufacture or functioning" of a vehicle (s. 10), and since 2018 the Minister can order a company to correct a defect (s. 10.5).[4] The Minister may also require the means to retrieve data a vehicle records (s. 8). The Act says nothing explicit about software that changes after sale.

Ontario governs the car in use. Transport Canada's framework states that provinces and territories are responsible for vehicles operating safely on public roads: traffic law, licensing, registration, insurance and liability.[5] The same framework sets no rule for software updates after sale. Federal testing guidelines say vehicle data "should be shared" with the permitting jurisdiction and that updates should be made only by the developer or trusted actors, but they are guidance, not law.[6]

[1] O. Reg. 306/15, Pilot Project, Automated Vehicles, s. 18, as amended by O. Reg. 268/25 (filed November 27, 2025), https://www.ontario.ca/laws/regulation/150306

[2] Globe and Mail, October 2026, https://www.theglobeandmail.com/business/article-waymo-to-launch-in-toronto-begin-service-

[3] O. Reg. 161/25, Pilot Project, Automated Commercial Motor Vehicles, https://www.ontario.ca/laws/regulation/250161

[4] Motor Vehicle Safety Act, S.C. 1993, c. 16, current to September 30, 2026, https://laws-lois.justice.gc.ca/eng/acts/m-10.01/FullText.html

[5] Transport Canada, Canada's Safety Framework for Connected and Automated Vehicles 2.0, February 2025, https://tc.canada.ca/en/road-transportation/innovative-technologies/connected-automated-vehicles/canada-s-safety-framework-connected-automated-vehicles-20

[6] Transport Canada, Guidelines for Testing Automated Driving Systems in Canada, version 2.0, https://tc.canada.ca/en/road-transportation/innovative-technologies/connected-automated-vehicles/

The car falls between them. For a conventional car, the split works: the car that was approved is the car on the road. For an automated car it does not. The driver is software, the software is updated after sale, and a single update can change what the car is able to do. The provinces' own council has said so. The Canadian Council of Motor Transport Administrators' guidelines note that "vehicle software updates or upgrades may complicate the registration process" and that "neither the New Vehicle Information Statement (NVIS) nor the VIN currently provides an ADS-equipped vehicle identifier."[7] We found no statute or regulation, federal or provincial, that assigns anyone to keep a record of the automation level or software of an individual car after it is sold.

3 What Ontario collects today

The pilot regulation is light at the level of the car. Its requirements, as consolidated in November 2025, are below.

Requirement	What the regulation says
Who may apply (s. 7)	The original manufacturer, or a converter that shows the expertise
Insurance (s. 2.2)	At least $5,000,000; $8,000,000 for vehicles seating eight or more
Changes to the fleet (s. 14)	Within 10 days, with vehicles identified by make, model and class, not VIN
Collisions (s. 15)	Within 10 days, with vehicles identified by VIN, plus persons, location, apparent cause and injury or damage
Records (s. 16)	Kept until the third anniversary of the regulation's revocation
Other reports (s. 17)	Only if requested by the Minister
Manufacturer Level 3 cars (s. 2(3))	Outside the regulation entirely once sold

The commercial vehicle pilot asks for more. Collisions must be reported within 24 hours, by VIN, and the insurance minimum is $10,000,000. Neither pilot asks for the software version of a car, the automation level of a car, or evidence that a software recall was applied to it.

guidelines-testing-automated-driving-systems-canada

[7] CCMTA, Canadian Jurisdictional Guidelines for the Safe Testing and Deployment of Vehicles Equipped with Automated Driving Systems, v2.0, February 2022, https://tc.canada.ca/sites/default/files/2022-12/canadian_jurisdictional_guidelines_safe_testing_deployment_vehicles_equipped_with_automated_driving_systems_v2.0.pdf

4 What other jurisdictions require

The jurisdictions furthest along have moved from the operator to the car.

Jurisdiction	The car	Its software	Who checks
Germany	Keeper stores each vehicle's VIN with defined data on interventions, accidents and malfunctions	Keeper stores the software version ("Softwarestand")	Federal motor transport authority (KBA); state authority approves the area
California	VIN on every permitted vehicle; VINs in monthly and quarterly reports from 2026	Annual updates certified; collision data recorder required	DMV; police notices of noncompliance from July 2026
Japan	Chassis number of each vehicle in the operating plan	Over-the-air changes affecting standards need prior permission	Prefectural public safety commission; national technical agency for software
United Kingdom	Authorisation register names the responsible entity	Conditions may require keeping vehicles up to date	Secretary of State; most of the 2024 Act not yet in force
United States	Crash reports within 5 days carry the VIN	Not required per vehicle	NHTSA; self-certification
UN (R156)	Not per vehicle	Register of software before and after each update, by vehicle type	Approval authority or its technical service

Sources: Germany, Road Traffic Act s. 1g and AFGBV ss. 13, 15 (https://www.gesetze-im-internet.de/stvg/__1g.html); California DMV regulations adopted April 28, 2026 and memo AVIM 2026-001A (https://www.dmv.ca.gov/portal/news-and-media/new-autonomous-vehicle-regulations-strengthen-oversight-and-enforcement-authorize-trucks-and-transit/); Japan, National Police Agency Level 4 guidance and MLIT (https://www.npa.go.jp/bureau/traffic/selfdriving/L4-summary.pdf); UK Automated Vehicles Act 2024 ss. 6, 10, 14 (https://www.legislation.gov.uk/ukpga/2024/10/contents); US NHTSA Standing General Order 2021-01, third amendment (https://www.govinfo.gov/content/pkg/FR-2026-03-04/html/2026-04240.htm); UN Regulation 156 paras 7.1.1.12, 7.1.2.3 (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:42021X0388).

Three things stand out. Germany, California and Japan now require evidence at the level of the individual vehicle, and Germany requires its software version. The UN rule on software updates keeps its register by vehicle type, so it cannot say which software a particular car is running. And in every regime the operator or manufacturer holds the evidence and the regulator asks for it; no regime yet requires a car's software history to be held by an independent party. A new UN regulation and global technical regulation on automated driving systems were adopted on June 24, 2026,

and Transport Canada has consulted on bringing the global rule into Canadian law.[8,9]

5 Six gaps

5.1 Identity

A registration record can hold a VIN without saying the car is automated, what level it operates at, or whether that has changed. CCMTA recommends an "ADS flag" and level on the registration record and asks manufacturers to notify jurisdictions when a car's level changes, but these are voluntary and, as CCMTA notes, neither the VIN nor the NVIS carries the information.

5.2 Software state

No Canadian rule requires anyone to record which software version an individual automated car is running. The UN register is kept by vehicle type. Germany is the clearest model: the keeper must store the software version with the VIN.

5.3 Completion of software fixes

More recalls are now fixed with software, and many fixes are delivered over the air. Makers' own service bulletins say an over-the-air fix reaches only cars with an active connected-services account.[10] Whether a fix reached a given car is not visible in any provincial record.

5.4 Access

The Insurance Bureau of Canada called in 2018 for a "legislated data-sharing arrangement between vehicle manufacturers and vehicle owners and/or insurers" so the cause of a crash can be determined.[11] The Senate transportation committee asked Transport Canada to work through CCMTA on a model provincial policy.[12] Police in California can now issue a notice of noncompliance to an automated vehicle's manufacturer. Ontario has no defined route for police or insurers to read the evidence about a car.

[8] NHTSA, Federal Register, July 31, 2026, noting adoption on June 24, 2026, https://www.govinfo.gov/content/pkg/FR-2026-07-31/html/2026-15483.htm

[9] Transport Canada, consultation on the UN Global Technical Regulation on Automated Driving Systems, March 6 to May 1, 2026, https://tc.canada.ca/en/corporate-services/consultations/united-nations-global-technical-regulation-automated-driving-systems

[10] For example, Hyundai Technical Service Bulletin 24-01-064H and Kia bulletin MC-11014555, in NHTSA's manufacturer communications, https://www.nhtsa.gov/recalls

[11] Insurance Bureau of Canada, Auto Insurance for Automated Vehicles: Preparing for the Future of Mobility, November 15, 2018, as reported by Insurance-Canada.ca, https://insurance-canada.ca/2018/11/15/ibc-automated-vehicles-paper/

[12] Senate of Canada, Standing Committee on Transport and Communications, Driving Change, January 2018, recommendation 2, https://sencanada.ca/content/sen/committee/421/trcm/reports/com_rpt_trcm_automatedvehicles_e.pdf

5.5 The driver's own record

A licence binds a test to one person and keeps a record that follows that person. For a software driver, the test is arriving through the UN rules and part of the identity exists in Germany's rule. The record exists nowhere. When the investigators of the 2018 Tempe crash looked for the driver, they found it in a footnote: the crash vehicle ran version 2018.071.3pl, and so did every other car in the fleet.[13] No Canadian record could answer where that release was driving, or what had replaced it.

5.6 Who holds the evidence

After a crash, each party to an automated vehicle holds its own account: the developer its logs, the manufacturer its controllers, the operator its reports. The regulator that approved the testing usually holds none of its own. In the Tempe crash, the investigators listed among the contributing factors "the Arizona Department of Transportation's insufficient oversight of automated vehicle testing."[14] In the 2023 San Francisco crash, the developer later admitted that its report to the federal regulator left out that the car had dragged the pedestrian, and paid a criminal fine under a deferred prosecution agreement.[15] A record read from the vehicle and kept by a party that was not driving means the Ministry holds an account of its own: what it required, what it received, and which software was driving.

[13] NTSB, Highway Accident Report HAR-19/03, footnote 19, https://www.ntsb.gov/investigations/AccidentReports/Reports/HAR1903.pdf

[14] NTSB, Highway Accident Report HAR-19/03, section 3.2, https://www.ntsb.gov/investigations/AccidentReports/Reports/HAR1903.pdf

[15] United States Attorney's Office, Northern District of California, November 2024, as reported by TechCrunch, https://techcrunch.com/2024/11/15/gms-cruise-to-pay-500000-fine-to-doj-admits-submitting-false-report

6 Options

There are three ways to hold the evidence. They differ in who keeps it.

Option A: the operator keeps it, the Ministry asks. This is the pilot's model and broadly Germany's and California's. It costs the province least. Its weakness is that the evidence is held by the party with the most interest in it, and the Ministry receives it on request, in each operator's format, to re-key.

Option B: the Ministry builds a register. CCMTA's ADS flag on the registration record points this way. It is authoritative. Its weakness is that a registry cannot read a car's software, reconcile makers' and developers' recall filings, or keep pace with updates without building capabilities it does not have today, by October 2027.

Option C: accredited independent keepers. The Ministry keeps the authority, sets the facts and the format, and accredits keepers that meet independence and audit conditions. Ontario already works this way for safety inspections: the Ministry licenses independent inspection centres, technicians record each inspection on a provincial system, and anyone can search a vehicle's inspection history by VIN.[16] Shipping has worked this way since the eighteenth century, through classification societies to which flag states delegate statutory surveys.

	A. Operator	B. Ministry	C. Accredited keeper
Independent of the operator	No	Yes	Yes, by condition
Cost to the province	Lowest	Highest	Low; keepers funded by fees
Ready by October 2027	Yes	Unlikely	Yes, if accreditation starts in 2027
Reads software from the car	Operator only	No	Yes
One format across operators	No	Yes	Yes
Defined access for insurers, police	No	Possible	Yes, by condition

The precedents also show what makes Option C work, and what breaks it. International rules for classification societies bar a keeper's staff from being the designer, manufacturer, supplier, owner or maintainer of what they assess, and bar dependence on a single commercial client.[17] The EU designates vehicle technical services for five years at a time, requires them to be independent of what they assess, and reassesses them at least every 30 months.[18] Ontario's own Drive Clean pro-

[16] Government of Ontario, Safety Standards Certificate (DriveON), https://www.ontario.ca/page/safety-standards-certificate

[17] IMO, Code for Recognized Organizations, resolution MSC.349(92), ss. 2.3–2.4, https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/MSCResolutions/MSC.349(92).pdf

[18] Regulation (EU) 2018/858, arts. 69, 73, 76, https://eur-lex.europa.eu/eli/reg/2018/858/oj/eng

gram is the caution: it relied on more than 2,000 accredited facilities, and the Auditor General found that covert audits detected non-compliance in about 60 per cent of cases.[19] Accreditation without real audits does not produce trustworthy records.

7 Recommendations

1. **Name the facts per car.** The regulation that follows the pilot should list what an operator must be able to show for each car: identity and automation level, registration, the driving system and its software version, remedies and their completion, readiness, and events. Germany's list is a useful starting point.

2. **Start now, without a new regulation.** The Registrar may already attach conditions to pilot approvals (s. 9). Conditions requiring fleet changes by VIN, software versions per car, and collision reports within 24 hours, as the commercial pilot does, would give the Ministry evidence to design the successor on.

3. **Allow accredited independent keepers.** Set independence rules modelled on the IMO code and the EU rules, designate for a fixed term, and audit, including covertly. Let operators choose among accredited keepers so no one is locked in.

4. **Give the driving release a record.** Alongside the record for each car, keep one for each release of a driving system: the cars running it, the incidents it was driving in, the remedies scoped to it and the release that replaced it. A recall then reads as what it is, the suspension of a release, with the cars it reached and the cars it did not.

5. **Define access.** Give insurers, police and the operator's own regulators a defined right to read the record, as the Insurance Bureau of Canada proposed in 2018, with which software runs on which car restricted for security.

6. **Align with Ottawa through CCMTA.** Use the same fields as the national rules that will implement the UN global technical regulation, so a car's record means the same thing in every province.

7. **Publish the pilot evaluation.** The evaluation the regulation required before January 2026 is the natural basis for public consultation on the successor.

[19] Auditor General of Ontario, 2012 Annual Report, s. 3.04, https://www.auditor.on.ca/en/content/annualreports/arreports/en12/304en12.pdf

8 Questions for the framework

1. How will the Ministry know what each car is, including its automation level, when neither the VIN nor the NVIS records it?
2. How will a recall filed against a software version reach the cars running that version?
3. How will the Ministry know a software fix was applied, car by car?
4. Who keeps the evidence, and how is that keeper kept independent of the operator?
5. How will insurers and police read the evidence after a crash?
6. When a software driver makes a mistake, how will the Ministry know which other cars it is driving tonight?

A A field list

The fields below are offered under the Creative Commons Attribution 4.0 licence. Any operator, keeper or jurisdiction may use them without asking.

Fact	Fields	Each carries
Identity	VIN, make, model, model year, body, powertrain, final-stage manufacturer, fleet-only flag, ADS flag and level	Source document, date observed
Registration	Jurisdiction, registrant number, status, expiry	Source record, date observed
Driving system	Developer, system name, software version, date installed	Source (filing or read from the car), date
Remedies	Recall number, authority, scope (VIN or software version), status, date completed	Source, evidence of completion
Readiness	Inspection or service type, result, date, next due	Operator record
Events	Event type, date, location class, report reference, release driving at the time	Operator report
Driving release	Developer, release identifier, first deployed, cars running it, incidents, remedies scoped to it, superseded by	Developer filing; cars running it restricted for security

About this paper

This paper was written by Cardog Inc., a Canadian company that maintains vehicle identification data and has a commercial interest in vehicle records. It argues for a role that any qualified, independent party could fill under the Ministry's authority. Statements about law are our reading of the sources cited and are not legal advice. Comments are welcome and will be reflected in the next version.

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