

## On-road enforcement for automated vehicles



## Outline

<b>Title</b>	On-road enforcement for automated vehicles
<b>Purpose</b>	To communicate recommended policy positions approved by Infrastructure and Transport Ministers in June 2023
<b>Abstract</b>	This paper outlines approved policy positions to support safe and effective on-road enforcement of automated vehicles. The paper follows a discussion paper and a consultation process conducted between July and September 2022.
<b>Attribution</b>	This work should be attributed as follows, Source: National Transport Commission, On-road enforcement for automated vehicles. If you have adapted, modified or transformed this work in any way, please use the following, Source: based on National Transport Commission, On-road enforcement for automated vehicles.
<b>Keywords</b>	Automated vehicles, complementary law policy positions, compliance, law enforcement, states and territories
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## Foreword

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Automated vehicles (AVs) have the potential to revolutionise road transport, providing significant safety, productivity, mobility and environmental benefits.

To realise these benefits, Australia's Infrastructure and transport Ministers have agreed a national framework for enabling and regulating AVs that requires integrated and complementary laws across the Commonwealth and state and territory governments.

To ensure system safety, a new Commonwealth regulator will oversee the corporations that operate automated driving systems (ADS). However, as first responders to vehicle-related incidents and being responsible for local road rules and law enforcement, state and territory law enforcement agencies will play a key role in ensuring road safety and ensuring human users meet their obligations under the framework.

This paper sets out a range of policy positions agreed by Australian Infrastructure and Transport Ministers in 2023 to support safe and effective on-road enforcement of AVs. They will inform changes to state and territory laws to clarify how law enforcement agencies will interact with AVs when they are operating on Australian roads and outline the powers of enforcement officers in relation to human user obligations for AVs.

The policy positions outlined in this paper represent our current understanding of what the future on-road enforcement requirements will be. The automated vehicle landscape will continue to change, and as AV technologies and standards evolve, these policy positions will be revised and adapted accordingly.

With the proposed national framework anticipated for introduction in 2026, the NTC will continue to work closely with the Commonwealth, states and territories to refine policies for on-road enforcement amidst international developments and implementation considerations. This ongoing work will ensure that the national framework is fit for purpose for governments, law enforcement, industry and road users alike.

We thank the many stakeholders who contributed to the development of these positions, including all Australian governments, law enforcement agencies and associations, industry and the community.



**Aaron de Rozario**  
Executive Leader, Regulatory Reform



**Michael Hopkins**  
Chief Executive Officer and Commissioner

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## Key terms

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**Automated driving system (ADS):** hardware and software collectively capable of performing the entire dynamic driving task (defined below) on a sustained basis without human input.

**Automated driving system–dedicated vehicle (ADS–DV):** a vehicle designed to be operated exclusively by a Level 4 or 5 ADS within its operational design domain limitations.

**Automated driving system entity (ADSE):** the corporation that is certified as responsible for the safety of an ADS over its life. The ADSE will be certified either when first providing the vehicle to the market or when applying to take responsibility for an ADS in service.

**Automated vehicle (AV):** a vehicle that has an ADS. It is distinct from a vehicle with advanced driver assistance systems such as lane-keep assist. AVs have automation at Level 3 or above, whereas advanced driver assistance systems vehicles have automation at Level 1 or 2.

**Automated Vehicle Safety Law (AVSL):** a proposed new national law for regulating the in-service safety of AVs. The AVSL will regulate ADSEs and their executive officers and remote drivers and operate in conjunction with existing road transport laws. It will also establish an in-service regulator for AVs.

**Control:** ministers have agreed that when an AV's ADS is engaged, the ADS is in control and the ADSE is responsible for complying with dynamic driving task obligations.

**Dynamic driving task (DDT):** all the operational and tactical functions required to operate a vehicle in on-road traffic. This includes steering, acceleration and deceleration, object and event detection and response, manoeuvre planning and enhancing visibility through lighting, signalling and so on. The DDT does not include strategic functions such as trip planning.

**Enforcement officers:** officers of the law who perform investigations, confiscations or other law enforcement functions.

**Fallback-ready user:** a human in a Level 3 vehicle who can operate the vehicle and who is receptive to requests from the ADS to intervene and respond to emergency vehicles. The fallback-ready user is expected to respond by taking control of the vehicle.

**First supply:** the point at which vehicles enter the Australian market for the first time. Ministers have agreed to a safety assurance approach for the first supply of AVs, comprising ADSEs self-certifying their ADS against safety criteria and obligations under the existing type approval process.

**First-supply regulator:** the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts administers the regulation of road vehicles up to the point of first supply in Australia. The enabling legislation for this framework is the *Road Vehicle Standards Act 2018* (Cth).

**General safety duty:** an overarching and positive obligation on the ADSE to ensure the safe operation of its ADS so far as is reasonably practicable. This type of duty is used in other transport sectors in Australia, including heavy vehicles, commercial passenger vehicles, rail and domestic

commercial marine vessels. What is ‘reasonably practicable’ will vary over time as technologies and practices evolve.

**In service:** when vehicles have entered the Australian market and can be operated on the road.

**In-service regulator (ISR):** the new regulator for the in-service safety of AVs. The regulator will be established once the AVSL is passed and is expected to begin operations by the end of 2026. The regulator is expected to be small to begin with, scaling up as the AV market grows.

**Levels of automation:** vehicle automation levels as defined by the Society of Automotive Engineers International (SAE International, 2021):

- Level 3 vehicles: the ADS undertakes the entire DDT within its operational design domain. When the ADS is driving, the human operator does not have to monitor the driving environment or the driving task but must respond to ADS requests to intervene.
- Level 4 vehicles: the ADS undertakes the entire DDT within its operational design domain. When the ADS is driving, the human operator is not required to monitor the driving environment or the driving task, nor are they required to intervene, as the ADS can bring the vehicle to a safe stop unassisted.
- Level 5 vehicles: the ADS undertakes all aspects of the DDT and monitoring of the driving environment. The ADS can operate on all roads at all times. No human operator is required.

		SAE LEVEL 0™	SAE LEVEL 1™	SAE LEVEL 2™	SAE LEVEL 3™	SAE LEVEL 4™	SAE LEVEL 5™
What does the human in the driver's seat have to do?		You <u>are</u> driving whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			You <u>are not</u> driving when these automated driving features are engaged – even if you are seated in “the driver's seat”		
		You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	
Copyright © 2021 SAE International.							
What do these features do?		These are driver support features			These are automated driving features		
		These features are limited to providing warnings and momentary assistance	These features provide steering OR brake/acceleration support to the driver	These features provide steering AND brake/acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met	This feature can drive the vehicle under all conditions	
Example Features		<ul style="list-style-type: none"><li>• automatic emergency braking</li><li>• blind spot warning</li><li>• lane departure warning</li></ul>	<ul style="list-style-type: none"><li>• lane centering OR</li><li>• adaptive cruise control</li></ul>	<ul style="list-style-type: none"><li>• lane centering AND</li><li>• adaptive cruise control at the same time</li></ul>	<ul style="list-style-type: none"><li>• traffic jam chauffeur</li></ul>	<ul style="list-style-type: none"><li>• local driverless taxi</li><li>• pedals/steering wheel may or may not be installed</li></ul>	<ul style="list-style-type: none"><li>• same as level 4, but feature can drive everywhere in all conditions</li></ul>

**Operational design domain:** the specific conditions under which an ADS or feature is designed to function (e.g., location, weather conditions and driving modes).

# Executive summary

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The operation of AVs on Australian roads will create unique challenges for law enforcement. This paper details nationally agreed policy positions on how law enforcement will interact with AVs on the road. These positions will help steer the states and territories in the development of regulatory and policy changes. It will also guide the required changes to procedures, training needs and system requirements.

AV technology is still in the development phase, with early models only now being deployed internationally. The National Transport Commission (NTC), in partnership with Australian governments, will continue to monitor international policy, regulatory and technological developments to inform and refine policy positions and ensure an integrated national framework for the safe use of AVs.

## **Context**

In February 2022, the Infrastructure and Transport Ministers agreed to the content and legislative implementation approach for a national framework for the regulation of AVs based on a Commonwealth Automated Vehicle Safety Law (AVSL). Three streams of policy and legislative work were part of that decision:

- development of a Commonwealth AVSL
- negotiation of an intergovernmental agreement (IGA)
- state and territory legislative development.

The AVSL will primarily regulate the corporation (the Automated Driving System Entity or ADSE) and its executive officers as the parties responsible for an ADS. The states and territories will regulate the humans that use and interact with AVs, including how law enforcement will interact with AVs and their users. This means that although the ADSE will be a Commonwealth-regulated entity, on-road enforcement activities will remain a matter for the states and territories. To ensure the regulatory framework for AVs provides a single national market, it is important that the state and territory enforcement rules remain as nationally consistent as possible.

This paper completes the NTC's on-road enforcement for the AVs project. It covers recommended policy positions for complementary state and territory laws so that state and territory law enforcement can:

- safely interact with AVs
- respond to the road safety risks of AVs.

The recommended positions are informed by contemporary knowledge and assumptions about AV law, technology and capabilities, including the draft national road vehicle standard for AVs (Australian Design Rule [ADR] 90/01) and the AVSL. If these assumptions change or new information emerges, corresponding changes to these policy positions may be required.

## Conclusions and recommendations

The policy positions approved by the Australian Infrastructure and Transport Ministers can be grouped into:

- law enforcement interactions with AVs (Recommendations 1–5)
- law enforcement access to AV data and related topics (Recommendations 6–12)
- law enforcement interactions with the in-service regulator (ISR) (Recommendations 13–15)

**Recommendation 1:** That state and territory enforcement powers be amended so that enforcement officers can legally provide directions to (a) a person (such as the driver, passenger or person seated in the driver's seat of an AV with accessible manual controls), (b) an ADS and (c) an ADSE. \_\_\_\_\_ 18

**Recommendation 2:** That the states and territories introduce a new specific power allowing enforcement officers to disable the ADS when the vehicle is stationary at the roadside. This power will be supported by an ADSE's Law Enforcement Interaction Protocol, which will provide information to enforcement officers about how its ADS is to be disengaged. \_\_\_\_\_ 19

**Recommendation 3:** That the states and territories and the NTC monitor international developments in remote disabling. If an international consensus emerges or as the technical ability is developed, the NTC, states and territories will review whether a power and/or design requirement of this kind is required. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes. \_\_\_\_\_ 19

**Recommendation 4:** That the states and territories introduce a new power for law enforcement to remove or tow an AV after it has been disabled and where the vehicle is creating a danger or obstruction to traffic. \_\_\_\_\_ 20

**Recommendation 5:** That state and territory laws be amended to extend existing law enforcement powers to (a) conduct random drug and alcohol testing and (b) request that a person produce their driver's licence for inspection and state their name and address, where such an obligation is required of a vehicle occupant of an AV. \_\_\_\_\_ 21

**Recommendation 6:** That the states and territories agree to consult their respective Privacy Commissioners or the equivalent and consider whether they need to undertake a Privacy Impact Assessment before introducing new enforcement powers to access data from AVs. \_\_\_\_\_ 22

**Recommendation 7:** That the states and territories adopt new data collection and access powers that allow enforcement officers to collect or access specified ADS operational data at the roadside and more generally. The powers should be compatible with data collection requirements under the AVSL. The NTC and states and territories will continue to monitor international developments on ADS data. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes. \_\_\_\_\_ 23

**Recommendation 8:** That there be no requirement at this time for AVs to include a visual indicator. The NTC and the states and territories will continue to monitor international developments on dynamic visual indicators to consider whether changes to this position are recommended. \_\_\_\_\_ 24





**Recommendation 9:** That the states and territories introduce new powers allowing enforcement to request in-vehicle camera data, if available, for the purpose of determining whether a vehicle occupant who has specific obligations in certain circumstances (e.g., a fallback-ready user) met those obligations. This will include, but is not limited to, determining whether (a) the person was complying with their obligations and (b) the person took back control within a reasonable time after a request to intervene. The NTC and the states and territories will continue to monitor international developments of in-vehicle camera requirements. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes. \_\_\_\_\_ 25

**Recommendation 10:** That no further powers to collect information from vehicle occupants be introduced at this time, as existing legal provisions are sufficient. \_\_\_\_\_ 26

**Recommendation 11:** That once a decision is made internationally about the DSSAD retention period, it be adopted into Australia's regulatory framework through the Road Vehicle Standards Act and reflected in the AVSL. \_\_\_\_\_ 26

**Recommendation 12:** That no further changes be recommended relating to the admissibility of data from AVs as evidence, as current laws in each jurisdiction are considered adequate. \_\_\_\_\_ 27

**Recommendation 13:** That the states and territories consult their respective Privacy Commissioners or the equivalent and consider whether they need to undertake a Privacy Impact Assessment before introducing new information-sharing arrangements between enforcement, the ISR and ADSEs. \_\_\_\_\_ 28

**Recommendation 14:** That the states and territories introduce new powers allowing enforcement officers to share relevant information with the ISR if such powers are needed. The new powers will outline (a) the types of information enforcement officers can share with the ISR, (b) that the disclosure of that information is for the purpose of assisting the ISR in exercising its functions and powers and (c) the timeframes for information exchange. These powers will not compel disclosure but will be enabling powers. \_\_\_\_\_ 29

**Recommendation 15:** That the states and territories not introduce a new power to enable enforcement officers to share information directly with ADSEs, as this is not currently required. \_\_\_\_\_ 29

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## **Consultation**

The NTC consulted with industry, governments (including law enforcement agencies) and other interested stakeholders in the development of these recommendations. A discussion paper was published in July 2022, supported by workshops with target stakeholder groups.

Feedback was received through the consultation sessions, individual meetings and 16 written submissions.

## **Next steps**

The recommendations in this paper were endorsed by Australian Infrastructure and Transport Ministers in June 2023. The recommendations provide a foundation for the states and territories





and the NTC to consider how they can be implemented at the state and territory level in a nationally consistent fashion.

Further policy analysis regarding policy positions for complementary state and territory laws continues in parallel with the Commonwealth's development of the AVSL. Further public consultation on the national framework is expected in 2024.



# 1 Context

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## **Key points**

The purpose of this project is to outline a nationally consistent approach for state and territory law enforcement officers to interact with AVs in a way that manages road safety risks. The issues and options in this paper were developed by the NTC and our stakeholders. The NTC will continue to consult with government stakeholders, industry, other regulators and the broader public on emerging AV policy issues.

## **1.1 Project objectives**

### **1.1.1 Purpose**

The purpose of this project is to develop a nationally consistent approach that allows state and territory law enforcement officers to:

- interact with AVs
- manage the road safety risks posed by AVs.

For road safety purposes, 'state and territory law enforcement officers' include police officers, relevant officers of state and territory road transport agencies and authorised officers under the Heavy Vehicle National Law. We refer to 'state and territory law enforcement officers' as 'enforcement officers' throughout this paper.

### **1.1.2 Problem statement**

The NTC has identified key areas that need to be addressed so enforcement officers can fulfil their safety and enforcement roles when AVs start operating on Australian roads (NTC, 2021).

As with conventional vehicles on the road, enforcement officers will continue to play an integral role in addressing the road safety issues associated with the use of AVs. Officers will need to monitor AVs' compliance with road traffic laws and their safe interaction with other road users. They will need to interact with AVs on the road, at the roadside and after a crash and intervene in real time in cases of road traffic law breaches.

The on-road operation of AVs will create unique challenges for enforcement. These include:

- safely intervening and interacting with AVs on the road
- identifying an AV's level of automation and whether it is under ADS or driver control
- communicating with AVs
- applying road rules to AVs
- accessing data for crash investigation and reporting, including at the roadside, where possible.

Current powers and practices of enforcement officers are insufficient or ineffective to allow officers to interact with and respond to the road safety risks of AVs in all scenarios.

### 1.1.3 Project objectives

The objectives of this project are to:

- examine whether powers currently available to enforcement officers (including authorised officers under the Heavy Vehicle National Law) are suitable for ensuring the safe operation of AVs on the road and identify gaps
- establish what data enforcement officers need to respond to the road safety risks posed by AVs
- develop a nationally consistent approach for enforcement officers to ensure the safe operation of AVs on the road, including legal powers to
  - interact with AVs
  - access data to respond to AV road safety risks
  - share data with relevant parties, particularly the new regulator for the in-service safety of AVs (the ISR)
- identify further legislative or operational changes required by the states and territories.

## 1.2 Background

### 1.2.1 The national reform program for AVs

Australia's laws do not currently support the deployment of AVs. Our laws are designed for vehicles with human drivers. A 2016 review found more than 700 barriers in state, territory and Commonwealth laws to the deployment of AVs (NTC, 2016).

AVs are expected to deliver safety, productivity, mobility and environmental benefits. Without reforms, Australians will not be able to enjoy these benefits. In 2016, Infrastructure and Transport Ministers agreed to the development of an end-to-end regulatory framework for the commercial deployment of AVs. Since then, the NTC has collaborated with government and industry to develop this framework. Informed by this work, the ministers have agreed to:

- defining regulated parties
- determining how control (human or ADSE) of an AV is ascribed
- assuring safety for AVs at first supply
- establishing a new national AVSL and the ISR
- establishing an approach to motor accident injury insurance for AVs
- regulating government access to AV data.

Elements of the regulatory framework for AVs in Australia relevant to this on-road enforcement work already agreed to by the ministers are:

- The ADSE will be responsible for the driving task when the ADS is engaged.
- Under state and territory legislation, there will be a new regulated party (the fallback-ready user) with obligations to remain attentive to certain factors (e.g., transition of control demands) and be fit to drive a Level 3 ADS.
- The ADS must meet specified safety criteria before it can be supplied to the market. The safety criteria will be incorporated into the existing framework for the first supply of vehicles under the Road Vehicle Standards Act.
- While in service, the ADSE will be subject to a general safety duty and prescriptive duties and requirements, including developing and maintaining a law enforcement interaction protocol.
- The ISR will have compliance and enforcement powers, including information access, collection and sharing powers.



## 1.2.2 Relevant Australian developments

### Current draft ADR 90/01

The Department of Infrastructure, Transport, Regional Development, Communications and the Arts is incorporating the first-supply safety criteria into the ADRs. Specifically, Appendix B of ADR 90/01 outlines ADS design requirements at first supply. ADR 90/01 is currently in draft form.

### Law enforcement interaction protocol

In February 2022, Infrastructure and Transport Ministers agreed to recommendations relating to the in-service framework for AVs. They included recommendations that:

- The AVSL should provide that the ADSE must develop and maintain a law enforcement interaction protocol to be shared with the ISR.
- The ISR should publish, in conjunction with state and territory enforcement agencies, guidance on the areas to be covered in law enforcement interaction protocols.

The ISR will forward protocols received from ADSEs to road transport and enforcement agencies.

These protocols will provide clarity to enforcement and emergency services on how to interact safely with a particular AV type. In conjunction with state and territory enforcement agencies, the ISR will develop guidance on the content required in interaction protocols (NTC, 2022, p45-46).

The interaction protocols are expected to cover:

- how officers can intercept and safely stop an AV
- how officers can access ADS data at the roadside or during an investigation
- how officers can disable an ADS (e.g., after a crash)
- how the AV will recognise enforcement and emergency services
- how first responders can safely interact with an AV at a crash scene.

### Design principles for managing government access to AV data

In August 2019, the NTC recommended the Transport and Infrastructure Council (TIC)<sup>1</sup> note design principles for managing government access to cooperative intelligent transport systems and new AV data, with specific reference to addressing the privacy challenges that these datasets may generate (NTC, 2019, p56). These design principles were recommended for guiding further work by the NTC and Austroads in this area.

As this project considers legal powers enabling government agencies to access AV data, the design principles for data access are a relevant consideration. Legal powers to access data may require additional privacy protections. The AVSL (at the Commonwealth level) and enforcement powers (at state and territory levels) will need to complement each other.

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<sup>1</sup> The TIC was replaced by the Infrastructure and Transport Ministers' Meeting (ITMM) in 2020.

## Data requirements for AV and electric vehicle registration

Austrroads considered the data requirements for the registration of AVs and electric vehicles. In this work, Austrroads noted that to:

*support the registration of automated and electric vehicles, changes may be required to jurisdictional registration systems. Specifically, additional data may be required that is unique to both automated and electric vehicles. (Austrroads, 2020)*

The project recommended ‘a small additional data set for automated vehicles and electric vehicles and draft data definitions for further development’ (Austrroads, 2020).

Austrroads further progressed this work through FDI6338 *Addition of electric, hybrid and automated vehicle attributes in the National Exchange of Vehicle and Driver Information System (NEVDIS)*. This project defined the requirements for the next NEVDIS implementation project, a technical project to add the new data attributes to NEVDIS and to support the jurisdictional registration process for AVs and electric vehicles.

Austrroads is also responsible for the curation of the Road Asset Data Standards. The standards represent the collectively agreed data measures to describe and quantify all aspects of Australian roads, such as condition, usage and criticality. Road Asset Data Standards may need to be updated to introduce codes and definitions specific to road infrastructure accessible at the different levels of automation.

### 1.2.3 Relevant international developments

#### Development of the Data Storage System for Automated Driving

The Data Storage System for Automated Driving (DSSAD) records and stores vehicle data for significant interactions between the driver and the ADS. It identifies who (driver) or what (entity) was controlling the vehicle at a given time and whether the driver was requested to assume control of the vehicle.

The United Nations Working Party 29 (WP.29),<sup>2</sup> including the subgroup on DSSAD, is developing international requirements for the DSSAD for an ADS. Requirements for a DSSAD are already included as part of UN Regulation No. 157, which relates to automated lane-keeping systems. The regulation covers:

- the requirement that a DSSAD be fitted
- when the DSSAD must record data and which data elements it must record
- the availability and accessibility of DSSAD data
- retrieving data after a crash.

The DSSAD requirements for automated lane-keeping systems provide insights into how the DSSAD for ADSs may be developed.

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<sup>2</sup> WP.29 is the World Forum for the Harmonization of Vehicle Regulations, a permanent working party of the United Nations.



## Automated Vehicle Safety Consortium

The Automated Vehicle Safety Consortium is an invitation-only consortium comprised of industry participants (potential ADSEs). It develops best-practice recommendations to inform industry-wide standards for the safe deployment of ADSs. The Society of Automotive Engineers standards were developed or amended based on the Automated Vehicle Safety Consortium's recommendations. Companies within the consortium followed the recommendations when developing their AVs. Companies outside the consortium have indicated support for adopting the recommendations.

The consortium developed best-practice recommendations for first responder interactions with fleet-managed dedicated AVs (ADS-DVs). These included a common approach for describing the interactions and associated protocols for incorporating vital information regarding first responder interactions with SAE level 4 and level 5 fleet operated vehicles into on-going development and deployment plans (Automated Vehicle Safety Consortium, 2020, p. 3).

## Requirements in California for a law enforcement interaction plan

Department of Motor Vehicles' regulations in California require ADSEs ('the manufacturer') to provide a law enforcement interaction plan to enforcement agencies and other first responders, instructing those agencies on how to interact with the AV in emergency and traffic enforcement situations (California Department of Motor Vehicles regulations, Articles 3.8, cl 228.06(c)(3) and 3.7, cl 227.38(e)).

Some of the matters the manufacturer must cover in its law enforcement interaction plan are:

- how to communicate with a remote operator
- where to obtain information about the owner, vehicle registration and insurance if there is a crash or traffic infringement
- how to safely remove the vehicle from the road
- how to recognise whether the ADS is engaged and, if possible, how to disengage it
- how to detect and ensure the ADS has been deactivated.

## Work on optical and audible signals by Working Party 1

Working Party 1 (WP.1) is the Global Forum for Road Traffic Safety, a permanent working party of the United Nations. WP.1 focuses on improving road safety. Its primary function is to serve as guardian of the United Nations legal instruments aimed at harmonising traffic rules.

WP.1 is considering the issue of optical and audible signals for AVs. WP.1's principal consideration is for the advice and instruction of other road users, not enforcement officers. While no resolution has been reached, discussions and proposals have highlighted the risks of distracting other road users when AVs use optical and audible signals to indicate the automated mode. An informal paper submitted by Germany at a recent WP.1 meeting noted that such signals should not be used as a general rule but should be deployed only in very specific scenarios as a temporary solution (Global Forum for Road Traffic Safety, 2021).



### 1.2.4 Project milestones

#### Development of key issues and options

In July 2021, the NTC, in consultation with Commonwealth and state and territory road transport and law enforcement agencies, refined the scope, issues and options for this project. The NTC also engaged with:

- industry stakeholders to understand how potential ADSEs were considering law enforcement interaction and to explore the practical implications of various approaches and options
- international counterparts to share ideas about enforcement in anticipation of the arrival of AVs on Australian roads.

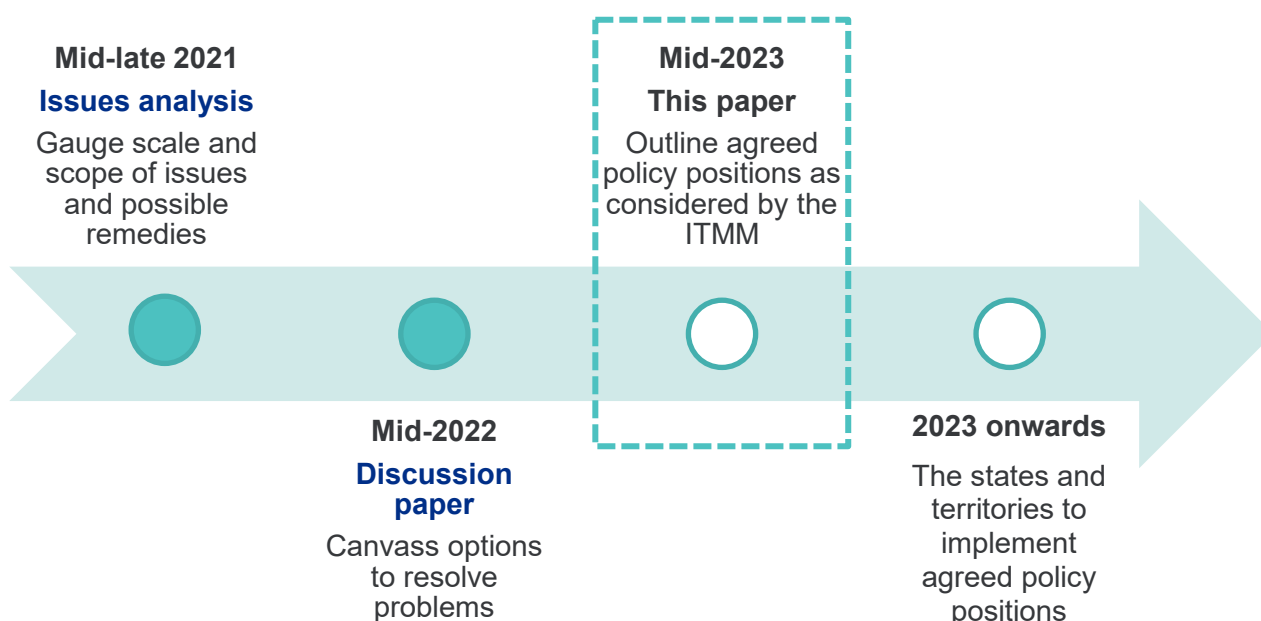
#### The discussion paper

In July 2022, a discussion paper consolidated the issues and options developed during workshops and stakeholder consultations.

Following the consultation and further analysis, the resulting recommended policy positions were considered and approved by Australian Infrastructure and Transport Ministers in June 2023.

The timeline for these activities is presented in Figure 1.

**Figure 1. Project milestones and timeliness**



## 1.3 Consultation

The NTC consulted across Australian governments, law enforcement, industry and the community in shaping the recommended policy positions.





Workshops were held to develop options ahead of the publication of the discussion paper in July 2022. During the consultation period from July to September 2022, the NTC held workshops with government, industry and other interested stakeholders. Further consultation occurred into early 2023 with government stakeholders to form consensus policy positions.



## 2 Law enforcement interactions with AVs

### Key points

- State and territory law enforcement will continue to play a critical role in ensuring safety outcomes when AVs are in operation on Australian roads.
- As the primary on-road enforcement representatives, they will need to respond to on-road incidents in real time and ensure human users of AVs meet their obligations.

### 2.1 Power to provide a direction to an ADS and ADSE

Enforcement officer powers to direct road traffic under state and territory laws are essential in supporting a range of other powers designed to maintain road safety. Current state and territory laws cover various methods for providing directions, such as hand signals, signs and verbal communication. These powers refer to the 'driver' of a vehicle, with 'driver' defined as a natural person or a corporation. However, an ADS is neither a natural person nor a corporation.

The present recommendation provides enforcement officers powers to legally direct all vehicles, conventional or automated, by incorporating all responsible parties, including the ADS, into legislation.

Enforcement officers must be able to direct an ADSE to take a particular course of action with respect to an ADS, such as prohibiting a specific vehicle from moving while enforcement investigates a safety issue.

The states and territories will introduce a new power for enforcement to direct an ADSE, as the ADSE will be the legal entity responsible for the operation of the ADS.

Further work will be undertaken to appropriately scope this direction power, noting that the ISR will have primary responsibility for regulating ADSEs.

**Recommendation 1:** That state and territory enforcement powers be amended so that enforcement officers can legally provide directions to (a) a person (such as the driver, passenger or person seated in the driver's seat of an AV with accessible manual controls), (b) an ADS and (c) an ADSE.

Separate from the legal powers to do so, the laws will be supported by the Law Enforcement Interaction Protocol established under the AVSL to ensure that roadside enforcement officers have clarity about how they can safely interact with AVs.

The protocols are expected to cover:

- how officers can intercept and safely stop an AV
- how officers can access ADS data (such as the level of automation engaged) at the roadside or during an investigation
- how officers can disable an ADS (e.g., after a crash)
- how the AV will recognise enforcement and emergency services on the road or at the roadside
- how first responders can safely interact with an AV at a crash scene.

## **2.2 Power to disable an AV at the roadside and remotely**

While a conventional vehicle poses little risk once stopped, an ADS-enabled vehicle may still present safety risks if not disabled, which in this context means the ADS is disengaged. Current laws do not address the power to disable an ADS, and powers proposed under the AVSL are limited to the scope and functions of the ISR.

Accordingly, enforcement officers will need the power to disable a vehicle at the roadside in the event that the ADS has not disengaged after the vehicle has been pulled over. The law enforcement interaction protocol described above will provide details on how an officer can disable a vehicle.

Some stakeholders have noted interest in laws that support the remote disabling of an ADS. However, this is not a common or intended technical feature of AVs for a range of reasons, including the risk of creating a potential ‘back door’ that could be exploited by bad actors. Mandating the introduction of such a requirement, or any similar Australia-specific technological requirements, may deter ADSEs from entering the Australian market and delay the introduction of ADSs.

Accordingly, no changes regarding remote disabling are recommended at this stage. The states and territories and the NTC will monitor developments in remote disabling and whether such laws should be further considered.

**Recommendation 2:** That the states and territories introduce a new specific power allowing enforcement officers to disable the ADS when the vehicle is stationary at the roadside. This power will be supported by an ADSE’s Law Enforcement Interaction Protocol, which will provide information to enforcement officers about how its ADS is to be disengaged.

**Recommendation 3:** That the states and territories and the NTC monitor international developments in remote disabling. If an international consensus emerges or as the technical ability is developed, the NTC, states and territories will review whether a power and/or design requirement of this kind is required. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes.



## 2.3 Power to remove a vehicle once it has been disabled

Once an ADS has been disabled, law enforcement may need to remove the vehicle from the road. Current laws are not designed for such situations involving AVs. Existing provisions focus on dangers, obstructions or offences related to vehicles that have broken down, were involved in accidents or are unattended. However, when an ADS has been disabled, it is important to clarify this power for law enforcement.

The states and territories will introduce a new power to remove or tow the AV after it has been disabled. This power will only be exercised in circumstances where the vehicle is creating a danger or obstruction to traffic. This power will be limited to those states and territories where existing enforcement powers are insufficient to remove an AV from the road.

In the execution of this power, enforcement officers will have the discretion to allow a person (either a passenger of a highly automated vehicle without manual controls or a person capable of driving in a vehicle with manual controls) to remove the vehicle from the roadside if:

- the vehicle is safe to drive away with the ADS engaged, or
- the person can safely drive the vehicle with the ADS disengaged.



**Recommendation 4:** That the states and territories introduce a new power for law enforcement to remove or tow an AV after it has been disabled and where the vehicle is creating a danger or obstruction to traffic.

## 2.4 Power to perform random breath/drug testing or require a person to produce their driver licence and identify themselves by stating their name and address

Some vehicle occupants in AVs will be subject to licensing and drug and alcohol obligations. For example, a person in the driver's seat of a vehicle with manual controls and with obligations to take over the driving task when requested by the ADS (such as a Level 3 or 'fallback-ready user' feature) will be required to hold a valid licence and be at or under the blood alcohol concentration permitted in the state or territory. This obligation will be in place even when the ADS is engaged and performing the driving task.


Accordingly, state and territory laws will be amended to extend existing law enforcement powers to:

- conduct random drug and alcohol testing
- request that a person produce their driver's licence for inspection and state their name and address


where such an obligation is required of a vehicle occupant in an AV.







The NTC notes that these obligations regarding licensing and drug and alcohol impairment remain to be resolved for vehicle occupants of AVs in all circumstances. The expectation is that for Level 3 vehicles, where control is expected to pass from the human driver to the ADS and back with some regularity, a licensed and sober driver must be present. For vehicles with higher levels of automation (e.g., where there are no manually accessible controls) further analysis, informed by international policy positions and technical capabilities of AVs, is required



**Recommendation 5:** That state and territory laws be amended to extend existing law enforcement powers to (a) conduct random drug and alcohol testing and (b) request that a person produce their driver's licence for inspection and state their name and address, where such an obligation is required of a vehicle occupant of an AV.

## 3 Law enforcement access to AV data and related topics

### **Key points**

- AVs will collect significant amounts of data.
- International and national design standards will largely determine what data will be collected.
- Balancing rights to privacy against access for law enforcement is critical.

### **3.1 Managing privacy concerns for new data access powers**

AVs will collect considerable amounts of data to support their operation. Ensuring that any law enforcement powers to access this data are appropriately balanced against vehicle users' rights to privacy was an issue that received considerable attention throughout the consultation process.

To ensure rights to privacy are protected, the states and territories agree to consult their respective Privacy Commissioners or the equivalent and consider whether they need to undertake a Privacy Impact Assessment before introducing new enforcement powers to access data from AVs. This will ensure that any privacy risks raised by new powers are appropriately considered.



**Recommendation 6:** That the states and territories agree to consult their respective Privacy Commissioners or the equivalent and consider whether they need to undertake a Privacy Impact Assessment before introducing new enforcement powers to access data from AVs.

### **3.2 Framework for new powers to access AV data**

When AVs begin operating on Australian roads, enforcement officers will need to access data to respond to AV road safety risks. This will include accessing data for crash investigations and reporting and in relation to road rule infringements.

There are no direct powers in state or territory law covering access to ADS data. Even the most adaptable current powers to access data are fragmented and may not apply to ADS data.

Stakeholders consider that access to data in a timely manner and a fit-for-purpose format is critical to support law enforcement. This includes data collection following an incident, for example, law enforcement determining whether the ADS or a human driver was in control at the time of an incident and being able to have this information on hand as a crash report is compiled.

However, it is noted that the framework for state and territory law enforcement should be compatible with any powers and obligations in relation to ADS data established under the AVSL.

A framework for state and territory law enforcement data collection powers for ADSs must be established and should contain:

- a clear definition of 'ADS operational data', noting that the datasets that may be requested by enforcement will align with the relevant national road vehicle standards for the type of ADS accessed and the data an ADSE is required to record and share under the AVSL, while the operational data requested will likely be a subset of that recorded by the ADS
- clearly stated purposes for which ADS operational data can be collected and used by enforcement officers, including but not limited to, determining:
  - whether the ADS or human driver was controlling the vehicle at a given time
  - the level of automation engaged
  - any transition requests or prompts to human users
  - whether manual controls were enabled or disabled, as relevant to a highly automated (Level 4 or 5) AV with accessible manual controls
  - any factors causing or contributing to the breach of a road traffic law or a crash, depending on the coverage of existing laws.

These powers are to collect and use data where that data is available. They are not intended to place additional requirements on ADSEs to make data available beyond what will already be required under the AVSL. AVSL requirements include a requirement to demonstrate a data recording and sharing capability at certification and an ongoing requirement for an ADSE to record and store data.

The framework should also establish a restriction on the collection, use and disclosure of data beyond the purposes defined unless the data can be accessed under other existing processes (e.g., a warrant).

The states and territories will adopt new data collection and access powers that allow enforcement officers to collect or access specified ADS operational data at the roadside when an officer is near the stationary vehicle and more generally. The states and territories will work closely with the Commonwealth in developing state and territory law to ensure compatibility.

The jurisdictions and the NTC will continue to monitor developments and review if international consensus on ADS data arises, including developments relevant to the DSSAD. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes



**Recommendation 7:** That the states and territories adopt new data collection and access powers that allow enforcement officers to collect or access specified ADS operational data at the roadside and more generally. The powers should be compatible with data collection requirements under the AVSL. The NTC and states and territories will continue to monitor international developments on ADS data. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes.

### 3.3 Visual indicators of ADS status on AVs

One of the main reasons to seek ADS data is to determine whether a human user or the ADS was engaged during an incident. One solution to this issue considered in the discussion paper was the use of external visual indicators signalling to other road users whether a vehicle has ADS features and whether those features are engaged. This could have benefits for enforcement purposes, helping to identify the party in control, the level of automation engaged and what on-road response and enforcement action, if any, should be taken.

However, there is no current international consensus on the inclusion of visual indicators on AVs, and the draft ADR 90/01 does not include requirements for visual indicators. Stakeholders noted that, in the absence of international consensus, the introduction of an Australian requirement for a visual indicator would likely act as a barrier to or delay market entry. Stakeholders also highlighted that explicitly communicating the ADS status of a vehicle could lead to safety risks if human users interacted with AVs in an unsafe way. Further, there is the possibility that signals could act as a distraction. Accordingly, at this time, the states and territories will not introduce requirements for vehicles to include a visual indicator.

The NTC, along with the states and territories, will continue to monitor international developments on dynamic visual indicators, and if changes are recommended in the future, this will be reported back to the ministers.



**Recommendation 8:** That there be no requirement at this time for AVs to include a visual indicator. The NTC and the states and territories will continue to monitor international developments on dynamic visual indicators to consider whether changes to this position are recommended.

### 3.4 Approach to enforcement accessing in-vehicle camera footage

Stakeholders indicate that there is a potential need for cameras to be included in AVs to assist with determining whether a fallback-ready user should have taken over control or was meeting their obligations when the ADS was engaged. Stakeholders note that because fallback-ready users will have obligations in parallel with an ADSE, police require this information at the roadside. Whether in-vehicle cameras or another technical solution will record this information in the ADS is yet to be determined.

Other issues surrounding accessing the data from in-vehicle cameras include:

- whether AVs will be required to have in-vehicle cameras and whether relevant data from these cameras will be available for enforcement officers to collect
- the period the cameras will record for and the nature of the footage they collect (e.g., visual and audio)
- how enforcement officers can access data from in-vehicle cameras at the roadside.



Currently, there are no specific powers to allow enforcement to access such data without a warrant or court order.

To address this issue in the specific circumstances outlined, the states and territories will introduce new powers allowing enforcement to request in-vehicle camera data, if available, for the purpose of determining whether a vehicle occupant who is required to drive the vehicle in some circumstances (i.e., a fallback-ready user) meets those obligations. This will include, but is not limited to, determining whether:

- the person was complying with their obligations
- the person took back control of a Level 3 vehicle within a reasonable time after a request to intervene.

The collection and use of data from in-vehicle cameras by enforcement officers will be restricted to specific purposes and used only when the data cannot be accessed under other existing processes to inform enforcement about the above obligations.

The states and territories will consult with their Privacy Commissioners or the equivalent about whether a Privacy Impact Assessment is required for the introduction of this new power. The Fair Work Commission has previously ruled that driver monitoring systems that film vehicle operators can be installed in Australian heavy vehicles where the system can contribute to better safety outcomes.<sup>3</sup>

To ensure international alignment, international developments regarding specific requirements for in-vehicle cameras will be monitored. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes.

**Recommendation 9:** That the states and territories introduce new powers allowing enforcement to request in-vehicle camera data, if available, for the purpose of determining whether a vehicle occupant who has specific obligations in certain circumstances (e.g., a fallback-ready user) met those obligations. This will include, but is not limited to, determining whether (a) the person was complying with their obligations and (b) the person took back control within a reasonable time after a request to intervene. The NTC and the states and territories will continue to monitor international developments of in-vehicle camera requirements. The review period will be 2 years from ministerial endorsement of this recommendation (June 2025). The NTC will report back to ITMM with any consequential changes.

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<sup>3</sup> *Toll North Pty Ltd & Anor v Transport Workers' Union of Australia* [2014] FWC 2945.

### 3.5 Power to obtain information from vehicle occupants

Enforcement officers currently obtain relevant information from vehicle occupants, including information about who was in control of the vehicle at a particular point in time.

The states and territories will not introduce a new power for enforcement officers to collect further information from vehicle occupants at this stage, as existing legal provisions are agreed to be sufficient.



**Recommendation 10:** That no further powers to collect information from vehicle occupants be introduced at this time, as existing legal provisions are sufficient.

### 3.6 Approach to data retention

A key part of the data provision obligation is ensuring that data can be retained so that enforcement can undertake investigations as necessary. When seeking certification, an ADSE will specify how it will ensure data is retained to the extent necessary to meet the data retention obligations under the AVSL. The AVSL will include ongoing obligations for ADSEs to record, store and share relevant data, including data relevant to the enforcement of road traffic laws.

Vehicles will be fitted with a DSSAD as part of first-supply certification requirements. The states and territories agree that once a decision is made internationally about the DSSAD retention period, it will be adopted into Australia's regulatory framework through the Road Vehicle Standards Act and reflected in the AVSL.



**Recommendation 11:** That once a decision is made internationally about the DSSAD retention period, it be adopted into Australia's regulatory framework through the Road Vehicle Standards Act and reflected in the AVSL.

### 3.7 Approach to data admissibility as evidence

The states and territories agree that existing enforcement powers sufficiently address the admissibility in court of evidence taken from AVs. The admissibility of data will be a matter for the court to determine, as it depends on the evidence rules of each jurisdiction.



**Recommendation 12:** That no further changes be recommended relating to the admissibility of data from AVs as evidence, as current laws in each jurisdiction are considered adequate.

## 4 Law enforcement interactions with the ISR

### Key points

- The AVSL will establish a Commonwealth ISR, which will regulate ADSEs and their executive officers as parties responsible for an ADS.
- The ISR will share information with state and territory law enforcement to support in-service safety, on-road enforcement and first-response activities.
- State and territory law enforcement will need enabling powers for this sharing of information.

### 4.1 Managing privacy concerns in new information-sharing arrangements

The states and territories will consult their respective Privacy Commissioners or the equivalent and consider whether they need to undertake a Privacy Impact Assessment before introducing new information-sharing arrangements between enforcement, the ISR and ADSEs. This will ensure that any privacy risks raised by the new arrangements are appropriately considered.



**Recommendation 13:** That the states and territories consult their respective Privacy Commissioners or the equivalent and consider whether they need to undertake a Privacy Impact Assessment before introducing new information-sharing arrangements between enforcement, the ISR and ADSEs.

### 4.2 Enforcement information-sharing arrangements with the ISR

Enforcement officers will need to report incidents involving an AV to the ISR for investigation.

If needed, the states and territories will introduce new powers allowing enforcement officers to share relevant information with the ISR. In addition to this, it is intended that the AVSL will generally facilitate disclosure of information to the ISR for purposes relating to the exercise of the ISR's powers, functions and duties.

The new powers will outline:

- the types of information enforcement officers can share with the ISR
- that the disclosure of that information is for the purpose of assisting the ISR to exercise its functions and powers
- the timeframes for information exchange.

These powers will not compel disclosure but will be enabling powers.

**Recommendation 14:** That the states and territories introduce new powers allowing enforcement officers to share relevant information with the ISR if such powers are needed. The new powers will outline (a) the types of information enforcement officers can share with the ISR, (b) that the disclosure of that information is for the purpose of assisting the ISR in exercising its functions and powers and (c) the timeframes for information exchange. These powers will not compel disclosure but will be enabling powers.

### 4.3 Enforcement information-sharing arrangements with ADSEs

Information-sharing will occur between enforcement and the ISR and will include the approved law enforcement interaction protocol developed by the ADSE and submitted to the ISR. Should enforcement require or wish to share information with ADSEs, this will be facilitated through the ISR.

The states and territories will not introduce a new power to enable enforcement officers to share information directly with ADSEs, as this is not currently required.

**Recommendation 15:** That the states and territories not introduce a new power to enable enforcement officers to share information directly with ADSEs, as this is not currently required.

## 5 Conclusion and next steps

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### **Key points**

- The recommended policy positions outlined in this paper provide a foundation for harmonised national positions for state and territory law enforcement interactions with AVs and the ISR.
- The review periods outlined in this paper and ongoing monitoring of AV technology and international standards and policy positions will help ensure that Australia's regulatory framework is internally aligned.

The states and territories have agreed to consider how to implement these recommended positions and align changes to laws with the AVSL as it is developed. It may also be appropriate to reflect the agreed positions in the IGA.

Reporting of progress to the Infrastructure and Transport Ministers will occur as part of the NTC's coordination of the national AV reform program.



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