Australian Government

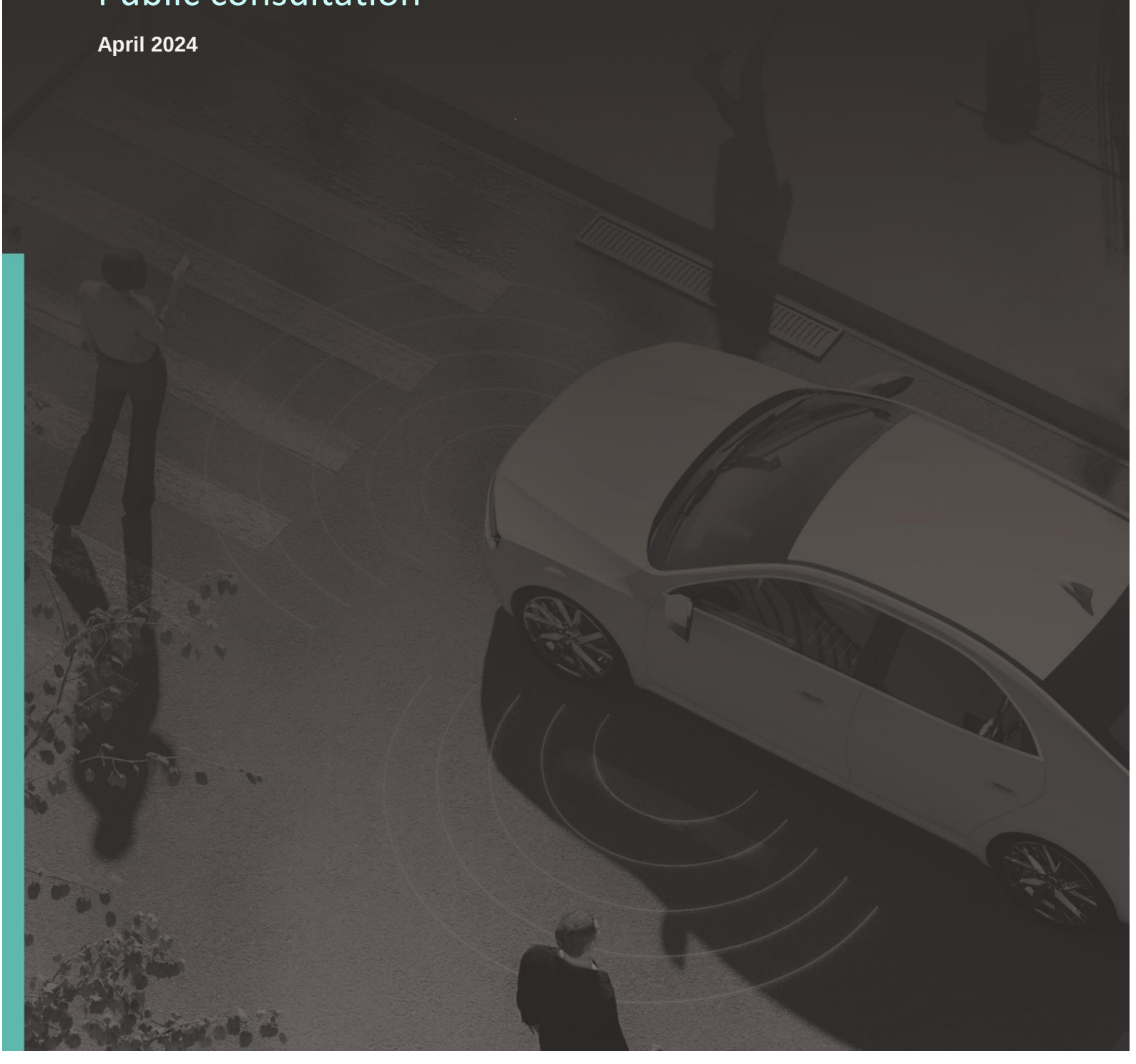
Department of Infrastructure, Transport, Regional Development, Communications and the Arts

National Transport Commission

Automated vehicle safety reforms

Public consultation

April 2024



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Email: automatedvehicles@ntc.gov.au or avregulation@infrastructure.gov.au

Website: www.ntc.gov.au/AV-safety-reform

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What is this consultation about?

This consultation outlines the end-to-end regulatory framework for automated vehicles to support their safe use on Australian roads. This framework has been developed over several years and supported by multiple rounds of public consultation.

Over this time, Australian infrastructure and transport ministers agreed to different elements of the framework. This consultation is intended to explain and seek feedback on the framework as a whole.

The Department of Infrastructure, Transport, Regional Development, Communications and the Arts and the National Transport Commission seek your views on a series of consultation questions about the regulatory framework, including some areas of policy that need further development. These include:

- remote operation of automated vehicles
- additional measures for repairers, maintainers and modifiers
- consumer understanding of automated vehicle capabilities
- obligations for human users when an automated driving system is engaged
- managing the risks of automated vehicle deployment ahead of the regulatory framework.

Have your say

You can submit your input through the NTC website at www.ntc.gov.au by selecting the 'Have Your Say' option on the homepage.

If possible, you should provide evidence, data, or documents to explain or support your submission.

You can choose to answer some, or all of the consultation questions. We are also happy to receive feedback on the automated vehicle regulatory framework more generally, even where there is not a specific consultation question.

Submissions can be made until Tuesday 11 June 2024.

Introduction

This consultation is part of an ongoing reform program to set up end-to-end regulation for automated vehicles. The purpose of end-to-end regulation is to allow automated vehicles to be used safely on Australian roads with other road vehicles.

As part of this consultation we explain and invite feedback on the proposed regulatory framework and the work that has been done so far, and seek your input on some specific consultation questions.

What are automated vehicles?

Automated vehicles are also sometimes called autonomous vehicles, self-driving vehicles, driverless vehicles or robotaxis. They may be passenger cars, utes and vans, or larger vehicles such as buses and trucks. Automated vehicles can also have more unusual forms, like the automated shuttle bus pictured in Figure 1.

An automated vehicle has an Automated Driving System (ADS) that is able to drive without human input or attention.

Figure 1: An automated shuttle bus trialled at the Sydney Olympic Park precinct in NSW

Image courtesy of Transport for NSW

Automated Driving Systems

An ADS combines:

- **hardware** – including sensors, cameras, computers and other parts of the vehicle like steering and braking components
- **software** – programs and other operating information used by the computers that are part of the ADS, which may use artificial intelligence and machine learning.

The ADS is able to drive – that is, perform the entire dynamic driving task – on a sustained basis without human input. This means that it can keep driving and respond appropriately to some or all

external events like other vehicles and traffic signs. Depending on the vehicle, it can do this for all or part of a journey.

An ADS will be designed to function in a particular set of operating conditions, called the operational design domain. The operational design domain includes things like the geographical area, time of day, weather conditions, traffic conditions and road characteristics.

The dynamic driving task includes:

- controlling the movement of the vehicle – steering, acceleration and braking
- monitoring the environment the vehicle is driving in – noticing the objects and events that are happening around the vehicle, recognising what they are, and planning what to do in response
- taking action in response to the objects and events around the vehicle – for example avoiding obstacles, assessing gaps, turning, and overtaking
- controlling the vehicle's lights, signals and horn.

The dynamic driving task does not include the **strategic** parts of driving, like choosing the destination or when a trip should happen.

Automation levels

Driving automation is often described according to the Society of Automotive Engineers (SAE) taxonomy.[1] Automated vehicles have capabilities at levels 3, 4, and 5 of driving automation. These automation levels are the focus of the automated vehicle safety reforms described in this paper.

For an ADS feature with level 3 driving automation (also called 'conditional automation') the ADS can do all of the dynamic driving task, some of the time. The person in the driver's seat, known as the 'fallback-ready user', does not need to monitor the road, but must be ready to take over when the ADS makes a transition demand.

For ADS features at levels 4 and 5 automation, a person will not need to take over driving from the ADS, because the ADS will be capable of doing the entire driving task within its operational design domain, and will be able to come to a safe stop when it has reached the limit of its operational design domain or if the ADS has a system failure. The ZOE2 research vehicle pictured at Figure 2 has a prototype ADS with level 4 driving automation.

A vehicle may have one or more ADS features which may operate at different levels of automation and/or in different operational design domains.

More information is in the *What is an automated vehicle* and *Key concepts* papers.

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[1] SAE International, *SAE Levels of Driving Automation™ refined for clarity and international audience*, SAE International, 2021, accessed March 2024.

Figure 2: ZOE2, a research prototype connected and automated vehicle (CAV) developed by Queensland's department of Transport and Main Roads in partnership with Queensland University of Technology and VEDECOM research institute, France.

Image courtesy of Transport and Main Roads, Queensland.

Availability

Automated vehicles for use on public roads are not available commercially in Australia yet. They have only been used on public roads in some small-scale trials. However, some early automated vehicles are being used in other countries, including in larger-scale public trials.

Based on available projections, we are preparing for the possibility of small numbers of automated vehicles entering the Australian market from 2026.[2,3] The Bureau of Infrastructure and Transport Research Economics forecast introduction of level 4 vehicles between 2026 and 2031, with 2.6% of new passenger vehicles to be highly or fully automated by 2030, increasing to around half of all new vehicles by 2046.

Automated vehicles are already available in some countries, with the Mercedes-Benz Drive Pilot conditionally automated driving feature available in its S-Class and EQS models in Germany, California and Nevada; and companies like Waymo operating 'robotaxis' in San Francisco, California and Phoenix, Arizona.

Why we need a new regulatory framework

We need new laws for automated vehicles to ensure safety on our public roads. Our existing laws apply to human drivers, and without new laws we will not have the right tools to manage the safety of automated vehicles. We also want to make new laws as consistent across Australia as they can be, so it is easier for automated vehicles to operate here.

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2 Bureau of Infrastructure and Transport Research Economics (BITRE), *Forecasting uptake of driver assistance technologies in* Australia, BITRE, Canberra, 2021, accessed March 2024.

3 Austroads, *Future vehicles forecasts update 2031*, Austroads, Sydney, 2021, accessed March 2024.

Safety and responsibility on public roads

Current road laws say human drivers are always responsible for operating vehicles safely on public roads. Drivers must be licensed and obey the road rules, and they may be held responsible if there is a crash. These obligations are enforced by police and regulators, to ensure safety for all road users.

If a vehicle is controlled by an ADS, a human user will not be able to ensure the ADS drives safely. At times there may not even be a person in the vehicle.

We need to place responsibility for an ADS on someone who is able to ensure it operates safely, not just when it is brand new, but throughout its life. This is important for all road users, not just people who may use an AV. All road users, including drivers, riders, passengers, pedestrians, cyclists, and others such as mobility device users, need to be able to use public roads safely.

Clear allocation of responsibilities for the operation of ADSs is important so:

- parties that are in the best position to keep an ADS safe have clear duties to take responsibility for the ongoing safety of their products, and be held accountable to these duties
- vehicle users are clear about their responsibilities when travelling in different types of vehicles
- human users of vehicles with an ADS are not held responsible for safety risks that they cannot control.

Currently we use tools like issuing infringements or suspending licences when a human driver breaks road traffic laws, to help ensure safe behaviour on the roads. We will need a different set of tools to ensure ongoing monitoring, enforcement and improvement of the on-road safety of ADSs.

If we do not change our laws to assign responsibility for safe operation of ADSs, human users of automated vehicles could be unfairly held liable for any crashes when the ADS was in control. We also need to ensure that human users understand their responsibilities in vehicles with an ADS.

The end-to-end regulatory framework aims to support the safe deployment of automated vehicles in Australia by:

- making sure an automated vehicle is safe when it is first supplied in Australia, including that it meets any relevant technical standards for an ADS
- ensuring there is a corporation with the right skills and capabilities to take responsibility for the safety of the ADS for its on-road life – this corporation will be called the Automated Driving System Entity (ADSE)
- keeping the ADS safe when it is on the road by placing safety duties and other obligations on the ADSE and its executive officers to ensure the safe operation of its ADS
- ensuring that people that use and interact with an automated vehicle understand what their roles and responsibilities are.

Accessing the benefits of automated vehicles

Automated vehicles have many potential benefits. Having automated vehicles on our roads may, over time, improve road safety, mobility and accessibility. They may be beneficial for people with disability and for people who do not have enough access to transport. Automated vehicles could reduce carbon emissions and improve productivity, traffic flow and fuel efficiency.

However, they also could bring new safety risks, which is why governments have primarily decided to regulate their safety. The overall impacts are hard to predict, because much depends on the kind of automated vehicles introduced in Australia, who owns them, and how and where they are operated.

Nationally consistent laws will enable Australia to access the potential benefits of AVs. When the National Transport Commission (NTC) analysed the current regulatory framework in 2019, it noted that if we allow different approaches to regulation of automated vehicles to be adopted in different parts of Australia, this could make it unnecessarily difficult for companies to bring their automated

vehicles to market here.[4] This could mean the Australian community misses out on potential benefits from this technology.

Automated vehicle specific laws can also help to increase confidence in automated vehicle technology, again helping to ensure that Australians do not risk missing out on the potential benefits of automated vehicles.

Framework development so far

This is not the first public consultation on automated vehicle safety reforms. The NTC, state and territory governments and the Australian Government have worked together since 2016 to develop a flexible and safety-focused regulatory framework. Key outcomes from policy development work to date are outlined below, with more information in the *Earlier work on the automated vehicle regulatory framework* paper.

Our aims in developing the framework have been to:

- make sure automated vehicles will operate safely on the roads and risks will be addressed
- minimise unnecessary costs, barriers and burdens that are placed on industry, so that the Australian market is open to automated vehicle technology.

In May 2018, infrastructure and transport ministers from the Australian Government and the state and territory governments agreed on some important concepts:

- there should be a uniform approach to driving laws for automated vehicles, and this would be achieved by developing a purpose-built national law
- when the ADS is engaged, there must be an entity responsible for complying with driving obligations, referred to as the ADSE.

Safety assurance approach

In November 2018, infrastructure and transport ministers considered how automated vehicles would enter the Australian market, which we call 'first provision'.[5] They agreed to a safety assurance approach for the first provision of automated vehicles to the Australian market. This would mean incorporating new safety criteria into the existing regulatory framework under the *Road Vehicle Standards Act 2018*. More information about subsequent changes to this approach is in the *Requirements when a vehicle with an ADS is first provided* paper.

Automated Vehicle Safety Law

In June 2020, ministers considered how to make sure automated vehicles operate safely once they are on the roads, or 'in-service'.[6] They agreed to a regulatory approach with the following elements:

- a national in-service Automated Vehicle Safety Law (AVSL) would be developed
- the AVSL would establish a new automated vehicle in-service safety regulator
- the AVSL would place a general safety duty and prescriptive obligations on ADSEs

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4 National Transport Commission (NTC), *In-service safety for automated vehicles: consultation regulation impact statement*, NTC, Melbourne, 2019, accessed March 2024.

5 A consultation regulation impact statement (RIS) on safety assurance for automated driving systems was released in May 2018, and the resulting decision RIS was provided to infrastructure and transport ministers to support their decision.

6 A consultation RIS on the in-service safety for automated vehicles was released in July 2019, and PricewaterhouseCoopers completed an independent cost–benefit analysis. A decision RIS was provided to Ministers in June 2020.

- the AVSL would also place due diligence obligations on the executive officers (top-level managers) of ADSEs
- the ADSE would be responsible for the driving of a vehicle when its ADS is engaged
- requirements for human users of automated vehicles would be established in state and territory laws.

After these decisions, the NTC again consulted with industry and the public, this time on the detailed content of the AVSL.[7]

This consultation informed the development of a comprehensive regulatory framework for automated vehicles, which the NTC presented to ministers in February 2022.[8]

The regulatory framework for automated vehicles in Australia

The regulatory framework presented to ministers and published in 2022 included:

- consideration of the roles of the three key regulators for automated vehicle safety (the first-supply regulator, new in-service regulator, and state and territory road transport regulators)
- interactions with other regulators, agencies and frameworks, including the Heavy Vehicle National Law, commercial passenger transport, public transport, work health and safety, and transport of dangerous goods
- interactions with state and territory legislation, including traffic law breaches by automated vehicles, crash investigation, motor accident injury insurance
- the different ways automated vehicles would enter the market
- how access to the road network would be regulated (usage on-road); obligations of human drivers, remote drivers, ADSEs and other road users; and interaction with law enforcement
- applying a general safety duty with supporting prescriptive safety duties, due diligence for executive officers, and a number of prescriptive requirements to support enforcement
- ADSs to be switched off once unsupported
- offences for third-party interference to be established by states and territories
- obligations of owners and operators
- transfer of responsibility for an ADS to a different ADSE
- policy on modifications of automated vehicles
- establishing the new regulator: its functions, compliance and enforcement powers
- consumer protection
- penalties under the new law
- establishing, maintaining and reviewing the new law.

Infrastructure and transport ministers agreed that the AVSL would be implemented through Commonwealth law, and that the NTC would work with state and territory governments to develop a national approach to complementary state and territory legislation to support the national regulatory framework.

The AVSL will primarily regulate the ADSE responsible for an ADS, as well as the ADSE's executive officers. States and territories will regulate the humans that will use and interact with automated vehicles. Complementary state and territory law amendments are needed to support the national

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7 National Transport Commission (NTC), *A national approach to in-service safety for automated vehicles: discussion paper*, NTC, Melbourne, 2020, accessed March 2024.

8 National Transport Commission (NTC), *The regulatory framework for automated vehicles in Australia*, NTC, Melbourne, 2022, accessed March 2024.

regulatory framework. To ensure the regulatory framework for automated vehicles provides a single national market, it is important that these amendments remain as nationally consistent as possible.

End-to-end regulation for automated vehicles

Since the 2022 decision we have been working on several parallel reforms to achieve end-to-end regulation for automated vehicles. Following the February 2022 decision, the Department of Infrastructure, Transport, Regional Development, Communications and the Arts has been working in consultation with state and territory transport agencies and the NTC to adapt the policy framework so it can be implemented in Commonwealth law. This includes development of the new AVSL, plans to establish a new regulator, and development of new requirements for automated vehicles under the Road Vehicle Standards Act.

At the same time, the NTC and the state and territory agencies have been developing policy positions for the necessary complementary state and territory law amendments to road rules and other legislation. Key elements of the end-to-end framework are summarised in Figure 3.

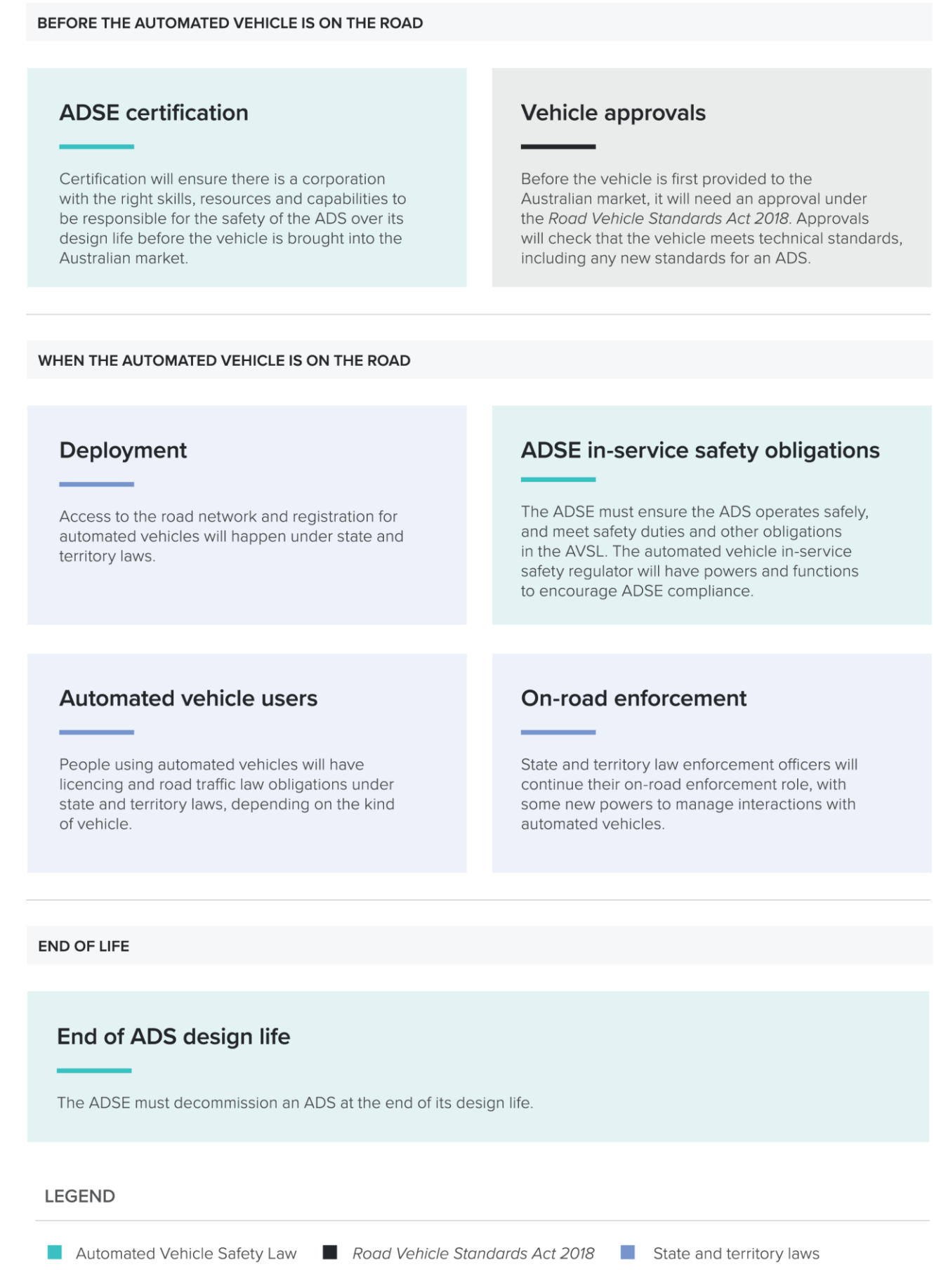
In June 2023, ministers agreed to a series of policy positions relating to state and territory law enforcement and road transport laws, including:

- obligations for occupants of vehicles with a conditionally automated (level 3) feature, and obligations for other road users (such as not obstructing the path of an automated vehicle, consistent with current rules for other vehicles)
- new third-party interference and related vehicle offences to be introduced in both the AVSL and state and territory laws
- amendments to vehicle registration and roadworthiness laws to accommodate automated vehicles
- updates to the light and heavy vehicle standards to refer to the applicable national road vehicle standards for ADS compliance
- ADSEs that supply vehicles to a third-party transport operator without acting as a transport provider will not have additional obligations under passenger transport legislation
- powers to enable law enforcement interactions with automated vehicles and access to automated vehicle data
- expectations about information sharing between law enforcement agencies and the automated vehicle in-service regulator.

As part of this June 2023 package, infrastructure and transport ministers agreed to a set of obligations for users of conditionally automated ADS features, including an obligation for a fallback-ready user to be seated in the driver's seat to take control of the vehicle when required. Ministers also agreed to assign a range of non- dynamic driving task obligations to the fallback-ready user, as well as assigning some new obligations to automated vehicle passengers. These are detailed in the *Human user or occupant obligations when using a vehicle with an ADS* paper.

Through this consultation, we are seeking the community's views on what obligations may apply to users of ADS features with higher levels of driving automation (that is, SAE levels 4 and 5).

Figure 3: A summary of end-to-end regulation for automated vehicles



This consultation

The department and the NTC are now seeking your views on consultation questions related to establishing the end-to-end regulatory framework for automated vehicles in Australia.

In developing the AVSL as a Commonwealth law, based on the published policy framework, we need to further develop some elements, or adapt them to fit a Commonwealth legislative environment. Some areas of policy were only briefly covered in the 2022 framework and need further development or changes of approach. We need to consult on these before we can settle a way forward. The main ones for the AVSL are:

- how to ensure the safety of any remote operation of automated vehicles;
- possible additional measures for repairers, maintainers and modifiers
- ways to promote consumer understanding of automated vehicle capabilities and the AVSL.

For state and territory law complementary amendments, we are consulting on:

- obligations for human users when a highly or fully automated ADS is engaged (SAE levels 4 and 5).

We are also seeking views on possible measures to control the risks of deployment of automated vehicles before the AVSL and the rest of the regulatory framework is in place. These measures could be taken through the *Road Vehicle Standards Act 2018* as well as state and territory laws.

These new areas of policy are the focus of the consultation, and many of the consultation questions focus on these topics. However, we also welcome feedback on other elements of the regulatory framework.

Consultation documents and questions

This consultation paper gives an overview of the end-to-end regulatory framework. Another 19 shorter papers address particular issues in more depth.

The supporting papers are written so people who only want to read about a particular topic have all the information they need in one place, so there is some repeated content between this consultation paper and the supporting papers.

The papers, their links to the chapters in this consultation paper (as shown in the black rows), and the consultation questions associated with each paper are shown in Figure 4.

There are three types of papers:

- **Explain** papers set out things like background information and key concepts. These do not have associated consultation questions.
- **Expand** papers provide greater detail on areas of the regulatory framework that was agreed to in 2022, such as considering more practical elements of how the policy will be implemented. Some of these papers have associated consultation questions.
- **Explore** papers describe new areas of policy beyond what was agreed to in 2022 as part of the regulatory framework for automated vehicles in Australia[9]. These also have associated consultation questions.

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[9] The *Human user or occupant obligations when using a vehicle with an ADS* paper also explores policy areas beyond those that were agreed by Infrastructure and Transport Ministers in June 2023

Figure 4: Links between consultation papers and questions

PAPER	QUESTION/S
INTRODUCTION	
What is an automated vehicle?	NIL
Key concepts	NIL
Earlier work on the automated vehicle regulatory framework	NIL
MAKING SURE THE AUTOMATED DRIVING SYSTEM IS SAFE WHEN IT ENTERS THE MARKET	
Requirements when a vehicle with an ADS is first provided	NIL
Automated Driving System Entity certification	1, 2, 5, 8
Safety management systems for vehicles with an ADS	3
Law enforcement and emergency services interaction protocol	4
KEEPING THE AUTOMATED DRIVING SYSTEM SAFE WHEN IT IS ON-ROAD	
Automated Driving System Entity in-service obligations	6
Additional measures for repairers, maintainers and modifiers	7 a, b, c, d, e, f
Establishing an automated vehicle register	NIL
Information management requirements	9, 10
Remote operations of vehicles with an ADS	11 a, b, c, d, e, f, g
Consumer information requirements for automated vehicles	12, 13, 14
Regulator powers and functions	NIL
Recalls of automated vehicles	NIL
HOW PEOPLE WILL INTERACT WITH AN AUTOMATED DRIVING SYSTEM	
Human user or occupant obligations when using a vehicle with an ADS	15 a, b, c, d, e, f
Third-party interference with an ADS	16
MANAGING AUTOMATED VEHICLE SAFETY BEFORE THE REGULATORY FRAMEWORK IS IN PLACE	
Managing automated vehicle deployment ahead of the new regulatory framework	18, 19, 20

LEGEND

Explain Expand Explore

Consultation questions

Making sure the ADS is safe when it enters the market

1. What are the benefits and drawbacks of different corporate presence requirements?
2. How would a requirement for the corporation to be an Australian registered company impact business models of potential ADSEs?
3. How suitable are the matters we propose to include in an ADSE's safety management system? Should other matters be considered?
4. Are there are other matters that the law enforcement and emergency services interaction protocol should account for?
5. Do the certification procedures for aftermarket installations of an ADS adequately manage safety risks or should other matters be considered?

Keeping the ADS safe when it is on-road

6. Are there other modifications that should be considered significant? Is there other information an ADSE should provide when seeking authorisation for a significant modification?
7. What are your views on the proposed additional AVSL measures to manage the safety risks of repairs, maintenance and modifications? In your response, please consider:

   a. Are the risks arising from repairs to an ADS different enough to the risks arising from repairs to a conventional vehicle to require additional regulatory measures?

   b. Is express authorisation of repairers, maintainers and modifiers a suitable approach to manage the risks of unqualified parties working on an ADS?

   c. What is an appropriate balance between the level of control or discretion an ADSE has over who it authorises to work on its ADSs, and the level of responsibility placed on either the ADSE or the repairer, maintainer or modifier doing that work?

   d. Should the AVSL require that an ADSE not unreasonably withhold authorisation, and that it share necessary information? For what reasons should an ADSE reasonably be allowed to withhold authorisation?

   e. Should the AVSL include safety duties for repairers, maintainers and modifiers of ADSs? If so, how suitable are the proposed elements of the safety duty on repairers, maintainers and modifiers?

   f. How may the proposed additional measures for repairs, maintenance and modifications affect business models for both ADSEs and repairers, maintainers and modifiers?
8. Are there measures we should consider to manage the consumer impacts of an ADS being disabled due to suspension, cancellation or surrender of certification?
9. For how long should ADSEs be required to retain data? Should there be different periods for different types of information?
10. Are there risks associated with information management that are not covered in these proposals?

11. What are your views on the proposed additional AVSL measures to manage the safety risks of remote operation of a vehicle with an ADS? In your response, please consider:

    a. How are companies using or planning to use remote operations as part of ADS deployment, and what business models are likely to be used? Which parties will have an influence on the safety of remote operation?

    b. Do you agree with the proposed scope of remote operations to be managed under the AVSL, and if not, which forms of remote management do you consider should be managed under the AVSL?

    c. Should an ADSE have responsibility for the safety remote operation performed to support its ADS? Should we consider other models for allocation of safety responsibility for remote operation?

    d. What duties should be placed on an ADSE or on other entities for remote operations?

    e. Should remote operators be subject to a safety duty, or any other requirements, under the AVSL?

    f. What specific skills or proficiencies should be required of remote operators?

    g. Should the AVSL require that remote operations centres be located in Australia? What are the advantages and disadvantages of this?

12. Should an ADSE be required to ensure certain technical information is provided to consumers to inform purchasing decisions?

13. Should the AVSL include offences in relation to misrepresenting vehicle capabilities?

14. Are there other measures needed to address consumer risks?

How people will interact with an ADS

15. What are your views on how we should approach laws for human user obligations in vehicles with highly or fully automated driving features? In your response, please consider:

    a. Which types of vehicle control and seating configurations are being considered or developed by industry for vehicles with highly or fully automated driving features? Can vehicle control/seating design help to determine the obligations for users of these vehicles?

    b. In vehicles with higher levels of driving automation that are configured with manual driving controls, should there be specific requirements about seating position when the ADS is engaged? Do you support any of the options identified, or propose any other options?

    c. How should licensing requirements apply to users of vehicles with highly and fully automated driving features with accessible manual controls? Do you support any of the options identified, a combination of options, or propose any other options?

    d. How should drug and alcohol restrictions apply to users of vehicles with highly and fully automated driving features? Do you support any of the options identified, a combination of options, or propose any other options?

    e. Do you think there should be a requirement to always have a person capable of driving travelling in a vehicle with highly or fully automated features? Why or why not?

    f. Do you support permitting a person seated in the driving position in vehicles with highly or fully automated driving features to undertake secondary activities? Do you support any of the options identified, a combination of options, or propose any other options?

    g. How should non-dynamic driving task obligations be assigned or shared in vehicles with highly and fully automated driving features? Do you agree with our analysis?

16. Do you support third-party interference offences being included in both the AVSL and state and territory law?
17. Do you support the proposed automated vehicle regulatory framework as a whole, and are there any barriers to its implementation?

Managing automated vehicle safety before the regulatory framework is in place

18. Are measures needed to prevent vehicles with an ADS from being provided to the market before the automated vehicle regulatory framework is in place? Which option or options is most suitable?
19. Is it necessary to restrict aftermarket installation of an ADS, or use of an ADS to approved trials only, before the automated vehicle regulatory framework is in place?
20. What are the barriers to more complex and large-scale trials in Australia? How could trial arrangements be improved? Should there be provision in the AVSL for interim certification to support trials?

Terminology

In this consultation we use some terms that have been established during the policy development period, such as automated driving system entity (ADSE) and Automated Vehicle Safety Law (AVSL). These are the terms used in the development of the regulatory framework to date, but may subject to change with the development of the new Commonwealth law and complementary legislation.

Next steps

Following consultation, we will analyse the information we receive to inform the design of the regulatory framework, including the proposed AVSL, and development of national policy positions for required changes to state and territory laws to be agreed by ministers.

The input received through this consultation will inform updated impact analysis ahead of the introduction of new legislation.

Making sure the ADS is safe when it enters the market

Safety assurance when vehicles with an ADS are first supplied is an important part of the end-to-end regulatory framework. Vehicles with an ADS will need to comply with national road vehicle standards.

A central principle of the proposed AVSL is that for each ADS there is an ADSE that takes responsibility for the safety of the ADS over its life. Before an ADS can be supplied for use in Australia, it will need a certified ADSE. The certification requirements will ensure that ADSEs have the right structures and capabilities to keep an ADS safe.

Approving automated vehicles at first provision

The department will regulate the first provision of road vehicles with an ADS – that is, when they first enter the market – under the *Road Vehicle Standards Act 2018* (RVSA), the same as for all road vehicles. All road vehicles must meet the relevant national road vehicle standards or applicable eligibility criteria. Vehicles with an active ADS will be subject to the same road vehicle standards as conventional vehicles (for example, requirements for lighting or braking), as well as any additional Australian Design Rules (ADRs) specifically related to the ADS. These are expected to include standards for safe and predictable driving behaviour, real-time monitoring, and comprehensive data recording. The department is participating in international vehicle regulations development for ADSs, and aims to align Australia's technical vehicle regulations with those of the United Nations where possible.

The department previously consulted on a draft ADR for steering systems (draft ADR 90/01) in June 2021. The draft ADR 90/01 included design criteria for an ADS, as well as requirements for systems, processes and ongoing in-service obligations for an ADSE. Following further development of the automated vehicle regulatory framework, ongoing obligations for ADSEs will now be established in the AVSL. Work on standards for an ADS, which will focus on the technical qualities of the vehicle, is now focused on the development of international regulations by the United Nations.

More information, including current approaches to developing new technical regulations for ADSs, is in the *Requirements when a vehicle with an ADS is first provided* paper.

When certification will be needed

One key difference between conventional vehicles and vehicles with an ADS is that every ADS will need an ADSE to support it throughout its active life.

To make sure this happens, a first provision approval under the RVSA for a vehicle with an ADS will only be issued to the certified ADSE for the ADS. ADSE certification will be done under the AVSL. For this reason both ADSE certification and first provision approval need to happen before the vehicle can be provided. We will develop streamlined processes for this between the 2 regulators.

There will also need to be a certified ADSE before an aftermarket ADS can be installed.

Aftermarket ADS installation could occur through:

- the necessary hardware and/or software for an ADS being fitted to a conventional vehicle (retrofitting), or
- a new vehicle being supplied with all the necessary components for an ADS that is 'switched on' later, for example with a software update.

Before an aftermarket ADS can be installed, an ADSE will need to be certified by the new national automated vehicle in-service safety regulator.

Finally, certification of a new ADSE will also be needed when an existing ADSE arranges to transfer responsibility for an ADS to a different entity during the ADS's life. More information is in the *Automated Driving System Entity certification* paper.

Certification process

To be certified as an ADSE, an entity needs to be a corporation with suitable structures and capabilities to meet the certification requirements (detailed below). This does not have to be the original designer or manufacturer of the vehicle or ADS.

The corporation will need to apply to be certified as an ADSE before its ADS is first provided to the Australian market, is first installed aftermarket, or is transferred to a new corporation. This will involve providing documents to the automated vehicle in-service regulator to show that the certification requirements are met. An ADSE will be certified for an ADS for the whole of its design life (which is defined as how long the applicant intends to support the ADS).

The policy framework released in 2022 said it would be the first-supply regulator that would assess applicants applying to become an ADSE against corporate obligations set out in the Road Vehicle Standards legislation. Instead, our intention is to place ADSE certification requirements in the AVSL, which will be purpose-built to regulate ADSEs and make the new in-service regulator responsible for assessing the applications. This will ensure that ADSE certification is assessed by the regulator with specialist skills, and that will have an ongoing relationship with ADSEs.

Certification requirements

An entity will need to satisfy a range of requirements to be certified as an ADSE.

Corporate presence in Australia

Corporate presence requirements are intended to ensure the new regulator can effectively perform its functions and use its powers in relation to ADSEs. It is important that ADSEs and their activities are within Australian jurisdiction, so they can be held accountable under Australian law if they fail to meet their obligations under the AVSL. Corporate presence requirements include requirements about the corporate structure of the ADSE, as well as document access and control.

There are different kinds of corporate structures that could be set as a minimum requirement to demonstrate sufficient corporate presence in Australia. The options vary in terms of how much certainty they provide that the corporation's activities are happening in Australian jurisdiction. Those options that provide greater certainty of applying the AVSL are also more limiting of the kinds of business structures a potential ADSE can have. We are seeking feedback on 3 options for the kind of corporate presence that could be required:

- **Option 1** – The corporation must be an Australian registered company with its centre of operations in Australia.
- **Option 2** – The corporation must be an Australian registered company.
- **Option 3** – The corporation must, at minimum, be a foreign company registered to carry on business in Australia.

Consultation questions

1. What are the benefits and drawbacks of different corporate presence requirements?
2. How would a requirement for the corporation to be an Australian registered company impact business models of potential ADSEs?

Other certification requirements

When deciding whether to certify an entity as an ADSE, the new regulator will need to consider whether the entity meets all of the certification requirements, including the following elements.

- **Identification of the ADS** – what components make up the ADS, the vehicles it will be provided in, and the operational design domain and design life (how long the applicant intends to support the ADS)
- **Document access and control** – evidence that the entity will have appropriate document access and control arrangements for the design life of the ADS, noting these may be held by an international parent company
- **Financial capacity** – evidence to show the entity will have the financial capacity, both at the time of certification and in the future, to meet its ongoing responsibilities under the AVSL, including appropriate insurance
- **Data recording and sharing capability** – evidence of the ADSE's ability to record and provide data for a range of purposes relating to road traffic law enforcement, insurance claims, determining liability, and investigation of safety incidents (see the *Automated Driving System Entity certification* and *Information management* papers)
- **Safety management systems** – information about the safety management system for the ADS, including how the ADSE will manage risks, how they will manage ADS compliance with relevant road vehicle standards, and how they will meet all the other duties and obligations (see the *Safety management system for vehicles with an ADS* paper)
- **Law enforcement and emergency services interaction protocol (LEESIP)** – a document that explains how law enforcement officers and emergency services workers can interact safely with the ADS (see the *Law enforcement and emergency services interaction protocol* paper)
- **Additional certification requirements** – as ADS technology and regulation is still developing, the AVSL will include the ability to make a legislative instrument setting out any new certification requirements.

Consultation questions

3. How suitable are the matters we propose to include in an ADSE's safety management system? Should other matters be considered?
4. Are there are other matters that the law enforcement and emergency services interaction protocol should account for?

Aftermarket installation of an ADS

Compared with supplying a new vehicle with an ADS, installing an ADS in a vehicle that is already on the road creates different safety risks. These need to be addressed in the AVSL.

ADSE certification before aftermarket installation

Before an ADS could be installed aftermarket, a corporation would need to be certified as the ADSE for the ADS. All of the general certification requirements and procedures (detailed above and in the *Automated Driving System Entity certification* paper) will apply. There will also be some additional certification requirements: meeting applicable national road vehicle standards, and controlling additional risks.

An ADS that is installed aftermarket will be held to the same safety standard as an ADS that is provided to the market under the *Road Vehicle Standards Act 2018*. The corporation seeking certification as an ADSE would need show evidence that the ADS will comply with applicable national road vehicle standards that are in place when the ADS is installed in the vehicle.

As ADS installation could impact other vehicle systems, the corporation seeking certification would also need to show that installing the ADS will not affect the vehicle's compliance with any other applicable national road vehicle standards that the vehicle was certified against when it was first provided to the Australian market.

The applicant will also need to provide evidence about managing additional safety risks. Specific risks to be addressed would be set out in a legislative instrument so they can more easily be updated as we understand more about the safety risks of aftermarket ADS installations. Categories of risks may include:

- safety risks arising from the variability in condition and performance of the vehicle the ADS is being installed in – controlled through, for example, limitations on vehicle age or mileage
- safety risks arising from the performance of the ADS installation – controlled through procedures such as high-level testing for all vehicles or random sampling of vehicles for detailed testing.

Offence for aftermarket installation of an ADS

The AVSL will seek to prevent unauthorised aftermarket ADS installations. This will help avoid uncontrolled safety risks from ADSs that are not overseen by an appropriately skilled and prepared ADSE.

A person or entity that installs an ADS without being certified as an ADSE would commit an offence. The offence would not apply if a person was installing an ADS under the instruction of a certified ADSE that has been approved by the regulator to install that ADS.

State and territory governments will also introduce an offence for unauthorised aftermarket installation of an ADS. Having offences in both the AVSL and state and territory law will ensure there is a comprehensive prohibition on unauthorised aftermarket installations.

Consultation questions

5. Do the proposed certification procedures for aftermarket installations of an ADS adequately manage safety risks, or should other matters be considered?

Keeping the ADS safe when it is on-road

The introduction of automated vehicles will introduce new parties, including ADSEs and remote operators, whose actions will affect the safety of an ADS and other road users. The new in-service safety law will make sure that parties with the most influence and control over ADS safety can be held responsible for it, across the whole life cycle of an ADS.

Obligations on ADSEs

The new law will make ADSEs accountable for ensuring that the ADS operates safely. This is achieved by assigning ADSEs both a general safety duty and number of prescriptive safety duties on specific matters.

The law will take a flexible, principles-based approach, focusing on whether the regulated parties are achieving the purposes of the regulation, rather than outlining exactly what the the ADSE must do to manage risk. This will allow ADSEs to adopt the most appropriate and effective approaches that align with their own technologies and business models.

For more information, see the *Automated Driving System Entity in-service obligations* paper.

General safety duty

The general safety duty will require the ADSE to ensure, so far as is reasonably practicable, the safe operation of its ADS(s). This duty applies for the whole design life of the ADS. It makes the ADSE accountable for safe operation, and applies to all aspects of ADS operation. This includes when a conditionally automated ADS (level 3) is transitioning control to a human driver.

The standard ‘so far as is reasonably practicable’ recognises that there may be cases where a risk to safety is not eliminated, in spite of the best efforts of the ADSE to control that risk. However, the standard is intended to be a high one. It requires the ADSE to weigh up competing factors, including likelihood, harm, and costs.

An ADSE will be required to include information in its safety management system about how it intends to ensure it meets the general safety duty. The requirements of applicable national road vehicle standards, together with the prescriptive safety duties detailed below, will inform how the ADSE complies with its general safety duty.

Under the AVSL, a person or company with a safety duty will not be able to transfer it to someone else. It will be possible to have more than one safety duty, and more than one person can also hold the same safety duty at the same time.

The regulator is expected to develop guidance for ADSEs on meeting the general safety duty.

Prescriptive safety duties

ADSEs will also have to comply with a series of specific prescriptive safety duties. These give more information about what an ADSE must do to ensure the safety of its ADS. The prescriptive duties do not limit the general safety duty. Like the general safety duty, they identify the outcome the ADSE needs to achieve, but leave the ADSE flexibility in how it achieves this outcome.

The prescriptive duties are expected to require that an ADSE must:

- continue to implement, review and update its safety management system
- continue to implement, review and update its LEESIP

- ensure the ADS continues to operate in compliance with the national road vehicle standards that apply to an ADS, including later or amended ADRs where the amendments are important for safety, so far as is reasonably practicable
- ensure that, when engaged, the ADS operates in compliance with all applicable road traffic laws and all directions by enforcement officers or first responders as if it were a driver, unless strict compliance is not possible due to a road-environment related hazard or dynamic driving task - related emergency
- prevent the operation of an ADS when the ADSE is aware the ADS is unsafe, so far as is reasonably practicable
- ensure, so far as is reasonably practicable, that an ADS does not operate if updates to safety-critical systems have not been successfully installed, and that all system updates and/or upgrades to the ADS are installed safely and do not result in the operation of an unsafe ADS
- provide education and training to all relevant parties, including all users of its ADS(s), that will minimise the safety risks of operating the ADS, so far as is reasonably practicable
- make efforts to ensure the ADS cannot be interfered with by third parties, so far as is reasonably practicable
- comply with any other safety duties detailed in a legislative instrument.

More information about these safety duties is in the *Automated Driving System Entity in-service obligations* paper.

Executive officer due diligence

Executive officers of an ADSE are employees, managers or others who are in a position to personally influence the ADSE's compliance with the law. Executive officers will be expected to exercise due diligence, making reasonable efforts to ensure the ADSE complies with its safety duties.

This would include:

- taking reasonable steps to learn about automated vehicle safety and keep this knowledge up to date
- making sure the right resources and processes are available and used to minimise risks
- making sure the ADSE receives and responds to safety incident reports.

Specific requirements on ADSEs

Where necessary, the principles-based safety duty approach will be supplemented with more specific requirements to address risk in certain scenarios.

Notification obligations

Requirements for ADSEs to report certain information will help the new regulator to understand emerging safety risks, as well as to understand how an ADSE is meeting its duties and obligations under the AVSL. An ADSE will be required to notify the new regulator in the following circumstances:

- when it is aware of any safety issue that may be systemic; that is, that may affect other ADSs
- when the operation of an ADS has been suspended due to non-installation of safety-critical upgrades or updates, or if system failures are detected after upgrades or updates
- if there are any significant safety incidents or traffic law breaches
- if it detects any attempts by others to interfere with an ADS, including its software or hardware
- if it takes any voluntary recall action for safety reasons, including potential for injury, or noncompliance with standards. This obligation will also apply to suppliers of an ADS or part of an ADS.

More information about ADSE reporting and notification requirements is in the *Automated Driving System Entity in-service obligations* paper. More information about recalls is in the *Recalls of automated vehicles* paper.

Modifications

Most ADSs will be modified in some way during their design life. Modifications could range from smaller changes to ADS software for bug fixes or updates, through to significant hardware or software modifications that substantially change the way the ADS operates.

An ADSE (or a person authorised by the ADSE) would be allowed to make a minor modification to an ADS without any additional authorisation from the regulator.

However, more significant modifications could result in safety risks if not managed appropriately. They may also impact the way an ADSE needs to meet its other duties and obligations under the AVSL. Therefore, the AVSL will include requirements that an ADSE must meet before it proceeds with a significant modification, which must be authorised by the regulator.

The proposed threshold for a 'significant' modification is one that changes how or when the ADS performs the dynamic driving task. Some likely examples of significant modifications are: changes to the functionality of the ADS; extension of the design life; installation or removal of ADS components; changes to the level of automation; and expansion of the operational design domain. The specific things that would be considered significant modifications would be identified in a legislative instrument, allowing easier updates as we learn more about ADS operation and technology.

A significant modification could be carried out by the ADSE, or by a modifier that has been authorised by the ADSE. The ADSE will need to have sufficient oversight of any modifications performed.

The regulator will need to know about such modifications to understand whether an ADSE is meeting its duties and obligations under the AVSL, and when investigating safety incidents. An ADSE will be required to keep a log of all in-service ADS modifications, and to provide this to the in-service regulator when requested.

Consultation questions

6. Are there other modifications that should be considered significant? Is there other information an ADSE should provide when seeking authorisation for a significant modification?

Additional measures for repairers, maintainers and modifiers

ADSs will be technically complex. If a person without the right knowledge, skills, guidance or equipment does work on an ADS, this could cause it to operate unsafely. Work on an ADS includes repairs (restoring a damaged or faulty ADS to its original state), maintenance (preserving the original condition), and modifications (changing the ADS from its original specifications).

The 2022 policy framework for the AVSL included measures to manage the potential influence of repairers, maintainers and modifiers over the safety of automated vehicles through:

- the ADSE's safety duties under the AVSL (see the *Automated Driving System Entity in-service obligations* paper)
- third-party interference offences in state and territory legislation and the AVSL (see the *Third-party interference with an ADS* paper)
- existing state and territory regulation of these repairers, maintainers and modifiers, and updated modification standards for non-ADS modifications of automated vehicles.

Repairers, maintainers and modifiers are parties that could have a significant influence on the safety of an ADS. Even if the ADSE does everything that is reasonably practicable to ensure the safety of its ADS, the acts or omissions of a person repairing, maintaining or modifying an ADS may still result in safety risks.

The approach to managing the safety impacts of repairers, maintainers and modifiers has been further developed. We are now seeking feedback on how this is covered in the AVSL, through:

- requiring ADSEs to authorise repairers, maintainers and modifiers
- potentially placing safety duties on repairers, maintainers and modifiers.

More information is in the *Additional measures for repairers, maintainers and modifiers* paper.

Authorising repairers, maintainers and modifiers

The ADSE will be responsible for the safe operation of the ADS. It needs to know who is repairing, maintaining or modifying its ADSs, and to be sure those people have the right expertise. While it is likely that early on, only the ADSEs themselves will do this work, this may change as the market expands.

The 2022 policy framework did not include an express requirement for ADSEs to authorise these parties to work on their ADSs, but an authorisation requirement was implied by the proposed third-party interference offence, which would make it an offence for a person to perform repairs or modifications on the ADS without authorisation by the ADSE.

We are seeking feedback on whether the AVSL should include an express requirement for ADSEs to authorise and oversee repairers, maintainers and modifiers.

Consumers may need to know which repairers, maintainers and modifiers are authorised to work on a particular ADS. ADSEs would be required to record this information in the automated vehicle register (see below for further information, and the *Establishing an automated vehicle register* paper).

Promoting competition for repairs, maintenance and modifications

If we require ADSEs to authorise repairers, maintainers and modifiers, there is a risk that an ADSE might unreasonably restrict which ones they authorise. This would limit competition and reduce choice for consumers. To promote competition, the AVSL could require that an ADSE must not withhold authorisation except for allowable reasons.

Allowable reasons might include insufficient expertise, or not undertaking the training required. The reasons would be set out in a legislative instrument, to make it easier to adjust over time.

Authorised repairers, maintainers and modifiers will need access to information about how to perform different kinds of work on an ADS. The AVSL could also require ADSEs to make this information available on the automated vehicle register. Any person working on an ADS will also need to know which parts of the vehicle form part of the ADS. To make sure this information is easily available, information about the components of the vehicle that are part of the ADS would also be included in the automated vehicle register.

Safety duties for repairers, maintainers and modifiers

We are also considering whether the AVSL should impose safety duties directly on repairers, maintainers and modifiers of an ADS. This would address some potential safety gaps and ensure these parties can be held accountable for the safety impacts of their work.

An ADSE may fulfil its safety duties, taking all reasonably practicable steps to ensure the repairers, maintainers and modifiers it authorises to work on its ADS are suitable. Even then, it is possible that the person may make a mistake or an omission when performing the repair, maintenance or modification, and this could result in a safety risk.

Third-party interference offences would cover people working on an ADS without ADSE or in-service regulator authorisation, but would not address the risk of faulty work by an authorised repairer, maintainer or modifier.

Other laws may provide for certain duties in relation to repairers, maintainer and modifiers (for example, common law negligence in relation to substandard repairs), but there may still be a regulatory gap.

The AVSL could include safety duties for repairers, maintainers and modifiers for work performed on an ADS or ADS components. The new duty would support the ADSE's primary safety duty to ensure the safe operation of its ADS.

The proposed duty could require repairers, maintainers and modifiers to:

- perform repairs, maintenance and modifications with care for their own safety and the safety of others affected by their acts or omissions
- perform the work in accordance with the ADSE's authorisation and following the ADSE's instructions
- otherwise ensure their actions do not adversely affect the safety of the ADS, so far as reasonably practicable.

A shared duties approach is used in other transport safety regulatory frameworks, including the Rail Safety National Law, the Heavy Vehicle National Law (through the chain of responsibility approach), and the Domestic Commercial Vessel National Law. These include safety duties for various parties that have an influence on safety.

More information is in the *Additional measures for repairers, maintainers and modifiers* paper.

Consultation questions

7. What are your views on the proposed additional AVSL measures to manage the safety risks of repairs, maintenance and modifications? In your response, please consider:

   a. Are the risks arising from repairs to an ADS different enough to the risks arising from repairs to a conventional vehicle to require additional regulatory measures?

   b. Is express authorisation of repairers, maintainers and modifiers a suitable approach to manage the risks of unqualified parties working on an ADS?

   c. What is an appropriate balance between the level of control or discretion an ADSE has over who it authorises to work on its ADSs, and the level of responsibility placed on either the ADSE or the repairer, maintainer or modifier doing that work?

   d. Should the AVSL require that an ADSE not unreasonably withhold authorisation, and that it share necessary information? For what reasons should an ADSE reasonably be allowed to withhold authorisation?

   e. Should the AVSL include safety duties for repairers, maintainers and modifiers of ADSs? If so, how suitable are the proposed elements of the safety duty on repairers, maintainers and modifiers?

   f. How may the proposed additional measures for repairs, maintenance and modifications impact business models for both ADSEs and repairers, maintainers and modifiers?

Maintaining ADSE certification

The AVSL will include obligations an ADSE must meet to maintain its certification. These will be intended to ensure an ADSE maintains appropriate structures and capabilities to support ADS safety over the life of the ADS it supports.

The ADSE will be required to notify the regulator of any changes that could impact its certification. These might include changes to corporate structure or key personnel, significant changes to its safety management system or law enforcement and emergency services interaction protocol (LEESIP), and any changes that affect financial capacity or insurance. The ADSE will also be required to notify the regulator when it wants to transfer responsibility for the ADS to a different entity, or if it no longer plans to support an in-service ADS.

Legislative instruments may be used to set out other circumstances in which the ADSE needs to notify the regulator, as well as to set out the detail of processes and timeframes for notifications.

An ADSE will be required to keep and maintain up-to-date records that the regulator may need to access in order to assess whether it continues to meet the certification requirements. Records to be maintained will include the original supporting information from the ADSE's application to be certified, and any updates. The ADSE will need to keep this information for 7 years after its certification expires.

Suspension and cancellation of certification

There may be circumstances where it is appropriate for the regulator to suspend or cancel an ADSE's certification, either temporarily or permanently, due to concerns about the ADSE's ability to manage the safe operation of its ADSs. The regulator may suspend or cancel certification if the ADSE:

- used misleading documents or made false representations in order to be certified
- can no longer demonstrate that it meets the requirements for certification
- breaches its safety duties and obligations under the AVSL, is not taking proactive measures to correct the breach, and is not responding to other enforcement action – so there has been continued and deliberate noncompliance by the ADSE.

When an ADSE's certification has been suspended or cancelled, the ADSE would need to disable the affected ADSs and prevent them from operating.

The processes for suspension or cancellation would include:

- notification in writing, with timeframes and requirements for disabling of the ADS
- opportunity to contest the decision within 28 days, by giving suitable reasons
- if appropriate, the opportunity to correct or improve any issues identified by the regulator.

In situations where the regulator considers there is an imminent or serious risk to safety, we propose that it may issue a written notice to immediately suspend the certification of an ADSE. An immediate suspension would operate for a 6-week period, unless a shorter period is included in the notice. The regulator would not have a power to immediately cancel an ADSE's certification.

Making sure there is always an ADSE

Having a responsible ADSE for every ADS that is in-service is fundamental to the approach to ensuring ADS safety in the proposed AVSL. If the ADSE no longer intends to support an ADS, we need processes for transfer and surrender to minimise safety risks.

For safety reasons it is essential that an ADS is always supported by an ADSE. We recognise that if an ADS has to be disabled due to suspension, cancellation or surrender of certification, this may have negative impacts for consumers.

Transfer of ADS responsibility

An ADSE would need to notify the regulator when it plans to transfer responsibility for its ADS to a new entity. The new entity would need to be certified as an ADSE before responsibility for an existing ADS could be transferred to it, even if the entity is already an ADSE for a different kind of ADS.

Once the new ADSE has taken responsibility for the ADS, the regulator can cancel the old ADSE's certification for that ADS. The regulator would notify the old ADSE in writing of the date the cancellation takes effect; the effect of cancellation; and any transitional requirements the ADSE needs to comply with.

Surrender of certification

The AVSL will include processes for an ADSE to surrender its certification. This is because an ADSE may not be able to find another suitable entity to transfer responsibility for an ADS to, or it may not wish to transfer responsibility.

An ADSE would be required to give a written notice to the regulator, with the reason it will stop supporting its ADSs, the arrangements it has made to disable or decommission the ADSs, and the date this will occur. An ADSE would not be able to surrender its certification until the regulator is satisfied with its arrangements for surrendering certification.

After an ADSE's certification has been cancelled or surrendered, some records must be kept by the former ADSE, including records that were required to be made and kept under the AVSL. Records would need to be kept for 7 years from the day the record was made. This requirement exists to support any criminal or civil claims that may be brought during or after the certification has been cancelled or surrendered. The 7-year period is consistent with record keeping requirements under the Road Vehicle Standards Rules and the *Corporations Act 2001*.

Consultation question

8. Are there measures we should consider to manage the consumer impacts of an ADS being disabled due to suspension, cancellation or surrender of certification?

Information management

The AVSL will introduce data collection, storage and reporting requirements. ADSEs will need to maintain, store and make available a range of information including details about ADS modifications and ADS data to support incident investigations.

It is important that both ADSEs and the new regulator only collect the required data and information, and that it is safely stored and only used where needed. This will help to protect people's privacy, while enabling effective regulation of the use of automated vehicles on Australian roads. More information is in the *Information management requirements* paper.

Information management for ADSEs

When applying for certification, an ADSE will need to show it has appropriate systems to record, secure and share ADS data. This is necessary because an ADSE will need to be able to provide certain information to the regulator, and assist enforcement agencies and insurers to understand whether or when the ADS was engaged, among other things.

Data recording obligations will support the new regulator in its compliance, audit and investigation functions.

The new law will require ADSEs to collect, store and keep updated different types of information, including:

- documents and information provided when applying for certification – to be kept while their certification is in force and for 7 years afterwards (aligned with requirements under RVS legislation)

- information about all repairs, maintenance and modifications to its ADSs (see the related paper for more information)
- records about all safety incidents with their ADSs
- records about any voluntary recall action.

We are proposing that the period for which an ADSE will be required to retain its records and information (aside from the certification material), will be established in a legislative instrument.

Information management for the new regulator

Collecting and storing information and data will support many of the new regulator's functions, including audit, compliance, enforcement and research. The regulator will also need to exchange information with other government agencies.

Officers of the regulator will be required to handle information appropriately, and ensure they do not use it other than for authorised purposes.

Privacy

The *Privacy Act 1988* (Privacy Act) will apply to the new regulator as an Australian Government entity, which will help to protect personal information about individuals that is handled by the new regulator. The AVSL would authorise the regulator to collect and store personal and sensitive information where it is necessary to do its job. The Privacy Act will apply to ADSEs. This will ensure that ADSEs will be required to comply with the Australian Privacy Principles when handling personal and sensitive information

Policy settings for the AVSL have been informed by the recommendations of a Privacy Impact Assessment commissioned by the NTC in 2021, which considered the privacy impacts of developing the AVSL and the differences between a Commonwealth complementary law and state and territory applied law approaches. Following the decision on a Commonwealth law approach, we will undertake a further privacy impact assessment to ensure the settings in the AVSL are fit for purpose.

Consultation questions

9. For how long should ADSEs be required to retain data? Should there be different periods for different types of information?
10. Are there risks associated with information management that are not covered in these proposals?

Remote operation

The NTCs February 2022 paper *The regulatory framework for automated vehicles in Australia* proposed that prescriptive rules to cover remote driving would be able to be made under the AVSL, and that the in-service regulator would regulate remote driving.[10]

In developing the new law, we needed to look more closely at the idea of regulating remote driving through the AVSL. Some types of remote driving may have nothing to do with automated vehicles,

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[10] National Transport Commission (NTC), *The regulatory framework for automated vehicles in Australia*, NTC, Melbourne, 2022, accessed March 2024.

such as remote driving of a vehicle without an ADS. We also wanted to consider the best approach to other forms of remote operation, like remote assistance.

The AVSL is expected to place duties on an ADSE to ensure the safe operation of an ADS. This leaves a policy gap, as the ADS may not be engaged in some forms of remote operation. This means that ensuring safe remote operations may require additional measures beyond what is anticipated for the management of ADS safety.

More information about proposals to manage the risks associated with remote driving is outlined below, and in the *Remote operations of vehicles with an ADS* paper.

What is remote operation?

Remote operation is a broad term that can cover a range of activities, including remote driving, remote ADS assistance, and other activities such as vehicle monitoring and passenger support. Generally (unless the operator is close enough to the vehicle not to need it) the vehicle transmits video footage and other vehicle information to the remote operator, using wireless networks such as mobile phone networks.

In **remote driving**, a person that is not sitting in the driver's seat does all or part of the driving task. That person could be located remotely, directly outside the vehicle, or even in another position inside the vehicle. Remote driving can occur in a vehicle that does not have an ADS.

Remote ADS assistance means that a person located outside the vehicle provides the ADS with advice to respond to an unexpected situation, but the ADS still performs the driving task. Remote assistance may be used to help a driverless ADS when it comes across an unexpected situation that the ADS cannot manage.

Remote monitoring can include oversight of the vehicle's condition, occupants' behaviour and cargo status. It can also involve providing assistance to users, where a remote operator (when requested) provides information or advice to vehicle passengers or other road users nearby.

Types of remote operation to be covered in the AVSL

We propose that measures in the AVSL would be limited to remote operation used to:

- allow a trip to continue when an ADS encounters a situation it cannot manage
- otherwise ensure the safe operation of the ADS, such as moving a vehicle off the road after a crash.

Other forms of remote driving – that is, those that are not connected with the safe and efficient operation of an ADS – would not be regulated by the AVSL. This includes, for example remote driving of a vehicle that:

- does not have an ADS
- has an ADS but is remotely operated when outside of its geographical operational design domain, for instance, to transit the vehicle between operational design domains.

Forms of remote operation that perform information, support or monitoring functions do not need additional measures in the AVSL. Using remote operation in these ways may contribute to:

- meeting other AVSL requirements, such as the safety duties and law enforcement and emergency services protocol
- meeting the requirements of other regulatory frameworks, such as state and territory passenger transport regulations.

Any new AVSL measures would not make it compulsory for an ADSE to use remote driving or remote ADS assistance as part of its operations. The proposed measures would only apply if the ADSE chose to use remote driving and remote ADS assistance to ensure the safe operation of its ADS.

Safety risks to be managed

Remote operation brings challenges and risks that can impact the safe operation of an ADS. The safety risks that may need to be managed for the ongoing safety of remote operation while the vehicle is in-service include:

- ensuring there is a secure and stable communications connection between the vehicle and the remote operator, with appropriate bandwidth, latency and reliability
- cybersecurity management, including secure transmission and receipt of data; ensuring the security of remote operation consoles and devices; and protecting the entire system from cyber attacks
- managing the impacts of other activities or threats such as breaches of physical security, unscheduled electricity disruption, or physical impacts to supporting infrastructure from fires, storms and other natural disasters
- ensuring that remote operators have the necessary physical and mental capabilities when on duty, are suitably skilled, have appropriate training and qualifications, have access to appropriate and well-maintained workstations, and are not impaired by alcohol, drugs or fatigue
- ensuring that remote operation is performed in accordance with the applicable road traffic laws.

Proposed measures

We are seeking feedback on the following measures, which could be included in the AVSL to manage the safety of remote operations.

A duty on the ADSE to ensure the safety of remote operation

The AVSL could include a prescriptive duty that an ADSE must ensure, so far as is reasonably practicable, the safety of remote operation of a vehicle, where remote operation is performed in connection with its ADSs.

For the kinds of remote operation that would be covered by the AVSL, ADS operation and remote operation are tightly linked, which means the ADSE is likely to be well placed to manage the safety of remote operation of its AVs. Including a duty in the AVSL would help to clarify that an ADSE should ensure the safety of remote operation, even if it has contracted some parts of remote operation to another company.

It is proposed that meeting this duty would require:

- the ADSE having sufficient oversight of remote operations performed in relation to its ADSs
- that remote operation is provided in a safe way, including by appropriately skilled and trained operators
- that remote operation occurs in accordance with road traffic laws, unless strict compliance is not possible due to a hazard in the road environment or an emergency related to the dynamic driving task.

Alternative approach – including a new entity for remote operation

Instead of making the ADSE responsible for remote operation, the law could provide for a separate entity to take responsibility for ensuring the safety of remote operation. That entity would be regulated and subject to duties and obligations under the AVSL. An ADSE would still be able to choose to also be the entity responsible for remote operation, which would lead to a more streamlined certification process.

The certification process for remote operation would be similar to that for ADSEs. The entity would be required to demonstrate that it has a corporate presence in Australia, suitable financial capacity, and data recording and sharing capabilities.

As part of certification, the entity would also need to:

- identify the ADSs that it is providing remote operations for
- demonstrate it has ongoing arrangements with the ADSE to help it meet its duties and obligations under the AVSL
- provide a safety management system for remote operations and demonstrate how this interacts with the ADSE's safety management system
- develop a LEESIP in conjunction with the ADSE.

Providing for a separate entity to have responsibility for remote operation may allow greater flexibility in business models for ADS deployment. However, it would also increase the complexity of the automated vehicle regulatory framework. If this is not justified in the early years of deployment, it may be worth considering as part of a later review.

The proposals for either an ADSE or a new entity to have primary safety responsibility are focused on a clear allocation of responsibilities. Both options use a certification process to determine whether an organisation is suitable to take responsibility for the safety of remote operations. There may be other regulatory options to allocate responsibility for remote driving, and we welcome feedback identifying such options.

Safety duties for remote operators

There is a risk that an ADSE (or in the case of the alternative approach, a remote driving entity) could do everything that is reasonably practicable to ensure the safe provision of remote operation, but a remote operator may still perform their role poorly or without sufficient care, resulting in poor safety outcomes.

To address this, the AVSL could include a supporting safety duty requiring remote operators to:

- perform remote operation with care for their own safety and the safety of others affected by their acts or omissions
- comply with the reasonable directions of the ADSE.

Requirement for the location of remote operation

The AVSL could require that any remote operation of automated vehicles must be performed from within Australia. There are several reasons to consider this:

- Remote operation relies on a secure and stable connection with the vehicle. There is a greater chance of variable performance where remote operation is performed at greater distance, and using offshore infrastructure.
- As well as being appropriately skilled and licensed, remote operators will need to understand Australian driving rules and norms, ideally by having experience being licensed and driving in Australia.
- Inspection and enforcement of an entity's remote operations and remote operators will require law enforcement agencies and the regulator to use powers provided under Australian legislation. These powers cannot always be used in all circumstances in other countries, and regulators may need to rely on international agreements to enable any monitoring, investigation and enforcement outside of Australia.

Accounting for remote operation in other elements of the AVSL

To support the proposed new duties and requirements, we also need to incorporate remote operation into other areas of the AVSL:

- The way an ADSE meets other prescriptive safety duties may need to account for remote operations.
- The safety management system will need to provide information about the processes, policies and systems ensuring the safe provision of remote operation.

- LEESIP requirements should require the ADSE to provide information about how enforcement officers or emergency services personnel can interact with a remote operator at the roadside.
- Data recording requirements could be expanded to require the ADSE to record data related to the provision of remote operation services, to help the in-service regulator assess if the services are being provided in a safe manner as well as determine responsibility in the event of a safety incident.
- Existing reporting requirements for ADSEs in relation to an ADS should be expanded to include remote operations where applicable, such as systemic safety issues and breaches of road traffic laws.

Consultation questions

11. What are your views on the proposed additional AVSL measures to manage the safety risks of remote operation of a vehicle with an ADS? In your response, please consider:

    a. How are companies using or planning to use remote operations as part of ADS deployment, and what business models are likely to be used? Which parties have an influence on the safety of remote operation?

    b. Do you agree with the proposed scope of remote operations to be managed under the AVSL, and if not, which forms of remote operation do you consider should be managed under the AVSL?

    c. Should an ADSE have responsibility for the safety remote operation performed to support its ADS? Should we consider other models for allocation of safety responsibility for remote operation?

    d. What duties should be placed on an ADSE or on other entities for remote operations?

    e. Should remote operators be subject to a safety duty, or any other requirements, under the AVSL?

    f. What specific skills or proficiencies should be required of remote operators?

    g. Should the AVSL require that remote operations centres be located in Australia? What are the advantages and disadvantages of this?

Consumer information

Lack of consumer understanding of automated vehicles and how they differ from conventional vehicles could have consumer and safety impacts. More information is in the *Consumer information requirements for automated vehicles* paper. Important differences include:

- an ADS will need to be disabled at the end of its design life (and the vehicle may or may not be usable afterwards, depending on the vehicle type)
- an ADS will not operate outside of its operational design domain
- the role and responsibilities of humans in the vehicle vary at different levels of automation
- there are limitations on who can repair, maintain or modify an ADS
- an ADS may need to be disabled if there is a serious safety issue, or if there is no longer an ADSE to support it
- the operational design domain could be reduced if there is a safety issue.

Some measures that we propose to include in the AVSL will help to address the risk of consumers not knowing or understanding these conditions:

- A publicly searchable automated vehicle register will provide information for each ADS about design life (the length of time an ADSE has said it will support the ADS), operational design domain, and authorised repairers, maintainers and modifiers. More information is in the *Establishing an automated vehicle register* paper.
- The new regulator will have a community education role, helping to explain things like design life, operational design domain and the safety responsibilities of ADSEs.
- ADSEs will be required to provide education and training to owners and users of their ADSs, so they can use them safely.

However, some consumer impacts will not be addressed by these measures, and we are seeking feedback on some additional proposals.

Technical information requirements

When a person is deciding whether to buy or lease an automated vehicle or perhaps to subscribe to an shared car service, they may not know what kind of information to seek out and use to inform their decision-making. Initially, it may not be practical to look up a specific vehicle on the automated vehicle register.

The AVSL could require an ADSE to include technical information – such as design life, operational design domain, and the level of automation and what this means for the user – whenever it provides general information to consumers about its ADS or automated vehicles. This would ensure consumers are well informed about key aspects of ADS operation, and could help them to make informed decisions about which vehicles or services suit their needs.

Preventing misleading marketing

Vehicle advertising and promotion could also cause consumer issues, and potentially safety issues, particularly if a vehicle's capabilities are misrepresented. It will be important for consumers to understand the capabilities of specific vehicles and how they can be used, particularly if the vehicle has (or is claimed to have) automated features.

Vehicle features with different levels of automation are sold with a variety of brand-specific names, which may make it difficult to understand and compare functionality. This will create safety risks such as consumer misunderstanding of user obligations and/or liability when travelling in automated vehicles; inappropriate or dangerous user behaviour; and crashes, injury or death.

Some Advanced Driving Assistance System (ADAS) features represent level 2 automation, such as features that combine lane keeping assistance and adaptive cruise control. Without a clear understanding of system capabilities, it can be difficult for a user to distinguish between a level 2 system that can control steering, acceleration and braking on a sustained basis, and a level 3 ADS that can perform the entire driving task some of the time. When using level 2 automation features, the driver would still need to monitor the road. Once the AVSL is in force, when a level 3 ADS is operating, such monitoring would not be required because an ADSE would be responsible for the safe operation of the vehicle. These differences are explained in more detail in the *What is an automated vehicle* paper.

Risks arising from consumer misunderstanding of vehicle capability could be partly addressed by introducing restrictions on the way vehicles could be marketed and advertised. These offences would be intended to apply broadly to any person undertaking marketing of a vehicle. The AVSL could include offences for misleading marketing of vehicles in relation to automation, including:

- misrepresenting a vehicle's capability
- using restricted terms to describe a vehicle that does not have an ADS, such as 'driverless', 'automated vehicle', and 'self-driving'.

The requirements would be similar to those the United Kingdom has proposed to regulate misleading marketing of vehicles as part of its Automated Vehicle Bill.

Consultation questions

12. Should an ADSE be required to ensure certain technical information is provided to consumers to inform purchasing decisions?
13. Should the AVSL include offences in relation to misrepresenting vehicle capabilities?
14. Are other measures needed to address consumer risks?

Establishing a regulator

The AVSL will establish a new in-service safety regulator to oversee the ways ADSEs and other parties meet their AVSL obligations.

Functions of the new regulator

The primary tasks of the new regulator will be to facilitate the safe operation of automated vehicles, and to promote the development of safety cultures and safety management practices in ADSEs.

Keeping safety as its primary consideration, the new regulator will also be expected to consider:

- ensuring alignment with international standards and conventions
- facilitating access to the benefits of automated vehicle technology
- the potential economic impact of its regulation on individuals, businesses and the community.

The AVSL will empower the new regulator to perform a range of functions:

- **Certification** – administering, reviewing and auditing the certification of ADSEs.
- **Authorisation** – allowing an ADSE to make significant modifications to its ADS.
- **Auditing** – checking that ADSEs and their executive officers are meeting their duties and obligations.
- **Monitoring, investigation and enforcement** – checking compliance with the AVSL through a range of activities, both routinely and when there are suspected contraventions; gathering information and evidence; and taking enforcement action.
- **Safety investigation and assessment** – investigating, assessing and taking action in response to automated vehicle safety concerns or incidents. These may come to the regulator's attention from a range of sources, and may not always be caused by a failure to comply with the AVSL.
- **Guidance** – creating and publishing guidance on automated vehicle safety. Much of this guidance will support ADSEs (for example, explaining safety duties; and developing and maintaining the safety management system and LEESIP). Guidance material will be informal and not enforceable under the AVSL.
- **Education** – providing advice, information and education to:
  - ADSEs and other regulated parties about their duties and obligations
  - government agencies and the public about the regulator's activities and the AVSL
  - the broader community about automated vehicle safety, including potential consumer impacts of regulating automated vehicles.
- **Research** – conducting and evaluating research; and collecting, analysing and sharing information. This may cover automated vehicle safety and use, safety incidents and crashes, road management issues and international regulatory developments.
- **Cooperation and consultation** – working with government agencies and other stakeholders to achieve the goals of the AVSL, and working with law enforcement agencies for a consistent national approach.

- **Automated vehicle register management** – keeping a public, searchable national register of automated vehicles.
- **Other general functions** – including administrative services and advising the Australian Government minister with responsibility for transport on how the AVSL is working.

Powers of the new regulator

The safety framework promotes the development of a safety culture within ADSEs. The certification requirements, safety duties and other obligations require the ADSE to identify and manage safety risks before something goes wrong.

However, ADSEs may at times fail to manage the safe operation of an ADS. The regulator will need powers to encourage compliance with the AVSL, investigate when something goes wrong, and if necessary, enforce the law and/or require ADSEs to fix problems.

The new regulator will have powers to take action encouraging and facilitating compliance. The following powers will apply whether or not the regulator suspects or becomes aware of a contravention of the AVSL:

- monitoring
- enforceable undertakings.

Other powers will enable the regulator to take action when it suspects or knows the ADSE has broken the law, or may do so:

- investigation
- embargo notices
- forfeiture (under the *Regulatory Powers (Standard Provisions) Act 2014*)
- formal warnings
- improvement notices
- infringement notices
- injunctions.

More information is in the Regulator powers and functions paper.

Compulsory recalls power

The AVSL will also include a power for compulsory recall of an ADS or a component of an ADS. This would be exercised by the minister, not directly by the regulator. More information is in the Recalls of automated vehicles paper.

How people will interact with an ADS

Most existing systems, such as registration and insurance, will apply to automated vehicles in much the same way as they do to conventional vehicles. However, people interacting with and using automated vehicles will have some additional obligations and expectations that they will need to know about.

Owning a vehicle with an ADS

People who own and operate automated vehicles for use on public roads will be required to register them, obtain compulsory motor accident injury insurance, and ensure the vehicle is roadworthy according to state and territory requirements, the same as for conventional vehicles. This applies whether the vehicles are for personal or commercial use.

Under the national framework, registration and roadworthiness assessment for automated vehicles remain state and territory government responsibilities. Where necessary, these laws will be amended so that:

- vehicle owners must not allow an automated vehicle to operate on the road if it is unregistered or does not comply with vehicle standards.
- a person will commit an offence if they allow an ADS to be engaged, used or permitted to be used to drive on the road if they are aware, or must have realised that the ADS is unsafe

Vehicle owners will continue to be responsible for any repairs, modifications and maintenance to non-ADS components. A key difference in owning an automated vehicle will be that the ADSE will have responsibility for the safe operation of the ADS, which may include controlling how and by whom repairs, maintenance and modifications to the ADS are done. For more information see the *Additional measures for repairers, maintainers and modifiers* paper.

In each state and territory, there will be offences for interfering with an ADS (third-party interference) and for unauthorised installation of an ADS (aftermarket installation). This will cover unapproved actions that introduce or enable ADS capability in an in-service vehicle, and will include using or reactivating an ADS that has been deactivated by the ADSE or the regulator. This may be because it is unsafe, or because there is no ADSE to support it. Offences for an ADSE will be dealt with under the AVSL and this offence will not apply to an ADSE.

Obligations about operating, using, or driving an unregistered vehicle will not apply to an ADS. The ADSE will not have any obligations regarding vehicle registration unless it is the owner of the vehicle.

Using a vehicle with an ADS

Occupants and users of automated vehicles are expected to have a range of responsibilities, some of which will vary depending on the design and capabilities of the vehicle. These are outlined in detail in the *Human user or occupant obligations when using a vehicle with an ADS* paper.

Fallback-ready user obligations

In a vehicle with a conditionally automated ADS (level 3) feature, a fallback-ready user will be required. This is a person who is licensed and able to operate the vehicle when the ADS requests (referred to as a transition demand). A fallback-ready user will not be required to proactively monitor the driving environment while an ADS is in control. They may voluntarily take over manual control.

Infrastructure and transport ministers have agreed on certain obligations for fallback-ready users, which will be included in state and territory road transport laws. These obligations include that they:

- must respond to an ADS transition demand as soon as they can do so safely
- must hold an appropriate driver licence for the class of vehicle

- must remain seated in the driving position when the ADS is engaged
- will be subject to the same drug, alcohol and fatigue laws as drivers of conventional vehicles,
- must not perform an activity that impedes them from being able to take control of the vehicle in response to a transition demand.

State and territory registration and roadworthiness laws will be amended so that fallback ready users must not allow an automated vehicle to operate on the road if it is unregistered or does not comply with vehicle standards. These rules will not apply to passengers.

If necessary, state and territory governments may decide to change driving training and education requirements to ensure drivers are competent to safely operate conditionally automated vehicles – in particular, to operate as a fallback-ready user. State and territory governments have previously considered the implications of lower levels of automation in vehicles. In 2022, Austroads published a guideline to help driver licensing authorities respond to the increasing presence of ADAS features in vehicles. Austroads will regularly review and update the guideline as the technology develops.

More information is in the *Human user or occupant obligations when using a vehicle with an ADS* paper.

Non-driving obligations on fallback ready users

The road rules in each state and territory also impose a number of obligations on drivers that are separate to the dynamic driving task. Fallback-ready users in vehicles with a conditionally automated (level 3) ADS feature will also have a number of nondriving obligations, some from the current road rules and others specific to use of a conditionally automated vehicle. These include:

- assisting or exchanging information with other people if they are involved in a car crash
- wearing a seatbelt
- ensuring passengers wear a seatbelt or a proper child restraint
- removing fallen things from the road
- ensuring lights are not used to dazzle other road users (where the light function does not form part of the normal vehicle design and is not under ADS control)
- ensuring horns and other warning devices are not used unless they are necessary to warn other road users
- taking reasonable steps to prevent people from travelling in particular parts of the vehicle that are not safe for passengers to use
- not performing any activity that impedes them from being ready and able to take over control when a transition demand is issued by the ADS
- being in a position to have a clear view of the road, and traffic, ahead, behind, and to each side of them
- not having a person or animal in their lap
- in vehicles over 12 tonnes, using portable warning triangles
- following the directions of a police officer or authorised person
- not using a vehicle if it is unregistered or unroadworthy

Passengers in a conditionally automated vehicle

In addition to agreeing obligations for fallback-ready users, infrastructure and transport ministers have agreed to requirements that will apply to other parties in relation to conditionally automated (level 3) ADS features.

Automated vehicle passengers will have the same obligations as passengers in conventional vehicles, along with some additional obligations.

A passenger in an automated vehicle while Level 3 features are engaged must:

- not travel in the vehicle unless a fallback-ready user is in the driver's seat
- not interfere with the ADS, or the fallback-ready user's obligations to respond to ADS requests or take control of the vehicle.

Obligations on drivers and other road users

Dangerous driving laws that make it an offence for human drivers to drive in a manner which deliberately creates a serious safety risk for the public, or another person, will also protect automated vehicles when in operation on the road.

Existing road rules placed on drivers, pedestrians and bicycle riders about causing a traffic hazard will be updated so these road users must not illegally obstruct the path of automated vehicles as well as other road users.

Human user obligations in highly or fully automated vehicles

At higher levels of automation, new obligations and modifications to existing rules are needed to ensure road safety and clarify nondriving task responsibilities for automated vehicle occupants and other road users.

There are potential gaps in responsibility in vehicles with an ADS at higher levels of automation (levels 4 and 5). Addressing these gaps may require trade-offs between competing objectives including road safety, personal safety, accessibility and mobility, and traffic efficiency.

The rules and obligations may vary with different vehicle control and seating configurations: vehicles with an ADS may have manual driving controls that are accessible, or not accessible; or they may not have manual driving controls at all.

A key difference at higher levels of driving automation is that a person will not be called on to take over driving for a safety-critical reason – this is in contrast to the role of the fallback-ready user using an ADS with a conditionally automated feature (level 3). This is because an ADS capable of level 4 or higher driving automation will be able to bring the vehicle to a minimal risk condition. A minimal risk condition is a stable, stopped condition, for example, pulling over out of an active lane of traffic to stop on a shoulder.

However, there are other safety risks that need to be managed during a journey beyond the performance of the dynamic driving task, such as how non-driving obligations will be managed and how journeys can be safely continued when the vehicle exits the ADS' operational design domain.

The risks to be managed may differ depending on the kind of capability the ADS has. Some ADSs may be able to complete an entire trip under ADS control within a geofenced area. Other ADSs may only operate for the part of a trip that is within its operational design domain, for example if the feature can only be used on a motorway. These kinds of ADS features could also be designed to alert a passenger that the operational design domain limit is approaching so they can choose to take over driving. This would mean a person would have to drive the car to complete the journey, or otherwise the ADS would bring the vehicle to a minimal risk condition. This may cause inconvenience, delay completion of a journey, contribute to congestion, or result in the vehicle being stopped in a roadside position that is unexpected, and potentially unsafe.

Presence of a person in the driving seat position if manual controls are accessible

There are a number of possible vehicle control and seating configurations at higher levels of driving automation:

- many vehicles with a highly automated ADS feature could have the same kind of manual driving controls that are currently in conventional vehicles
- vehicles such as taxis could have manual driving controls that are or can be made physically inaccessible

- there may be new vehicle designs without any manual driving controls and potentially with new seating configurations.

If manual controls are accessible, we may need to consider the risks of someone voluntarily taking over driving control from the ADS, in particular if they can shift mid-journey into a seating position that can access the controls (although this would be illegal under current seatbelt laws). One option we are considering is to require a person who is capable of driving (licensed, sober, and so on) to sit in the driving position.

This approach would mean there is a person available to take over driving if the ADS reaches the limits of its operational design domain. This would have traffic efficiency benefits: otherwise the ADS would perform a manoeuvre to come to a safe stop. The person could also have the nondriving obligations listed above.

A disadvantage would be limiting potential mobility and productivity benefits. The extent of this limitation would depend on the availability of vehicles with no accessible manual driving controls.

If manual controls are not accessible (for example, if they are locked out or behind a physical barrier), and so there is no risk of takeover, there would not be a requirement to have a person in the driving position.

Licensing obligations

Unlike a level 3 ADS feature, a level 4 or 5 feature will not issue a transition demand to a human. An ADS at this level may be designed to issue an alert as it reaches the limit of its operational design domain to allow a person to take over driving and continue the journey. We are considering the merits of requiring a licensed person to be sitting in the driving position.

This would enable the person to begin driving if the ADS issues an alert advising it is reaching its operational design domain limit (if the ADS is not able to complete the entire journey). This would address the risk of an unlicensed person being tempted to start driving, and ensure that someone over the age of 17 is in the vehicle and able to take responsibility for other nondriving obligations (see below).

However, requiring the presence of a licensed person could significantly impact mobility and accessibility outcomes, as it would limit how unlicensed people could use automated vehicles. Another option could be to allow an unlicensed person to travel in the vehicle alone as long as they do not sit in the driver's seat position.

If manual controls are not accessible and cannot be activated by a user, it is proposed licensing requirements would not apply.

Drug and alcohol restrictions

There is a risk that a person who has used drugs or alcohol may choose to take control of the vehicle from the ADS, or may be prompted to do so by the ADS issuing an alert that has reached its operational design domain limit. This could also leave a person stranded in the vehicle if the ADS cannot complete the journey.

One option is to prohibit people who do not comply with drink- and drug-driving laws from travelling in the vehicle unless there is a person in the driving position who complies with drug and alcohol restrictions.

This could potentially impact uptake of vehicles with these features, resulting in continued reliance on conventional vehicles – where drink- and drug-driving remain a significant behavioural factor in serious road crashes. An option could be to allow a noncompliant person to travel in the vehicle as long as they do not sit in the driver's seat position.

If manual controls are not accessible and cannot be activated by a user, it is proposed drug and alcohol requirements would not apply.

Having a person capable of driving the vehicle

In the first deployments of automated vehicles with level 4 ADS features, the operational design domain may be limited and a person may need to perform the driving task for portions of the journey, if they expect to travel beyond the vehicle's operational design domain.

One option is to consider whether we should require a *person capable of driving:* that is, a person who is sitting in the driving position and is qualified to drive.

Existing laws could be relied on to deter a person from commencing driving if they do not meet licensing, drug and alcohol requirements. However requiring a *person capable of driving* to sit in the driving seat position would place these obligations on the person while the ADS is engaged to ensure they have the fundamental skills and capacity to drive if the ADS reaches the limits of its operational design domain.

Some expected business use cases for automated vehicles include commercial passenger transport and freight services, which may travel without a person capable of driving. There are also mechanisms that may help manage emerging risks, including the use of remote operation and customer service assistants.

Additionally, as some vehicles may not have any manual driving controls, some non-driving obligations may need to be assigned to users inside the vehicle.

Regulating secondary activities

One of the main expected benefits from higher levels of automation is for people to be able to engage in 'secondary activities' when they might have otherwise been driving, with productivity and social benefits. Secondary activities could include:

- working (checking emails, working on a laptop, talking on a mobile phone)
- resting (sleeping or sitting still and not focusing or concentrating on the journey)
- consuming entertainment or social media on a portable device or on the vehicle's human–machine interface or screen
- performing personal productivity tasks on portable devices or the vehicle's human–machine interface or screen (such as paying bills)
- actively interacting with other passengers (for example, facing and engaging with people in the rear passenger seats or cross-facing seats, depending on the configuration or seating layout)
- reading books, newspapers, or magazines.

Although a person in the driving position will not be called upon to take over control for a safety-critical reason, it still may be appropriate to regulate secondary activities, because:

- An ADS may issue an alert to a passenger that they could take over driving, and an ineffective takeover could disrupt traffic.
- A person capable of driving may need to be in a position to discharge non-dynamic driving task obligations.
- A user may choose to take over control in response to an alert from the ADS. The transition needs to be undertaken safely and effectively.

One option is to permit some forms of secondary activities for the person sitting in the driving position and prohibit others, based on the risk to a safe transition of control. This may promote safety, but would also reduce available time and freedom for the person in the driving position. More evidence would be needed about the risk of various secondary activities.

Another option is to prohibit any activity that would impede an effective takeover, based on instructions provided by the ADSE to ADS users. A further option is to not apply any restrictions on secondary activities.

Non-driving obligations

There are some road rule obligations imposed on human drivers that are **not** part of the dynamic driving task. These include:

- exchanging information with other people if involved in a crash
- rendering assistance
- ensuring they and their passengers, including children, wear a seatbelt or proper restraint.

Consideration should be given to the circumstances when it may be appropriate for non-driving obligations tol be reassigned to a person in the vehicle when a highly or fully automated feature is engaged. Where a vehicle does not have a person able to assume these obligations (including when there are no occupants, no manual driving controls or no driver's seat – only passenger seats) a range of other parties may be considered. These include:

- the ADSE, where there are relevant obligations proposed as part of the AVSL
- under certain business models (for instance, taxi fleets or other commercial services) an identifiable operator, remote operator, or service provider
- the registered owner of the vehicle
- one or more passengers travelling in the vehicle, if reasonable to do so
- a new category of human user, such as a supervisor, steward, or lead passenger.

We have identified two potential categories of non-driving rules:

- rules that can be performed partially by the ADS when it is engaged, and therefore should be partially assigned to the ADSE
- rules for which it is not practical or possible for an ADSE to assume responsibility, and therefore the obligation should be reassigned to another party, such as a human occupant.

For more information, see the *Human user or occupant obligations when using a vehicle with an ADS* paper.

Consultation questions

15. What are your views on how we should approach laws for human user obligations in vehicles with highly and fully driving features? In your response, please consider:

    a. Which types of vehicle control and seating configurations are being considered or developed by industry for vehicles with highly or fully automated driving features? Can vehicle control/seating design help to determine the obligations for users of these vehicles?

    b. In vehicles with higher levels of driving automation that are configured with manual driving controls, should there be specific requirements about seating position when the ADS is engaged? Do you support any of the options identified, or propose any other options?

    c. How should licensing requirements apply to users of vehicles with highly and fully automated driving features with accessible manual controls? Do you support any of the options identified, a combination of options, or propose any other options?

    d. How should drug and alcohol restrictions apply to users of vehicles with highly and fully automated driving features? Do you support any of the options identified, a combination of options, or propose any other options?

    e. Do you think there should be a requirement to always have a person capable of driving travelling in a vehicle with highly or fully automated features? Why or why not?

    f. Do you support permitting a person seated in the driving position in vehicles with highly or fully automated driving features to undertake secondary activities? Do you support any of the options identified, a combination of options, or propose any other options?

g. How should non-dynamic driving task obligations be assigned or shared in vehicles with highly and fully automated driving features? Do you agree with our analysis?

Law enforcement and first responders

Law enforcement powers

In June 2023, infrastructure and transport ministers agreed to a set of policy positions informing a nationally consistent approach to on-road law enforcement for AVs. These cover how enforcement officers will be able to interact with automated vehicles and access automated vehicle data, and how law enforcement agencies will interact with the new regulator.

At present, there are powers in state and territory laws that enable enforcement officers to direct road traffic. These support a range of other powers that are essential to maintain road safety.

These powers refer to the 'driver' of a vehicle, and 'driver' is defined as a natural person or a corporation. The laws will need to be changed to give police and other enforcement officers powers to direct a person (such as the driver, passenger or fallback-ready user), and an ADS.

Other agreed positions include:

- states and territories will introduce a new power enabling enforcement officers to direct an ADSE, as the entity responsible for the operation of the ADS, to take a particular course of action with respect to an ADS[11]
- states and territories will introduce new powers allowing enforcement officers to disable an automated vehicle at the roadside, as well as to remove it after it has been disabled[12]
- states and territories will extend existing police powers to perform random breath or drug tests on any human users of an automated vehicle who are required to comply with drug and alcohol restrictions
- states and territories will extend existing police powers to request that a human user of an automated vehicle produce their driver's licence for inspection and state their name and address, where they are obliged to hold a driver's licence
- state and territory governments will adopt new powers for enforcement agencies to access specified ADS operational data, while managing privacy requirements[13]
- new powers will be introduced to allow enforcement officers and agencies to share relevant data and information with the new regulator.

The NTC's paper *On-road enforcement for automated vehicles* provides more information on potential future on-road enforcement requirements.[14] The NTC and state and territory governments will continue to work together to implement these policy positions.

The LEESIP required for each ADS will explain how enforcement officers and emergency services workers can interact safely with the ADS. The LEESIP will cover things like how the ADS will recognise people it should respond to, and how police and others would intercept or direct it. More information is in the *Law enforcement and emergency services interaction protocol* paper.

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[11] This power is intended to be exercised in a roadside enforcement context, for example prohibiting a specific vehicle from being moved while a safety issue is being investigated.

[12] To 'disable' means to disengage the ADS from controlling the vehicle. This power will scoped to apply in circumstances where the vehicle is creating a danger or an obstruction to traffic.

[13] These new powers will contain a definition of ADS operational data which will be aligned with AVSL and RVSA requirements, as well as the purposes data can be collected for.

[14] National Transport Commission (NTC), *On-road enforcement for automated vehicles*, NTC, Melbourne, 2023, accessed March 2024.

How will traffic laws be enforced?

We are proposing that the safety duties in the AVSL require an ADSE to ensure its ADS operates in ways consistent with the applicable road traffic laws. If an ADS breaks a traffic law, both the ADSE and regulator will be notified by police or state and territory road authorities.

If an ADS breaks a road rule, this could be a one-off incident, but it could also indicate a systemic safety issue. The new regulator will be responsible for taking enforcement action in response to breaches of the safety duties. The regulator will be able to use a tailored suite of monitoring, compliance and enforcement actions to address noncompliance by an ADSE, as well as any emerging systemic safety issues. The infringements that apply to human drivers may not be a suitable deterrent for an ADSE, and may be insufficient to prompt ADSEs to identify and resolve systemic safety issues.

Third-party interference offences

ADSs are complex systems, and their safety could be compromised through intentional or unintentional actions, such as:

- deliberate engagement of an ADS that has been disabled by an ADSE
- an unauthorised person performing repairs, maintenance or modifications on an ADS
- action intended to impair ADS operation or impact ADS safety (for example, hacking ADS software)
- maintenance or repair of non-ADS components affecting ADS safety.

The 2022 policy framework stated that third-party interference offences would be introduced in state and territory law. We are proposing that the AVSL will also include measures designed to prevent people from performing unauthorised works on an ADS or taking other actions that would compromise ADS safety.

Third-party interference offences are likely to vary in size and scope. Having third-party interference offence provisions in both the AVSL and in state and territory laws will provide flexibility and enable an appropriate enforcement response. More information is in the *Third-party interference with an ADS* paper.

Consultation questions

16. Do you support third-party interference offences be included in both the AVSL and state and territory law?
17. Do you support the proposed automated vehicle regulatory framework as a whole, and are there any barriers to its implementation?

Interactions with existing regulation

The automated vehicle in-service safety framework will interact with other regulators and legislation. These frameworks will need to be reviewed over the coming years and, in some cases, adjusted to accommodate the use of automated vehicles.

State and territory on-road legislation

Under state and territory laws, state and territory road transport regulators will retain responsibility for an automated vehicle's access to the road network, vehicle registration, road management, regulation of human drivers and other road users as well as human driver licensing. States and territories will also regulate human users of automated vehicles, including fallback-ready users, and third parties interfering with an automated vehicle.

States and territories will also maintain responsibility for roadworthy inspections of automated vehicles as well as the regulation of modifications and repairs to the non-ADS parts of the vehicle.

The introduction of ADSs to vehicles mean that standards for roadworthiness assessment will need to be updated to support state and territory management of automated vehicle roadworthiness. The technical standards and assessment procedures will be updated so that:

- where appropriate, roadworthiness assessments of automated vehicles will include a basic evaluation of the ADS as well as the usual assessments included in these inspections
- vehicle modification standards will identify allowable modifications to the non-ADS components in an automated vehicle, provide suitable directions and requirements for making these types of modifications, and detail how risks to the ADS must be managed, including triggers for certification
- written-off light and heavy vehicle repair and inspection criteria are updated to establish allowable ADS repairs in a written-off automated vehicle and certification requirements.

The NTC will work with all jurisdictions to update the Australian Light Vehicles Standards Rules and Heavy Vehicle (Vehicle Standards) National Regulation to ensure continued compliance with all Australian Design Rules applicable to an ADS. The light and heavy vehicle standards will not impose additional requirements for an ADS beyond what is specified in the applicable national road vehicle standards.

Heavy Vehicle National Law

In a heavy vehicle with an ADS, the new regulator will regulate the safe operation of the ADS, under the AVSL.

The Heavy Vehicle National Law (HVNL) regulates parties that can reasonably influence the safety of heavy vehicle operations, and it imposes a primary duty on parties in the chain of responsibility. These parties include an employer of a driver and an operator of a vehicle.

If a company that is an ADSE also performs a role that brings it within the chain of responsibility under the HVNL (for example, if it is an employer of a driver of a heavy vehicle), it will have to comply with the HVNL primary duty. This will require it to ensure, so far as is reasonably practicable, the safety of transport activities related to the heavy vehicle. This duty will apply alongside duties under the AVSL to ensure the safe operation of an ADS.

The NTC, National Heavy Vehicle Regulator, state and territory transport agencies and the department are undertaking further work to understand the interactions between the automated vehicle regulatory reforms and the HVNL, to ensure fit-for-purpose regulatory settings.

Commercial and public passenger transport

While the frameworks for regulating commercial passenger transport legislation are slightly different between states and territories, generally owners and operators/drivers of vehicles that provide a commercial passenger service are, among other things, responsible for ensuring the safety of the service. These services include taxis, hire cars, buses and rideshare services.

We expect that an ADSE providing a fleet of automated vehicles for hire (such as 'robotaxis') would be treated as a service provider under state and territory commercial passenger vehicle legislation. This would mean the ADSE would be subject to any applicable duties when providing a passenger service. For example, in some states, an ADSE providing commercial passenger services would need to ensure, so far as is reasonably practicable, the health and safety of any drivers and other persons while they are engaged in providing commercial passenger transport services.

If an ADSE operates a fleet as an operator for public transport, under state and territory public transport legislation, that entity will be subject under passenger transport regulations to various safety duties as well as fitness, accreditation and application requirements. States and territories will need to review existing public transport legislation to clarify its application to automated vehicles.

In 2023 infrastructure and transport ministers agreed to a number of policy recommendations that governments would apply when considering how automated vehicles are used in passenger transport services:

- ADSEs that supply vehicles to a third-party transport operator will not have additional obligations for ADS performance or safety assurance under passenger transport legislation
- state and territory regulators that investigate passenger transport crashes will develop procedures to engage the automated vehicle in-service regulator for its assistance in investigations involving automated vehicles
- maintenance requirements in passenger transport legislation will only allow the ADSE or an ADSE-authorised party to modify or repair an ADS in a passenger transport service vehicle.
- physiological criteria, licensing provisions, and non-dynamic driving task obligations related to human drivers under passenger transport legislation do not apply to an ADS performing a passenger transport service.

The NTC, state and territory transport agencies and the department are undertaking further work to understand how the introduction of automated vehicles would interact with passenger transport regulation, and develop shared principles for managing the regulation of automated vehicles used in passenger transport.

Motor accident injury insurance

Motor accident injury insurance (MAII) schemes (compulsory third-party and national injury insurance schemes) in each state and territory should provide access to compensation for injuries and deaths caused in crashes when an ADS is engaged. The key principle guiding this work is to 'ensure no person is better or worse off, financially or procedurally, in the relevant jurisdiction, if they are injured by a vehicle whose ADS was engaged than if they were injured by a vehicle controlled by a human driver.'[15]

More work will be required, by state and territory governments and heads of MAII schemes, to review existing recovery mechanisms and develop approaches for the inclusion of ADS-caused injuries.

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[15] National Transport Commission (NTC), 'Motor accident injury insurance and automated vehicles', NTC, Melbourne, 2019, accessed March 2024.

Dangerous goods

The *Australian code for the transport of dangerous goods by road & rail* sets out the requirements for transporting dangerous goods by road or rail. The code is given legal force in each Australian state and territory by each jurisdiction's dangerous goods transport laws. Generally, any person involved in transporting dangerous goods must comply with the requirements of the code. This includes drivers, loaders, vehicle owners and operators, consigners and consignees. Further work is needed to identify how the dangerous goods regulatory arrangements would apply to a vehicle with an ADS.

Work health and safety regulation

Under each jurisdiction's work health and safety (WHS) regulations, anyone conducting a business or undertaking has a duty of care to ensure the health and safety of workers. They also have duties to ensure that the health and safety of other persons is not put at risk from work carried out as part of their business or undertaking.

Depending on its business model, a corporation that has been certified as an ADSE may also separately be considered a 'person conducting a business or undertaking' for the purposes of WHS law.

Australian Consumer Law

Consumer law provides consumers with certain guarantees when buying services and when buying, hiring or leasing goods. When these guarantees are not met, remedies can include refund or replacement, and sometimes compensation. The Australian Consumer Law (ACL) also prohibits misleading and deceptive conduct and false or misleading representations.

The ACL and relevant state and territory fair trading legislation contain product safety provisions, setting out how the Australian Government and state and territory governments can address safety hazards from consumer goods and product-related services.

The ACL also contains product safety recall provisions that will operate concurrently with those proposed for the AVSL.

For more information, see the *Recalls of automated vehicles* paper.

Managing automated vehicle safety before the regulatory framework is in place

Early automated vehicles are already operating in some countries. In Australia we have had some limited on-road trials and use of automated vehicles in mining and agriculture, but our regulatory frameworks are not yet ready for commercial deployment of automated vehicles on public roads. It would be risky for automated vehicles to be deployed widely in Australia without appropriate oversight.

Options for managing early deployment

It is important that there is someone identified to take responsibility for the safe operation of a vehicle when it is being driven by an ADS. Introduction of automated vehicles on the roads ahead of the AVSL and outside of approved and controlled trials could be unsafe, and could reduce public confidence in the safety of the new technology.

We are considering several options which may reduce the risk of automated vehicles being used on roads before the new regulatory framework is in place. For more information, see the *Managing automated vehicle deployment ahead of the new regulatory framework* paper.

Requirements under the Road Vehicle Standards Act

The main approval pathway for commercial deployment of vehicles under the *Road Vehicle Standards Act 2018* (RVSA) requires compliance with the road vehicle standards. As there are currently no standards specific to an ADS, the RVSA does not necessarily prevent vehicles with an ADS from entering Australia.

As discussed earlier in this paper, under the new regulatory framework, approvals of a vehicle with an ADS will only be granted to a certified ADSE.

We may need an interim measure to prevent unsupported automated vehicles operating on the roads. To achieve this outcome, vehicle approvals under the Road Vehicle Standards legislation could be restricted to vehicles that do not have an ADS. This kind of measure could include an exception for a vehicle that will be used as part of an approved automated vehicle trial.

Consultation question

18. Are measures needed to prevent vehicles with an ADS from being provided to the market before the automated vehicle regulatory framework is in place?

Interim restrictions on aftermarket installation

A conventional vehicle could also be given automated vehicle functionality through aftermarket installation of an ADS. This risk may be managed under state and territory laws, as the states and territories have responsibility for vehicles in-service.

Once the AVSL and broader regulatory framework are in place, the risk of unauthorised installation would be addressed by new third-party interference offences in both the AVSL and in state and territory laws. These will include offences for engaging an ADS that is not supported by an ADSE.

Ahead of the framework commencing, states and territories could introduce interim restrictions on installing or using an ADS. They would then be able to provide for exemptions from the prohibition to allow automated vehicle trials.

Consultation question

19. Is it necessary to restrict aftermarket installation of an ADS, or restrict use of an ADS to approved trials only, before the automated vehicle regulatory framework is in place?

Improvements to automated vehicle trial arrangements

To date, automated vehicle trials in Australia have been limited in scale and usually only include one or a few vehicles (see figures 5 and 6 for two examples of vehicles that have been used in small-scale trials in Australia).

Figure 5: Interior view from ZOE2, a research prototype connected and automated vehicle (CAV) developed by Queensland's department of Transport and Main Roads in partnership with Queensland University of Technology and VEDECOM research institute, France.

Image courtesy of Transport and Main Roads, Queensland.

More complex trials have occurred in overseas jurisdictions, involving vehicles with level 3 and 4 automated features in real-world scenarios on public roads. Trials are an important step to ensure that automated vehicles can be used safely and efficiently in Australian conditions, and may offer a controlled early deployment option as we move towards commercial rollout.

Automated vehicle trials are currently managed by individual states and territories under the *Guidelines for trials of automated vehicles in Australia*. These guidelines provide high-level guidance on how to apply to do a trial and outline basic safety, insurance and reporting requirements. States and territories also impose requirements on trials conducted within their jurisdictions, through their own trial management frameworks.

We are interested in whether trial arrangements could be enhanced by doing things like establishing objectives and priorities for trials (such as cross-border trials); more consistent risk management, governance and information-sharing approaches; and approaches to manage regulatory barriers and risks associated with trials involving passenger transport services and freight.

Interim ADSE certification

We are also interested in whether the AVSL could better accommodate automated vehicle trials by providing an interim ADSE certification pathway. This could be useful to:

- provide a clearer pathway to move from trials into commercial deployment under the AVSL, which may encourage larger-scale trials
- enable the regulator and trialling organisations to learn from trial arrangements to better understand regulatory requirements and practical issues ahead of commercial deployment
- depending on the nature of the trial, understand how automated vehicles will interact with existing transport regulatory frameworks for passenger transport and heavy vehicles.

To support earlier commencement of large-scale trials, it may be feasible for arrangements to be put in place earlier than other elements of the AVSL (while other legislative instruments are still being developed). Certification requirements could be adjusted to recognise the different scale and risks of a trial.

Interim ADSE certification will also interact with existing requirements under state and territory trialling frameworks. If interim ADSE certification is supported, further development of the option would occur in parallel with consideration of how existing trial arrangements can be improved to make sure any resulting arrangements are well integrated.

Consultation question

20. What are the barriers to more complex and large-scale trials in Australia? How could trial arrangements be improved? Should there be provision in the AVSL for interim certification to support trials?

Figure 6: A ute retrofitted with automated technologies tested at the Future Mobility Testing and Research Centre in NSW.

Image courtesy of Transport for NSW.

Next steps

After this consultation is completed, we will consider the input we receive, and develop the draft Bill for the AVSL. States and territories and the NTC will use the feedback from consultation to inform nationally consistent policy positions about the obligations of human users of automated vehicles.

We will use feedback from this consultation to consider whether additional measures should be included in the AVSL for:

- remote operations
- repairers, maintainers and modifiers
- consumer information and
- interim ADSE certification to support larger-scale trials.

As part of this process we will complete an additional impact assessment if new elements are introduced to the law that have not been considered in previous regulatory impact assessments.

Other feedback you provide on consultation questions and the regulatory framework more broadly will also be used to shape the AVSL. As we further develop the law, there may be future consultation processes. Where there is further consultation, this will be made available on the department's web site (www.infrastructure.gov.au).

Feedback from this consultation process will also be used to inform nationally consistent policy positions about the obligations on human users of automated vehicles.

Once nationally consistent policy positions have been developed, we will seek agreement to them from the Infrastructure and Transport Ministers' Meeting. Where policy positions relate to the Australian Road Rules, we will develop amendments to the model Australian Road Rules to support consistent translation of the policy positions across Australia. Changes to the model Australian Road Rules do not operate until they have been implemented through amendments to state and territory road traffic legislation.

Other elements of the regulatory framework, such as third-party interference offences and on-road enforcement powers, will also need to be implemented through amendments to state and territory law. Where appropriate this will be supported by the development of model law provisions to assist in having consistent arrangements across Australia.