



Australian Government

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



Managing automated vehicle deployment ahead of the new regulatory framework

This paper **explores** new policy

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Overview

Automated vehicles involve safety risks different to those associated with vehicles controlled by human drivers. Until the regulatory framework is in place, it may be necessary to limit the deployment of vehicles with Automated Driving Systems (ADSs) on public roads to authorised trials.

This paper explores options to limit the use of automated vehicles before the new regulatory framework is in place, and seeks feedback.

Key points

Deployment of automated vehicles before the regulatory framework is in place may raise new safety and liability risks, as these vehicles will not have an entity that takes ongoing responsibility for ADS safety in service.

Options to limit the availability of automated vehicles ahead of the commencement of the regulatory framework include:

- introducing requirements under the *Road Vehicle Standards Act 2018*
- introducing interim restrictions in state and territory laws on aftermarket installation and use of an ADS.

We are also exploring options improve arrangements for automated vehicle trials.

Consultation questions

We welcome feedback on all elements of the regulatory framework. In relation to managing automated vehicle deployment ahead of the new regulatory framework, we are especially interested in the following.

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?
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?
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?

Early deployment of automated vehicles

While first-generation automated vehicles are already operating in some countries and some trials of automated vehicles have happened in Australia, Australia's regulatory frameworks are not yet ready for the commercial deployment of automated vehicles on public roads.

Previous forecasts have predicted that automated vehicles will begin to enter the Australian market around 2026.^{1,2} If automated vehicles enter Australia before the new regulatory framework is in place, and outside of controlled trial arrangements, there will be new road safety risks that cannot be managed by our existing laws. Australian governments recognise the benefits of trials of automated vehicles – providing opportunities to better understand how the technology works in the Australian context – but it is important that this occurs safely within an appropriate regulatory environment.

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. Until the Automated Vehicle Safety Law (AVSL) is in place, automated vehicles on Australian roads will not have an entity that is legally responsible for their operation (outside of approved trials).

Unregulated early deployment of automated vehicles may reduce public confidence in automated vehicle technology and regulation.

However, facilitating limited early deployment through trials may provide opportunities to test automated vehicle technology in an Australian setting. It could also allow governments to test the regulatory framework, including by developing and testing new operational approaches for parties such as road managers, and law enforcement and emergency management agencies.

How can early deployment be addressed?

This paper considers options in Commonwealth law and in state and territory laws and policies to manage the risks of deployment of automated vehicles before the regulatory framework is in place.

The following options may help to prevent any premature availability and use of automated vehicles:

- introducing requirements under the *Road Vehicle Standards Act 2018* to manage the supply of vehicles with an ADS to the Australian market
- amending state and territory laws so that an ADS may only be fitted to, or activated in, a vehicle that is part of an approved trial.

These would be transitional arrangements, intended to be removed or replaced when the automated vehicle regulatory framework is in place.

While it is important to control the risk of premature deployment of automated vehicles (with driving automation at Society of Automotive Engineers levels 3 and higher), we also recognise the need to avoid deterring or prohibiting the introduction of advanced safety features. Any measures to restrict the provision of ADSs will need to be carefully scoped so they do not impact non-ADS features.

Limited deployment of automated vehicles through improved automated vehicle trials frameworks could provide useful insight to industry and government about how automated vehicles operate in the Australian context, while still managing risks that may arise. This means that measures to prevent automated vehicles being provided to the market may need to be complemented with measures that enable larger-scale, complex automated vehicle trials, so we can still benefit from these learnings.

¹ Bureau of Infrastructure and Transport Research Economics (BITRE), [Forecasting uptake of driver assistance technologies in Australia](#), BITRE, Canberra, 2021, accessed March 2024.

² Austroads, [Future vehicles forecasts update 2031](#), Austroads, Sydney, 2021, accessed March 2024.

Requirements under the Road Vehicle Standards Act

Vehicle supply to the Australian market is currently managed through the *Road Vehicle Standards Act 2018* (the Act). The Act allows for the supply of vehicles that satisfy the requirements of the relevant vehicle approval pathway to Australia. The main vehicle approval pathway used for commercial deployment requires vehicles to comply, or substantially comply, with the road vehicle standards, including the Australian Design Rules (ADRs) and other applicable eligibility criteria for the vehicle. There are currently no ADRs specific to ADSs, so the Act does not explicitly prevent vehicles with an ADS from entering Australia via this pathway.

As part of the automated vehicle regulatory reforms, we are proposing to introduce a requirement under the Act that a first provision approval for a vehicle with an ADS will only be granted to the certified Automated Driving System Entity (ADSE). The ADSE takes responsibility for ensuring the ongoing safety of the ADS when it is in service. As this requirement will only come into effect once the automated vehicle regulatory framework is in place, we may need an interim measure to prevent unsupported automated vehicles entering Australia.

The practical outcome we are looking for is that a vehicle provided in Australia does not have an ADS that could be used on Australian roads before the regulatory framework is in place. An ADS is defined as the software and hardware that is collectively capable of performing the dynamic driving task on a sustained basis.

To achieve this outcome, vehicle approvals under the Road Vehicle Standards legislation could be restricted to those vehicles that do not have an ADS. This may mean that a vehicle model that has an ADS would need to be modified, either through software or hardware changes, so that it does not have this capability before it could be provided in Australia.

This kind of measure could include an exception for a vehicle that will be used as part of an approved automated vehicle trial.

There is a risk that a person may attempt to install an ADS in a vehicle once it is in-service. Measures to address this risk are considered in the next section.

If adopted, any interim restrictions on providing a vehicle with an ADS would only be used until the automated vehicle regulatory framework, including relevant national road vehicle standards for an ADS, was in place and operating. The preferred option could be implemented by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts using existing processes under the Act.

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 of an ADS

Aftermarket installation of ADS hardware and/or software could convert a conventional vehicle into an automated vehicle, providing another pathway by which an automated vehicle could end up on Australian roads. This risk would need to be managed under the state and territory laws that currently manage vehicle safety in service.

To address the installation and use of an ADS in a vehicle already in Australia, states and territories could introduce interim restrictions on installing or using an ADS, ahead of the automated vehicle regulatory framework coming into effect. The interim restriction would apply to the aftermarket installation of an ADS (through changes to hardware and/or software) to a road vehicle other than in the context of an approved trial of an ADS.

The restriction would also cover use of an ADS in a vehicle where that vehicle is not part of an approved trial.

Once the automated vehicle regulatory framework was in place, these restrictions would be updated or removed.

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

At present, automated vehicle trials in Australia are limited in scale and usually only include one or a few vehicles. On-road safety regulation of trials is currently managed on a jurisdiction-by-jurisdiction basis, in line with the national [Guidelines for trials of automated vehicles in Australia](#). Greater national consistency in automated vehicles trial arrangements could provide a clearer pathway for organisations to trial on a larger scale before considering a move to commercial deployment.

Trials are an important part of ensuring that automated vehicles can be used safely and efficiently in Australian conditions. To move towards commercial rollout and its potential benefits, larger-scale trials that involve more extensive use of public roads and public access may be needed to better understand automated vehicle technical capabilities and reliability, develop safety management practices, and test the feasibility of business models.

The existing national trial guidelines provide high-level guidance to potential trialling organisations, and outline the basic safety, insurance and reporting requirements for establishing a trial in Australia. We are interested in whether trial arrangements could be enhanced by, for example:

- establishing objectives and priorities for trials in Australia, including cross-border trials
- improving national consistency in safety and risk management approaches
- improving consistency in governance and information-sharing processes between jurisdictions
- establishing approaches to manage regulatory barriers and risks associated with trials involving passenger transport services and freight
- establishing approaches for controlling risk in larger trials to gain the benefits of trials at this scale.

Interim ADSE certification

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

- 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
- provide a clearer pathway to move from trials into commercial deployment under the AVSL, which may encourage larger-scale trials.

Interim certification could have different features to full ADSE certification, for example:

- certification requirements could be adjusted to recognise the different scale and risks of a trial
- rather than the safety duties and obligations of the AVSL applying in full, the requirements on an interim ADSE could be set through conditions on its certification
- compliance could be supported by specific offences for a failure to comply with conditions of the certification or the ability to cancel interim ADSE certification

- there could be different pathways available at the conclusion of a trial – seeking full ADSE certification, disabling the ADS in each trial vehicle or destroying or exporting the vehicles.

It may be feasible for interim ADSE certification arrangements to be put in place earlier than other elements of the AVSL (while other legislative instruments are still being developed) to support earlier commencement of larger-scale trials.

Interim ADSE certification would interact with existing requirements under state and territory trialling frameworks. If interim ADSE certification is supported, its development would occur alongside any improvements to trial arrangements 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?