



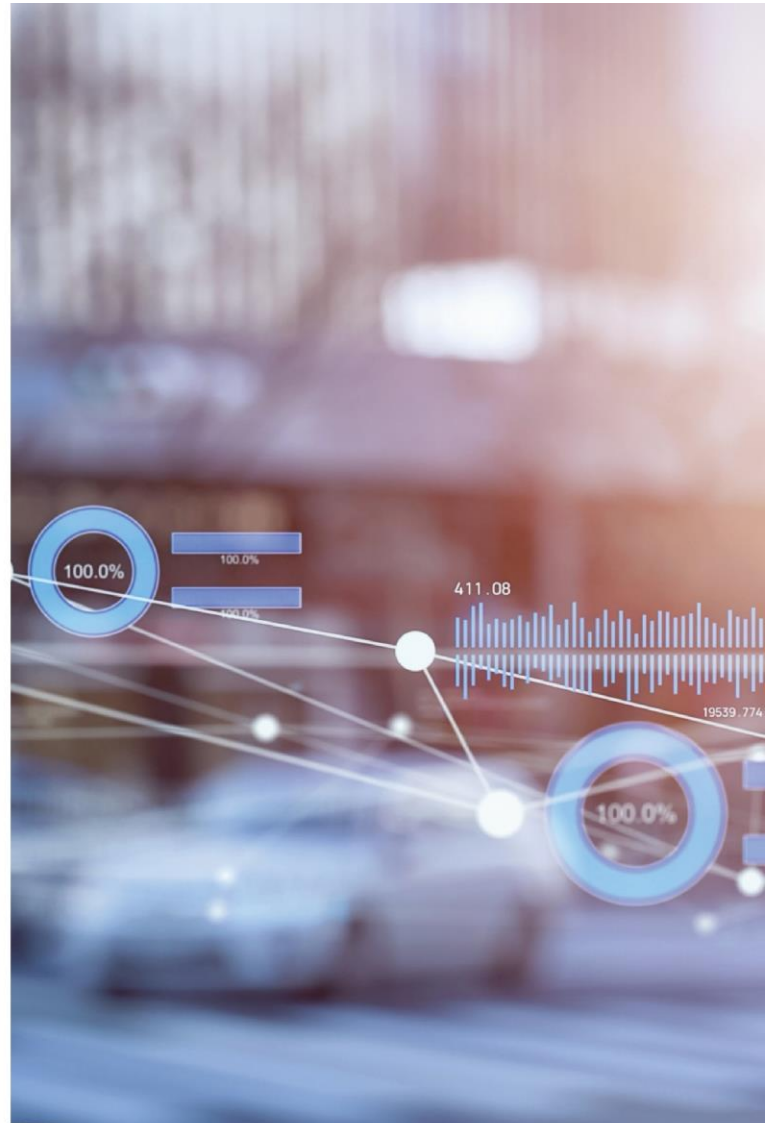
Submission to the National Transport Commission

Automated vehicle safety reforms

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Introduction

Thank you for the opportunity to provide a submission to the National Transport Commission (NTC) and the Department of Infrastructure, Transport, Regional Development, Communication and the Arts' consultation on automated vehicle safety reforms.

The Centre for Connected and Automated Transport (CCAT) is a government and industry collaboration which aims to facilitate the transition to connected and automated transport.

Our two key objectives are to:

- build a strategic vision for the infrastructure that supports connected and automated transport in Australia and New Zealand
- be the public champion for the transition to connected and automated transport in Australia and New Zealand.

Our membership comprises government transport agencies, statutory bodies, infrastructure providers, transport and logistics associations, research bodies, community groups and consultancies amongst others.

We bring together these established groups to create an expert and representative voice on preparations for connected and automated technologies across transport modes.

Submission

CCAT supports the development of a regulatory framework for automated vehicles to allow for their safe deployment on Australian roads. We provide the following submission to inform these regulatory reforms.

OUTCOMES-FOCUSED REGULATION FOR NEW TECHNOLOGIES

CCAT notes that an overarching principle for the automated vehicle regulatory reform program must be the creation of flexible, outcomes-focused regulation. Adhering to this principle is vital when attempting to regulate an uncertain and still developing technology, and while international standards are yet to emerge. This approach removes barriers to entry to the Australian market for industry, while ensuring safety is managed by those who best understand the technology.

We suggest that some of the reform proposals, including those outlined below, are considered with this principle in mind.

CHANGES TO PREVIOUS FRAMEWORK WITH POTENTIAL INDUSTRY IMPACT

Important changes to the framework previously agreed by Ministers after public consultation and regulatory impact analysis are described in the consultation, but not highlighted as

issues for consultation. CCAT considers that the two following changes could have impacts for industry which should be addressed.

1. Approving automated vehicles at first provision

The consultation notes that the Australian framework will no longer include design requirements specific to first provision of automated driving systems (ADSs) until UNECE design requirements are agreed and harmonised into Australian Design Rules. This differs from the previously agreed framework, which included both outcomes-focused design requirements and in-service requirements, in anticipation that an Australian framework for ADSs would be implemented prior to UNECE standards being agreed, given the likely discrepancy between UNECE timeframes and timeframes for automated vehicle deployment. The intent was for design requirements to harmonise with UNECE standards over time.

CCAT notes the following potential impacts and issues for consideration.

Risk of delay to implementation of Australian framework

The implementation of the Australian framework for the commercial deployment of automated vehicles is now dependent on UNECE timelines for international agreement of vehicle standards for ADSs.

CCAT understands that timeframes for automated vehicle deployment have slowed since Ministers first agreed to an Australian-specific framework, and that the UNECE now intends that its vehicle standards will be agreed in 2026 – the same year that the NTC has noted it intends a commercial deployment framework for automated vehicles will be implemented in Australia.

However, the UNECE has been considering design requirements for many years and notes itself on its website that 2026 is an ambitious timeframe. Should UNECE timeframes be extended, Australia will not have a regulatory framework for the commercial deployment of automated vehicles until after 2026.

This lack of control plus potential delay is a drawback of the new approach. We consider the previous approach, which would involve Australian design requirements harmonising with UNECE requirements as they emerge, strikes an appropriate balance between allowing Australians to benefit from safe automated vehicles when they are ready for deployment and harmonising with international standards. We note the Australian design requirements were developed as outcomes-focused safety criteria to avoid prescribing types of technologies in this interim period.

Risk of not including all automated vehicles in Australian framework

The Australian framework is intended to accommodate all types of automated vehicles (levels 3 to 5). However, it is unclear whether the UNECE design requirements will be inclusive of all automated vehicles. If they are not, or at least if standards for different ADS systems are agreed on different timeframes, the commercial deployment framework in Australia may now pick ‘winners and losers’ in terms of which type of automated technology can be deployed when.

We consider that both level 3 and level 4 systems must be implemented in Australia in a timely way, given the use cases that are drawing closer to deployment (specific Level 3 features are already available overseas in privately-owned vehicles and Level 4 features are

being developed in commercial applications like robotaxis, middle-mile trucking and public transport shuttles and buses).

Current example

CCAT is also aware that design requirements for one level 3 system, automated lane keeping systems (ALKS), have already been agreed by UNECE. Should ADS systems continue to be agreed on a system-by-system basis, it is not clear when the threshold will be reached for 'switching-on' the rest of the Australian framework. It is also unclear whether ALKS operating at level 3 automation will be prohibited here until the full Australian automated vehicle framework is in place – and if not, whether an Automated Driving System Entity (ADSE) or any of the in-service ADSE obligations will be required.

2. Certification process

The consultation notes that ADSE certification will now fall under the Automated Vehicle Safety Law (AVSL) and be administered by the in-service regulator. This differs from the previously agreed framework, which included ADSE certification as part of the type-approval process governed by the Road Vehicle Standards Act 2018 (RVSA) and administered by the first supply regulator.

CCAT notes that this change creates two separate processes for the first provision of automated vehicles into the Australian market - type approval and ADSE certification. We note the following potential impacts and issues for consideration.

Risk of two-stage approval process

Creating a separate ADS type-approval process and ADSE certification process governed by different pieces of legislation and administered by different regulators may create a two-stage approval process for companies wanting to bring automated vehicles to market in Australia. This would create unnecessary administrative burden and costs for companies, as well as delays. We note that having two separate approval processes for first provision of a vehicle is a significant addition to the existing process for manufacturers of conventional vehicles, and that regulatory impact analysis may be warranted.

CCAT notes the intention to streamline these processes. We suggest that specifically, there should be one application process for the applicant, and a touchpoint for the applicant with just one regulator.

CCAT notes the stated benefit of placing ADSE certification in the AVSL, namely the in-service regulator having an ongoing relationship with the ADSE. However, we consider that the in-service regulator's oversight of first provision approvals can be managed through information sharing arrangements between the first supply and in-service regulator.

Risk of different type-approval holder and ADSE

CCAT notes that having separate legislation governing type-approval and ADSE certification could open up the possibility of the type-approval holder and ADSE being different entities. CCAT supports an explicit requirement that a type-approval holder and an ADSE must be the same entity. We consider the safest outcome is for the ADSE and type-approval holder to remain the same entity as previously agreed by Ministers – as it is likely that the entity that is best able to demonstrate the safety of the technical aspects of the ADS would be best able to manage the safety of the ADS over its life. We also note that having a different type-

approval holder and ADSE could create duplication when assessing responsibility for ADS faults.¹

WORKFORCE TRANSITIONS (AVSL MEASURES TO MANAGE THE SAFETY RISKS OF REPAIRS, MAINTENANCE AND MODIFICATIONS)

CCAT queries why existing mechanisms such as the third-party interference offence, modification requirements, existing state and territory regulation of repairers, maintainers and modifiers, and common law mechanisms would not be sufficient to cover safe repairs. We suggest the existence of a regulatory gap be explored further before placing additional requirements on repairers, maintainers and modifiers. We also encourage further consideration of how an ADSE's safety duties would operate in conjunction with the repairer, maintainer and modifier safety duties, i.e. repairer liability for a faulty repair vs ADSE liability for an ADS not recognising a faulty repair.

We consider a more practical approach to the question of safe repairs should be prioritised. There are many new technologies that repairers, maintainers and modifiers are increasingly required to manage, including electric vehicle technologies and advanced driver assistance systems. CCAT considers the focus should be on training and potentially certification of these parties, and data sharing between ADSEs and these parties, rather than safety duties.

We also recommend this be part of a broader program of work to consider workforce transitions which will accompany the deployment of automated vehicles. Repairers, commercial drivers, enforcement agencies, emergency services, roadworthiness inspectors, driver licence trainers and others will all be impacted to varying degrees, and a national program of work to smooth the transitions in these industries should be coordinated by the NTC or another body.

HUMAN USER OBLIGATIONS

We note the difficulty of placing legal obligations on human users of automated vehicles in line with SAE levels of automation. The primary reason given in the consultation for this level-by-level regulation, is the safety critical driving role that users of conditionally automated vehicles (level 3) will have, unlike in highly automated vehicles (level 4) where the ADS is capable of bring the vehicle to a minimal risk condition.

In practice, vehicles are being developed with a range of functionalities, which may include a combination of level 2, 3 and 4 features, and it is unclear how the ADSE and in-service regulator will agree the overall level of automation of the ADS. For example:

- ADSs which expect a human operator to respond to transition demands (level 3), may still be able to perform a very limited minimal risk manoeuvre (a level 4 functionality) such as coming to a stop in a critical situation.

¹ If the type-approval holder and ADSE are allowed to be different entities, we note that the technical requirements relating to assuring the safety of the ADS must be expanded in the ADSE certification requirements.

- A vehicle that generally operates with only driver assistance features may include a level 4 automated valet parking function².
- Functionality of an ADS may change over time as more features are introduced through over-the-air updates.

While this is not necessarily an issue for the ADSE framework, which is intended to have an outcomes-focus that accommodates flexible safety regulation for all types of ADSs and levels of automation, the human user obligations are focused on level-by-level regulation, with some nuance in relation to driving controls.

There are numerous ways in which a human user's obligations could be categorised. For example, different rules could apply:

- in level 3 vs level 4 vs level 5 vehicles
- in vehicles with useable driving controls (level 3/ some level 4 vehicles) vs humans in vehicles without useable driving controls (some level 4 vehicles/ level 5)
- depending on whether the vehicle is a commercial vehicle or privately owned
- depending on the range of minimal risk manoeuvres the ADS can undertake
- depending on the comprehensiveness of a driver monitoring system
- depending on the specific functions of each ADS.

We note that differing obligations for users of level 3 vehicles and level 4 vehicles with useable driving controls may make sense from the perspective of the technical capability of the ADS, but we also note the practical issues of disruption to other road users should a level 4 vehicle always be relied on to perform a minimal risk manoeuvre where a human does not or cannot respond to a transition request. It may therefore be appropriate instead for human users in level 4 privately-owned vehicles with useable driving controls to be subject to fallback-ready user obligations in the early stages of deployment.

On the other hand, we understand that design requirements in Australia might mandate all automated vehicles to be capable of performing certain minimal risk manoeuvres – in which case, depending on the comprehensiveness of the minimal risk manoeuvres mandated, it might be more appropriate for the fallback-ready user obligations to be more in line with the proposed obligations on highly automated vehicle users.

Noting the different possible ways to categorise human user obligations, we understand that a position must be taken and that ultimately certainty for the human user is a priority along with other considerations such as accessibility, overall road safety, and practical enforcement. CCAT therefore supports the development of options under the categories the NTC has chosen in the first instance as long as the obligations are clear and implementable by human users. However, we recommend that regular, targeted consultation with manufacturers be undertaken to understand how ADSs are being developed, what expectations manufacturers have for human users, and emerging business models; and that the practicality of human user obligations is reviewed over time.

² Such as this function deployed by Bosch: <https://www.bosch-mobility.com/en/solutions/parking/automated-valet-parking/#:~:text=The%20automated%20valet%20parking%20service%20is%20accessed%20using%20a%20smartphone,officially%20approved%20for%20everyday%20use>.

Further comments on specific human user obligation issues in the consultation are included in the table at the end of this submission.

MANAGING EARLY DEPLOYMENT

CCAT considers the focus should be on delivery of the full framework for the commercial deployment of automated vehicles, rather than implementation of an interim framework. An interim framework will likely not be able to achieve a nationally consistent approach, and we anticipate a risk that the implementation of an interim framework may be difficult to reverse. We also consider diverting resources to the development of a new framework could create delays to the implementation of the full framework.

We recommend an updated timeframe for implementation of the commercial deployment framework should be communicated with industry, to provide guidance to those considering investment into the Australian market.

With regard to the interim framework options to restrict ADSs, CCAT queries whether additional restrictions on entry to the market are required given existing frameworks have already successfully limited automated vehicle deployment in Australia. We note the greater risk could be in the enforcement of existing restrictions. We consider the business model most likely to cause practical difficulties in the short-term is that of vehicles introducing automated features through over-the-air software updates while already in-service. Enforcement mechanisms to address this scenario should be considered.

The interim framework option that includes a Commonwealth ADSE certification does not appear to provide any benefit beyond current state and territory trial frameworks. To avoid duplication, states and territories would likely need to limit their role in determining what vehicles are trialled on their roads through exemptions to road rules. CCAT considers this shift unlikely, and therefore more foreseeable that a Commonwealth ADSE certification would only duplicate current state and territory trial frameworks.

Instead, CCAT supports improvements being made to automated vehicle trial arrangements as the approach to managing early deployment. These improvements should address:

- the ability to trial automated vehicles across borders
- streamlined trial approval processes, including for cross-border trials
- the ability to supply larger numbers of vehicles to the market under the RVSA for testing purposes
- the ability to trial commercial applications
- encouraging less duplication in trials across jurisdictions, with learnings to be shared instead
- consideration of how trials can be proactively used to stimulate community acceptance of automated vehicles.

SAFE SYSTEMS APPROACH – ALIGNMENT OF REGULATORY REFORM PROGRAM WITH INFRASTRUCTURE CHANGE

CCAT emphasises that ensuring safe vehicles, safe operation and safe road user behaviour are just some of the elements of a safe systems approach to road transport. The other major

element is safe road infrastructure. We note that while some manufacturers state that their vehicles will not rely on changes to road infrastructure, given the expected safety benefits of automated vehicles, it is still important to consider infrastructure change and maintenance that can enable swift deployment of automated vehicle technologies.

To ensure the safe and timely introduction of automated vehicles, this regulatory reform program must work in alignment and to similar timeframes as a program to bring the condition of the road to a standard that will facilitate the safe operation and faster deployment of automated vehicles across the network. This includes physical infrastructure improvements to line marking, signage and road surface condition across the whole network, and to increase harmonisation, for example. Smart roadside infrastructure is also an enabler for safer and faster deployment of automated vehicles. For example, this technology can assist automated vehicles around traffic lights, emergency services, vulnerable road users and can address some of the risks outlined in the consultation including the risk of stranding.

Given the ADSE will be liable for any incidents caused when an ADS is in operation, it is important that road infrastructure does not create a barrier or delay to ADSEs bringing their technology to market in Australia. Appropriate infrastructure standards to aid deployment must also be considered, and importantly, the regulatory reform program and any infrastructure reform program must be aligned.

COMMUNITY ACCEPTANCE

CCAT notes that community acceptance is integral to the deployment of automated vehicle technology, and that timely deployment is important given expected safety benefits. We recommend that policy decisions made on many of the consultation issues, such as human user obligations, privacy requirements, consumer information requirements, user education requirements and trial arrangements, are all considered in light of their impact on community acceptance, amongst the other considerations already highlighted.

FEEDBACK ON SPECIFIC CONSULTATION QUESTIONS

CCAT has outlined its feedback on specific questions and issues in the consultation below.

ADSE certification before aftermarket installation	It is unclear how the relationship between the new ADSE and the existing type-approval holder (who is also the previous ADSE) will be managed. There may need to be some consideration of arrangements between these parties as part of the new ADSE's certification.
Aftermarket installations of an ADS	The wording of the offence should be careful not to apply to individuals who may want to develop an ADS purely for research, trial or interest purposes. We suggest further refinement to refer to 'installation and use or sale' or 'installation with intention of use or sale.'
Privacy	CCAT emphasises that consumer privacy is an important consideration both for the protection of consumers and for encouraging community acceptance of connected and automated vehicles. We note that privacy considerations more generally between ADSEs/ OEMs/ ADS manufacturers and consumers must be addressed in relation to all advanced vehicles.

Additional AVSL measures to manage the safety risks of remote operation of a vehicle with an ADS	CCAT considers that safety duties on the ADSE for remote operation will be sufficient and appropriate to manage remote driving, assistance and monitoring in the early years of deployment. We consider the ADSE best placed to manage safety assurance for remote driving given its knowledge of the ADS. We suggest review of this position as business models and international regulatory approaches develop. CCAT considers remote operators would be sufficiently covered by state and territory road traffic laws, with any amendments to clarify their application to remote operators or amending certain road rules if required.
Consumer information requirements	CCAT considers that ADSEs must be required to ensure technical information is provided to consumers, including the design life, current operational design domain, and current ADS functionality, in order for consumers to make an informed purchasing choice. We note the importance of accurate and standardised terminology when it comes to communications with consumers about a vehicle's capability. CCAT supports work to address this risk, but notes this issue has broader application to both automated vehicles and current advanced driver assistance systems and should potentially be progressed as a general program to address misleading marketing in relation to advanced vehicles (though we support the AVSL requirements in the absence of a broader program). We also suggest this work consider the interaction with existing consumer law frameworks dealing with misleading conduct. We also highlight the importance of the in-service regulator and ADSE's education roles in promoting consumer understanding of ADSs. We suggest the regulator would be well placed to maintain and publish information about ADS functionalities and standardised categories in due course, in consultation with ADSEs.
Recalls/ Regulator powers and functions	CCAT recommends that the in-service regulator has the power to direct an ADSE to suspend operation of an ADS or ADS function, either through a standalone power or clarified as mechanism in its recall function. While the regulator has the power to suspend an ADSE's certification, and other regulators could compulsorily order vehicles off the road through recall action, the suspension of an ADS or ADS function is a less disruptive option where a vehicle could still be used safely without the ADS or a function of the ADS in operation, and where the ADSE is not behaving in a way that would warrant suspension of its certification.
Human user obligations	We note that all the human user obligations for highly automated vehicles must work together, and as such, while consultation feedback may favour certain options, the obligations finally chosen must make sense as a package. For example, any type of prohibition on secondary activities may not make sense if unlicensed and/or impaired users can also sit in the drivers' seat. We also note the point at page 47 that 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. We suggest that this could also apply to the human user obligations for users of automated vehicles being placed into road rules (i.e. the specific obligations consulted on would only apply to privately owned vehicles).
Interactions with existing regulation	With regard to the Australian Consumer Law, we also note the relevance of the ACCC's work on the right to repair, which covers the provision of information from OEMs to repairers.