



# **AAA RESPONSE TO SAFETY ASSURANCE FOR AUTOMATED DRIVING SYSTEMS**

**CONSULTATION REGULATION IMPACT STATEMENT**



Australian  
Automobile  
Association

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# Introduction

The AAA welcomes the opportunity to provide comment to the *Safety Assurance for Automated Driving Systems* consultation regulation impact statement (the Consultation RIS). The AAA is the peak organisation for Australia's motoring clubs and their eight million members. The AAA advances the interests of all road users across Australia to ensure land transport networks are safe and sustainable, and that the cost and access to transport is fair for all Australians.

Automated vehicles will change the way we interact with vehicles and could potentially deliver significant societal benefits as the technology becomes increasingly sophisticated and widely available. There could however be potential risks if new advanced technologies are deployed without full understanding of their operation and potential limitations.

The AAA believes the regulatory environment needs to maximise the safety and societal benefits, but also encourage the safe deployment of automated vehicles while managing risks to consumers. The AAA also believes Australian regulation must remain consistent with major international markets, with additional Australian-specific measures considered only if a community net benefit exists.

Australia's motoring clubs are leading the way in automated technology, with several clubs involved in trials that test the use of high level automation on our roads. The NRMA has also recently released a white paper *Transforming Mobility: A regulatory roadmap for connected and automated vehicles*<sup>1</sup>. Given this unique position, the AAA consulted extensively with clubs to determine what model would be best placed to support the technology under the options proposed in the NTC's Consultation RIS.

While the qualitative nature of the Consultation RIS made it difficult to assess the net benefits of each option decisively, there were common themes in the feedback provided by member clubs. It was broadly agreed that there was significant uncertainty about the future in this evolving policy space. There was also a strong desire to manage risks to the consumer while also keeping compliance costs low, noting that any high initial regulatory standards may need to be reviewed in the future once confidence in the technology has been demonstrated.

The AAA and member clubs strongly support the key feature of the safety assurance system reform package, the requirement for the ADSE to self-certify against principles-based safety criteria. This approach ensures that safety is at the forefront while keeping compliance costs low. However, the Consultation RIS proposes additional regulatory compliance that would go above this feature including:

1. the introduction of legislative offences, compliance and enforcement measures that are specific to safety assurance to enforce compliance with the safety assurance system;
2. the appointment of a government agency with responsibility for administering the new self-certified safety assurance system that would regulate the ADS separately from the standard vehicle certification system; and
3. the introduction of a primary safety duty to ensure in-service safety risks and hazards that are not identified through the safety assurance system process are managed on an ongoing basis.

The AAA supports any proposed regulatory intervention where a net benefit exists. At present, it is unclear whether these proposed additional regulatory interventions would increase automated vehicle take up and/or reduce potential safety benefits. However, there are obvious benefits in establishing a consistent regulatory framework across Australia that aligns closely with major international markets.

Without internationally consistent regulation, there may be an economic disincentive for ADSEs and manufacturers to invest in Australia, meaning that the full extent of automated vehicle benefits may not be realised. This economic disincentive will need to be carefully evaluated against the safety benefits that may arise from a unique Australian regulatory environment.

## Introduction of legislative offences, compliance and enforcement measures

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Most research indicates that vehicles with higher levels of automation will be inherently safer. It is therefore a little unclear why additional legislative offences and enforcement measures are required on a vehicle that is designed to be safer. There may however be a case for governments to intervene to better manage consumer expectations and understanding of new technology. There may also be a case to answer as to why these enforcement measures are not in place for today's vehicle fleet given the significant cost of road trauma on the community. For example, the safety risks associated with an ADS malfunctioning may be as serious as a malfunction that relates to a conventional vehicle.

If the new legislative offences were not introduced, governments would rely on existing mechanisms such as vehicle recalls or withdrawal of registration, noting that the new Road Vehicle Standards Act will introduce targeted compliance and enforcement options, including sanctions and penalties for non-compliance. If the NTC considers that the current system is not meeting safety standards, there may be a case to review the enforcement measures that apply to the entire vehicle fleet.

An alternative approach may be to introduce offences, compliance and enforcement measures through changes to federal legislation following a further review that looks at their application across the entire fleet.

## Appointment of a government agency to regulate the automated driving system

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The Consultation RIS notes that the appointment of a government agency is likely to bring added benefits including:

- states and territories can identify and refer safety related intelligence to a national agency that is responsible for the safety assurance system;
- regulating the in-service performance of the ADS and ensure that the ADSE maintains ongoing compliance with its Statement of Compliance and reports safety-critical events such as breaches of the road rules, crash data, near-miss data and cybersecurity vulnerabilities;
- providing information back to the states and territories to assist with managing road safety; and
- manage the primary safety duty if this option is implemented.

The AAA supports a government agency being responsible for the management of the safety assurance system. The Department of Infrastructure Regional Development and Cities (DIRDC) currently performs many of the functions listed above under the current compliance framework for motor vehicles, however the AAA considers that DIRDC is significantly under resourced. DIRDC's appropriation for road safety and vehicle standards is expected to fall from a high of \$18.2 million in 2016-17 to \$16.3 million in 2020-21. The former Federal Office of Road Safety received funding of around \$25 million per annum (based on 1995 resourcing adjusted for inflation), suggesting that DIRDC is underfunded by around \$7 million per year on previous resourcing levels<sup>2</sup>.

The AAA supports a model where a government agency is appointed to regulate the ADS if that agency also performs standard vehicle accreditation. A new sufficiently-resourced standalone body separate to DIRDC could be established to perform all certification roles. This would ensure that compliance costs and bureaucracy are not unnecessarily increased with little additional consumer benefit. For example, Transport Certification Australia may be well placed to assume a combined ADS and vehicle standard certification role. A better resourced national vehicle regulator, responsible for road safety and vehicle regulation could bring immediate benefits across the entire community.

## Introduction of a primary safety duty

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A primary safety duty would provide an overarching and positive general safety duty on the ADSE to ensure the safety of the ADS so far as reasonably practicable. The Consultation RIS could be improved by clearly explaining what additional benefits a primary safety duty would bring over and above those provided under the Australian Consumer Law.

A primary safety duty would be administered by a national body and triggered by an incident, near-miss or other behaviour indicating a risk involving an ADS. In such events, the national body could investigate the causes of the incident, near-miss or unsafe behaviour to determine responsibility.

The AAA considers that the ability to investigate an incident, near-miss or other behaviour indicating a risk will be an important role for a regulator in managing the ADS. The NTC's proposed Statement of Compliance includes a requirement for an ADSE to comply with data recording and sharing processes which could be implemented under a low compliance regulatory model that does not include the introduction of a primary safety duty.

The risk of establishing a primary safety duty in the short term is that manufacturers or ADSEs only bring vehicles to the Australian market that comply with the proposed ADR 90/01 and thus are not subject to the primary safety duty. This may limit the vehicle models available in Australia.

Where a primary safety duty is supported by the majority of stakeholders, the AAA supports an in-principle agreement approach. This would mean that the primary safety duty was supported in principle, following a full quantitative cost-benefit analysis.

## AAA Recommendation

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The AAA supports the introduction of a regulatory system that:

- requires ADSEs to self-certify against principles-based safety criteria that capture key safety risks associated with automated vehicles;
- appoints a government agency to regulate the current vehicle certification process including vehicles that fall under the proposed ADR 90/01, (vehicles with an ADS) noting that ADR 90/01 will adapt to changes in technology (i.e. a single vehicle regulator);
- considers reviewing the offences, compliance and enforcement measures that apply to all vehicles, not just those that have an ADS; and
- instigates a full quantitative cost benefit analysis for the introduction of a primary safety, so as to not unnecessarily raise compliance costs and limit technology roll out in Australia.

# Consultation Questions

### 1. To what extent has the consultation RIS fully and accurately described the problem to be addressed?

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The AAA supports the key problems identified in the consultation RIS, which include the following:

- Automated driving systems (ADS)s may fail to deliver reasonable safe outcomes;
- A lack of consumer confidence in the safety of ADSs may reduce or delay their uptake; and
- Automated Driving System Entities (ADSE)s may face inconsistent/ and or uncertain regulation to supply ADSs to the Australian market.

The AAA agrees with the NTC's assessment that inconsistent and/or uncertain regulation in Australia is likely to impose unnecessary costs on ADSEs and the government.

One of the challenges for Australia is ensuring that the level of regulatory oversight does not precede international developments. Australia represents a small share of around 1.5 per cent of global vehicle sales and imports almost all its motor vehicles from overseas. Without internationally consistent regulation, there may be an economic disincentive for ADSEs and manufacturers to invest in Australia, meaning that the full extent of automated vehicle benefits won't be realised. The NTC should consider whether this should be added as a key problem in the Consultation RIS.

### 2. What other factors should be considered in the problem statement

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In addition to international alignment, the AAA considers the role of infrastructure is important to the discussion. Failure to provide adequate supporting infrastructure could contribute to safety risks, which would ultimately undermine consumer confidence and acceptance of the technology. While the AAA understands that this issue is being addressed through a separate work program, infrastructure readiness needs to be front-of-mind for regulators.

### 3. Has the consultation RIS provided sufficient evidence to support the case for government intervention?

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Motor vehicles pose significant safety risks for the community. Current transport regulations cover vehicle standards, the operation and roadworthiness of vehicles and driver licensing. General consumer and product liability laws also provide additional consumer protections.

The AAA considers that the governments' role in safety will not change with the introduction of automated vehicles. Government intervention will be warranted to manage and enforce the safety and compliance of automated vehicles. The need for government regulation is supported by evidence in the RIS, however evidence that supports the different levels of regulation (i.e. options 1 through to 4) could be bolstered. It is not clear what additional protection is afforded to consumers by regulating the ADS separately from the current vehicle compliance framework.

For example, in aviation, the fact that an aircraft may have a complex autopilot system does not warrant a separate safety body to oversee such systems. The framework of checks and balances within the Civil Aviation Safety Authority (CASA) can deal with the added complexity. It is therefore unclear why there would need to be two regulators in vehicle regulation.

### 4. To what extent have the community and industry expectations of a regulatory response been accurately covered

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The community expects that Australian governments will continue to regulate vehicles to ensure a high safety standard is maintained. Recent evidence suggests that Australians trust governments to regulate automated vehicles at a greater level than they trust the companies that design and manufacture cars<sup>3</sup>. When these results are compared internationally, Australians have a much higher trust in government to regulate vehicles compared to private companies.

The form this regulation takes (i.e. options 1- 4) must best protect consumers while encouraging up-take.

## 5. Are the four options clearly described?

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The Consultation RIS proposes four reform options under a mandatory self-certification system. While the paper sets out a summary of the options and how each may be implemented, the AAA understands that industry (through the FCAI) has raised concerns with how the options are described.

For example, an exemption from the ADRs may not be required under Option 2. The AAA understands that DIRDC intend to introduce a new Australian Design Rule (ADR 90/01) that will allow an ADS to be included in the current vehicle type approval system. A vehicle fitted with an ADS will need to be certified to ADR 90/01 by either meeting the requirements of the related United Nations Vehicle Regulation (UN R79/02) or self-certifying against a Statement of Compliance.

This process would then allow an ADSE or manufacturer to bring vehicles to Australia and an exemption from the ADRs is not required. At the time of writing this submission this revised interpretation of Option 2 could not be confirmed by the NTC. The AAA would appreciate feedback as soon as possible as to the correct description of Option 2 following future discussions between the NTC and DIRDC.

In relation to the proposed Option 4, the Consultation RIS would greatly benefit from including additional information as to how the primary safety duty will differentiate from existing regulatory frameworks such as product safety laws and recall powers under Australian Consumer Law. It is also unclear whether the primary safety duty is being pursued by other countries.

## 6. Are the proposed safety criteria and obligations on ADSEs sufficient, appropriate and proportionate to manage the safety risk? and

## 7. Are there any additional criteria or other obligations that should be included?

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The AAA is comfortable with the proposed safety criteria and consider them to be sufficient, appropriate and proportionate to manage safety risks. The AAA also supports the additional obligation on ADSEs which relate to data recording and sharing.

In line with previous submissions, the AAA believe that consumers should be able to access and control the data collected by automated vehicles. This will be particularly important in the event of a collision and/or traffic incident.

Consumers should also have the right to nominate data to a third party such as an independent repairer. This will also ensure competitive after-markets for the service and repair of automated vehicles.

The AAA looks forward to working with the NTC on its upcoming project that will seek to clarify access to vehicle data.

## 8. Do you agree with the impact categories and assessment criteria? If not, what additional impact categories or assessment criteria should be included?

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The AAA broadly agrees with the impact categories and assessment criteria identified.

## 9. Has the consultation RIS captured the relevant individuals or groups who may be significantly affected by each of the options? Who else would you include and why?

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The regulatory framework for automated vehicles will have a wide-ranging impact on individuals, groups, industry, governments and the Australian community in general.

The consultation RIS has considered to a large extent the relevant individuals or groups affected by each of the reform options. However, the following impact categories may be further extended to include consumers:

- Regulatory costs to industry;
- Regulatory costs to government; and
- Flexibility and responsiveness.

The AAA notes that there is an inter-relationship between the individuals and groups affected. Consequently, costs that are borne by governments may have an adverse impact on industry. The additional regulatory costs imposed on industry may then affect consumer cost and choice.

**10. Does our analysis accurately assess the road safety benefits for each reform option? Please provide any further information or data that may help to clearly describe or quantify the road safety benefits.**

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Automated vehicles are predicted to be inherently safer than the vehicles on the road today, which is why governments across Australia are actively pursuing trials and attracting investment. The NTC Consultation RIS notes that the introduction of highly automated vehicles could reduce the annual cost of road trauma estimated at \$30 billion by between 21 and 42 per cent. Automated vehicles are also expected to positively impact the wider Australian economy by around \$95 billion per annum. This includes the total avoidable costs from crashes and congestion, as well as new jobs and investment.<sup>4</sup>

Safety risks arise where automated vehicle technology interacts or relies on human intervention. Many manufacturers acknowledge that there will continue to be a requirement for a human driver in the short to medium term and that the introduction of automated driving systems will operate within limited situations such as freeway driving, or in trial environments. Austroads has also found that the benefit of automated vehicles varies depending on whether the system controls all functions, or whether human intervention is required.

There also appears to be divergent levels of appetite for risk between established vehicle brands and technology newcomers. Traditional car brands are taking a more cautious approach to the use of automated systems under a very limited range of driving conditions, whereas new market entrants seem willing to take on additional risk. These factors will likely create significant confusion within the community regarding the limitations and operation of such systems and may result in increased crash risk when drivers and other road users have incorrect understanding and expectations of system performance. For example, 'hands off the wheel' capabilities in current technology on the road today varies between 10 and 65 seconds with an even longer interval allowed under the Tesla operating model.<sup>5</sup>

The AAA notes that there are limitations with the multi-criteria analysis undertaken for road safety benefits. The analysis does not consider the incremental road safety benefits for each of the options, making it difficult to accurately and objectively assess which option provides the greatest net benefit. The analysis of the criteria for Option 2 seems to not accurately reflect how the ADR 90/01 is expected to work in practice. Criteria f (proactively addresses emerging ADS risks before the safety issue eventuates) may also be managed well under option 3 where a data sharing code is enforced by government and managed by the national body.

To better understand the benefits of the different options, the AAA supports a further quantitative cost-benefit analysis to be undertaken. This will be critical when considering the benefits of implementing the primary safety duty.

**11. What additional safety risks do you consider the primary safety duty in option 4 would address compared with option 3?**

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The AAA understands that the primary safety duty is an improved way of managing and mitigating safety risks in the future. However, the AAA has identified several risks with proceeding with Option 4 by 2020, including:

- greater compliance through a primary safety duty may be inconsistent with international standards and prohibit the uptake of automated vehicles in Australia due to increased compliance costs in a small market such as Australia;
- the approach imposes greater regulatory oversight than adopted in the US at the federal level;
- it is not clear whether other countries are pursuing a primary safety duty; and
- it is unclear what additional protections a primary safety duty affords consumers over and above what is required under the Australian Consumer Law.

The AAA also understands that many vehicle OEMs will not introduce new automated driving systems into Australia without more definitive guidance on the standards the systems must meet.

The AAA believe that the regulatory cost of implementing a primary safety duty could outweigh the potential benefits, especially in the short to medium term. As such, the primary safety duty may be supported 'in-principle' until a full cost benefit analysis is conducted.

**12. Does our analysis accurately assess the uptake benefits for each reform option? Please provide any further information or data that may help to clearly describe or quantify the uptake benefits.**

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The potential benefits of automated vehicles cannot be fully realised unless automated vehicles are widely used in Australia. In order for these benefits to be realised, both community and industry must be provided assurance that risks or uncertainties have been addressed. The preferred option should deliver maximum benefits at the least cost.

The AAA consider that establishing a safety assurance system is the reform option that will most benefit automated vehicle take-up. The AAA notes that the assessment criteria relating to consumer confidence has been rated similarly across all options that introduce a safety assurance system. This would indicate that Options 3 and 4 provide the same level of vehicle take-up benefit. This may not necessarily be correct, however depicts the issues that can arise when assessing a qualitative RIS.



13. Does our analysis accurately assess the regulatory costs to industry for each reform option? Please provide any further information or data that may help to clearly describe or quantify the regulatory costs.

*and*

14. Are there any specific regulatory costs to industry that we have not considered?

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Industry may be better placed to provide further detail, however the AAA notes that this section could be improved by explaining how the principles-based safety criteria proposed for the Statement of Compliance are consistent with international approaches in other major markets i.e. the EU, US and Japan.

15. Does our analysis accurately assess the costs to government for each reform option? Please provide any further information or data that may help to clearly describe or quantify the costs to government.

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The introduction of a safety assurance system will result in additional costs to government and industry, compared to the baseline approach. These costs include both direct and indirect costs such as the resources needed to build and maintain systems as well as capabilities. The AAA supports a government agency regulating the ADS along with the current vehicles standards process. This agency needs to be appropriately resourced to perform this task which would incur costs to government. As such, criteria a (minimises upfront structural change) for Option 2 would need to be amber.

Criteria b (supports efficient ongoing administrative processes) should be amber in the scenarios where two regulatory bodies regulate separate elements of the one vehicle. Industry have noted that this would be inefficient and create additional regulatory complexity.

16. Does our analysis accurately assess the flexibility and responsiveness for each reform option? Please provide any further information or data that may help to clearly describe or quantify the flexibility and responsiveness of the options.

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Flexibility and responsiveness of a regulatory response will be critical to the take-up of automated vehicles in Australia. Failure to accommodate for rapid and dynamic changes in the environment could have detrimental economic outcomes by stifling innovation and resulting in a delay of take-up.

The AAA agree with NTC's assessment that Options 3 and 4 are unlikely to be implemented by 2020 due to the extensive structural and legislative reforms required. The assessment of Option 2 under DIRDC's proposed ADR may allow for additional flexibility than the NTC originally envisaged. The AAA suggests that this option may need to be revisited for this assessment.

The AAA also does not support having two separate agencies regulating the same vehicle. Safety will be sufficiently managed through an appropriately resourced regulator that manages all elements of a vehicle.

17. Do you consider the relevant factors and conditions for government in choosing an option to be valid? Are there any factors and conditions you do not agree with?

*and*

18. Do you agree with our view on the relevant factors and conditions for government in choosing an option?

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The AAA agrees that the compliance framework for automated vehicles needs to be strengthened to protect consumers, build confidence and manage key risks. A new regulator jointly responsible for regulating all aspects of a vehicle, that is appropriately resourced, will significantly improve road safety outcomes, not just for vehicles with an ADS, but for the vast majority of vehicles that will use our roads for the next 20 years.

An appropriately resourced regulator that not only regulates vehicles but also demonstrates national leadership in road safety, could have significant benefits in the short term as well as the longer term. These benefits should have a greater weight in the decision-making process given the uncertainties in the automated vehicle policy space.

19. Has the consultation RIS used an appropriate analytical method for assessing the benefits and costs of the options? What else should be considered?

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The AAA understands that the Consultation RIS relies on a multi-criteria analysis to assess options for a safety assurance system due to information constraints. However, to appropriately assess the options, it is important to consider the incremental benefits of each reform option, relative to the base case. The inability to test the net benefits of each option makes it difficult to support a clear option.

Given the uncertainties, the AAA recommends that 'in-principle' support for a primary safety duty may be given. This would be subject to the undertaking of a full quantitative cost-benefit analysis.

20. On balance, do you agree that the preferred option best addresses the identified problem? If not, which option do you support?

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As noted previously, the AAA supports NTC's assessment that there are significant disadvantages with continuing with the current approach. A balance between government oversight and industry-self regulation will be needed to facilitate take-up and private sector innovation.

As such, the AAA supports a hybrid approach, where existing administrative frameworks are used to establish a safety assurance system and a regulatory body assumes responsibility for regulating the ADS as well as the current vehicle standards regime. Where additional enforcement and compliance is supported, a review should consider whether these should apply to the whole fleet.

Lastly, a primary safety duty should be the subject of a full cost-benefit analysis prior to final approval.

21. How does your choice of option better address the problem than the preferred option?

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The AAA believe that a hybrid approach will comprehensively address safety issues while ensuring that benefits of automated vehicles can be realised in Australia earlier.

# Conclusion

In summary, the AAA supports the introduction of a regulatory system that:

- requires ADSEs to self-certify against principles-based safety criteria that capture key safety risks associated with automated vehicles;
- appoints a government agency to regulate the current vehicle certification process including vehicles that fall under the proposed ADR 90/01, (vehicles with an ADS) noting that ADR 90/01 will adapt to changes in technology (i.e. a single vehicle regulator);
- considers reviewing the offences, compliance and enforcement measures that apply to all vehicles, not just those that have an ADS; and
- instigates a full quantitative cost benefit analysis for the introduction of a primary safety duty, so as to not unnecessarily raise compliance costs and limit technology roll out in Australia.

## Endnotes

1 NRMA: Transforming Mobility: A regulatory road map for connected and automated vehicles accessed at: <https://www.mynrma.com.au/-/media/documents/advocacy/transforming-mobility.pdf?la=en>

2 Portfolio Budget Statements accessed at: [https://infrastructure.gov.au/department/statements/2017\\_2018/budget/files/2017-18\\_PBS-infrastructure.pdf](https://infrastructure.gov.au/department/statements/2017_2018/budget/files/2017-18_PBS-infrastructure.pdf)

3 Public opinion on a future with driverless cars (April 2018), Ipsos accessed at: [https://www.ipsos.com/sites/default/files/ct/news/documents/2018-04/ipsos\\_ga\\_driverless\\_cars\\_in\\_australia.pdf](https://www.ipsos.com/sites/default/files/ct/news/documents/2018-04/ipsos_ga_driverless_cars_in_australia.pdf)

4 ADVI – Economic Impacts of Automated Vehicles on Jobs and investment (2016)

5 ARRB presentation – learning by doing – CAVs on Eastlink (2018) Austroads webinar

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