



Submission to NTC

Discussion Paper—National guidelines for automated vehicle trials

Prepared by the ADVI Policy and Risk Group

1. Preamble

What is ADVI?

The Australian Driverless Vehicle Initiative (ADVI) is the national peak advisory body for autonomous vehicle technology and is a trusted adviser to government and industry partners.

Led and coordinated by the Australian Road Research Board (ARRB), the ADVI initiative is now a cooperative partnership program comprising more than 85 Australian and international organisations, and is funded by partners from a range of sectors, including:

- Automotive industry
- Communications and technology industries
- Insurance and banking industries
- Legal and advisory industries
- Defence industry
- Taxi and car sharing industries
- Parking industry
- Automobile clubs
- Media and industry facilitators
- Local Councils
- State and Commonwealth Governments
- Australian research partners
- International research partners
- Industry associations

ADVI has three core programs of work:

1. Scientific research: field trial development and evaluation, research program development, knowledge transfer and dissemination, scientific quality and rigour.
2. Informing policy and risk: identification of emerging risks and concerns, social research, development of position papers and supporting materials.
3. Media and advocacy: promotion and public participation, industry and media engagement, government relations and public awareness.

As the above points demonstrate, ADVI's role is to investigate and help inform the development of robust national policy; performance criteria; legislation; regulation; business models and operational procedures; and processes to pave the way for the introduction of self-driving vehicles to Australian roads. Underpinning those activities is the need to raise public awareness and encourage a change in mindset through knowledge-sharing, demonstrations, and simulated and in-field investigation trials.

The ADVI initiative is managing the safe and successful introduction of driverless vehicles onto Australian roads, and will ultimately position Australia as an international role model in the development of new technologies and attract developers, innovation and investors.

ADVI brought the first successful on-road test of a driverless vehicle anywhere in the southern hemisphere, and more on-road testing in real-world conditions will be a key part of future research and evaluation efforts.

Who to contact for further information?

The contact person for this submission is Ms Rita Excell Executive Director of the Australian Driverless Vehicle Centre of Excellence rita.excell@advi.org.au

2. Feedback relating to the NTC guidelines discussion paper

Summary

In general terms, ADVI is supportive of the proposed content, methodology and approach as outlined in the *"National guidelines for automated vehicle trials discussion paper, November 2016."*

Many areas of the discussion paper align with previous submissions and public comments made by ADVI in relation to trials of automated vehicles on Australian roads. Indeed, in its previous submission to NTC in July 2016, ADVI flagged its in-principle support for the introduction of national guidelines to support a consistent approach to on-road trials.

ADVI has long advocated for consistent guidelines to be developed and implemented to ensure the safe and successful introduction of automated vehicles into the Australian fleet, we also acknowledge that this will reduce costs and contribute to Australia's international competitiveness.

Given the relative infancy of trials of this technology within the Australian environment, ADVI believes that information gathering and sharing in an open, transparent and structured manner provides a unique opportunity for all industry participants to share learnings and adopt a collaborative best-practice approach.

ADVI is highly supportive of on-road trials, and recognises that they are critical to the success of this new vehicle technology and to ensure that more automated systems can operate safely on Australian roads.

Some specific points of feedback that ADVI wishes to provide in response to the proposed national guidelines are outlined in the table following

Question	Comment	Explanation
Do you agree that national guidelines should provide the basis for conditions of an exemption? If not, why?	Yes	Just as autonomous vehicle technologies are evolving and constantly developing, it is critical to ensure that the proposed National Guidelines for AV trials also stay updated as a 'living', rather than static, document. This will ensure the guidelines remain relevant to this rapidly-changing industry opportunity. A performance-based approach is welcomed which strike 'a balance between facilitating innovation and safety'.
How should road transport agencies use the guidelines in relation to exemptions?	Yes	ADVI agrees that jurisdictions use the national guidelines to provide the basis of conditions for any exemptions, with the 'essential' requirements of the national guidelines as a minimum; however, jurisdictions may add additional 'essential' requirements as they deem fit, in addition to making any 'optional' requirements in the national guidelines 'essential', on case-by-case basis.
Should national guidelines take a safety management approach? If not, what other approach do you suggest?	Yes	ADVI recommends that a Safety Management System approach be adopted which focusses on how failures are to be addressed.
Are there additional criteria that should be included in the guidelines?	Yes	<p>1. Monitoring during trials</p> <p>Reporting obligations must balance the issue of breaching intellectual property or commercial competition matters with adopting a holistic approach based on a common good.</p> <p>Effective planning is assumed to be critical for the ultimate successful undertaking of trials within the road network environment. The absence of any standard planning model for on-road trials of autonomous vehicles reflects an opportunity to fill that void and</p>

	<p>gather information of monitoring activity as the trial is underway.</p> <p>Such data will include identification of planning and/or legislative gaps encountered, and what changes were required to be made, and why, to achieve a positive trial event.</p> <p>Capturing this level of additional data is likely to inform future trials of previously experienced issues and gaps, and allow those to be more broadly considered in the planning stages for future trials involving autonomous vehicles.</p> <p>2. Post-trial evaluation conducted</p> <p>Similarly, the need to capture monitoring data obtained during a trial is critical to compile a comprehensive overview through a post-trial evaluation process. A structured process would allow opportunity to learn first-hand from trial coordinators what was learned from the trial event and what could be done differently.</p> <p>Such learnings would be invaluable if it was shared through a debrief/review process with those planning to conduct future trials. A data-suite would also encourage governments to consult with other jurisdictions when assessing applications to conduct a trial, and ensure that trial proposers actively consider previous trials in their planning process.</p> <p>3. Consistent data set established</p> <p>While sharing of lessons learnt from trials is one clear opportunity, there is also a need to ensure that there is a consistent set of data collected across these trials. This will ensure that we can inform other trials and compare the performance of technologies for Australian conditions.</p>
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		<p>It would be useful to consider a formal mechanism for the sharing of trial findings across jurisdictions and industry. This should be a prescriptive part of the guidelines which covers the definition of the data to be collected from every trial to ensure that a national resource of information can be established. While individual jurisdictions are always happy to talk up the trial and the activity often some important learnings and challenges are not well shared.</p> <p>4 Import process for non-ADR compliant vehicles</p> <p>One of the issues encountered by the recent RAC Intellibus trial, but not discussed in the proposed national guidelines document is the exemption arrangements for circumstances when a vehicle that may not be compliant with the Australian Design Rules, is proposed for use in a trial on Australian roads.</p> <p>The highly-successful shuttle bus trial involved an exemption/discretionary approval for the vehicle’s use – which did not have a steering wheel and did not comply with any Australian standards. This is a key issue that must be considered at a national level – especially given the likelihood of multi-state trials at a future point where cross-border approval issues may arise.</p>
<p>Do you support the guidelines including prescribed insurance? If so, what kind of insurance should be prescribed?</p>	<p>Yes</p>	<p>Insurance for trials</p> <p>The National Guidelines for automated vehicle trials must include insurance as an essential requirement for any automated vehicle trial. The required insurance should be appropriate and sufficiently broad to cover a number of risk areas, including public property damage and product liability. This is consistent with Option 3(a) of the insurance options put forward by the National Transport Commission in its Discussion paper.</p>



	<p>Automated vehicle manufacturers and/or suppliers should retain responsibility for ensuring they have appropriate insurance to cover their liabilities and contingent liabilities to satisfy statutory requirements under existing Australian Consumer Law. Insurance products that could be considered for purchase by automated vehicle manufactures and/or suppliers include public liability, product liability and cyber risk.</p> <p>Compulsory Third Party Insurance for Trials</p> <p>Third party insurance is also an essential insurance for occupants and public safety in an Autonomous vehicle (AV) trials and should be a required insurance for any AV trial.</p> <p>Ideally statutory schemes should not bear the full financial costs of compensation for persons injured as a result of product failures. However, neither should community members injured as a result of an AV malfunction be penalised or have the path to compensation be more difficult than if they were injured in any other road transport accident. Particularly as evidence shows that early access to medical treatment results in better health outcomes for injured people.</p> <p>The current state based CTP schemes vary considerably in entitlements, eligibility and who underwrites and administers the scheme. As such each state should have the option to include trials as part of the CTP statutory scheme (with manufacturers offered a CTP premium that best covers the risk they pose) or exclude from the scheme as long if there is a private personal injury cover in place.</p>
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<p>If trialing organisations are required to collect crash data and share it with road transport agencies, what data should be required?</p>		<p>There is already a regulatory requirement for crash information to be provided to authorities. ADVI does not see any change to this current requirement. However, it is inevitable that road transport and safety agencies will require data to understand the causes of crashes involving driverless vehicles, and it is not immediately clear that this would be covered under existing regulations. Guidelines should not be prescriptive but prepared to evolve as greater understanding and capacity is developed over what data is required and</p>

		<p>possibly available at the time, as it is still too early to determine what data is relevant.</p> <p>Ideally data for road transport and safety agencies would include location, time, speed, direction of travel, type of crash, mode of operation (manual or automated), any recorded action by the driver/operator, braking/acceleration, steering, indicating, headlight status, any known equipment failure(s), and depersonalised v2v, V2I or V2x messages and any images recorded during the period from 30 seconds prior to the crash through to 30 seconds after the crash. This type of data may ultimately become available if there is a demonstrated need and benefit.</p> <p>It is also important that the insurance industry have access to this crash data in order to provide and improve insurance products for future trials, apportion liability, and to make the claims process as easy as possible for consumers.</p>
<p>How should an automated vehicle 'incident' be defined? What data should be required for such incidents?</p>		<p>In the early days of testing the technology it is important for regulators to understand the system reliability. It is recommended that an incident be defined as any time when the system has a failure. These incidents can range from minor to major in nature.</p>
<p>How important is it that state and territory road transport agencies facilitate cross-border trials of automated vehicles? How could governments enable cross-border trials?</p>		<p>A consistent set of guidelines and exemption requirements should be sufficient to support cross border trials. ADVI is already aware of three governments working toward a cross border trial.</p>
<p>Are there any unique issues for heavy vehicles that require special</p>		<p>There is a real risk that the benefits for heavy vehicles will be delayed unnecessarily by not dealing with automated heavy vehicles differently to light vehicles.</p>



<p>consideration in guidelines for automated vehicle trials?</p>		<p>The heavy vehicle industry is regulated more than light vehicles, has its own monitoring regime in place and has direct economic benefits that can be realised by companies, the environment and society. ADVI recommends that NTC consider a parallel approach to guidelines for trialing automated heavy vehicles, particularly for those that operate in controlled road environments and remote areas.</p> <p>Heavy vehicles already have a well-established Performance Based System in place and it is recommended that this be used as the basis to expand into the trialing of Automated Heavy Vehicles.</p>
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