



MOTOR ACCIDENT INJURY INSURANCE AND AUTOMATED VEHICLES DISCUSSION PAPER

October 2018

Report outline

Title	Motor Accident Injury Insurance and Automated Vehicles
Type of report	Discussion paper
Purpose	For public consultation
Abstract	This paper identifies elements within existing motor accident injury insurance schemes that may act as barriers to accessing compensation for personal injuries or death caused by an automated driving system. The paper discusses how these schemes, or alternative insurance models, could provide cover for injuries and deaths involving an automated vehicle.
Submission details	Submissions will be accepted until 12 December 2018 online at www.ntc.gov.au or by mail to: Attn: Motor Accident Injury Insurance and Automated Vehicles National Transport Commission Level 3/600 Bourke Street Melbourne VIC 3000
Key words	Automated vehicles, compulsory third party insurance, motor accident injury insurance, personal injury, liability
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Executive summary

Laws in each Australian state and territory require every registered vehicle to have motor accident injury insurance (MAII). Vehicles with automated driving systems (ADS) that can drive themselves for all or part of a trip are now being trialled and are expected to be commercially deployed in coming years. Although it is anticipated that automated vehicles will improve road safety in the longer term, accidents will continue to happen. This raises the question of how a person injured or killed in a crash involving a vehicle with an ADS could access compensation.

The purpose of this paper is to:

- identify barriers to accessing compensation under current MAII schemes for personal injuries caused by an ADS
- seek views on whether existing MAII schemes should be amended to provide cover for injuries caused by an ADS
- seek views on other options that could provide cover for injuries caused by an ADS.

Feedback we receive will be used to develop recommendations for ministers to consider at the May 2019 Transport and Infrastructure Council meeting.

The paper is part of a broader national reform program for the National Transport Commission, which aims to put end-to-end regulation in place to support the safe, commercial deployment and operation of automated vehicles.

Australia has a variety of motor accident injury insurance schemes

Every state and territory in Australia requires registered vehicles to have MAII. This insurance provides compensation for personal injury and/or death from motor vehicle accidents.

In the Northern Territory, Victoria, New South Wales and Tasmania, the MAII schemes provide benefits for people injured in motor vehicle accidents on a no-fault or partial no-fault basis. Western Australia, South Australia, the Australian Capital Territory and Queensland operate common law MAII schemes, with various levels of modification, that rely on an injured person establishing negligence against an insured party.

In addition, coverage for people who sustain eligible catastrophic injuries in a motor vehicle accident is provided regardless of fault under the National Injury Insurance Scheme (NIIS). The NIIS provides necessary and reasonable treatment, care and support according to nationally agreed minimum benchmarks. The NIIS is funded via a levy, premium or charge that is paid at the time of vehicle registration under different arrangements in each state and territory.

What are the problems?

This paper focuses on the following problems:

- People injured or killed in an ADS crash may not have the same, or any, access to compensation under existing MAII schemes compared with those injured or killed in a crash involving a motor vehicle controlled at the time by a human driver.
- Current MAII laws do not contemplate an ADS 'driving' a motor vehicle.

MAII laws contain definitions that do not provide for an ADS being 'in control of', being a 'driver' of or 'driving' a vehicle. One of the circumstances in which an injury or accident is eligible under these schemes is if it was caused by 'the driving of' the

vehicle. An ADS crash may not meet that requirement and access to compensation or benefits may be more restricted for those injured in an ADS crash.

- Many MAI schemes require fault to be proved for compensation to be paid.

To obtain compensation under fault-based MAI schemes (and hybrid MAI schemes in limited circumstances), an insured party - for example, the driver or registered operator must be at fault. Even if an ADS were considered to be driving, it is not a person. An ADS is a machine and cannot be negligent. The entity responsible is not clear.

- Current MAI schemes are generally designed to cover injuries caused by human error rather than product faults.¹

If MAI schemes were to cover ADS crash injuries, significant redesign of MAI schemes may be required to ensure that the cost of ADS crashes is borne by those who can control the risks. These parties may include manufacturers, automated driving system entities (ADSEs), communications providers and infrastructure owners rather than governments, insurers and vehicle owners.

Principles

Any decision on reform to ensure people injured in an ADS crash can obtain compensation should be guided by the overarching principle that:

No person should be worse off, financially or procedurally, if they are injured by a vehicle whose ADS was engaged, than if they were injured by a vehicle controlled by a human driver.

To support the overarching principle, the following principles are proposed:

- Reasonable and timely access to compensation should continue regardless of the type of vehicle involved in the injury.
- The arrangements should promote transparency and certainty in accessing compensation.
- The arrangements should ensure insurance for personal injuries caused by automated vehicles is fully funded, and affordability is considered, for example by minimising potential litigation between insurers and manufacturers/ADSEs.
- Existing state and territory benefit regimes should not be required to change.
- The arrangements should include an efficient process to access a standard set of reliable and verifiable vehicle crash data.

Options to address the problems

This paper looks at six options. The first three are based around existing MAI schemes. The last three options suggest new approaches. These are not necessarily mutually exclusive.

Option 1: Rely on existing legal framework

The existing MAI schemes have different definitions of motor accident or injury. Some schemes require fault by an insured party to be proved to gain access to compensation. Depending on the circumstances of the crash, MAI schemes may or may not provide

¹ The exception is Queensland, which covers loss of control due to a defect in the vehicle.

coverage. Under this option, available causes of action for anyone injured in an ADS crash include making a claim under existing MAl schemes, under the Australian Consumer Law (ACL), in contract law for breach of contract or in negligence based on a breach of a duty of care.

Option 2: Exclude injuries caused by an ADS from MAl schemes

Under this option, the MAl laws would be amended to exclude accidents/injuries caused by an ADS. Anyone injured by an ADS would not be able to use the MAl schemes to seek compensation for their injuries. An injured person would have no option but to rely on taking action under negligence, the ACL or contract law. This option provides clarity that a claim could not be made under MAl schemes.

Option 3: Expand MAl schemes to cover injuries caused by an ADS

Under this option, the MAl laws would be amended to remove barriers to accidents/injuries caused by ADSs. Injured people would have access to compensation and benefits regardless of whether the injury was caused by an automated vehicle whose ADS was engaged.

Expanding the scheme would shift costs from manufacturers under product liability to vehicle operators and insurers under the MAl schemes. Although insurers would have rights of recovery against manufacturers or ADSEs, it is likely that ADS crashes will be more complex to establish in negligence and product liability, with the risk that costs would not be recovered.

A modification of option 3 to address this cost shifting would be to create a national reinsurance pool from compulsory contributions from all parties who could be responsible for an ADS malfunction. Contributing parties could include ADSEs and other parties involved in automated vehicle manufacture, supply and delivery, including modifiers, installers, repairers and infrastructure and telecommunications providers. MAl scheme claims managers would have access to, or a right to recovery from, the pool. The national reinsurance pool would be administered by a new or existing national entity.

Option 4: Purpose-built automated vehicle scheme

Under this option, a purpose-built scheme would be established to ensure there is an accessible claims process for people injured by automated vehicles. It could be a national scheme, or a state and territory scheme designed to mirror existing MAl scheme arrangements in each jurisdiction. Premiums could be paid on a per vehicle basis by automated vehicle owners, fleet operators, users, dealerships and/or ADSEs.

The scheme would need to cover liabilities for injuries caused by both driver negligence and product failure because human driver negligence may still be a factor in an accident involving an automated vehicle that has human driver controls.

Option 5: Minimum benchmarks

Under this option, national benchmarks would be agreed for the scope and coverage of anyone injured in an ADS crash. The NIIS is an example of this type of approach.

Jurisdictions would retain the responsibility and flexibility to deliver the minimum requirements in the way that best suits their situation. They could implement automated vehicle injury insurance arrangements that may:

- leverage existing MAl schemes
- allow for more private insurer participation
- permit self-insurance by ADSEs

- consider the ownership composition of the fleet in each jurisdiction
- change as the autonomy level of the fleet evolves.

Option 6: Single insurer

Under this option, the MAIL laws would be amended to allow for private insurers to provide fully comprehensive motor accident insurance (cover for property damage and personal injury) under a single policy covering all liabilities for automated vehicles. This is a change from existing arrangements in Australia where compulsory third-party insurance is purchased as a separate policy to optional third-party property or comprehensive motor vehicle insurance.

Where the ADS causes an accident, the insurer would be able to pursue a recovery claim against the manufacturer. The personal injury costs of ADS failures would be privately underwritten. Existing MAIL schemes would not have to expand beyond covering personal injury caused by human drivers. Jurisdictions in which a statutory corporation or authority exclusively provides third-party personal injury insurance would need to allow private providers to offer this insurance.

Data and registration

The paper also analyses potential data requirements for determining liability in ADS crashes, along with impacts on the mutual recognition of vehicle registration.

Conclusion, consultation and next steps

Our analysis indicates that options 1 and 2 are unlikely to meet with community expectations on equality of access to compensation. Option 3 best meets our assessment criteria and would be the simplest and quickest option to implement. However, there are concerns that under this option, governments will be underwriting private sector risk. Further work would be required to avoid this consequence. Options 4, 5 and 6 are all viable options and each have their own advantages; all require significant further work to develop.

A possible approach could be to implement option 3 in the short to medium term while the number of vehicles with an ADS remains small and their operational design domain remains quite limited. A new approach could then be developed that takes into account evidence of safety risks from early deployments.

We are seeking submissions on this paper by **Wednesday 12 December 2018**. Feedback will be used to develop recommendations for transport ministers to consider in May 2019.

1 Context

Key points

- The Motor Accident Injury Insurance and Automated Vehicles Review is part of a broader body of National Transport Commission work to have end-to-end regulation in place by 2020 to support the safe deployment of automated vehicles.
- The National Transport Commission and Heads of Motor Accident Injury Schemes have identified:
 - elements of compulsory third-party insurance schemes and national injury insurance schemes that may act as barriers to accessing compensation by those who suffer personal injury² caused by an automated driving system.
 - several options that could enable people who are injured by an automated driving system to access compensation.
- Failure to address personal injury insurance issues may unduly prevent or slow the deployment of automated vehicles in Australia.

1.1 About the National Transport Commission

The National Transport Commission (NTC) is a statutory agency that proposes nationally consistent land transport reforms. We submit reform proposals to the Transport and Infrastructure Council (the Council). The Council comprises Commonwealth, state, territory and New Zealand ministers who are responsible for transport and infrastructure. The Australian Local Government Association is also a Council member.

The NTC contributes to achieving national reform priorities that are agreed by the Council. Our reforms are objectively assessed against the following policy objectives:

- improve transport productivity
- improve environmental outcomes
- support a safe transport system
- improve regulatory efficiency.

One of our key focus areas is removing regulatory barriers to transport technologies that have significant safety, productivity and environmental benefits.

1.2 About the Heads of Motor Accident Injury Schemes

The Heads of Motor Accident Injury Schemes is a group comprising the Chief Executives, or delegates, of the agencies responsible for regulating and/or delivering motor accident personal injury insurance in Australia and New Zealand. It includes the separate agencies responsible for catastrophic injury insurance resulting from motor vehicle accidents under the National Injury Insurance Scheme (NIIS).

² In this paper, we generally refer to ‘injury’ caused by motor vehicle accidents rather than ‘injury and/or death’. Provided the injury occurred in the circumstances defined in the relevant law, benefits may be paid to surviving spouses and dependent children, and liabilities arising from the death of a person as well as injuries to a person are covered by MAII schemes.

The group is committed to promoting and implementing best practice in motor vehicle personal injury insurance through:

- information exchange and benchmarking
- discussing strategic issues
- promoting reform through coordinated action
- providing advice to government
- engaging with other bodies associated with accident and injury insurance regulation.

The group has no legal constitution or status and cannot impose decisions on jurisdictions.

The NTC has consulted with the Heads of Motor Accident Injury Schemes in drafting this paper and gratefully acknowledge their assistance. Unless otherwise stated, the contents of this paper should not be interpreted as the individual views of jurisdictions or their agencies responsible for delivering or regulating motor accident personal injury insurance, or the collective view of the Heads of Motor Accident Injury Schemes.

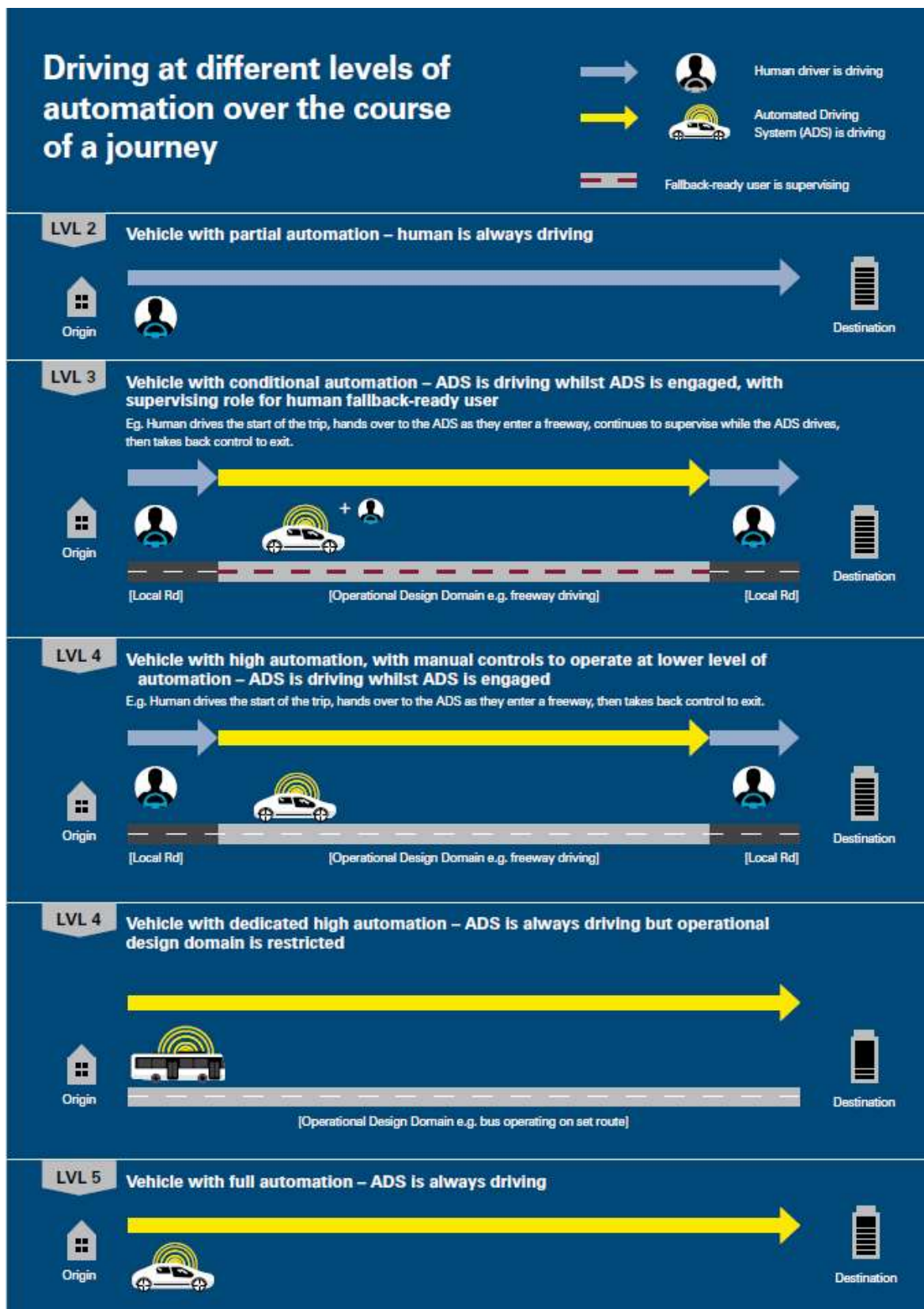
1.3 What are automated vehicles?

The term ‘automated vehicle’ covers a variety of levels of automation. The table of key automated vehicle terms below describes levels of driving automation. These definitions are based on the Society of Automotive Engineers (SAE) International Standard J3016, *Taxonomy and definitions for terms related to driving automation systems for on-road vehicles* (SAE International, 2016).³ These SAE levels are currently being used to develop legislative and regulatory responses to automated vehicles in the United States and the European Union.

Throughout this paper, unless otherwise specified, when we use the term ‘automated vehicle’ we are referring to vehicles with ‘conditional’, ‘high’ or ‘full’ automation as defined in the SAE International Standard J3016. Only vehicles at these levels of automation are capable of ‘driving’ on a sustained basis without human assistance or monitoring. Figure 1 shows how the driving task moves from human to an automated driving system (ADS) at different levels of automation.

³ SAE J3016 was revised in June 2018. Minor clarifications were made to some definitions and new definitions were added. The changes do not affect this paper.

Figure 1. Driving at different levels of automation over the course of a journey



Key Terms – Automated vehicles

ADS crash means a crash caused by an automated vehicle whose ADS is engaged at the time of the crash.

Automated driving system (ADS) means the hardware and software collectively capable of performing the entire dynamic driving task on a sustained basis. It is a type of driving automation system used in vehicles with conditional, high or full automation.

Automated driving system entity (ADSE) means the legal entity that is responsible for the ADS. This is likely to be the vehicle manufacturer.

Conditional automation means the ADS undertakes the entire dynamic driving task for sustained periods in defined circumstances. The human driver does not have to monitor the driving environment or the ADS but must be receptive to ADS requests to intervene and any system failures. This is SAE Level 3 automation.

Dedicated automated vehicle means a highly or fully automated vehicle that has no manual controls enabling it to be driven by a human driver. In this type of vehicle, the ADS performs the dynamic driving task at all times and in all situations the vehicle is able to operate. (This term is not the same as the definition in the SAE International Standard J3016.) There are currently no fully automated dedicated automated vehicles.

An example of a highly automated dedicated automated vehicle is low-speed driverless passenger shuttles such as the Autonobus trialled on La Trobe University's Bundoora campus.

Dynamic driving task means all the operational and tactical functions required to operate a vehicle in on-road traffic.

Full automation means all aspects of the dynamic driving task and monitoring of the driving environment are undertaken by the ADS. The ADS can operate on all roads at all times. No human driver is required. This is SAE Level 5 automation.

High automation means that the ADS undertakes the entire dynamic driving task for sustained periods in some situations, or all the time in defined places. When the system is driving the vehicle, a human driver is not required to monitor the driving environment or the driving task. Nor are they required to intervene, because the ADS can bring the vehicle to a safe stop unassisted. This is SAE Level 4 automation.

1.4 Objectives

The objectives of the Motor Accident Injury Insurance and Automated Vehicles Review (previously known as the Compulsory Third-Party Insurance Review) are to:

- identify barriers to accessing compensation under current motor accident injury insurance (MAII) schemes for personal injuries caused by an ADS
- seek views on whether existing MAII schemes should be amended to provide cover for injuries caused by an ADS
- seek views on other options that could provide cover for injuries caused by an ADS.

The review is part of a broader national reform program for the NTC, that aims to put end-to-end regulation in place to support the safe commercial deployment and operation of automated vehicles at all levels of automation (see section 1.5.1). In November 2016, the Council approved the development of a regulatory framework to support the safe operation of automated vehicles (National Transport Commission, 2016a), which included the following recommendation:

Recommendation 7: That state and territory governments undertake a review of compulsory third-party and national injury insurance schemes to identify any eligibility barriers to accessing these schemes by occupants of an automated vehicle or those involved in a crash with an automated vehicle.

That, subject to the review of insurance schemes, each state and territory government amends its compulsory third-party insurance schemes in close consultation with each other and industry, and that resulting reforms are nationally consistent wherever possible.

Lead agency: States and territories to undertake reviews, and the NTC to report progress to the Transport and Infrastructure Council.

Timeframe: Legislative amendments to state and territory compulsory third-party and national injury insurance schemes completed by 2018.

Since November 2016, the review's scope has broadened and consultation across government has added complexity and time. Feedback received will be used to develop recommendations for consideration at the Council's meeting in May 2019.

1.4.1 Scope

The aim of this review is to assess how crashes involving vehicles driven by an ADS would be covered by existing MAll schemes. It discusses whether compensation for personal injuries caused by an ADS should be provided within existing MAll schemes and how this could be achieved, or whether compensation should be provided by an alternative insurance model.

The following issues are within the scope of this review:

- overview of MAll regulation
- identifying legislative barriers for people injured by an ADS to access compensation equivalent (in quantum and accessibility) to that provided under existing MAll schemes
- discussion of other options that could provide cover equivalent to existing MAll schemes for injuries caused by an ADS.

The following issues are outside the scope of this review:

- Detailed consideration of the financial sustainability of MAll schemes, including cost of premiums and government underwriting. Financial risks will vary between jurisdictions, and this may be considered by the Australian Prudential Regulation Authority for privately underwritten MAll schemes. The Heads of Treasuries and the Council on Federal Financial Relations may seek to consider implications of this review.
- Detailed consideration of the Australian Consumer Law's (ACL) suitability to deal with product liability claims involving ADSs. This discussion paper looks at the current mechanisms for compensation for personal injuries under product liability laws for the purposes of understanding alternatives to MAll. Product liability laws are established under a Commonwealth law that is applied in states and territories. These laws are the responsibility of the Ministerial Council on Consumer Affairs. The ACL covers a wide range of goods apart from motor vehicles.

Although detailed consideration of the ACL is outside the scope of this review, the Australian Competition and Consumer Commission (ACCC) has advised that the ACL would not be appropriate to act as a compensation scheme for personal injuries caused by automated vehicles.

- Over-insuring, where two or more policies exist that cover the same subject matter and parties are insured against the same risk.
- Consideration of small robot delivery vehicles and other automated motor vehicles that may be developed. Delivery robots are ‘currently outside the NTC project mandate set by the Transport and Infrastructure Council’ (National Transport Commission, 2016b, p. 27). The focus of this paper is automated passenger vehicles and heavy vehicles designed principally for use on roads rather than footpaths.
- Whether other innovative automated small delivery vehicles that mainly use footpaths should be permitted to operate and under what conditions. For example, the type of registration required and what sort of insurance should apply could be developed separately. State and territory registration authorities and MAII regulators could work together to resolve these issues.

1.5 Background

1.5.1 Broader national reform program for automated vehicles

Since late 2015, the NTC has worked with Commonwealth and state and territory governments, Austroads and industry and consumer groups to identify and address regulatory barriers and policy issues associated with automated vehicles. In November 2016, the Council approved the NTC Policy Paper, *Regulatory Reforms for Automated Road Vehicles* (National Transport Commission, 2016a). The paper provides a roadmap to prepare Australia for the safe and routine commercial use of automated vehicles through the following projects:

Delivered May
2017

Automated vehicle trial guidelines: national guidelines governing conditions for trials of automated vehicles.

Delivered
November
2017

Clarifying control of automated vehicles: national enforcement guidelines to clarify the application of current law on control and proper control to levels of driving automation available currently.

Phase 1:
Completed
May 2018
Phase 2:
Commenced

Changing driving laws to support automated vehicles: development of legislative reform options to clarify the application of current driver and driving laws to automated vehicles and establish legal obligations for automated driving system entities (ADSEs) and human users.

Phase 1 was completed in May 2018 when the Council approved high-level reform options. These include that a uniform approach to driving laws for automated vehicles is taken through developing a purpose-built national law. Phase 2 will develop more detailed policy recommendations to enable the development of purpose-built national law to regulate an ADS ‘driver’. This will be part of the development of detailed policy across all NTC automated vehicle reforms and be translated into laws as required.

Report to
Council:
November
2018

Safety assurance system for automated vehicles: development of an approach to the safety of automated vehicles. In November 2017, the Council approved development of a safety assurance system based on mandatory self-certification in the interim period, until international standards are developed. A consultation regulation impact statement (RIS) (National Transport Commission, 2018b) was released seeking the views of interested parties on policy options to address the safety risks of deploying automated

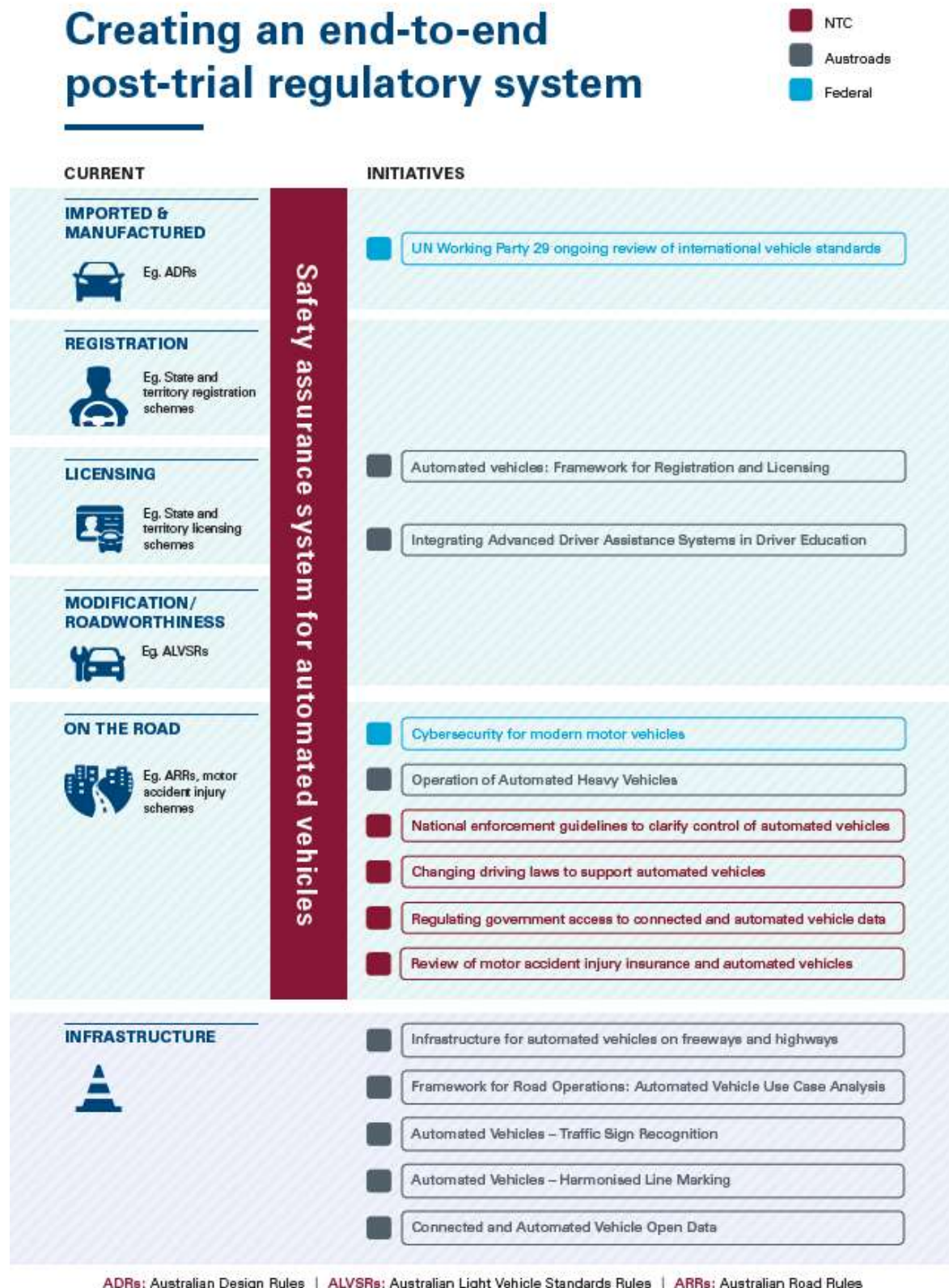
vehicles. We will submit the RIS to the Council for a decision in November 2018.

Report to
Council: May
2019

Regulating government access to C-ITS and automated vehicle data: assessment of whether Australia's information access framework applying to government collection and use is sufficient to protect the privacy of C-ITS and automated vehicle users. We released a discussion paper in September 2018 and will report to the Council in May 2019.

Figure 2 outlines the initiatives for creating an end-to-end post-trial regulatory system for automated vehicles.

Figure 2. Creating an end-to-end post-trial regulatory system



1.5.2 Links to other NTC projects

This review has drawn on five important elements of the NTC's Changing Driving Laws and Safety Assurance System projects. Some elements have been approved by ministers, while other elements are currently being considered in light of stakeholder feedback.

Approved recommendations:

1. ADSs will be legally permitted to operate on Australian roads

In May 2018, the Council approved the NTC's first recommendation from the Policy Paper *Changing driving laws to support automated vehicles* (National Transport Commission, 2018a). The recommendation was that there should be a purpose-built national law that:

- 1(i). allows an automated driving system that has been approved under, and continues to comply with, the safety assurance system to perform the dynamic driving task when it is engaged

Implications for this review:

Vehicles with an ADS will be legally permitted to operate on roads. Under the proposed Safety Assurance System, it will have to be demonstrated how the ADS complies with certain safety criteria to ensure it operates safely. If crashes involving automated vehicles do occur, those injured will expect to be able to claim compensation for their injuries. This review aims to ensure there is a pathway that the community recognises is equitable.

2. The legal entity responsible for the operation of an ADS will be the ADSE

The Council also approved the NTC's third and fourth recommendations from the Policy Paper *Changing driving laws to support automated vehicles* (National Transport Commission, 2018a) that:

3. The purpose-built national law should provide that when the automated driving system is engaged the automated driving system is in control at conditional, high and full automation and the automated driving system entity is responsible for compliance with dynamic driving task obligations.
4. The purpose-built national law should identify any additional duties and obligations that an automated driving system entity is responsible for that do not form part of the dynamic driving task.

Implications for this review:

The Changing Driving Laws reforms propose to make the ADSE, identified under the Safety Assurance System⁴, responsible for the ADS's compliance with safety and traffic (mainly dynamic driving task) obligations. These proposals fulfil the need to have a legal entity that is responsible for the ADS's noncompliance with those laws. Having an identified legal entity with responsibilities for the ADS will help insurers in actions for damages resulting from an ADS crash due to a defective or unsafe ADS.

⁴ The proposed Safety Assurance System design principles require ADSEs to submit a Statement of Compliance that demonstrates how a number of agreed safety criteria have been managed. This proposal is being considered in light of feedback to the Safety Assurance System consultation RIS.

3. The definition of ‘driver’ within existing road traffic and safety laws will not change

The Council approved recommendation 1 in the Policy Paper *Changing driving laws to support automated vehicles* (National Transport Commission, 2018a) to create legislation that allows an ADS to perform the dynamic driving task. This option was recommended over other options, including changing the definition of ‘driver’ within existing road traffic and safety laws to include the ADS.

Implications for this review:

The approved approach is to specify in new automated vehicle law the driving and other traffic requirements an ADS will have to comply with. It will make the ADSE for the ADS responsible for any noncompliance.

It is not expected that the definition of ‘driver’ within existing road traffic and safety laws will be changed. However, MAI laws also use the term ‘driver’ or ‘driving’. These terms, and the ways they could be a barrier to people injured in an ADS crash accessing MAI scheme compensation, are discussed in Chapter 3. Depending on the option that is supported for this review, amendments to these definitions may be necessary. Alternatively, it may be possible to implement outcomes from this review by including them in the purpose-built national law for automated vehicles.

Current proposals for reform

As part of the Safety Assurance System consultation RIS there are two obligations proposed to be placed on the ADSE that are relevant to this review. These proposals are being considered in light of submissions received in response to the consultation RIS.

4. The Safety Assurance System will require the ADSE to have insurance

The Safety Assurance System consultation RIS (National Transport Commission, 2018b, p. 89) proposes that the ADSE must meet minimal financial requirements, including insurance:

The ADSE must also hold an appropriate level of insurance to cover personal injury, death and property damage caused by the ADS when it is properly engaged.

Insurance requirements must be considered in light of the NTC’s changing compulsory third party insurance to support automated vehicles project.

These financial requirements will assist in ensuring financial risk and liability is appropriately distributed and managed. The onus is on the applicant to explain how they will remain solvent and why the level of insurance held is appropriate in the circumstances.

Implications for this review:

An ADSE will be required to have insurance that is adequate to cover claims made against it. There will need to be insurance products on the market for an ADSE to purchase. This could be product liability, public liability or some other insurance product. The exact nature of the insurance required will be informed by the outcomes of this review.

5. The Safety Assurance System will require the ADSE to record and share automated vehicle data

The Safety Assurance System consultation RIS (National Transport Commission, 2018b, p. 87) proposes data recording and sharing requirements for the ADSE to:

... outline the data it will record and how it will provide the data to relevant parties. Without limiting the data to be recorded and shared, the applicant must explain how it will ensure:

- the vehicle has real-time monitoring of driving performance and incidents, including event data records in the lead up to any crash or near-miss that identifies which party was in control of the vehicle at the relevant time
- the vehicle can provide road agencies with crash and near-miss data
- relevant parties (including police) receive information about the level of automation engaged at a point in time
- individuals receive data to dispute liability (for example, data showing which party was in control for the purposes of defending road traffic infringements) when the individual makes a reasonable request and the provision of information aligns with privacy regulation
- data is provided in a standardised, readable and accessible format when relevant
- data is retained to the extent necessary to provide it to relevant parties. The amount of time data is retained for may depend on the purpose(s) the information could be used for (for example, law enforcement or insurance)
- data is stored in Australia.

Implications for this review:

This criterion does not specify data standards or data types. It does not define who 'relevant parties' are and what types of data they have access to. These matters may need to be detailed, possibly in regulation, so the rights of access and responsibilities to disclose of insurers, manufacturers, ADSEs, insured parties and injured people are clear.

1.6 Motor accident injury insurance in Australia

1.6.1 Compulsory third-party insurance

Each Australian state and territory has laws that require every registered vehicle to have MAI (often referred to as 'green slip' or CTP insurance). This insurance provides compensation for personal injury and/or death from motor vehicle accidents. Compensation does not extend to property damage caused by a motor vehicle accident.

MAI laws around Australia modify or extinguish (to varying degrees) specific common law rights to actions in negligence based on an alleged failure to take reasonable care to avoid causing injury or loss to someone.

- Western Australia, South Australia, the Australian Capital Territory and Queensland operate fault-based, common law schemes with various levels of modification. They rely on an injured person establishing negligence against an insured party, usually the driver or owner.
- Victoria, Tasmania and New South Wales (for accidents after 1 December 2017) have hybrid schemes where access to common law damages is available to varying degrees. For example, in Victoria people with specified levels of permanent impairment, can bring actions for pain, suffering and economic loss.
- Only the Northern Territory scheme is completely no-fault. Common law liability for motor accidents has been abolished.

Compensation in the form of periodic payments or a lump sum may be payable, depending on the scheme, for:

- medical, allied health and rehabilitation expenses
- past and future loss of income
- home and vehicle modifications

- non-economic loss – pain and suffering
- spouse/partner and dependent payments on death
- gratuitous or commercial care.

MAI premiums are paid as a condition of vehicle registration. The premium may be paid to a statutory body as occurs in Victoria, the Northern Territory, Tasmania and Western Australia. Elsewhere, the premium is paid to a private insurer.

1.6.2 National Injury Insurance Scheme

The NIIS ensures people who sustain eligible serious or catastrophic, lifetime injuries in motor vehicle accidents (regardless of fault) receive necessary and reasonable treatment, care and support. All states and territories have introduced laws (the Australian Capital Territory, New South Wales, Queensland, South Australia and Western Australia) or amended existing laws (Victoria, Tasmania and the Northern Territory) to implement the scheme. The NIIS excludes people who have received a common law compensation payment in respect of their care and support needs.

The NIIS is funded via a levy, premium or charge that is paid at the time of vehicle registration under different arrangements in each state and territory. The NIIS levy is paid to the lifetime support authority/scheme in New South Wales, Queensland, the Australian Capital Territory and South Australia. In the Northern Territory, Tasmania and Western Australia it is paid to the statutory authority that administers the MAI schemes.

Agreed national minimum benchmarks (Australian Government Department of Treasury, 2018) include:

NIIS benchmark: Scope of motor vehicle accidents

Each jurisdiction's NIIS should cover injuries that arise from accidents that:

- involve at least one registerable vehicle
- occur on a public road or other locations where registered vehicles are commonly driven including driveways and car parks, and areas adjacent to roads such as nature strips, footpaths and other road-related areas
- are the result of:
 - the driving of the vehicle
 - the vehicle running out of control
 - action taken to avoid a collision with the vehicle
 - a collision with the vehicle while it was stationary
- includes injuries to pedestrians and cyclists injured because of such incidents.

1.6.3 MAlI arrangements in Australia

Table 1 provides an overview of the MAlI arrangements in each jurisdiction. Even at a high-level view, there is significant variation. On closer inspection of different elements, the variation is even greater.

Table 1. Overview of MAlI arrangements in Australia

Non-catastrophic injuries				Catastrophic injuries (NIIS)		Funding	
Juris.	Fault-based	No-fault	Common law access	Treatment, care and support		Govt. under-written	Privately under-written
				Lifetime care scheme	Common law access		
ACT	✓		✓	✓	x		✓
NSW	✓	•	Modified	✓	x		✓
NT		✓	x	✓	x	✓	
Qld	✓		✓	✓	✓*		✓
SA	✓	▲	✓	✓	x		✓
Tas		✓	Restricted	✓	x	✓	
Vic		✓	Restricted	✓	Restricted	✓	
WA	✓		✓	✓	✓*	✓	

* Access to common law for catastrophic injuries only where liability has been incurred by a third party

▲ For necessary and reasonable treatment, care and support for children aged under 16 years

• For necessary and reasonable treatment, care and support for victims of motor vehicle accidents who suffer minor injuries, for a period of up to 26 weeks

Key terms – Insurance

Compulsory third party (CTP) scheme: compulsory insurance to protect insured persons from liability arising from death or injury caused by motor vehicle accidents. It aims to ensure people injured or killed in those accidents receive compensation. Some schemes require fault on the part of the insured person (Western Australia, South Australia, the Australian Capital Territory, Queensland). Others have moved to no-fault (the Northern Territory) or partial no-fault, where a certain level of cover for injured people is provided regardless of fault, and actions in negligence are allowed in some cases. In this paper we refer to these schemes as **hybrid schemes** (Victoria, New South Wales, Tasmania).

Damages: monetary compensation for loss suffered due to the wrongful conduct of another party, which is awarded by courts and endeavours to place a person in the position where they would have been had the loss not been suffered.

Insurance: a 'risk transfer, loss-spreading arrangement' (Pynt, 2011) to distribute or mitigate risk. This is done through insurance products, called premiums, purchased by individuals and organisations.

Motor accident injury: an injury or death that is the result of a motor vehicle accident.

Motor accident injury insurance (MAlI) schemes: collective term for CTP and national injury insurance schemes.

National Injury Insurance Scheme (NIIS): nationally agreed arrangements for no-fault cover for treatment and lifetime care and support for people with eligible serious or catastrophic injuries provided in line with minimum benchmarks. Injuries are required to be caused by specified accident types, including motor vehicle accidents. The

arrangements were incorporated into CTP laws in Victoria, the Northern Territory and Tasmania, and under special purpose laws in South Australia, New South Wales, Queensland, the Australian Capital Territory and Western Australia.⁵

No-fault benefits: the benefits paid to injured persons under partial no-fault CTP schemes without the person having to prove the injuries were caused by another person's negligence or wrongdoing.

Nominal Defendant: statutory scheme that enables injured persons to be compensated due to the negligent driving of unidentified or uninsured vehicles. In claims involving uninsured motor vehicles, the Nominal Defendant has the right to recover as a debt, the amount paid in settlement of the claim from the owner or driver (or both) of the uninsured motor vehicle. The Nominal Defendant also steps in where a private insurer becomes insolvent.

Premium: the amount payable to obtain insurance or reinsurance protection for a specified risk for a specified period of time.

Risk: the likelihood of an event occurring which causes injury or loss. That risk may be the subject of a contract of insurance or reinsurance.

Reinsurance: insurance for insurers. Mechanism that allows insurers to transfer risk or parts of risk to other parties by contract. Where an incident occurs that requires payment to a claimant, the insurer may pass part of that liability onto a reinsurer.

1.7 Principles to support any personal injury insurance changes

When automated vehicles are commercially deployed, despite the expected increased levels of safety, there will be ADS crashes. Those injured will require a pathway to obtain compensation. If it is determined that MAII schemes should cover automated vehicles, Heads of Motor Accident Injury Schemes consider the schemes should be able to support the use of automated vehicles on public roads in Australia in time for their anticipated commercial deployment. If it is decided that MAII schemes will not cover automated vehicles, then other appropriate mechanisms should be put in place within the same timeframe to provide compensation for personal injuries arising from ADS crashes.

So that people injured in an ADS crash can obtain treatment, care and compensation, Heads of Motor Accident Injury Schemes consider that whatever model is agreed on should be underpinned by the overarching principle that:

No person should be worse off, financially or procedurally, if they are injured by a vehicle whose ADS was engaged, than if they were injured by a vehicle controlled by a human driver.

⁵ In Western Australia, treatment, care and support of catastrophic motor vehicle injuries is provided under both the *Motor Vehicle (Catastrophic Injuries) Act 2016* and the *Motor Vehicle (Third Party Insurance) Act 1943*.

To support the overarching principle, the Heads of Motor Accident Injury Schemes have developed the following principles:

Proposed supporting principles

1. Reasonable and timely access to compensation should continue regardless of the type of vehicle involved in the injury.
2. The arrangements should promote transparency and certainty in accessing compensation.
3. The arrangements should ensure insurance for personal injuries caused by automated vehicles is fully funded and affordability is considered - for example, by minimising potential litigation between insurers and manufacturers/ADSEs.
4. Existing state and territory benefit regimes should not be required to change.
5. The arrangements should include an efficient process to access a standard set of reliable and verifiable vehicle crash data.

The Heads of Motor Accident Injury Schemes developed these principles to guide a uniform approach to identifying barriers and examining options. These principles should be considered presumptive rather than absolute. It may not be possible for an option to comprehensively meet all principles, and trade-offs between some of the principles may be necessary to achieve a workable solution.

Consultation question:

Question 1: Do you agree that the proposed principles are suitable? Should there be additional or different principles?

1.8 What are the problems?

An automated vehicle involved in crash may have been under the control of a human driver or an ADS. Key to the analysis of legislative barriers for an injured person to access compensation under MAII schemes is whether the ADS is engaged. This is because when an ADS is not engaged, the human driver will be 'driving', 'in control' of, or 'in charge' of the vehicle. Existing MAII schemes will apply. Where fault is relevant, the human driver will be responsible for any personal injuries caused. When an ADS is engaged, it is not clear that the MAII schemes will apply.

The problems we have identified in this review are set out below.

1.8.1 People injured by an automated vehicle may not be able to access the same, or any, compensation or benefits under current MAII schemes

People injured in an ADS crash may not have the same, or any, access to compensation under existing MAII schemes compared to people injured in a crash involving a vehicle controlled at the time by a human driver. This is because many definitions in MAII laws do not contemplate an ADS crash, and some MAII laws require someone to be at fault.

For people injured in an ADS crash to access compensation under existing MAII schemes, it is likely that amendments to all MAII schemes would be necessary. Without national agreement to change and a co-ordinated national approach to the changes, people injured in an ADS crash may have access to compensation in some jurisdictions, but not in others.

Barriers to accessing compensation are discussed in Chapter 3.

Injured people who are not eligible to access MAlI scheme compensation or benefits will have to rely on alternative causes of action. These options, which are discussed in Chapter 4.2.3, include:

- product liability laws under the ACL
- negligence
- contract

If no changes are made to MAlI schemes, those injured in ADS crashes will face uncertainty about whether they are covered by the existing schemes, the claims process and the amount of compensation. If they are not covered by MAlI schemes they will face delays and greater up-front expense in obtaining compensation. These matters, and options to address them, are discussed in Chapter 4.

1.8.2 MAlI laws do not contemplate an ADS ‘driving’ a motor vehicle

Current MAlI laws contain definitions that do not contemplate an ADS being ‘in control of’, being a ‘driver’ or ‘driving’ a vehicle. One of the circumstances in which an injury or accident is eligible under MAlI schemes is if it was caused by ‘the driving of’ the vehicle. An ADS crash may not meet that requirement, and access to compensation or benefits may be more restricted for those injured in an ADS crash. This is discussed in section 3.2 and in Appendix B:.

1.8.3 Many MAlI laws require fault for compensation to be paid

To obtain compensation under fault-based MAlI schemes (and hybrid MAlI schemes in limited circumstances), an insured party, likely to be the driver or registered operator, must be at fault. Even if an ADS was considered to be ‘driving’, it is not a person. An ADS is a machine and cannot be negligent. Without fault, the MAlI scheme may not apply to the accident and no compensation would be available. This is discussed in section 3.3 and in Appendix C:.

1.8.4 MAlI schemes are generally designed to cover injuries caused by human error rather than product faults

Following World War II, the number of vehicles on our roads increased, and so did the number and severity of motor vehicle accidents and personal injuries. Governments’ approaches to personal injury claims for motor vehicle accidents gradually moved from common law to the statutory schemes Australia has today, funded by compulsory contributions from all motor vehicle owners.

Since their creation, CTP schemes have undergone many reforms. However, no reform has considered the impact of automated vehicles. With the advent of automated vehicles, a range of risks arise. These are detailed in Appendix E:. ADS crash injuries are more likely to be the result of faults in communications, sensors and software systems. These systems could be both inside and outside the automated vehicle and may be susceptible to programming errors and external interference.

When an ADS fails it may cause more significant injuries than a human-driven vehicle. ADS failures may also result in larger number of injuries, particularly where fleets of an ADS model have a defect.

If MAlI schemes were to cover injuries because of an ADS crash, then significant redesign of MAlI schemes may be required. Any changes would need to ensure that the cost of ADS crashes is borne by those who can control the risks. These parties are likely to be manufacturers, ADSEs, communication providers and infrastructure owners, rather than governments, insurers and vehicle owners. Only Queensland’s MAlI scheme covers injuries resulting from loss of control due to a defect in the vehicle. This issue is discussed

throughout this paper and is addressed in all the options, particularly the variation to option 3 (see, Chapter 3).

Consultation question:

Question 2: Do the problems identified cover the key challenges of personal injury and automated vehicles? Are there other problems that we should consider?

1.9 International approaches to insuring automated vehicles

This section summarises some international approaches to insurance of automated vehicles. While Australia's system of federation means that not all approaches are readily transferrable to Australia, they may be useful to inform discussion on how Australia manages automated vehicle insurance issues.

1.9.1 United Kingdom

The United Kingdom requires insurance for third-party personal injury and death and for third-party property damage liabilities for vehicles used on roads and in public places. Personal injury damages are unlimited and property damage is capped at £1 million.⁶ Private insurers offer products to the market. Insurance policies must comply with the requirements of the *Road Traffic Act 1988* (UK) and several European Union Motor Insurance Directives.

The *Automated and Electric Vehicles Act 2018* (UK) passed the UK Parliament in 2018. It makes the insurer under the compulsory motor vehicle insurance scheme liable for damages from an accident caused by an automated vehicle driving itself. The Act:

...extends compulsory motor vehicle insurance to cover the use of automated vehicles in automated mode, so that victims (including the 'driver') of an accident caused by a fault in the automated vehicle itself will be covered by compulsory insurance in place on the vehicle. The insurer would be initially liable to pay compensation to any victim, including to the driver who had legitimately handed control to the vehicle. The insurer then has the right to recover costs from the liable party under existing common and product law. (UK Parliament, 2018, p. 5).

Insurers would be able to limit their liability if the ADS was tampered with, or if updates to the ADS were not installed or updated by the insured. The UK Government anticipates that insurers and manufacturers will work together to reach commercial arrangements that will help ensure that the insurer's recovery of the claim when determining technical liability is handled quickly and fairly. Legislation may be required in the future on issues such as minimum data sharing requirements and standardisation of data captured in road traffic collisions involving automated vehicles to help determine liability.

1.9.2 Germany

In June 2017 Germany passed amendments to its *Road Traffic Act* to allow conditionally and highly automated vehicles to be used on public roads:

The Bill does not change the general liability concept under German law. Therefore, both the driver and the 'owner' (not the manufacturer) remain liable even if the vehicle is in automated driving mode. Drivers may avoid liability if they lawfully used the automated driving mode. Automated vehicles must be equipped with a black box to identify whether the driver or the system had control at the time of an accident. Since this will help the driver or owner (or, in

⁶ *Road Traffic Act 1988* (UK).

practice, the 'owner's' insurance company) to prove that the vehicle caused the accident, the relevance of German product liability rules and product liability insurance is likely to increase. (Burianski & Theissen, 2017).

1.9.3 European Union

Liability for motor vehicles is addressed through various instruments at the European Union level such as the Motor Insurance Directive (2009/103/EC) and the Product Liability Directive (1985/374/EEC).

The Motor Insurance Directive provides for quick compensation of victims. The European Commission reviewed the directive for its application to automated vehicles and no changes were considered necessary. Automated vehicles will be required to have third-party liability insurance in line with the directive. The insurer can take legal action against a manufacturer under the Product Liability Directive if there is a malfunction or defect in the ADS. The European Commission also reviewed the Product Liability Directive and decided it will develop interpretative guidance clarifying important concepts in response to technological developments (European Commission, 2018, pp. 10-11).

The European Commission is proposing that automated vehicles are fitted with data recorders to clarify whether the vehicle's automated system or the driver was driving during an accident. This is discussed in more detail in Chapter 5.

1.9.4 United States

Motor vehicle insurance, or other proof of financial responsibility, is mandated in every state in the US. The most common required insurance is liability insurance covering an insured party against liability for death, injury and property damage. Insurance products are generally provided by the private sector. Several states have enacted laws to allow automated vehicles to operate on roads that include insurance requirements. Table 2 provides some examples.

Table 2. Insurance requirements for automated vehicles in parts of the United States

Jurisdiction	Insurance requirement
California	Regulations for the deployment of conditional, highly and fully automated vehicles in California were approved in February 2018. The regulations require the manufacturer to provide evidence of \$5 million value in insurance arrangements (insurance policy, surety bond, self-insurance) to cover liability for personal injury, death or property damage in the event of a crash. ⁷
Georgia	From 2017, highly and fully automated vehicles without a human driver present in the vehicle were allowed to operate on roads. The vehicle is required to be covered by commercial indemnity and liability insurance, 250 percent of that required for limousine carriers until the end of 2019 and after that date, the equivalent amount. ⁸ The level of insurance depends on the number of passengers: ▪ 12 or fewer passengers: \$300,000 for death or bodily injury and \$50,000 for third-party property damage

⁷ Modified Express Terms, Article 3.8 – Deployment of Autonomous Vehicles §228.04(a).

⁸ GA Code § 40-8-11 (2017).

	▪ more than 12 passengers: \$500,000 for death or bodily injury and \$50,000 for third-party property damage.⁹ ‘The initial increase reflects the legislature’s belief that litigation involving a brand new, developing technology will be extremely costly, and the appropriate level of insurance coverage must be available to promote safety and help cover that cost.’ (Ponce, Vol. 34, Iss. 1 [2017] Art. 111, p.245)
Tennessee	Amendments in 2017 allow highly and fully automated vehicles to operate on roads without a human driver physically present in the vehicle subject to conditions, including liability insurance for death, injury and property damage of at least \$5 million. The provision expires on 1 July 2021. ¹⁰
Texas	Amendments in 2017 require vehicles with conditional, high and full automation to have the same liability cover, in the form of an insurance policy or self-insurance, as other vehicles. ¹¹

1.10 Insurance arrangements for automated vehicle trials in Australia

Almost all states and territories are undertaking trials of automated vehicles on public roads. The most common trials are of shuttle bus services (Easy Mile in Darwin, NAVYA Intellibus at Curtin University in Perth, Flinders University in Adelaide, La Trobe University in Melbourne and Olympic Park in Sydney). Other types of automated vehicle operations being trialled include heavy vehicle platooning in Western Australia, and vehicle-to-infrastructure and fleet connectivity by Cohda in South Australia and in Ipswich in Queensland.

On-road trials are generally highly controlled, and a human supervisor or ‘chaperone’ is required to be in the vehicle to resume control in case the vehicle does not perform as expected.

South Australia, New South Wales and Victoria have enacted laws to enable trials to take place on public roads. Other states and territories manage trials through exemptions to road rules and some registration requirements.

Trial organisations are required to have public liability insurance to cover death or injury and property damage. For example:

- New South Wales requires trial applicants to have \$20 million public liability insurance policy and CTP insurance.¹²
- Victoria requires applicants to have \$20 million public liability insurance and CTP insurance.¹³ The vehicle will be required to be registered prior to participating in a trial. As CTP insurance must be paid at the time of registration, it is expected that all automated vehicles trialled on roads in Victoria will have paid the transport accident charge (Victorian Government Gazette, 2018).

⁹ GA Code § 40-1-166 (2014).

¹⁰ Tenn. Code Ann. § 55-54-103 (2017 TN S 151).

¹¹ Tex. Code Ann §545.454.

¹² *Road Transport Act 2013* (NSW) s148P.

¹³ Road Safety (Automated Vehicles) Regulations 2018, rr 9(2)(b) and (c), and *Victorian Guidelines for Trials of Automated Vehicles*, p. 9.

The NTC developed *Guidelines for Trials of Automated Vehicles in Australia* (National Transport Commission, 2017) to provide a national framework for conducting trials. The guidelines include a criterion for providing data and information; for example, data should be provided on crashes and road traffic offences, near misses and when the human in the vehicle has to take back control. This information is provided to the relevant state or territory road authority, and could be made available to MAII regulators to help develop risk profiles and premiums. However, because of the controls and limitations placed on trials to date, the information about faults, near misses and crashes does not reflect real operating conditions and is likely to be of limited value for insurance purposes.

2 Consultation and next steps

Key points

- Any individual or organisation can make a submission to the NTC.
- We seek submissions on this paper by **12 December 2018**.

2.1 Consultation questions

2.1.1 Questions to consider

The NTC invites submission on this paper by 12 December 2018. We are seeking responses to the following questions:

Chapter 1: Context

1.7 Principles

Question 1: Do you agree that the proposed principles are suitable? Should there be additional or different principles?

1.8 Problems

Question 2: Do the problems identified cover the key challenges of personal injury and automated vehicles? Are there other problems that we should consider?

Chapter 3: Barriers

Question 3: Have we accurately identified the key gaps and barriers in legislation? Are there other gaps or barriers that we should consider?

Chapter 4: Options

Question 4: Is more research needed before a preferred option can be selected? If so, what research?

Question 5: Which option best meets the policy principles outlined in Chapter 1? Is there another option not referred to in this paper that would better meet these principles? If so, please explain how it would work.

Question 6: Are the criteria sufficient for assessing the options? Are there alternative or additional criteria that you think should be considered?

Question 7: Do you agree that the entity most able to manage the risk should be responsible for the cost of damages if the risk eventuates?

Question 8: Should different insurance models be used depending on the level of vehicle automation (conditional, high or full automation)?

Question 9: If you support option 3, are current rights of recovery for insurers sufficient? If not, please indicate what additional rights or powers would be required and why.

Question 10: If you support option 4, please provide details on how a purpose-built scheme would work, including fault, governance, interaction with common law and existing MAIL schemes and caps or thresholds.

Question 11: If you support option 5, how should the minimum benchmarks be defined?

Chapter 5: Data and registration

5.3 Data issues

Question 12: Are existing legislative and non-legislative processes sufficient to access automated vehicle data for the purposes of establishing liability relating to a personal injury claim involving an automated vehicle? If not, what additional powers would be required and why?

5.4 Registration issues

Question 13: If different types of insurance attach to automated vehicles in different states and territories, does this create difficulties for mutual recognition of registration to continue? If so, how should this be addressed?

2.2 When to submit

We seek submissions by **Wednesday 12 December 2018**.

2.3 How to submit

Any individual or organisation can make a submission to the NTC. Where possible please provide evidence, such as data and references, to support your views.

To make an online submission, please visit www.ntc.gov.au and select 'Submissions' from the top navigation menu. Or post your comments to:

Att: Automated Vehicle Team
National Transport Commission
Level 3/600 Bourke Street
Melbourne VIC 3000

If you have any questions about the submission process, you can email the Automated Vehicle Team at automatedvehicles@ntc.gov.au.

Unless you clearly ask us not to, we will publish all submissions online. However, we will not publish submissions that contain defamatory or offensive content. The *Freedom of Information Act 1982* (Cth) applies to the NTC.

2.4 Next steps

We will consider feedback from submissions in developing a policy paper and recommendations for the Council to consider in May 2019.

3 Barriers in motor accident injury insurance schemes for personal injuries caused by an ADS

Key points

- MAll laws have different definitions of motor vehicle ‘accident’ or ‘injury’. All refer to ‘the driving of the vehicle’ and the vehicle ‘running out of control’. An accident caused by an ADS may not be covered in these circumstances.
- The NIIS arrangements also apply to ‘the driving of the vehicle’ and a vehicle ‘running out of control’, which means a person may not be covered if injured in these circumstances.
- Some states and territories have fault-based systems where the fault of an insured party is required. An accident caused by the ADS would not be the fault of an insured party and no liability under these MAll Acts would arise. The manufacturer or ADSE would have to be pursued:
 - in negligence, which may be difficult to prove, or
 - under product liability laws, where there are a few manufacturer defences.

3.1 Purpose

The purpose of this chapter is to examine the barriers in MAll laws that would prevent a person injured in an accident involving an engaged ADS from claiming benefits or compensation that a person injured by a vehicle controlled by a human would not face.

3.2 Definitions in MAll laws relevant to automated vehicles

Insurance policies under MAll schemes are triggered by an ‘accident’ or ‘injury’ caused by or involving a ‘motor vehicle’ in certain circumstances, including ‘the driving of the vehicle’. Access to cover for injuries depends on meeting the requirements for each of these threshold elements. Failure to meet the thresholds in a state or territory MAll law means the injured person is not eligible for benefits or compensation.

3.2.1 ‘Accident’ and ‘injury’

Circumstances of the accident or injury to which MAll laws apply vary across states and territories and include being the result of:

- the driving of the vehicle
- the vehicle running/moving out of control
- a collision with the vehicle, including a stationary vehicle
- action taken to avoid a collision with the vehicle
- a dangerous situation caused by the driving of the vehicle, a collision or action taken to avoid a collision with the vehicle, or the vehicle running out of control (New South Wales only)
- a vehicle defect causing the vehicle to run out of control (Queensland only)

- a collision between a pedal cycle and an open or opening door of a motor vehicle (Victoria only)
- a collision between a pedal cycle and a motor vehicle while the cyclist is travelling to or from their place of employment (Victoria only).

The only circumstances common to all state and territory MAII laws are:

- the driving of the vehicle
- the vehicle running/moving out of control.

Appendix B: shows the state and territory definitions of ‘accident/injury’ in MAII laws. Each state and territory law uses the same definition for catastrophic and non-catastrophic injuries except Western Australia, which has a broader definition in its NIIS Act for the purposes of catastrophic injuries.¹⁴

Some of the elements within the definition of ‘accident’ and ‘injury’ are considered below.

3.2.2 ‘Driving’ and ‘the driving of the vehicle’

The term ‘driving’ may create a problem for a person injured in an ADS crash because MAII laws assume that a driver is a natural person. Differing levels of vehicle automation challenge the idea that a person in a vehicle is ‘in control of the steering, movement or propulsion’, or ‘in charge of the vehicle’.

‘**Driving**’ is not defined in MAII laws.

‘**Drive**’ is only defined in the Australian Capital Territory’s MAII law. It is defined as being ‘in control of the steering, movement or propulsion of the vehicle’.¹⁵ This definition is similar to the definition of ‘drive’ in other jurisdictions’ road transport laws.

‘**Driver**’ is only defined in the Victorian, New South Wales and Western Australian MAII laws in terms of the person ‘in charge of the vehicle’.¹⁶ In Queensland, South Australia and the Northern Territory road transport laws refer to the driver variously as the person ‘driving the vehicle’ or the person ‘in charge of the vehicle’.¹⁷ In the absence of a specific definition in an Act, courts may have regard to definitions of the same term in related Acts.¹⁸

In May 2018 the Council approved recommendation 3 in the NTC’s Policy Paper *Changing driving laws to support automated vehicles*, that legislative change should provide that an ADS is in control of a vehicle when it is engaged (National Transport Commission, 2018a). The broader concept of a ‘person in charge of a vehicle’ may encompass occupants in

¹⁴ *Motor Vehicle (Catastrophic Injuries) Act 2016* (WA) s 4.

¹⁵ *Road Transport (Third-Party Insurance) Act 2008* (ACT) Dictionary.

¹⁶ *Transport Accident Act 1986* (Vic) s 3(1); *Motor Vehicle (Third Party Insurance) Act 1943* (WA) s 3(1); *Motor Accident Injuries Act 2017* (NSW) s 1.4.

¹⁷ *Transport Operations (Road User Management) Act 1995* (Qld) Schedule 4; *Road Traffic Act 1961* (SA) s 5; *Motor Vehicle Act* (NT) s 5.

¹⁸ For example, in South Australia, where a person sitting in the passenger seat of a vehicle was charged with drink driving offences (under the *Road Traffic Act 1961*) and driving an unregistered/uninsured vehicle offences (under the *Motor Vehicles Act 1959* which has no definition of ‘drive’), Justice White said ‘The RTA and MVA are concerned, in different ways, with the regulation of the use of motor vehicles and it is reasonable to suppose that the word “drive” and its cognates are used in each with the same meaning’. *Harvey v Police* [2009] SASC 302, para 7.

vehicles with high and full automation. It may not be relevant in a dedicated automated vehicle, or an automated vehicle with no occupants, although the person who decides the vehicle's route and sets it in motion may be considered 'in charge of the vehicle'.

ADS as a 'driver'

Where relevant laws define 'driver', they refer to 'the person'. An ADS is not a person. If the ADS is engaged, insurers and courts may consider that there is no 'driver' and no 'driving'. If this threshold requirement is not satisfied, a person injured in an ADS crash would not be able to access compensation where the accident or injury arose from 'the driving of the vehicle'.

The NTC's Policy Paper *Changing driving laws to support automated vehicles* (National Transport Commission, 2018a) addressed the problem of an ADS not being a person, nor capable of being legally responsible for its actions in road traffic laws. Rather than proposing to change the definition of 'driver' within existing road traffic and safety laws to include the ADS, the paper proposed creating law that sets out safety and traffic obligations for the ADS when it is engaged. The ADSE under the Safety Assurance System would be responsible for the ADS's compliance with these obligations.

Reference to 'the driving of the vehicle' appears to create uncertainty as to whether a crash caused by or involving an ADS would be covered by MAI laws and may be a barrier.

3.2.3 'Running/moving out of control'

The circumstance of a vehicle 'running or moving out of control' is likely to apply to most accidents caused by an ADS. An ADS that is operating as warranted, in compliance with the road rules, should not cause an accident. If the ADS causes an accident, the vehicle is likely to be considered 'out of control'. However, there may be circumstances when a properly operating ADS is faced with only two options for action and both result in a crash. The vehicle may not be 'running out of control'. An injured person may have no other circumstance to rely on and be unable to claim damages.

In MAI schemes where fault is a requirement, the eligibility of an injured person to claim will depend on the 'running out of control' being the fault of a person whose liabilities are covered by the scheme. Who is covered varies from scheme to scheme - for example, owner, driver, passenger (see Appendix D:).

3.2.4 'Use or operation of a vehicle'

Whether injuries fall within a MAI scheme may be limited by the requirement in some jurisdictions that the accident or injury arose from the 'use' or 'operation' of the motor vehicle.

South Australia and Northern Territory MAI laws refer to an injury 'being caused by' or 'arising out of the use of' a motor vehicle. New South Wales and Australian Capital Territory MAI laws refer to an accident 'involving the use or operation of a motor vehicle'. They define 'use and operation' to include, respectively, 'maintenance or parking of the vehicle'¹⁹ and 'drive, park or stop the vehicle on a road or road related area; and ... maintain the vehicle'.²⁰

There seems to be a strong case that a vehicle is being 'used' or 'operated' when its ADS is engaged if the vehicle:

- is being used to transport people or goods from place to place

¹⁹ *Motor Accident Injuries Act 2017* (NSW) s 1.4.

²⁰ *Road Transport (Third-Party Insurance) Act 2008* (ACT) s 8.

- has been directed to go to a place to pick up people, or
- has been directed to park after dropping people off.

This interpretation may apply even in New South Wales and the Australian Capital Territory, which use terms in the definition of ‘use’ or ‘operation’ that are more commonly used in the context of a human driver. For example, they use ‘drive’, ‘park’ and ‘stop’ because the definition is inclusive rather than limiting. Any possible ambiguity may create scope for legal challenges, which add expense and uncertainty to compensation actions.

3.2.5 ‘Motor vehicle’

Another requirement for access to MAI schemes is that the accident or injury was caused by or involved a ‘motor vehicle’. ‘Motor vehicle’ is defined by most states and territories’ MAI laws as ‘a vehicle built to be propelled by a motor that forms part of the vehicle’²¹ (with exclusions for things like motorised wheelchairs, motorised bicycles, in some states and territories). The definition of motor vehicle is not considered a barrier because automated vehicles would fit within its scope.

The exceptions are Queensland and Western Australia. Laws in those states define ‘motor vehicle’ by reference to a vehicle that is required to be registered. Registration requirements include meeting vehicle standards.²² As with any conventional motor vehicle, an automated vehicle that did not comply with the vehicle standards may not be covered by those states’ MAI schemes (Brady, et al., 2017, p. 42). The NTC is currently considering the role of vehicle standards as part of its work on a safety assurance system for ADSs. Ministers are due to consider recommendations in November 2018.

3.3 Fault

‘Historically, claims for motor vehicle accidents were brought as claims in negligence. In those jurisdictions that continue to use negligence claims as the primary legal avenue for seeking compensation, proving fault determines whether an injured person can access the CTP scheme’ (Brady, et al., 2016, p. 10).

3.3.1 Impacts of fault

To obtain compensation, an injured person must prove on the balance of probabilities that their injuries occurred as the result of the negligence of an insured party. This may be the owner, driver or passenger, depending on the state or territory MAI law²³.

In the case of an ADS crash, an ADS is not a person, and may not fall within the definition of ‘driver’. If there is no driver, there may be no relevant at-fault insured party. Alternatively, where definitions of driver that include ‘the person in charge of the vehicle’ although the ADS was engaged, a vehicle occupant who set a highly automated vehicle on its route, or a fallback-ready user of a conditionally automated vehicle, or possibly even the occupants of a dedicated automated vehicle, may be considered the ‘driver’ and so, an insured party.

²¹ See *Motor Vehicles Act 1959* (SA) s 5.

²² For Queensland, see the *Transport Operations (Road Use Management—Vehicle Registration) Regulation 2010* regs 5A, 9, 11. A MAI policy comes into force when a vehicle is registered (*Motor Accident Insurance Act 1994* (Qld) s 23). For Western Australia, see the *Road Traffic (Vehicles) Act 2012* (WA); the *Road Traffic (Vehicles) Regulations 2014* (WA) Parts 9, 10; and the *Motor Vehicle (Third Party Insurance) Act 1943* (WA) ss 3, 4(8), 4(8A). A vehicle cannot be licensed until the MAI premium is paid, and the granting of the licence constitutes the issue of the insurance.

²³ Appendix D: shows the people protected from liability under current MAI schemes.

The different definitions of ‘driver’ and ‘driving’ and ‘insured persons’ across the states’ and territories’ MAlI laws may result in different outcomes for people injured in ADS crashes. While this is also the case under current MAlI schemes where human drivers are in control, the differences may increase where an ADS is engaged.

Where an insured person alleges the accident was caused by the vehicle or its equipment malfunctioning, repairers and manufacturers could be joined as defendants or third parties. However, if an at-fault party is not indemnified under a MAlI scheme, an injured person would have to bring an action in negligence outside the MAlI system. In such a case complexity and costs could be created by:

- the range of potential parties - for example, ADSE, manufacturer, systems designer, repairer, road and communications infrastructure providers
- the difficulty of connecting the accident or injury to their negligence.²⁴

Whether a negligence claim is brought under a MAlI law or otherwise, the injured person must make out all the elements of negligence, as varied by the jurisdiction’s Civil Liability Act (duty, breach, foreseeability, causation) and deal with defences (such as the assumption of obvious risk, contributory negligence, illegal activity, providing emergency assistance: see, for example, the *Civil Liability Act 1936* (SA)).

The more highly automated a vehicle becomes, the more complex assigning liability and proving breach of duty of care will become. These complexities were examined for each stage of automation by Brady, Burns, Leiman, and Tranter in 2017. For example, in the case of conditional automation:

When the Level 3 automated driving system is engaged, that system executes the dynamic driving task, with the driver expected to respond appropriately to system requests to intervene. Questions then arise as to when it is reasonably foreseeable for the human ‘driver’ to rely on the system, or to resume control of the vehicle despite no prompting from the system to do so. Reasonable responses to automated warnings are matters of fact about which opinions might easily differ, and which might change over time as the public becomes accustomed to interaction with those features. If the human occupant is an injured party, complex questions might also arise about whether that occupant contributed to their own harm either by failing to take timely preventative action, or by resuming control instead of relying on the automated driving system (Brady, et al., 2017, p. 52).

3.4 National Injury Insurance Scheme benchmark: ‘the driving of the vehicle’

The NIIS benchmark for the scope of accidents/injuries covered is aligned with the causes of accident or injury in most state and territory MAlI schemes, specifying that the accident must result from:

- the driving of the vehicle
- the vehicle running out of control
- action taken to avoid a collision with the vehicle
- a collision with the vehicle while it was stationary.

²⁴ A product liability action under the ACL, which does not require proof of fault, may be a more attractive option. Product liability is discussed in more detail in section 4.2.3. An injured person may also have access to support from other sources such as income protection insurance, total and permanent disability insurance, personal liability insurance and government health/disability agencies.

The use of 'the driving of the vehicle' benchmark could create a barrier to access by those catastrophically injured in an ADS crash.

Because NIIS is a no-fault scheme, the barriers to injured people resulting from fault and having to prove negligence by an insured party in the fault-based and hybrid MAll schemes are not applicable. It should be noted that negligence is still needed for the injured person to recover other damages, such as loss of earnings and pain and suffering. Further, if a vehicle is not insured under a MAll scheme, an injured a person may not be eligible for NIIS treatment, care and support if catastrophically injured by an ADS.

3.5 Coverage under existing MAll schemes

The Heads of Motor Accident Injury Schemes have provided the following analysis of coverage for an ADS crash under their schemes.

Victoria

The definition of transport accident in the *Transport Accident Act 1986* is expected to be interpreted to include automated vehicle accidents, which would entitle people injured to compensation under the Act. The Transport Accident Commission will be examining the operation of the Act and relevant entitlements as part of trials of automated vehicles on Victorian roads under the recently legislated trial regime.

Tasmania

Motor accident refers to 'the driving of a motor vehicle', which may restrict access to the scheme for injuries involving an ADS, although 'vehicle running out of control' is an alternative that may apply.

If the threshold of motor accident is met, there should be access to scheduled benefits under s 23 of the *Motor Accidents (Liabilities and Compensation) Act 1973*, but access to compensation under common law may be more difficult because of the requirement of fault. The Motor Accidents Insurance Board's liability under s 14 of the Act is restricted to liabilities incurred by the owner or user of the vehicle. 'User' is not defined and may encompass a vehicle occupant, which may assist a person injured in an ADS crash.

Queensland

Compensation for personal injury requires the injury to be the result of specified actions and to be 'caused, wholly or partly, by a wrongful act or omission in respect of the motor vehicle by a person other than the injured person' (*Motor Accident Insurance Act 1994* s 5).

In the Act, section 2 of the Schedule - Policy of Insurance states that an insured person includes the 'owner, driver ... or other person whose wrongful act/omission causes the injury ... and any person who is vicariously liable for the wrongful act or omission'.

The requirement for fault may create problems for anyone injured in an ADS crash. An ADS is not a 'person' and it is unlikely that an ADS can make a wrongful act or omission. It may be difficult to link the fault in the ADS that caused an injury to a wrongful act or omission by another person such as the ADSE, manufacturer or repairer. In addition, those affected may be both an insured person and a party who can be recovered against under s 58 (manufacturers and repairers where a defect in the vehicle caused the accident and the defect arose from a wrongful act or omission of the manufacturer or repairer), which may create a conflict for the insurer such that it cannot recover.

If the vehicle is uninsured, a claim can be made on the Nominal Defendant.

Western Australia

The MAll legislation operates not by the driving alone, but rather by the *negligent* driving of a motor vehicle. If the ADS malfunctioned, causing the accident, the motor vehicle third-party

insurance legislation would not apply because the element of *negligent* driving of a person is absent.

However, eligible catastrophic injuries caused by ADS malfunction in a registrable vehicle may be covered under the *Motor Vehicle (Catastrophic Injuries) Act 2016* because that legislation does not depend on the existence of driver negligence or even a driver being in the vehicle for its operation.

South Australia

Conditionally, highly and fully automated vehicles are not currently able to be registered in South Australia and so the CTP scheme would not apply. However, if on a road network, the Nominal Defendant scheme may be liable and there may be a recovery right by the Nominal Defendant against another party such as the manufacturer. However, it could be argued that if the vehicle is not able to be registered then the Nominal Defendant scheme may not apply.

For those who suffer catastrophic injuries because of an ADS malfunction, they may be covered under the *Motor Vehicle Accidents (Lifetime Support Scheme) Act 2013*, if they meet the relevant injury criteria, because that legislation does not depend on the existence of driver negligence or even a driver being in the vehicle for its operation. However, arguably if the vehicle is not able to be registered (conditionally, highly and fully automated vehicles) then the Lifetime Support Scheme would not apply.

New South Wales

It is doubtful the *Motor Accident Injuries Act 2017* un-amended would cover all automated vehicle accidents. Specific provisions extending its operation would be required to ensure certainty.

The definition of 'driver' in s 1.4 of the Act means a person driving a motor vehicle and includes a person riding and operating a motor cycle and a person for the time being in charge of a motor vehicle. This definition, and the use of 'driving' in the term 'motor accident' may restrict coverage of anyone injured while the ADS is engaged.

If the person in charge of the vehicle is not located in New South Wales at the time of the accident, jurisdictional issues arise that are not relevant in non-automated motor vehicles or provided for in the current legislation.

The requirement for fault of the owner or driver for non-statutory benefit claims may restrict the availability of claims for damages because the ADS may not be recognised as the 'driver' and the owner may not be at fault.

If the vehicle is uninsured, a claim can be made on the Nominal Defendant.

Australian Capital Territory

The Road Transport (Third-Party Insurance) Act 2008 may need to be amended to clarify coverage when automated vehicles are involved in an accident and are undertaking the 'driving' task. Section 7 of the Act refers to 'someone driving', which implies a natural person. This would exclude an ADS and restrict coverage.

CTP insurance only covers liabilities arising from a wrongful act or omission. An ADS may not be capable of a wrongful act or omission. In addition, those insured are 'a person who uses an insured motor vehicle' and 'anyone else who is vicariously liable for the person's use of the insured motor vehicle'. An ADS is not a person.

Northern Territory

Reference to 'driving' in the definition of motor accidents in s 4A of the *Motor Accidents (Compensation) Act* may restrict coverage, but the alternative limbs, 'vehicle moving out of control' and 'a collision, or action to avoid a collision, with the motor vehicle (whether the motor vehicle is stationary or moving)', may be sufficient to cover accidents caused by automated vehicles.

3.6 Summary of barriers

The assessment of coverage by the Heads of Motor Accident Injury Schemes in section 3.5 supports the analysis in this chapter - that coverage of people injured in an ADS crash is uncertain or inconsistent with the treatment of those injured in a crash caused by a human driver.

The barriers or gaps in the current MAlI laws that may prevent a person injured in an ADS crash from accessing benefits or compensation can be summarised as:

- an accident/injury caused by or involving 'the driving of the vehicle' or the vehicle 'running out of control' may not apply when the ADS is engaged
- the ADS may not fall within the definition of 'driver', so there would be no insured party and so is not an indemnified party in fault-based and hybrid MAlI schemes
- an ADS is not capable of negligence or wrongdoing. Even if it were an indemnified person, the requirement for fault in fault-based and hybrid MAlI schemes would be absent.

Table 3 shows the barriers a person injured in an ADS crash would face.

Consultation question:

Question 3: Have we accurately identified the key gaps and barriers in legislation? Are there other gaps or barriers that we should consider?

Table 3. Summary of barriers for people injured in an ADS crash

Jurisdiction	People injured may not have the same or any access to compensation under MAl schemes. What is the likely outcome for injured person?	Current MAl schemes do not contemplate an ADS ‘driving’ a motor vehicle. What are the relevant definitions and possible interpretations?	Many MAl schemes require fault for compensation to be paid. Is fault a barrier?
New South Wales	Uncertain.	- No definition of ‘drive’ or ‘driving’. - Definition of ‘driver’ means ‘a person driving a motor vehicle’ and ‘a person for the time being in charge of a motor vehicle.’ An ADS is not a person so cannot be a driver. Whether a human occupant would be held to be ‘in charge’ of the vehicle and therefore the ‘driver’ has not been tested and may depend on the particular factual circumstances. - the vehicle ‘running out of control’ (a circumstance of ‘motor accident’) may not apply where the ADS is engaged.	Yes, except for necessary and reasonable treatment, care and support for minor injuries up to 26 weeks (Part 3 of the <i>Motor Accident Injuries Act 2017</i> (NSW))
Tasmania	Uncertain.	- No definition of ‘drive’, ‘driving’ and ‘driver’. - the vehicle ‘moving out of control’ or ‘driving of a vehicle’ (a circumstance of ‘motor accident’) may not apply where the ADS is engaged. Interpretation may be required by the scheme administrator on whether ‘the driving of the vehicle’ includes the ADS when it is engaged. The insured party includes the ‘user’ of the vehicle which may include an occupant of an automated vehicle when the ADS is engaged. In a common law action, damages may be able to be recovered from a negligent occupant. Courts may have to consider whether an injury occurred during ‘the driving of the vehicle’ if an ADS was engaged at the time.	Yes, except for prescribed benefits under Part IV of the <i>Motor Accidents (Liabilities and Compensation) Act 1973</i> (Tas).
Victoria	Likely to be eligible for compensation payments under Part 3 of the <i>Transport</i>	- No definition of ‘drive’ or ‘driving’. ‘driver’ includes a person who is in ‘charge of the motor car or motor vehicle’	Yes, for common law claims (serious injuries with certain levels of impairment),

Jurisdiction	People injured may not have the same or any access to compensation under MAIL schemes. What is the likely outcome for injured person?	Current MAIL schemes do not contemplate an ADS 'driving' a motor vehicle. What are the relevant definitions and possible interpretations?	Many MAIL schemes require fault for compensation to be paid. Is fault a barrier?
	<i>Accidents Act 1986</i> where eligibility is determined by the Transport Accident Commission. Uncertain for common law actions under Part 6 (serious injuries with certain levels of impairment)	- A vehicle occupant may be considered 'in charge of the vehicle' and therefore the 'driver'. 'transport accident' may be beneficially interpreted by the scheme administrator, to enable payment of compensation payments. In a common law claims, courts may have to consider whether the incident is 'caused by the driving of a motor car or motor vehicle' or 'involving a motor vehicle.... which is out of control' if the ADS was engaged at the time. A vehicle occupant's actions would need to be negligent for a liability to arise.	permitted under Part 6 of the <i>Transport Accident Act 1986</i> (Vic).
Queensland	Uncertain.	- No definition of 'drive', 'driving' and 'driver'. Definitions in other transport laws may be regarded, eg, the <i>Transport Operations (Road Use) Management Act 1995</i>: 'driver' means 'the person driving or in charge of any vehicle...' - A vehicle occupant may be regarded 'in charge' of the vehicle and so is the 'driver'. However, their actions would need to be negligent to be covered by the scheme. - Courts may have to consider, when an ADS was engaged, whether an 'injury' occurred as a result of: 'the driving of the vehicle' - the vehicle 'running out of control' - a 'defect in the vehicle, causing loss of control while it is being driven'.	Yes, for all claims.
Northern Territory	Uncertain.	No definition of 'drive', 'driving' and 'driver'. Interpretation by the scheme administrator may be needed on whether the circumstances of a 'motor accident' include:	No. Fault is not a requirement to claim.

Jurisdiction	People injured may not have the same or any access to compensation under MAl schemes. What is the likely outcome for injured person?	Current MAl schemes do not contemplate an ADS ‘driving’ a motor vehicle. What are the relevant definitions and possible interpretations?	Many MAl schemes require fault for compensation to be paid. Is fault a barrier?
		▪ ‘the driving of the vehicle’ ▪ the vehicle ‘moving out of control’ ...when the ADS is engaged.	
South Australia	Uncertain.	▪ No definition of ‘drive’, ‘driving’ or ‘driver’. Definitions in other transport laws may be regarded, eg <i>Road Traffic Act 1962</i> : ‘drive’ includes ‘to be in control of the steering, movement or propulsion of the vehicle.’ Courts may have to consider, when an ADS was engaged, whether an ‘injury’ occurred as a result of: ▪ ‘the driving of the vehicle’ ▪ the vehicle ‘running out of control’	Yes. For all claims except for necessary and reasonable treatment, care and support for children under 16 years. (s.127B <i>Motor Vehicles Act 1959</i> (SA))
Australian Capital Territory	Uncertain.	▪ No definition of ‘driving’ or ‘driver’. ▪ ‘drive’ includes ‘be in control of the steering, movement or propulsion of the vehicle’. Courts may have to consider, when an ADS was engaged, whether an ‘injury’ occurred as a result of: ▪ ‘someone driving the vehicle’ ▪ the vehicle ‘runs out of control’	Yes, for all claims.
Western Australia	Uncertain.	▪ No definition of ‘drive’ or ‘driving’. ▪ ‘driver’ includes ‘any person who is in charge of the motor vehicle’	Yes, for all claims.

Jurisdiction	People injured may not have the same or any access to compensation under MAl schemes. What is the likely outcome for injured person?	Current MAl schemes do not contemplate an ADS 'driving' a motor vehicle. What are the relevant definitions and possible interpretations?	Many MAl schemes require fault for compensation to be paid. Is fault a barrier?
		A vehicle occupant may be regarded as 'in charge' of the vehicle and so is the 'driver'. However, their actions need to be negligent to be covered by the scheme. Courts may have to consider, when an ADS was engaged, whether an 'injury' occurred as a result of: ▪ 'the driving of the vehicle' ▪ the vehicle 'running out of control'	
NIIS	Uncertain.	The requirement that the injury be caused through the 'driving of the vehicle' and the 'vehicle running out of control' creates the same complexity as described in individual jurisdictions above.	No. Fault is not a requirement for eligibility.

4 What could personal injury insurance look like with automated vehicles on public roads?

Key points

- Six options that provide possible avenues for injured parties to access compensation are considered. The first three options are based around the existing MAII schemes. The last three options suggest new approaches. The options are not necessarily mutually exclusive. Some options may be considered methods of implementation.
- Option 1 relies on the existing legal framework. It does not involve legislative change.
- Option 2 makes legislative change to exclude injuries caused by an ADS from all MAII schemes. People injured in an ADS crash would rely on a claim in contract, negligence or under the Australian Consumer Law.
- Option 3 expands all existing MAII schemes to cover injuries caused by an ADS. An additional element to option 3 introduces a reinsurance pool funded by parties who could be responsible for an ADS malfunction.
- Option 4 establishes a purpose-built automated vehicle scheme. This could be a national scheme or a state and territory scheme designed to mirror existing MAII scheme arrangements.
- Option 5 establishes coverage for those injured in ADS crashes through agreed minimum benchmarks that could be implemented in a variety of ways, by policy or legislation, to suit the circumstances in individual states and territories.
- Option 6 creates a single insurer model where insurers could offer personal injury and property damage or other types of motor vehicle insurance as one product.

4.1 Purpose

This chapter discusses options that provide cover to people injured in an ADS crash. The options range from relying on existing legal remedies to creating a new insurance scheme specifically for automated vehicles. Having appropriate insurance arrangements in place by the time automated vehicles are publicly deployed will be an important part of enabling the public to take full advantage of their benefits. This may require legislative change and new insurance products. Developing insurance options for discussion is an important step to ensure Australia is ready.

It has been widely reported that automated vehicles will improve road safety in the longer term. However, even then they will not eliminate all existing risks; they are likely to introduce new risks, and accidents will continue to happen.

As the proportion of automated vehicles in the national fleet increases and automated vehicle technology matures, it is anticipated that insurance will progressively shift from covering driver negligence to covering ADS technical failures.

The NRMA noted in its article *The future of car ownership* (NRMA, 2017, p. 11):

... growth in car sales does not necessarily mean growth in car ownership ... More cars can be bought and registered but fewer may be owned privately.

In a future where manufacturers and other providers are the owners of fleets of vehicles available for use by consumers, a commercial insurance product or self-insurance may be more efficient for covering all the risks inherent in providing a mobility service.

To provide certainty to the community that they will have cover, and to build community confidence in automated vehicles, personal injury insurance arrangements must seek to optimise safety outcomes by incentivising manufacturers, ADSEs and others in the automated vehicle supply chain to prioritise safety. Having insurance arrangements for the deployment of automated vehicles onto Australia's roads, either as MAll or some other product or scheme, is important to address the overarching principle that:

no person should be worse off, financially or procedurally, if they are injured by a vehicle whose ADS was engaged, than if they were injured by a vehicle controlled by a human driver.

4.2 Option 1: No change – rely on existing legal framework

4.2.1 Summary

Under this option, a person injured in an ADS crash could make a claim:

- under existing MAll schemes
- in contract law for breach of contract (if they were a party to the contract)
- in negligence based on a breach of a duty of care, or
- under the ACL.

4.2.2 Cover under MAll schemes

It is uncertain whether existing MAll schemes would provide cover. Barriers to compensation, and an assessment of whether MAll schemes would provide cover for an ADS crash, is provided in Chapter 3. If a MAll scheme provided cover, insurers would continue to have rights to recover costs from third parties.²⁵

4.2.3 Existing alternatives to MAll schemes

Where personal injury is the result of a defect in an automated vehicle or its ADS, compensation may be sought from the manufacturer or other relevant party outside the MAll schemes. These include actions in contract, negligence and product liability provisions of the ACL, such as the consumer guarantees regime and the defective goods regime.

Breach of contract and consumer guarantees under the ACL

When purchasing a vehicle, a contract is created between the purchaser and the manufacturer or supplier. The contract may have express terms (for example, there will be a warning five seconds before the ADS disengages) and implied terms (for example, that the

²⁵ A number of MAll laws give the insurer rights to exercise any rights the insured person has to recover their liabilities, including actions in negligence (as modified by relevant civil liability Acts) against third parties such as manufacturers of defective vehicles. See, for example *Motor Accidents (Compensation) Act* (NT) s 6(4); *Transport Accident Act 1986* (Vic) s 104; *Motor Vehicles Act 1959* (SA) s 25; *Motor Accident Injuries Act 2017* (NSW) s 6.17; *Motor Vehicle (Third Party Insurance) Act 1943* (WA) s 11; and *Motor Accidents (Liabilities and Compensation) Act 1973* (Tas) s 17.

manufacturer will exercise due skill and care in making the vehicle). The contract may have limitations, disclaimers or exclusions on what the manufacturer will be responsible for.

In consideration for monetary payment, the purchaser expects the vehicle will operate as described. If this does not happen, the purchaser may have an action for breach of contract. If the breach results in loss or damage and the loss has a reasonably close link to the breach, the purchaser may be able to obtain compensation.

The ACL, which is Schedule 2 of the *Competition and Consumer Act 2010* (Cth), contains consumer guarantees including that the goods are of acceptable quality²⁶ and fit for their purpose.²⁷ These guarantees cannot be excluded by the terms in a contract, and any excluding or inconsistent terms would be void.²⁸

Where goods are supplied that do not conform to the consumer guarantees or terms of the contract, a consumer could bring an action against the supplier for breach of statutory guarantee and breach of contract (Brady, et al., 2016).

The remedies for breaching a consumer guarantee under s 259 of the ACL depend on whether the failure to comply with the guarantee is a major or non-major failure. It includes the right to a remedy for the consumer in the form of a repair, replacement or refund. Also, s 259(4) provides a cause of action for personal injury:

...a consumer may, by action against the supplier, recover damages for any loss or damage suffered by the consumer because of the failure to comply with the guarantee if it was reasonably foreseeable that the consumer would suffer such loss or damage as a result of such a failure.

However, a person's ability to make a claim for damages for personal injury under s 259(4) would depend on their ability to show that there was a failure to comply with the consumer guarantee because the automated vehicle was unsafe, that this caused their injury and that the injury was a reasonably foreseeable consequence of the failure to comply with the guarantee. Compensation under this provision is generally limited to the reduction in value of a product, recovery of repair costs or recovery of costs for travel, product testing, and postage and handling.

Remedies in contract are only available to the parties to the contract.

Negligence

The law of negligence is based on the concept that people should exercise reasonable care in their actions by taking account of the potential harm that they might foreseeably cause to other people or property. In a negligence action, someone who has been injured must prove that a person who owed them a duty failed to exercise reasonable care in that duty, causing the injury. They must then prove that the injury was reasonably foreseeable by a reasonable person in the position of the duty holder.

Common law negligence has been modified by state and territory civil liability laws. These laws provide further guidance regarding most aspects of the determination of negligence, including standard of care and foreseeability of risk. They also regulate the assessment and amount of damages. Thresholds on damages for less serious injuries may be set lower for motor vehicle accidents than for other types of actions.²⁹

²⁶ Australian Consumer Law s 54.

²⁷ Ibid s 55.

²⁸ Ibid s 64.

²⁹ See, for example, *Civil Liability Act 1936* (SA) s 52(3) (non-economic loss) and s 56A (economic loss).

Common law negligence claims may be undertaken as part of a fault-based MAIL claim (for example, by joining additional parties to the MAIL action) or independently, depending on the circumstances of the case.

Many required elements for a negligence action may create difficulties for a person injured in an ADS crash. For example, the injured person would have to identify the party who failed to take reasonable care and prove that this caused the injury. Identifying the party may be difficult in an ADS crash. Depending on the circumstances of the injury, relevant parties could include:

- the manufacturer or importer of the vehicle
- the manufacturer of the ADS software
- a person who modified or repaired the vehicle or its software
- an occupant of the vehicle
- a telecommunications or infrastructure provider.

It may also be difficult to establish a failure in the standard of care owed. This would require proving the duty holder failed to take all reasonable steps to protect against the foreseeable risks of harm. What is reasonable will depend on the cause of the crash. It may involve evidence as to the amount and type of testing of the vehicle or its components, and evidence of safeguards built. These difficulties would create complexity and costs.

ACL – product liability

The ACL has been adopted by all states and territories and applies uniformly across Australia. It provides many protections to consumers buying goods and services. These protections provide a framework for the marketing of automated vehicles and place responsibilities on manufacturers and suppliers to correctly represent products and services to consumers.

The ACCC has advised that the ACL is not appropriate to provide people injured in ADS crashes with compensation in the place of an insurance scheme. Seeking damages for an unsafe or defective product under the ACL would require each individual to commence a claim in a court or tribunal, the burden of which may prevent or deter many injured persons from seeking compensation. The ACCC is of the view that relying on the ACL for personal injury compensation would result in inconsistent and ineffective outcomes for injured persons and would not address the wider policy issue of providing an equitable and just avenue for compensation for the wider public.

Of most relevance to this paper is the manufacturer's liability for goods with safety defects under Part 3.5 of the ACL. Section 138 makes a manufacturer liable for damages if it supplies goods with a safety defect that cause an injury to someone. No contract between the manufacturer and the injured person is required. Negligence or a wrongful act on the part of the manufacturer is not required either. The liability is strict, the manufacturer is liable where the goods have a safety defect that causes injury, loss or damage to an individual (Brady, et al., 2016, p. 31).

Definitions in the ACL

'Goods' includes vehicles and their component parts and accessories and is broad enough to cover automated vehicles and their ADS software and other components.³⁰

³⁰ Australian Consumer Law s 3.

‘Manufacturer’ is broadly defined³¹ to include an importer and, in some instances, supplier. This is relevant in Australia, where most vehicles are now imported.

‘Supply’ includes ‘sale, exchange, lease, hire or hire-purchase’. The manufacturer’s liability provisions may apply to providers of automated vehicles under mobility-as-a-service models if these are characterised as leasing the vehicle (Brady, et al., 2016, p. 31).

‘Safety defect’ means the safety of the goods ‘is not such as persons generally are entitled to expect’.³² The court will consider the safety of the goods by looking at all relevant circumstances³³ including:

- marketing of the goods
- the warnings and instructions for use
- what may reasonably be expected to be done with the goods
- the time when they were supplied.

‘Warnings and instructions for use’ could create difficulty for a plaintiff if general expectations are unclear because of the range of levels of automation and the varying operational design domains within each level.

An individual (not just a purchaser) can seek compensation not only for personal injuries but also for some property damage.³⁴

Similar to the consumer guarantees regime, to claim compensation for a defective good, an individual would need to show that there was a safety defect with the automated vehicle, and that there was a causal connection between the safety defect and the injury. It is ultimately for the court to decide whether there is such a causal connection, which may difficult to prove and may bar individuals from claiming compensation.

Product liability defences

Suppliers and manufacturers have the following defences:³⁵

- the safety defect did not exist at the time the goods were supplied
- the state of scientific and technical knowledge at the time of supply did not enable the supplier or manufacturer to discover the defect
- the good was part of another good, and the defect only arose because of the design, markings, instruction or packaging of that other good
- the defect only existed because a mandatory standard was complied with. (In this circumstance, the Commonwealth may have to pay compensation.)³⁶

³¹ Ibid s 7.

³² Ibid s 9(1).

³³ Ibid s 9(2).

³⁴ See, for example, Australian Consumer Law s 138 (loss or damage for injuries), s 140 (loss or damage suffered by another person), s 139 (loss or damage suffered by a person because other goods are destroyed or damaged) and s 141 (loss or damage suffered by person if land, a building or fixtures are destroyed or damaged).

³⁵ Australian Consumer Law s 142.

³⁶ Ibid s 148.

The 'state of scientific and technical knowledge' defence may be a barrier to recovery by people injured in an ADS crash, particularly in the early stages of deployment of automated vehicles. This is because of the reliance of automated vehicles on ADS software and the potential for software bugs, the impact of machine learning, cyber-terrorism/hacking, and the large amounts of data generated and shared between vehicles and infrastructure.

Time limits for claims and amounts of damages

A consumer must take action within three years of becoming aware, or from when they should have become aware, of all of the following:³⁷

- the alleged loss or damage
- the safety defect of the goods
- the identity of the person who manufactured the goods.

They must also claim within 10 years of when the goods were originally supplied.³⁸

There are limitations on the amount of personal injury damages that courts can award. Non-economic loss is capped at \$250,000 (indexed annually by CPI since 2011). There are also restrictions or limitations on some types of economic losses.³⁹

According to Brady et al., claims brought under the state or territory versions of the ACL may instead be covered by limitations on damages contained in applicable civil liability Acts. This could give rise to 'forum shopping' especially between state and federal courts as parties determine the best strategic jurisdiction (Brady, et al., 2017, p. 40).

³⁷ Ibid s 143(1).

³⁸ Ibid s 143(2).

³⁹ Ibid Part VIB.

4.2.4 Positives and negatives of option 1

Table 4 and Table 5 list the pros and cons relating to elements of option 1.

Table 4. Positives and negatives of claims under MAIL schemes

Positives	Negatives
▪ MAIL schemes and motorists are less likely to bear the cost of ADS failures, if product liability or common law claims are made instead. ▪ Established, efficient and relatively well known processes for making and settling claims within MAIL schemes. ▪ Hybrid and no-fault schemes provide immediate assistance, and fault-based schemes provide limited immediate assistance while determining a claim. ▪ Avoids implementation costs.	▪ Coverage for ADS crashes is uncertain. There may be argument about whether the accident/injury was caused by an ADS or a human driver. ▪ Eligibility for people injured in an ADS crash will vary across states and territories because of the different definitions of driver as 'person driving', 'in control of', or 'in charge of the vehicle'. ▪ Cases will need to be tested in the courts, increasing uncertainty, costs and delaying compensation. ▪ Additional costs to insurers will, at least initially, be unknown and may create unfunded obligations. ▪ At initial deployment of automated vehicles, responsibility for the cost of fault-based injuries and no-fault catastrophic injuries that are covered by the MAIL schemes will be placed on insurers and on owners (through increased premiums). ▪ Injured people not covered by MAIL schemes may have to pursue another remedy. This may delay receiving treatment and incur up-front costs to begin court actions and/or relying on Medicare or private health insurance. ▪ Information about whether the ADS was engaged and so whether the injuries are covered by the MAIL scheme may not be readily available. ▪ Delays to claims may result from the time taken to determine whether an ADS was engaged.

Table 5. Positives and negatives of personal injury actions under ACL, contract or negligence

Positives	Negatives
▪ Law and process for actions are nationally consistent. ▪ Any person injured from a safety defect can take ACL action against the manufacturer. The action does not have to be brought by the person who was supplied with the goods. ▪ Avoids MAI threshold complications regarding 'driver/driving' in definitions of 'injury' or 'accident'. ▪ No requirement for fault. Only need to show a safety defect in the goods caused the injuries. ▪ Action can be taken directly against the manufacturer. ▪ 'Manufacturer' is defined expansively and may include several entities in the automated vehicle supply chain, including an importer. ▪ Damages in contract are not limited by legislation. ▪ Damages in negligence, although limited by civil liability Acts, may be higher than no-fault benefits in hybrid schemes.⁴⁰	▪ Absent agreement, actions must be taken in court, taking longer and incurring up-front expenses for the injured person compared with MAI actions. ▪ Shorter time (10 years from supply) to bring an action under ACL than in contract and negligence (including fault-based MAI schemes).⁴¹ ▪ Immediate rehabilitation and recovery of the injured person may be delayed. ▪ Manufacturer defences may be easy to apply to automated vehicle technology because it is complex, new and quickly developing. ▪ Limits for non-economic loss may be lower than the limits applicable for non-economic loss under state and territory civil liability or motor vehicle accident legislation. ▪ No guarantee the manufacturer will be solvent or able to pay if damages are awarded against it (no requirement for manufacturer insurance to cover claims). ▪ Manufacturers may not be liable where an automated vehicle is used under the 'mobility as a service' model. ▪ Increased resourcing costs for courts, at least initially. ▪ Negligence proceedings are likely to be more complex because of the elements that must be proved.

4.3 Option 2: Exclude injuries caused by an ADS from MAI Schemes

4.3.1 Summary

Under this option the MAI Acts would be amended to exclude injuries caused by an ADS. People injured by an ADS would not be able to use the MAI schemes to seek compensation for their injuries. They would have no option but to rely on legal actions under negligence, ACL or contract – as detailed under option 1. This would place the cost of defective or

⁴⁰ Damages in negligence are limited by civil liability Acts. Within these Acts motor accident injuries may have lower limits than other types of damages (for example, *Personal Injuries Civil Liability Act 1936* (SA) s 8).

⁴¹ Generally, within three years after the accident, or for latent injuries, three years from when the injury came to the person's knowledge, for example, *Limitation of Actions Act 1936* (SA). Extensions of time may also apply to certain persons, for example, children, giving them three years after they turn 18yrs, *Transport Accident Act 1986* (Vic) s 93(19).

unsafe automated vehicles directly on manufacturers and provide a degree of certainty for injured people about the compensation pathway.

The exclusion could be achieved by different means. For example, a stand-alone provision that excluded an ‘accident’ or ‘injury’ caused by an ADS when it was engaged; or amending the definition of ‘accident’ or ‘injury’ to exclude a motor vehicle when its ADS was engaged.

The exclusion would mean that MAIL schemes would only respond to claims where a human driver causes personal injury. This would be consistent with the original intent of CTP schemes, which was to provide cover in the event of personal injuries caused by the negligent driving of a vehicle.

Under this approach, ADSEs would need to have insurance arrangements in place to cover ADS failures that cause personal injury. These policies could be provided by the insurance industry or ADSEs could self-insure. This could link to the proposed safety criteria in the Safety Assurance System consultation RIS, that the ADSE have ‘an appropriate level of insurance to cover personal injury, death and property damage caused by the ADS when it is properly engaged’ (National Transport Commission, 2018b, p. 89). Alternatively, a legislative requirement could be introduced.

The relative risk of the ADS when it is in control of the vehicle will be reflected in the premiums payable by the ADSE. This would maintain an essential price signal to ADSEs.

4.3.2 Positives and negatives of option 2

Table 6 lists the pros and cons of option 2.

Table 6. Positives and negatives of option 2

Positives	Negatives
- It would be clear that crashes caused by an ADS were not covered by the MAIL schemes. Injured persons would not waste time applying for support through these schemes. - A market for alternative and competitive insurance products would be created. - Clear price signals would be sent to the ADSE. - The costs of ADS crashes would not be shifted onto MAIL scheme participants. - MAIL schemes would not be subject to high reinsurance costs to cover large scale events.	- It may take some time to determine whether the ADS was engaged. Data may not be available or accessible to the injured person in the initial stages, for example, before a claim is lodged in court. - There may be arguments about whether the ADS caused the accident/injury. For example, if a vehicle occupant had engaged the ADS when they shouldn't have, or the owner hadn't properly updated software. This could delay a determination about whether the injured person is eligible for compensation or benefits. It may require a court decision or an appeal to an administrative review body. - The most likely alternative for anyone injured by an ADS is the ACL, which may not be suitable for this new technology.⁴² - May need to establish new administrative processes and sanctions.

⁴² See (Brady, et al., 2016). The paper highlights gaps in the ACL and suggests ways to overcome them, for example, an amendment requiring manufacturers to have insurance to ensure they can pay court-ordered damages to injured people.

4.4 Option 3: Expand MAl schemes to cover injuries caused by an ADS

4.4.1 Summary

Under this option, MAl laws would be amended⁴³ to remove barriers to accidents/injuries caused by ADSs. Injured people would have access to compensation and benefits regardless of whether the injury was caused by an automated vehicle whose ADS was engaged or a vehicle controlled by a human driver.

Premiums could be calculated specifically for automated vehicles to ensure there is no cross-subsidisation between automated vehicles and non-automated vehicles. Automated vehicle premiums could be based on automated vehicle-specific performance over time. Potential accidents caused by ADS failures should not result in increased premiums for drivers of non-automated vehicles, or visa-versa if automated vehicles prove to be significantly less risky than regular vehicles.

As under the current MAl schemes, insurers would have the right to recover the costs of ADS crashes from at-fault third parties. The ability to recover costs is vital to contain the costs of expanded MAl schemes. However, the complexities of proving causation and establishing liability in collisions involving an ADS, may make it difficult for MAl scheme insurers to recover claims costs from ADSEs or manufacturers. This would inevitably result in significantly higher premiums for all vehicles. To address the recovery of costs complexity, a variation of this option is discussed at 4.4.4.

⁴³ See Appendix C: for discussion of possible legislative changes to enable option 3 to be implemented.

4.4.2 Positives and negatives of option 3

Table 7 lists the pros and cons of option 3.

Table 7. Positives and negatives of option 3

Positives	Negatives
▪ Entitlement parity in each jurisdiction between automated vehicle and non-automated vehicle injuries. ▪ Established, efficient and relatively well known processes for claim assessment, medical rehabilitation, and services. ▪ Consistent personal injury claims management through all levels of automation. ▪ The one policy can provide cover for ADS and human driver. ▪ Single point of access to claim compensation whether the injury resulted from ADS or conventional vehicle. ▪ It could provide a first step until an alternative model is developed. ▪ It could include clarification or extension of the right to recover damages from manufacturers and the right to access data.	▪ The cost of damage and personal injury caused by a failure of an ADS could shift from a manufacturer to registered operators, insurers, government and taxpayers. ▪ The potential scale of ADS crashes is much greater compared with human-driven vehicles, as a systemic issue could cause a series of crashes. Reinsurance costs to cover these events may be reflected in higher premiums. ▪ The assumption that automated vehicles will have fewer crashes than conventional vehicles, and so reduce the costs of insurance, may not be correct, in particular for vehicles with conditional automation. ▪ Risk of increased administration and legal costs in MAIL schemes for recovery actions. ▪ The requirement for fault by an insured party adds complexity and cost, because the ADS or party responsible for the ADS that caused the accident/injury is not an insured person⁴⁴ and will have to be identified and pursued in negligence. ▪ Many entities may be involved in the manufacture, operation and maintenance of an ADS, creating complexity in determining fault. ▪ Terrorism exclusions in some existing CTP legislation⁴⁵ may exclude accidents/injuries caused by an ADS that has been subject to a cyber attack. ▪ The long-tail nature of CTP claims may lead to a higher risk of ADSE/manufacturer insolvency.

4.4.3 Premium setting and scheme financial sustainability risks

MAIL scheme insurers have raised concerns that if MAIL schemes are expanded to cover conditionally, highly and fully automated vehicles, premium paying motorists may cover or subsidise the costs of ADS failures, when the rightful action would be to claim against the manufacturer for a defective product under the ACL. Although some automated vehicle manufacturers have stated that they will stand behind their products in specified

⁴⁴ Except in Queensland and possibly the Australian Capital Territory and Tasmania. In Queensland, insured parties include a 'person whose wrongful act or omission in respect of the insured motor vehicle causes the injury to someone else and any person who is vicariously liable for the wrongful act or omission'. In the Australian Capital Territory and Tasmania, 'users' of the motor vehicle are insured persons (See Appendix D:).

⁴⁵ For example, the *Motor Accident Insurance Act 1994* (Qld) s 5(4).

circumstances (Volvo Car Australia, 2017), providing cover in the event of product failure, these statements reflect their existing legal obligations under the ACL.

The ACL provides a number of manufacturer defences that may make it difficult for a claimant to succeed in this area of complex and rapidly changing technology. In particular, the defences that ‘the state of scientific and technical knowledge at the time of supply did not enable the supplier or manufacturer to discover the defect’ and ‘the good was part of another good, and the defect only arose because of the design, markings, instruction or packaging of that other good’⁴⁶. It may be beyond the means of most private litigants to take action for damages against a manufacturer under the ACL.

There is a real risk that MII scheme insurers will not be able to recover sufficient claims costs from manufacturers due to the complexities of proving causation and establishing liability in collisions involving an ADS. This could result in significantly higher premiums for all vehicles.

Although many consider that automated vehicle technology will reduce the incidence of accidents, there is less certainty around the costs of the accidents that are likely to occur. It is difficult to judge the level of premiums that will need to be set because there is no information on the frequency or severity of automated vehicle crashes in Australia to assess. Few insurers currently offer personal injury insurance products for automated vehicles because these vehicles can only be used on roads as part of automated vehicle trials. The difficulty with using trial crash data is that trials are heavily controlled and supervised and provide little data that is useful for initial premium setting.

MI law also defines the matters that can be taken into account in setting or advising on premium levels, which may affect premiums for automated vehicles.

In addition, altered ownership models may emerge from the introduction of automated vehicles, and this in turn may impact on the setting of automated vehicle premiums. For example, if ownership is dominated by fleet owners, it may be possible to apply indicative premiums to the fleet, then make adjustments as claims experience develops.

4.4.4 Compulsory automated vehicle supply chain reinsurance pool

A modification of option 3 that would address the cost shifting from manufacturers under product liability to MI policy holders, would be to create a national reinsurance pool. The pool could be created from compulsory contributions by all parties who could contribute to an ADS malfunction - for example, ADSEs and other parties involved in automated vehicle manufacture and supply, including modifiers, installers, repairers and infrastructure and telecommunications providers. Governments could also participate in the reinsurance pool for the purposes of covering government-owned infrastructure failures that are implicated in automated vehicle accidents.

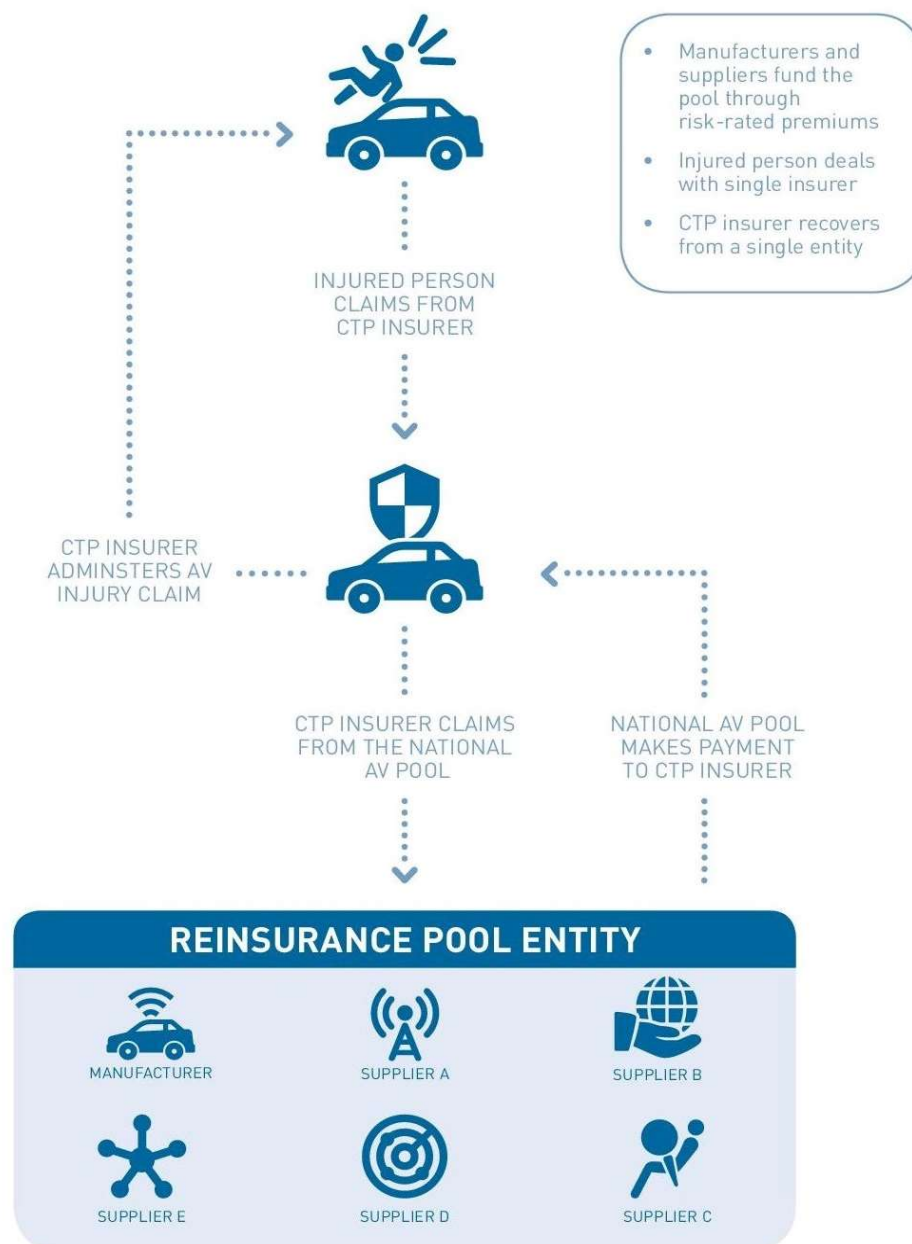
The pool would provide MI schemes with a central, streamlined means of recovering ADS claims payments and costs. MI scheme claims managers would have access to, or a right to recovery from, the pool. The national reinsurance pool could be administered by a new or existing national entity with expanded powers, such as the Australian Reinsurance Pool Corporation.⁴⁷

⁴⁶ See for example, Australian Consumer Law s 142.

⁴⁷ The Australian Reinsurance Pool Corporation (ARPC) is a corporate Commonwealth entity established by the *Terrorism Insurance Act 2003* (Cth). After terrorist events in the US in 2001, there was a global withdrawal of terrorism insurance. The government was concerned that the lack of comprehensive insurance cover for commercial property or infrastructure would lead to a reduction in financing and investment in the Australian property sector. The role of ARPC was to establish and provide ongoing administration of a scheme to provide

Figure 3 shows how the claim and recovery process might work under this model.

Figure 3. Possible claim and recovery process of a reinsurance pool



insurance cover for eligible terrorism losses, involving commercial property, associated business interruption losses and public liability (see <http://arpc.gov.au/about-arpc/>).

4.4.5 Positives and negatives of a reinsurance pool as part of option 3

Table 8 lists the pros and cons of introducing a reinsurance pool as part of option 3.

Table 8. Positives and negatives of a reinsurance pool as part of option 3

Positives	Negatives
▪ Reduces the risk of ADS liabilities transferring from the automated vehicle supply chain to consumers and governments. ▪ The sustainability of the MAII schemes for the existing fleet is protected from ADS liabilities. ▪ Provides a clear and efficient path to recover costs by claims managers. ▪ May be a practical interim solution during the early mixed-fleet period where the risks of automated vehicles is uncertain. ▪ Cybersecurity risks would be covered by premiums payable by manufacturers, rather than being subsidised by automated vehicle owners and the community generally. ▪ Possibility of charging premiums for the reinsurance pool on a per kilometre basis, so that manufacturers/suppliers and others contribute for the life of the vehicle. This provides cover for market entry and the used-automated vehicle market. ▪ Minimised disruption to existing MAII schemes. Existing claims management systems could deliver equitable compensation to people injured in motor vehicle accidents, regardless of the level of automation. ▪ Reduces exposure of manufacturers and others in the supply chain to the volatility of compensation awards under ACL because claims would be managed to MAII scheme caps and thresholds. These controls would provide ADSEs and MAII scheme insurers with a degree of certainty. ▪ A single entity could administer the reinsurance pool, operating with relatively low administrative overheads.	▪ Establishment and operational costs of a new national entity or extending the functions of an existing entity. ▪ May be difficult to determine the total contribution required for the reinsurance pool and the contribution rate of different parties. ▪ Unless premiums are risk-rated, the incentive for manufacturers to produce and maintain products to the highest possible safety standards may be diminished under this approach compared with a strict product liability regime. ▪ A compulsory reinsurance pool may still distort incentives for managing risks. ADSEs with poorer safety records are likely to derive disproportionately greater benefit from a reinsurance pool relative to those with better track records.

4.5 Option 4: Purpose-built automated vehicle scheme

4.5.1 Summary

Under this option, a purpose-built scheme would be established to ensure there is an accessible claims process for people injured by automated vehicles. It could be a national scheme or a state and territory scheme designed to provide similar coverage to MAII scheme arrangements in each jurisdiction.

Premiums could be paid on a per-vehicle basis by vehicle owners, or by fleet operators, users, dealerships and/or ADSEs, or as a percentage of revenue for companies running their vehicles as fleets.

The scheme could cover liabilities for injuries caused by both driver negligence and product failure because human driver negligence may still be a factor in an accident involving an automated vehicle that has human driver controls.

Compensation could be set or capped at the same levels as under MAlI schemes. It may be possible to administer the scheme using existing MAlI scheme processes and agencies. New laws would be required to establish the scheme (or schemes). Companies developing and deploying this technology may also wish to self-insure or access global insurance products to cover their risks.

Developing the scheme would require answering key policy questions including:

- **Would it be fault-based or no-fault?**

Fault and no-fault approaches provide differing incentives and coverage. Such a scheme could also incorporate an initial presumption of liability by the insurer of the automated vehicle as in the United Kingdom.

- **Would it be publicly or privately underwritten?**

The scheme could be government run or require a minimum level of insurance to be sought from a private provider.

- **How would the scheme interact with common law rights?**

The scheme could fully or partially extinguish rights for injured parties to claim common law damages.

- **How would it interact with MAlI?**

Different schemes for crashes involving human-driven vehicles and those involving an ADS could have other complexities. If vehicle control transfers between the human and ADS on the one trip, would the vehicle effectively move between MAlI and automated vehicle insurance schemes? What would happen if a crash occurred at the point of handover of control? An alternative could be to have any vehicle that has an ADS covered by the purpose built automated vehicle scheme for all of its trips, regardless of whether the human or ADS was in control at a particular point in time.

- **What compensation thresholds or caps would be set?**

Limits could be set on compensation amounts for injured parties or for compensation under particular categories.

- **What kind of crashes would be covered?**

The scope of crashes, accidents or events covered would need to be defined - for example, whether to include events that do not involve the 'driving of the vehicle' like a cyclist injured by the opening of a vehicle's door?

A new, national scheme for ADSs may also create complexities with existing state-based schemes for human drivers. New, state-based schemes for ADSs would avoid this but create complexity for a national ADSE, which may need to sign up to eight different insurance schemes in order to operate nationally.

This option may be better suited to a time when highly and fully automated vehicles form the greater part of the national fleet. For stakeholders who support this option, more information is sought on how such a scheme would be designed.

4.5.2 Positives and negatives of option 4

Table 9 lists the pros and cons of option 4.

Table 9. Positives and negatives of option 4

Positives	Negatives
▪ Reduces the risk of ADS liabilities transferring from the automated vehicle supply chain to consumers and governments. ▪ Could cover cybersecurity risks through premiums payable by manufacturers, rather than being subsidised by automated vehicle owners and the community. ▪ Could cater more easily for new and emerging technology including delivery robots, shuttles, delivery drones and flying cars. ▪ Provides the private insurance market with an opportunity to offer personal injury insurance for automated vehicles or fully comprehensive insurance products (including cover for cyber risks).	▪ If nationally managed, there would be complexity matching each jurisdiction's unique MAIL scheme entitlements to ensure equitable compensation between automated vehicle and non-automated vehicle injuries. ▪ Uncertainty for claimants (and insurers) about which scheme to access, particularly in 'hit-and-run' incidents or where Nominal Defendant provisions are applicable. ▪ Establishment and operational costs of a new entity (or entities). In the short term, the costs, borne by consumers/taxpayers, are likely to be disproportionately large relative to the size of the market. ▪ Potential for ongoing contribution to the automated vehicle scheme may be limited if the insurance premiums are tied to the registered operator on the registration of the vehicle or through the ADSE as the 'driver'. ▪ May not be appropriate or able to accommodate new automated vehicle ownership models. ▪ May not be able to appropriately allocate the costs of the scheme in a way that provides an incentive to manufacturers to ensure the quality and performance of the product.

4.6 Option 5: Minimum benchmarks

4.6.1 Summary

Under this option, national benchmarks would be agreed by states and territories on eligibility, coverage and benefits for personal injuries caused by an ADS crash. The NIIS, summarised at 1.6.2, where arrangements in jurisdictions are different, yet are recognised to meet minimum benchmarks, is an example of this type of approach. Jurisdictions would retain the responsibility for, and flexibility to deliver, the minimum requirements in the way that best suits their own circumstances. They could implement automated vehicle injury insurance arrangements that may:

- leverage existing MAIL schemes
- allow for more private insurer participation
- permit self-insurance by ADSEs
- consider the ownership composition of the fleet in each jurisdiction
- change as the autonomy level of the fleet evolves.

Minimum benchmarks may also consider other factors, such as risks covered, caps and thresholds, localised claims processing capability, access to interim payments, injury

management support and whether certain services can be contracted to others. Automated vehicle manufacturers could have the opportunity to build personal injury insurance into their products and deliver claims management services as required under the minimum benchmarks.

Insurance requirements for organisations conducting automated vehicle trials are evolving. The following examples indicate degrees of similarity and difference across jurisdictions:

- New South Wales and Victoria: CTP policy and a public liability insurance of at least \$20 million
- Western Australia: public liability insurance cover for personal injury and loss appropriate for the trial.

The Productivity Commission (Productivity Commission, 2011) considered that a no-fault NIIS would produce outcomes for catastrophically injured people that were more consistent, quicker and more efficient than a scheme based on fault. A no-fault approach could be considered for those injured in accidents caused by an ADS. How this could be funded so that manufacturers continue to bear the responsibility for ensuring their products are safe would be an important element.

Amendments to various laws may be required, depending on the way states and territories implement the benchmarks. A minimum benchmarks approach could be achieved by implementing some of the other options discussed in this chapter.

4.6.2 Positives and negatives of option 5

Table 10 lists the pros and cons of option 5.

Table 10. Positives and negatives of option 5

Positives	Negatives
▪ Cost of ADS defects would be borne by manufacturers or ADSEs, not shifted to governments and the community. ▪ May mitigate some of the risks (for example, costs and delays) that can be experienced when making a product liability claim against a manufacturer. ▪ Minimal disruption to existing MAII schemes. ▪ More flexibility for a changing vehicle ownership profile enabling it to accommodate Australia's disparate MAII schemes and the mixed fleet phase. ▪ Consistent with the NIIS minimum benchmark approach agreed by states and territories for no-fault catastrophically injured people. ▪ Efficiencies could be achieved if automated vehicles are covered under group policies of insurance for all risks. This may improve the efficiency and affordability of on-demand mobility services. ▪ 'Built-in' insurance could offer greater and/or wider levels of cover to increase the manufacturer's competitiveness in the automated vehicle market. This may also benefit the consumer. ▪ States and territories would be able to determine how best to deliver a personal injury insurance framework to cover injuries arising from automated vehicles in their jurisdiction. For example, some jurisdictions may have higher levels of private ownership of automated vehicles than others, so commercial insurance products may be in less demand.	▪ If the cost of insurance or self-insurance to meet the minimum benchmarks is too high for manufacturers or ADSEs, the introduction and take-up of automated vehicle technology in Australia may be hampered. This could result in reduced realisation of economic, safety and social benefits of automated vehicles. ▪ Uncertainty for claimants about which scheme to access. ▪ Uncertainty and complexity around • crash investigations on the cause of an accident • general claims management rights and responsibilities where there are possibly multiple liable parties (for example, manufacturer, ADSE and owner). ▪ Potentially high costs associated with regulators having to expand their expertise, functions and powers to manage a more diverse insurance market. ▪ Applying a minimum set of requirements to a range of insurance products may be difficult.

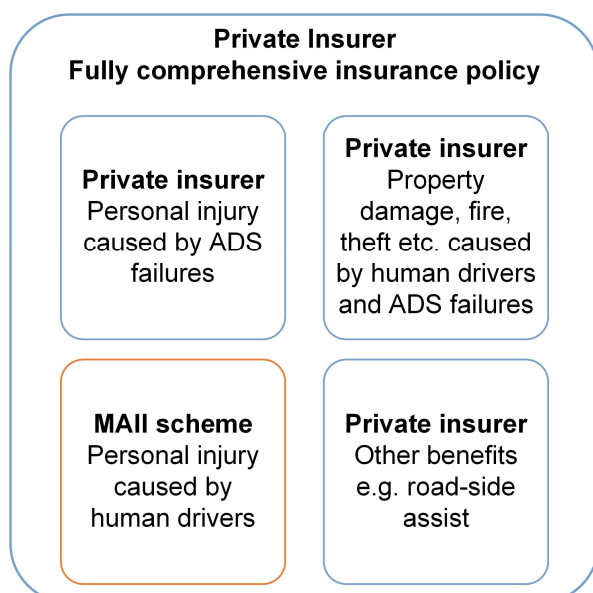
4.7 Option 6: Single insurer

4.7.1 Summary

In Australia, third-party personal injury insurance is currently purchased as a separate policy to optional third-party property or comprehensive motor vehicle insurance. Under this option, amendments to MAII laws could allow for private insurers to provide fully comprehensive motor accident insurance under a single policy covering all liabilities (cover for property damage and personal injury). Where the ADS causes an accident, the insurer would be able to pursue a recovery claim against the manufacturer; however, complexities of establishing liability may still arise.

The personal injury costs of ADS failures could be privately underwritten. Existing MAl schemes would not have to expand beyond covering personal injury caused by human drivers. Jurisdictions in which a statutory corporation or authority exclusively provides third-party personal injury insurance would need to allow private providers to offer this insurance. Figure 4 shows how this model could work.

Figure 4. The single insurer model



Jurisdictions that currently operate privatised MAl schemes (the Australian Capital Territory, New South Wales, Queensland and South Australia) may be initially in a better position to offer this option to automated vehicle owners. This option may have more appeal in the context of option 5 (minimum benchmarks), meeting MAl needs while not prescribing how that would be achieved.

4.7.2 Positives and negatives of option 6

Table 11 lists the pros and cons of option 6.

Table 11. Positives and negatives of option 6

Positives	Negatives
▪ Convenience for people injured in crashes, particularly where it is uncertain whether an ADS failure, a human driver, or both was the cause of the crash. ▪ Consumer convenience of dealing with one insurer to cover human driver liabilities and ADS liabilities. ▪ Creates a clear mechanism for apportionment of liability and recovery of damages payments to be determined in the background by insurers and the automated vehicle supply chain. ▪ The private insurance market could expand through the opportunity to offer a new fully comprehensive (personal injury and property damage) product. ▪ The 'bundling' of these insurance types may reduce red tape for consumers and introduce greater efficiencies and competitiveness into the insurance market. ▪ Crash investigation efficiencies for insurers. ▪ Reduced exposure to ADS claims for existing MAll schemes not having to manage claims or recover costs. ▪ May better accommodate automated vehicles during the mixed fleet years to reflect the changing risk profile of the national fleet, where liability gradually shifts away from human drivers to ADSEs.	▪ The length of time taken for an insurer to pursue a recovery of claims costs and the associated legal costs incurred from ADSEs may be substantial. These costs may ultimately be reflected in premium rates payable by automated vehicle owners. ▪ Where ADSEs successfully defend recovery claims, the insurer and policy holders will bear the costs associated with ADS failures. This weakens the price signalling needed to encourage manufacturers and service providers to deliver and maintain safe products to consumers. ▪ Premium affordability may be significantly diminished for certain cohorts of drivers in government-run MAll schemes as private insurers seek to risk-rate products, for example, based on driver risk rather than vehicle type. ▪ If the existing separation of compulsory personal injury insurance and property damage is retained alongside the 'single insurer' option, administration of vehicle registration and licensing may become more complex for transport agencies. There may be a cost impact associated with this complexity. ▪ Complex to establish national scheme given the varied nature of funding of current MAll schemes

4.8 Assessment of options

The NTC proposes five assessment criteria against which each of the six options can be assessed:

- Will the option ensure a person injured by an ADS is no worse off financially or procedurally than if they were injured by a vehicle controlled by a human driver?
- Will the option provide timely payment of claims to injured persons?
- Does the option address an identified gap or barrier to personal injury compensation created using automated vehicles?
- Will the option send an appropriate price signal to those responsible for the safe operation of automated vehicles to obviate product/system/technology failures and risks?

- Is the option capable of accommodating evolving technology, automated vehicles and ownership models?

These criteria have been developed to help guide an initial analysis of the options. They relate to the principles set out in Chapter 1 and reflect our discussions with the Heads of Motor Accident Injury Schemes. We are seeking feedback on whether these criteria are appropriate and whether additional or alternative criteria should be considered.

Table 12 shows an initial assessment of each option using these criteria, classified according to whether it meets the criteria to a high, medium or low degree.

Table 12. Initial options assessment

Criteria	Option 1: No change	Option 2: Exclude injuries caused by an ADS from MAlI schemes	Option 3: Expand MAlI schemes to cover injuries caused by an ADS	Option 4: Purpose built scheme	Option 5: Minimum benchmarks	Option 6: Single insurer
Assessment: High/medium/low						
Ensures a person injured by an ADS is no worse off financially or procedurally than if they were injured by a vehicle controlled by a human driver?	L	L	H	M	M	M
Provides timely payment of claims to injured persons?	L	L	H	M	M	M
Addresses an identified gap or barrier to personal injury compensation created by using automated vehicles?	L	L	H	H	H	H
Sends an appropriate price signal to those responsible and associated with automated vehicle product/system/technology failures and risks?	M	M	M	H	H	M
Can accommodate evolving technology, automated vehicles and ownership models?	M	M	M	M	M	M

4.9 Conclusion

Options 1 and 2 score low on three criteria and medium on two criteria. This is mainly because these options leave the resolution of liability for injuries to product liability and negligence laws. Option 3 scores high on three criteria and medium on two criteria. Option 4 scores high on two criteria and medium on three criteria. It is anticipated that significant policy questions would need to be resolved to establish a purpose-built scheme, and there

may be initial institutional arrangement costs. Option 5 scores high on two criteria, and medium on three criteria. A range of implementation possibilities under option 5 would require resolution. There may also be varied implementation costs on ADSEs. Option 6 scores high on one criterion and medium on four criteria. Establishing a single insurer scheme would require significant change for government underwritten jurisdictions. Out of the six options, option 3 scores highest against the criteria.

Our initial analysis indicates that options 1 and 2 are unlikely to meet with community expectations around equality. Option 3 best meets our assessment criteria and would be the simplest and quickest to implement. However, there are concerns that under this option governments will be underwriting private sector risk. We suggest that a reinsurance pool could minimise this risk. Options 4, 5 and 6 are all viable options. They each have their own advantages; however, all require significant additional work to develop.

The NTC is seeking more information on the principles, options and assessment criteria as part of this consultation process. One potential approach could be to implement option 3 in the short to medium term while the number of vehicles with an ADS remains small and their operational design domain remains quite limited. A new approach could then be developed that takes into account evidence of safety risks from early deployments.

Consultation questions:

Question 4: Is more research needed before a preferred option can be selected? If so, what research?

Question 5: Which option best meets the policy principles outlined in Chapter 1? Is there another option not referred to in this paper that would better meet these principles? If so, please explain how it would work.

Question 6: Are the criteria sufficient for assessing the options? Are there alternative or additional criteria that you think should be considered?

Question 7: Do you agree that the entity most able to manage the risk should be responsible for the cost of damages if the risk eventuates?

Question 8: Should different insurance models be used depending on the level of vehicle automation (conditional, high or full automation)?

Question 9: If you support option 3, are current rights of recovery for insurers sufficient? If not, please indicate what additional rights or powers would be required and why.

Question 10: If you support option 4, please provide details on how a purpose-built scheme would work, including fault, governance, interaction with common law and existing MAlI schemes and caps or thresholds.

Question 11: If you support option 5, how should the minimum benchmarks be defined?

5 Additional issues - data and registration issues

Key points

- Data issues:
 - When automated vehicles are on our roads, insurers will require new information to assess liability. This information will include whether the ADS was engaged and interactions between the ADS, the vehicle's occupants and other road users.
 - The *Safety assurance for automated driving systems* consultation RIS proposes a data recording and sharing obligation as part of the requirements of the ADSE's Statement of Compliance.
- Registration issues:
 - Existing mutual recognition of registration and insurance provisions in MAII laws may be impacted if there is no nationally consistent approach to insurance arrangements to cover injuries caused by an ADS.

5.1 Purpose

Data

Stakeholder feedback to the NTC's automated vehicle issues and discussion papers since May 2016 have highlighted the need for access to data generated by an automated vehicle. Some purposes that data could be used for include determining liability for insurance, law enforcement and road infrastructure management and planning, and for insurance risk modelling.

This chapter discusses the types of data insurers will need from automated vehicles to enable them to determine liability and eligibility for benefits and compensation. It discusses what data should be collected, who should have access to it and privacy implications. It does not discuss other types of data use such as for road safety statistics purposes or to assess the risks of different types of motor vehicle and driver for the purposes of setting premiums.

Registration

This chapter also raises a potential problem of unfunded liabilities arising from mutual recognition of registration (and the associated condition that the vehicle be insured) if some states and territories change MAII laws to include injuries caused by ADSs and others do not.

5.2 Current data used by motor accident injury insurance schemes

MAII scheme insurers rely on a range of data when it is necessary to establish fault for an accident, or where a person's contributory actions may decrease the benefits they receive (for example, seatbelt use, consumption of alcohol or drugs). This includes police reports, witness statements, dash-cam footage, private investigators' reports, traffic camera images, and police and hospital blood alcohol concentration and drug test results.

Some information about the vehicle's operation is already collected by vehicles fitted with drivers' aids and airbags. Many vehicles are fitted with event data recorders, which record, among other things, pre-accident speed, brake use, impact acceleration, safety-belt use and airbag deployment time. Currently, MAI scheme insurers do not commonly access this vehicle data.

Automated vehicles will generate unprecedented amounts of data about the vehicle, its interaction with the vehicle occupants, its interaction with other vehicles and road users, road infrastructure, and the activities of the vehicle occupants. When accidents occur involving an automated vehicle, it will be important for insurers to have access to the vehicle's data to assess liability.

5.3 Data and determining liability in automated vehicle crashes

Although vehicle data does not feature greatly in determining liability under MAI schemes now, access to data about the circumstances of a crash will become more important when automated vehicles are deployed. Whether the ADS was engaged or a person was driving may determine:

- an injured person's entitlement to compensation or benefits, and/or
- whether an action in negligence might lie against the manufacturer or ADSE or other party associated with the operation of the automated vehicle.

The number of parties involved in an ADS crash may include the:

- fallback-ready user who fails to respond to ADS instruction to take over
- manufacturer of the vehicle
- designer of the ADS
- repairer
- telecommunications or road infrastructure provider, etc.

This complexity increases the importance of access to the automated vehicle's data to determine liability. If access to data is difficult, or needs to be justified for each crash investigation, administration costs will escalate, claims processing will be delayed and outcomes for injured persons will be affected (whether under MAI schemes or alternative options). Data will need to be kept secure from tampering, possibly for many years, and be made available in a readable format when requested.

The NTC's *Safety assurance for automated driving systems* consultation RIS (National Transport Commission, 2018b, p. 37) addresses these issues through proposed requirements in the ADSE's Statement of Compliance. The proposed data recording and sharing obligation, which is being considered in light of submissions to the consultation RIS, states:

The applicant must outline the data it will record and how it will provide the data to relevant parties. Without limiting the data to be recorded and shared, the applicant must explain how it will ensure:

- the vehicle has real-time monitoring of driving performance and incidents, including event data records in the lead up to any crash or near-miss that identifies which party was in control of the vehicle at the relevant time
- the vehicle can provide road agencies with crash and near-miss data
- relevant parties (including police) receive information about the level of automation engaged at a point in time
- individuals receive data to dispute liability (for example, data showing which party was in control for the purposes of defending road traffic infringements) when the individual makes a reasonable request and the provision of information aligns with privacy regulation

- data is provided in a standardised, readable and accessible format when relevant
- data is retained to the extent necessary to provide it to relevant parties. The amount of time data is retained for may depend on the purpose(s) the information could be used for (for example, law enforcement or insurance)
- data is stored in Australia.

It is expected that automated vehicles will have systems capable of recording and storing information relevant to liability for crashes and that this data will be made available to the parties that need it for that purpose. These requirements are consistent with international approaches.

The following sections discuss what information insurers would need to determine liability in a crash involving an automated vehicle, who should have access to it and privacy implications. These matters and any stakeholder feedback will inform the development of data policy in our automated vehicle program of work.

5.3.1 What data?

An automated vehicle will generate data on the operation of the internal vehicle systems and on interactions between the vehicle systems and external objects or communications systems. It will also include data on the occupants of the vehicle and their interactions with the operation of the vehicle. This may include alertness or readiness to respond to ADS requests, and non-operational matters such as seat settings and infotainment system use.

It is important to determine how much of the information produced by the automated vehicle is necessary to determine the cause of an accident or liability. The type of vehicle data that is likely to be required includes:

- whether the ADS was engaged
- what level of automation was engaged
- the operational design domain for the level of automation engaged
- any requests from the ADS to the fallback-ready user or vehicle occupant and the response to the request
- data in the time leading up to, at the point of, and immediately after a crash including speed, acceleration, lane change and brake activation
- time, date and location
- last system upgrade
- results of the last vehicle self-diagnostic check.

It may be useful for insurers to have access to a greater range of information about crashes, or to have information about incidents other than crashes for risk modelling and product development purposes - for example, near-misses or recorded system faults. This information may be available through aggregated data provided to safety regulators. However, this type of data is not necessary for assessing liability for a specific incident.

Standardised data

The *Safety assurance for automated driving systems* consultation RIS (National Transport Commission, 2018b) proposes that data should be provided in a standardised, readable and accessible format. Data standards would ensure consistency in the format data is recorded and made available for access, for example, so that it can be read by commercially available tools. Standards could also address the quality and integrity of the data (making it tamper-

proof or tamper-evident) and the length of time data is required to be kept (for example, until court action is concluded or the limitation period has expired).⁴⁸

Australia's policy on vehicle standards is to align wherever possible with international standards. In addition, as a nation that no longer mass manufactures motor vehicles, it may be difficult to require more data elements to be recorded than those agreed internationally.

5.3.2 International developments on automated vehicle data

A significant amount of policy work is being done internationally on data recorder requirements. Some jurisdictions have made data recorders mandatory.

- The German *Road Traffic Act* was amended in 2017 to facilitate the use of automated vehicles. The law requires an automated vehicle to have a data recording device that records both the vehicle's control mode and any instances of a request by the vehicle for the driver to take control. The data must be stored for six months, or three years in the event the vehicle has previously been involved in an accident (Noerr LLP, 2017).
- In May 2018 the European Commission proposed 'to regulate data recorders for automated vehicles as part of the revision of the General Safety Regulation for motor vehicles to clarify who was driving (the vehicle or the driver) during an accident' (European Commission, 2018, p. 11).
- The International Organization of Motor Vehicle Manufacturers has developed a data storage proposal. In March 2018 they presented to the Intelligent Transport Systems and Automated Driving Informal Working Group of the World Forum for Harmonization of Vehicle Regulations (WP. 29). The proposal includes a Data Storage System for Automated Driving and data elements that would be required for any vehicle with an ADS (International Organization of Motor Vehicle Manufacturers, 2018). The requirements involve data (with timestamps) relevant to vehicle control – for example, ADS status, transition demand, take over and minimal risk maneuver. The proposal is to be considered further by groups within WP. 29.
- In February 2018, Californian regulations governing the deployment of automated vehicles came into operation (Californian Department of Motor Vehicles, 2018). Regulation §228.06(a)(6) requires a manufacturer to certify the automated vehicle is equipped with an autonomous technology data recorder that can store 'autonomous technology sensor data for all vehicle functions that are controlled by the autonomous technology at least 30 seconds before a collision with another vehicle, person, or other object while the vehicle is operating in autonomous mode'. The data, captured and stored in a read-only format and must be capable of being accessed and retrieved by a commercially available tool.
- At the federal level in the US, there is an emphasis on data for crash reconstruction. The National Highway Traffic Safety Administration voluntary guidance for automated vehicles, *Automated Driving Systems 2.0: A vision for safety* (National Highway Traffic Safety Administration, 2017, p. 14) states:

Vehicles should record, at a minimum, all available information relevant to the crash, so that the circumstances of the crash can be reconstructed. These data should also contain the status of the ADS and whether the ADS or the human driver was in control of the vehicle leading up to, during, and immediately following a crash. Entities should have the technical and legal capability to share with government authorities the relevant recorded information as

⁴⁸ Potentially up to 21 years, see *Transport Accident Act 1986* (Vic) s 68(3).

necessary for crash reconstruction purposes. Meanwhile, for consistency and to build public trust and acceptance, NHTSA will continue working with SAE International to begin the work necessary to establish uniform data elements for ADS crash reconstruction.

5.3.3 Who should have access?

A number of entities may require the automated vehicle data. It will be needed to make a claim and to defend a claim. Some vehicle data may be obtained by parties during proceedings through disclosure processes and subpoenas.

An injured person will need access to the data early in the claims process as this will help identify who the action should be taken against. It may be difficult to obtain this information, and if not provided in accordance with clear rules, proceedings would have to be commenced to obtain a court order for disclosure.

In a MAIL scheme action, the insurer defends the insured party against claims for compensation by the injured person. The insurer needs access to automated vehicle data as early as possible in the claims process because this may resolve liability quickly and reduce the expense of compensation claims. The insured party may be able to provide the data if they have direct access to the data or can obtain it from the manufacturer under the terms of the contract to buy the vehicle. A manufacturer may refuse to provide the data unless compelled because of cost or concerns about its own liability.

The insurer may also seek to recover some of the damages from an insured party who contributed to the crash or from the manufacturer, ADSE, software designer or repairer on the basis that the vehicle was defective. These parties, if they have access to the data, may refuse to provide it to an insurer voluntarily.

The *Safety assurance for automated driving systems* consultation RIS (National Transport Commission, 2018b) proposes that individuals should receive data to dispute liability. Depending on the feedback we receive, legislative provisions concerning access to data could also be developed. Any developments could be informed by the German approach. The German *Road Traffic Act* amendments specify that the data recorded (vehicle control mode and any requests by vehicle for driver to take control) must be made available to the authorities, as well as to any third party who provides plausible facts that (i) the data is necessary for asserting, satisfying or defending claims resulting from an accident and (ii) the vehicle was in fact involved in the accident (Bird & Bird, 2017). This approach protects the interests of all parties in a liability action by enabling access to the automated vehicle data most relevant to liability. A variation on the German approach could be to limit the data available to whether the ADS was engaged. This would enable the commencement of claims, following which additional information could be sought by court order. However, this would add delays to the consideration of claims and may result in court actions being unnecessarily commenced (where disclosure of all relevant data would have resolved liability without resort to the courts).

5.3.4 Maintaining privacy

The vehicle data relevant to determining liability in an ADS crash is most likely to be considered personal information for the purposes of Australia's privacy laws. The data is likely to be 'information ... about ... an individual who is reasonably identifiable'.⁴⁹ The individual could be the owner or driver of, or occupant in, the vehicle. For discussion on personal information and automated vehicle technology see NTC's Discussion Paper

⁴⁹ *Privacy Act 1988* (Cth) s 6.

Regulating government access to C-ITS and automated vehicle data (National Transport Commission, 2018).

The entity that collected the information, most likely the ADSE or the manufacturer, would need to comply with the privacy principles in the *Privacy Act 1988* (Cth). The Privacy Act applies to businesses with an annual turnover of more than \$3 million. It also applies to some businesses whose annual turnover is lower, including businesses trading in personal information (such as buying or selling a mailing list), which could apply to ADSEs and automated vehicle manufacturers if they sell the data produced by the vehicle's infotainment and other systems to other entities as apparently occurs in the US and Canada (British Columbia Freedom of Information and Privacy Association, 2015, p. 73).

Under Australian Privacy Principle 12,⁵⁰ an individual can obtain access to his or her own information. The driver of an automated vehicle could obtain disclosure of personal information connected with a crash from the manufacturer or ADSE to defend a MAll scheme claim. For other entities wishing to gain access to vehicle information that was personal information for the purposes of pursuing a MAll scheme claim, disclosure may be possible under the Privacy Act's permitted general situation described as 'The collection, use or disclosure is reasonably necessary for the establishment, exercise or defence of a legal or equitable claim'.⁵¹ Where a third party requests information, the entity disclosing the information may require a court order to satisfy itself that the information was reasonably necessary (Office of the Australian Information Commissioner, 2013, p. 6).

There is the possibility that parties may refuse to disclose personal information under the permitted general situation. If this is considered an undesirable uncertainty with risks of delay, a provision in state and territory MAll laws, or any new automated vehicle law could be developed. It could be similar to the German provision, clarifying that data from the automated vehicle's data recording device must be disclosed to anyone who provides plausible facts that the data is necessary for asserting, satisfying or defending claims resulting from an accident involving the vehicle. This would also ensure that any vehicle information that was not personal information would be required to be provided.

In the US, which has not adopted the privacy principles approach to regulating privacy due to privacy concerns by owners and drivers of vehicles, 17 US states have enacted laws restricting the downloading of event data recorder information, in most cases, only with the owner's consent or with a court order. At the federal level, the US enacted the *Driver Privacy Act* in December 2015. This Act places limitations on data retrieval from event data recorders and provides that information collected belongs to the owner or lessee of the vehicle (National Conference of State Legislatures, 2018).

5.3.5 Conclusion

Automated vehicles will generate vast amounts of data, and many parties may seek to use that data for a wide range of purposes. However, when determining who should have access to data and for what purposes, it is necessary to consider the privacy interests of owners, occupants and drivers of an automated vehicle. It is also necessary to balance those privacy interests against the ADSE or manufacturer's proprietary interests in the data and the costs of securely storing, formatting and making required data available for potentially many years. In the context of automated vehicle data for personal injury insurance, a balance needs to be struck so that only the minimum vehicle data necessary to determine liability is required to be made, recorded and stored.

⁵⁰ Ibid Schedule 1.

⁵¹ Ibid s 16A.

Consultation question:

Question 12: Are existing legislative and non-legislative processes sufficient to access automated vehicle data for the purposes of establishing liability relating to a personal injury claim involving an automated vehicle? If not, what additional powers would be required and why?

5.4 Registration issues - mutual recognition of registration

In Australia, obtaining MAll scheme cover is part of the process for registering a vehicle. The cover is associated with the vehicle. All states and territories have provisions that recognise the registration of a vehicle in another jurisdiction.

Most states' and territories' mutual recognition is conditional on the vehicle being covered by third-party insurance under a law of the jurisdiction in which it is registered.⁵² The remaining jurisdictions exempt interstate vehicles from registration subject to them being registered in another jurisdiction and displaying numberplates as required in that jurisdiction.⁵³ This appears to be de facto recognition of other jurisdictions' third-party insurance as this insurance is linked to registration in all states and territories.

In the states and territories with separate CTP and NIS laws, CTP insurance policies cover insured parties from liability incurred anywhere in Australia. In Victoria, Tasmania and the Northern Territory, where there is one MAll law, it appears that any person injured in the state/territory is entitled to treatment, care and support at or above the level of the NIS benchmarks. Owners and drivers (and other insured parties) of vehicles registered in the jurisdiction are covered for liabilities incurred anywhere in Australia.⁵⁴

Essentially, this means that the insurer of the vehicle (whether public or private) is liable for damages for injuries caused by the insured parties in other states and territories. The actions would be governed by the relevant laws of the other jurisdiction.

If one jurisdiction changed its laws to ensure those injured in ADS crashes were covered by its MAll scheme, insurers in other jurisdictions may be exposed to unfunded claims for damages arising from ADS crashes.

Consultation question:

Question 13: If different types of insurance attach to automated vehicles in different states and territories, does this create difficulties for mutual recognition of registration to continue? If so, how should this be addressed?

⁵² *Motor Vehicles Act 1959* (SA) s 19A; *Transport Accident Act 1986* (Vic) s 111; Transport Operations (Road Use Management—Vehicle Registration) Regulation 2010 (Qld) r 105; *Motor Vehicle (Third Party Insurance) Act 1943* (WA) s 3; Vehicle and Traffic (Driver Licensing and Vehicle Registration) Regulations 2010 (Tas) r 95; *Motor Vehicle Act* (NT) s 8A.

⁵³ *Road Transport (Vehicle Registration) Regulation 2000* (ACT) r 14 and *Road Transport (Vehicle Registration) Regulations 2017* (NSW) Clause 9, Schedule 1.

⁵⁴ Note that in the Northern Territory, negligence claims have been abolished.

Glossary

Term	Definition
Australian Road Rules	National model law intended to provide the basis for nationally consistent road rule in each jurisdiction. These rules do not, by themselves, have any legal effect.
automated driving system (ADS)*	Hardware and software collectively capable of performing the entire dynamic driving task on a sustained basis. It is a type of driving automation system used in vehicles with conditional, high or full automation.
automated driving system entity (ADSE)	The legal entity responsible for the ADS. This could be the manufacturer, operator or legal owner of the vehicle or another entity.
conditional automation*	where the ADS undertakes the entire dynamic driving task for sustained periods in defined circumstances. The human driver does not have to monitor the driving environment or the ADS but must be receptive to ADS requests to intervene and any system failures. This is SAE Level 3 automation.
dedicated automated vehicle	A highly or fully automated vehicle that has no manual controls enabling it to be driven by a human driver. In this type of vehicle, the dynamic driving task is always performed by the ADS. The vehicle could include very limited controls, such as an emergency stop control, that can be activated by a human but would not enable a human to take over the driving task. (This term is not the same as the definition in SAE International Standard J3016.)
dynamic driving task*	All of the real-time operational and tactical functions required to operate a vehicle in on-road traffic, excluding the strategic functions such as trip scheduling and selection of destinations and waypoints, and including without limitation: ▪ lateral vehicle motion control via steering (operational) ▪ longitudinal vehicle motion control via acceleration and deceleration (operational) ▪ monitoring the driving environment via object and event detection, recognition, classification, and response preparation (operational and tactical) ▪ object and event response execution (operational and tactical) ▪ manoeuvre planning (tactical) ▪ enhancing conspicuousness via lighting, signalling, gesturing, etc. (tactical).

Term	Definition
dynamic driving task fallback*	The response by the fallback-ready user or an ADS to either perform the dynamic driving task or achieve a minimal risk condition after a dynamic driving task performance-relevant system failure or when the vehicle exits the operational design domain.
event data recorder	'A device installed in a motor vehicle to record technical vehicle and occupant information for a brief period of time (seconds, not minutes) before, during and after a crash. For instance, EDRs may record (1) pre-crash vehicle dynamics and system status, (2) driver inputs, (3) vehicle crash signature, (4) restraint usage/deployment status, and (5) post-crash data such as the activation of an automatic collision notification (ACN) system' (National Highway Traffic Safety Administration, n.d.).
fallback-ready user*	A human in a vehicle with engaged conditional automation who is able to operate the vehicle and who is receptive to requests from the ADS to intervene and is receptive to evident dynamic driving task performance-relevant system failures. The fallback-ready user is expected to respond by taking control of the vehicle.
full automation*	Where all aspects of the dynamic driving task and monitoring of the driving environment are undertaken by the ADS. The ADS can operate on all roads at all times. No human driver is required. This is SAE Level 5 automation.
high automation*	Where the ADS undertakes the entire dynamic driving task for sustained periods in some situations, or all of the time in defined places. When the system is driving the vehicle a human driver is not required to monitor the driving environment and the driving task or to intervene and the ADS can bring the vehicle to a safe stop unassisted. This is SAE Level 4 automation.
non-dynamic driving task obligations	Obligations on a driver to perform tasks not related to the dynamic driving task (for example, securing loads, use of seat belts, carrying required documents) and those actions related to the strategic driving task (for example, route selection, determining stops along a journey).
operational design domain*	The specific conditions under which a given driving automation system or feature of that system is designed to function, including, but not limited to, environmental, geographical, and time-of-day restrictions, and/or the requisite presence or absence of certain traffic or roadway characteristics.
partial automation*	Where the <i>driving automation system</i> executes both the <i>lateral</i> and <i>longitudinal vehicle motion control</i> subtasks of the dynamic driving task with the expectation that the <i>driver</i> completes the <i>remaining subtasks of the dynamic driving task</i> and <i>supervises the driving automation system</i> .

Term	Definition
SAE	Society of Automotive Engineers
safety assurance system	A regulatory mechanism for governments to assess the safety performance of an automated vehicle to ensure it can operate safely on the network.
system failure*	A malfunction in a driving automation system or other vehicle system that prevents the driving automation system from reliably sustaining dynamic driving task performance (partial or complete).
WP. 29	World Forum for Harmonization of Vehicle Regulations, which creates regulatory instruments relating to motor vehicles and their equipment. It reports to the UNECE Inland Transport Committee.

* Terms marked with an asterisk are quoted or paraphrased from SAE International Standard J3016.

Appendix A: Literature review

We undertook a literature review to identify existing research and sources of debate on Australian personal injury insurance issues relating to automated vehicles. The literature review identified the following important issues:

- There are barriers to coverage in existing motor accident injury insurance (MAII) schemes because of definitions requiring or implying a human driver.
- There will be significant hurdles proving fault in an accident caused by an automated vehicle because of the range of possible parties and the need to prove a person's negligence caused the injury.
- Unsafe product actions under Australian Consumer Law (ACL) may be difficult to pursue successfully because of manufacturer defences, in particular the state-of-the-art defence.
- Product liability actions may not be possible in most automated vehicle crashes because this cause of action applies to defects at point of sale, and most automated vehicle faults will arise after sale as a result of over-the-air software changes.
- Another model for attributing liability could be to make the automated vehicle a legal person and deem it to be at fault, with compensation to injured people funded by a levy on manufacturers, consumers and governments.
- Automated vehicle developers are likely to have a primary duty of care rather than drivers, but the standard of care is likely to be easy to discharge, creating gaps for injured people. Uncertainty about liability should be addressed by legislative amendments.

Summary of key documents

The following five documents were identified as key publications for understanding personal injury insurance and automated vehicles in an Australian legislative setting.

'Submission in response to the Regulatory Options of Automated Vehicles Discussion Paper May 2016' (Brady, et al., 2016)

The paper responds to Chapter 11 Liability, and the recommendation to rely on existing liability regimes to resolve liability issues on a case-by-case basis in the NTC's 2016 Discussion Paper *Regulatory Options for Automated Vehicles* (National Transport Commission, 2016b). The paper focuses on ensuring the continual or better compensation and rehabilitation of motor accident victims. It identifies how CTP schemes, the NIIS and ACL product liability laws are not adequately adapted to vehicle automation.

For CTP schemes and the NIIS, the authors identify possible problems with terms used to determine access to compensation, particularly references to 'driving'. The requirement to identify a legally responsible entity that is at fault in fault-based schemes (and for benefits beyond no-fault benefits in hybrid schemes) is difficult as automation increases, particularly the requirement of reasonable foreseeability of harm. They recommend introducing a no-fault approach or nationally consistent benchmarks that would eliminate difficulties in proving fault and removing words and phrases that may create barriers to those injured in automated vehicle crashes.

In relation to product liability claims under the ACL, ADSs appear to be within the definition of 'goods'. However, technology platforms that enable components of the transport network (vehicles, roads and infrastructure) to wirelessly communicate may not.

In addition, 'safe' is defined as what the public is entitled to expect which may vary across levels of automation. Manufacturer defences such as 'state of scientific or technical knowledge at the time of supply' may also be easier to make out with rapidly changing automated vehicle technology. These uncertainties and difficulties make litigation more expensive and uncertain and should not be left to resolution on an ad hoc basis.

The paper considers that if automated vehicle pay-for-service business models evolve, then they may fall within the definition of 'services', and obligations will fall on the service provider.

The authors also discuss the differences between ACL and CTP claims, including the lack of early intervention payments, the requirement for court action, shorter time limits for actions, different minimum thresholds and maximum caps. These differences could lead to forum shopping.

The authors recommend that if the ACL is to be the mechanism for personal injury claims for those injured by automated vehicles, amendments to the ACL should be considered to:

- address cost, time and manufacturer defences
- recognise the impact of likely changes from traditional ownership to payment-for-services models on the application of remedies
- require compulsory manufacturer insurance to meet potential claims.

'Automated vehicles and Australian personal injury compensation schemes' (Brady, et al., 2017)

This paper was written in response to the NTC's May 2016 *Regulatory options for automated vehicles Discussion Paper* and the November 2016 *Regulatory reforms for automated road vehicles Policy Paper*. It focusses on the limitations of current CTP schemes and the NIIS when considering injuries to those involving an automated vehicle. It argues that the schemes will require reform to accommodate the adoption of automated vehicles.

The authors suggest that victims injured by automated vehicles should not suffer differential entitlement to compensation or be arbitrarily excluded from the various schemes as a result of technology specific definitions or by the inability to establish 'fault' where a vehicle is highly automated.

Failure to reform may lead to parallel actions against manufacturers or road and infrastructure providers in negligence or the ACL who are not insured as part of the CTP schemes and may not be able to satisfy an award of damages. It will also create uncertainty about liability that is likely to act as a disincentive to the introduction and take up of conditionally, highly and fully automated vehicles. Further, the increased complexity of negligence actions in fault-based jurisdictions will add to national inconsistency, with people injured in those jurisdictions having significantly more obstacles to accessing compensation than in no-fault or hybrid schemes.

The authors argue that to ensure continuous coverage of the schemes there will need to be reforms to the threshold definitions of accident/personal injury, in particular 'driver' and 'driving'. They contend that the current fault-based systems may no longer remain a viable pathway for attributing liability in an accident involving highly automated vehicles and require reform - for example, by introducing a no-fault approach as modelled by the NIIS.

'A radical solution for solving the liability conundrum of autonomous vehicles' (Griggs, 2017)

The author proposes a new model for liability for accidents caused by automated vehicles. It is argued that without a change in the law, vehicle manufacturers, or autonomous

technology manufacturers, will be targeted, based on the argument that some defect in the technology led to the accident and there was no 'driver' in the traditional sense in control of the vehicle. Manufacturers are likely to use the defences available in product safety laws and the limitations of contract and negligence to limit their exposure.

To avoid the complexity and uncertainty of current approaches, the author suggests the concept of attributing legal entity status to the automated vehicle itself and deeming it to be at fault unless there is an independent and external reason that could not have been foreseen (for example, the driver circumventing the self-driving functionality). This would remove the need to prove causation and simplify proceedings. This would be accompanied by a community-funded body that would act as the agent of the automated vehicle with compensation for injuries suffered, and property damaged incurred, coming from a pool of money established and contributed to by industry, government, and consumers. This would embed the liability costs in the process of manufacturer and sale rather than externalise them to a no-fault scheme and encourage manufacturers, coders and other stakeholders to work on continuous improvement. Insurers, rather than competing at the retail level for customers, would compete in the wholesale market for reinsurance.

The author suggests that unnecessary delay in creating a suitable regulatory framework for automated vehicles could obstruct the significant safety, productivity, mobility and other benefits that these vehicles offer.

'The Liability Blind Spot: Civil Liability's Blurred Vision of Conditionally Automated Vehicles' (Pyman, 2018)

This article focuses on conditionally automated vehicles, where control changes between the human driver and the ADS throughout a trip. The author takes the view that in Australia, product liability will not be useful because it concerns defects at point of sale, and most automated vehicle faults will arise after this as a result of over-the-air software changes.

The author argues that negligence will be the more useful option for injured people. In this new situation where the developer (who could be the vehicle manufacturer, the ADS software engineer or the manufacturer of the system component parts) and the driver share responsibility for driving, the author examines the nature of the duty of care on each party using the principles of fault and deterrence.

Using the fault approach, it is concluded that driver's duty will be limited to making reasonable decisions of when to use automated functionality appropriately and maintaining the hardware involved in its use. The automated vehicle developer will be held to have a primary duty of care, because of its 'proximity' to the vehicle, the motorist and the driving task. The developer will have access to, and control of, information and data about the operation and use of the vehicle and the ADS and the driver's behaviour and actions when using the vehicle.

However, the author suggests that the duty of care may be relatively easy for a developer to discharge, since the most likely causes of an automated vehicle crash will be programming errors, design flaws and software changes. These are not reasonably preventable or detectable. It suggests this could result in a gap, where people injured in an ADS crash may be less likely to receive compensation than those injured when a human is driving.

Applying the deterrence approach, the primary duty of care should rest with the entity that can most efficiently reduce risk. The author suggests that because of proximity to information, the ability to access and act on it, this entity is the developer. The issue in the deterrence approach is whether the imposition of the duty will incentivise or hinder safety improvements. The author finds that although it may stifle innovation and increase the costs of automated vehicles, without it, incremental investments in safety may not be made.

The paper recommends legislative change to provide certainty for injured people, developers and the public.

‘Registration, licensing and CTP insurance issues associated with automated vehicles, March 2017’ (Austroads, 2017)

The report identifies the following critical issues for current MAI schemes to deal with:

- the fairness or equity of different levels of cover across different jurisdictions for the same crash and injury.
- who pays for injury caused on public roads?
- common agreement on who or what is in control of the vehicle, and so who is liable?

It also discusses:

- the impact of automated vehicles on no-fault and at-fault schemes. Planning is required if changes are made to CTP schemes. Data sharing will enable liability to be determined.
- the impact of no ‘driver’ in the vehicle if a crash occurs. Minimum benchmarks could be agreed by states and territories.
- the impact of changing vehicle ownership models. It concludes that changing models will not have a significant impact on CTP. CTP provides for various models whether private, fleet or shared ownership, and premiums could be set differently for different classes of ownership.
- the assignment of liability for a crash. Shifting liability to manufacturers may encourage improvements to automated vehicle safety. The use of ADS crash data will need to consider issues of access and privacy.
- the impact on insurance premiums. CTP regulators may need to review the criteria used to set premiums if they are to cover automated vehicles.
- determination of risk. It suggests this might be done on the basis of the level of automation rather than type of driver. Insurers will play an important role in assessing the risk of automated vehicles.

Appendix B: State and territory definitions of accident/injury

State/territory and relevant MAII Act	Definition of accident/injury
Victoria <i>Transport Accident Act 1986</i>	s 3(1) transport accident means an incident directly caused by the driving of a motor car or motor vehicle, a railway train or tram. s 3(1A) For the purposes of the definition of transport accident ... an incident includes an incident — (a) involving a motor vehicle, a railway train or a tram which is out of control; (b) involving a collision between a pedal cycle and an open or opening door of a motor vehicle; (c) involving a collision between a pedal cycle and a motor vehicle while the cyclist is travelling to or from his or her place of employment; ...
South Australia <i>Motor Vehicles Act 1959</i>	s 99(3) ... for the purposes of this Part, death or bodily injury will be regarded as being caused by or arising out of the use of a motor vehicle only if it is a direct consequence of— (a) the driving of the vehicle; or (b) the vehicle running out of control; or (c) a person travelling on a road colliding with the vehicle when the vehicle is stationary, or action taken to avoid such a collision.
Western Australia <i>Motor Vehicle (Third Party Insurance) Act 1943</i>	s 3(7) ... the death of or bodily injury to any person shall not be taken to have been caused by a vehicle if it is not a consequence of the driving of that vehicle or of the vehicle running out of control.
New South Wales <i>Motor Accident Injuries Act 2017</i>	s 1.4 motor accident means an incident or accident involving the use or operation of a motor vehicle that causes the death of or injury to a person where the death or injury is a result of and is caused (whether or not as a result of a defect in the vehicle) during: (a) the driving of the vehicle, or (b) a collision, or action taken to avoid a collision, with the vehicle, or (c) the vehicle's running out of control, or (d) a dangerous situation caused by the driving of the vehicle, a collision or action taken to avoid a collision with the vehicle, or the vehicle's running out of control.' use or operation of a motor vehicle includes: (a) the maintenance or parking of the vehicle ...
Queensland <i>Motor Accident Insurance Act 1994</i>	s 5(1) ... applies to personal injury caused by, through or in connection with a motor vehicle if, and only if, the injury— (a) is a result of— (i) the driving of the motor vehicle; or (ii) a collision, or action taken to avoid a collision, with the motor vehicle; - or

State/territory and relevant MAI Act	Definition of accident/injury
	(iii) the motor vehicle running out of control; or (iv) a defect in the motor vehicle causing loss of control of the vehicle while it is being driven; and (b) is caused, wholly or partly, by a wrongful act or omission in respect of the motor vehicle by a person other than the injured person.
Australian Capital Territory <i>Road Transport (Third-Party Insurance) Act 2008</i>	s 7. Meaning of <i>motor accident</i> <i>motor accident</i> means an incident that— (a) involves the use or operation of a motor vehicle; and (b) causes personal injury to an individual (the <i>injured person</i>); and (c) happens when— (i) someone is driving the motor vehicle; or (ii) someone or something collides with the motor vehicle; or (iii) someone takes action to avoid colliding with the motor vehicle; or (iv) the motor vehicle runs out of control. s 8. When does someone use a motor vehicle? use ... includes— (a) drive, park or stop the vehicle on a road or road related area; and (b) maintain the vehicle; and (c) if the vehicle is towing a trailer—use the trailer while attached to the vehicle; and (d) if the vehicle is a tow truck towing or carrying an uninsured motor vehicle —use or operate the uninsured vehicle being towed or carried; and (e) anything else prescribed by regulation.
Tasmania <i>Motor Accidents (Liabilities and Compensation) Act 1973</i>	s 2(1) <i>motor accident</i> means an accident directly involving a motor vehicle. s 2(4) ... a person suffers personal injury from a <i>motor accident</i> if the injury results directly from – (a) a collision, or action taken to avoid a collision, with a motor vehicle, whether the motor vehicle is stationary or moving; or (b) a motor vehicle moving out of control; or (c) the driving of a motor vehicle.
Northern Territory <i>Motor Accidents (Compensation) Act 1979</i>	s 4A Motor accidents (1) A <i>motor accident</i> is an occurrence: (a) caused by or arising out of the use of a motor vehicle; and (b) resulting in the death of, or injury to, a person. (2) A <i>motor accident</i> is caused by or arises out of the use of a motor vehicle if, and only if, it results directly from: (a) the driving of the motor vehicle; or (b) the motor vehicle moving out of control; or (c) a collision, or action to avoid a collision, with the motor vehicle (whether the motor vehicle is stationary or moving).

Appendix C: Possible legislative changes to implement option 3

C.1 What legislative changes would be needed to overcome barriers in existing motor accident injury insurance laws?

The following sections provide suggestions for overcoming barriers for injured people accessing compensation for injuries caused by ADS crashes that were outlined in chapter 3.

Because of the differences in the MAII laws, each state and territory will need to consider the suggestions in light of their scheme and the definitions in the relevant laws to ensure they achieve the intended outcome and do not introduce unintended consequences.

C.1.1 Driving of the vehicle

The use of ‘the driving of the vehicle’ is common to all MAII laws, and there is currently no definition of ‘driving’. Options could include:

- Option 1: include a definition of ‘the driving of the vehicle’ that includes the ADS when it is engaged. This would fit with the existing Australian Capital Territory definition of ‘drive’ as to be *in control of* the steering, movement or propulsion of the vehicle. No other MAII laws define ‘drive’.
- Option 2: replace ‘driving’ in ‘the driving of the vehicle’ with the technologically neutral term ‘operation’. This was proposed by Brady et al (2017).

Impact of defining ‘driver’⁵⁵ to include ‘the person in charge of the vehicle’

The impact of defining driver as ‘the person in charge of the vehicle’ needs to be considered where a person in charge of an automated vehicle could be:

- the fallback-ready user of a conditionally automated vehicle,
- a passenger in a highly or fully automated vehicle,
- a person who decides the destination and sets the vehicle in motion (ie a passenger who expects to drive at some time during the journey; a passenger who never expects (or is able to) drive during the journey; or a person who may not even be present in the vehicle during the journey)

If these people are considered to be in charge of the vehicle, when it comes to an ADS crash caused by ‘the driving of the vehicle’ there will always be a person ‘driving’ (including where there are no occupants in the vehicle if the person who sets the destination is considered to be in charge of the vehicle).

⁵⁵ ‘Driver’ is defined in s.3(1) of the *Transport Accident Act 1986* (Vic), s.3(1) of the *Motor Vehicle (Third Party Insurance) Act 1943* (WA) and s.1.4 of the *Motor Accident Injuries Act 2017* (NSW) in terms of the person *in charge of* the vehicle (with no further definition of ‘in charge of’). In other state and territory MAII laws, ‘driver’ is not defined, but in the road transport acts, it is defined as the person *driving* the vehicle (s.5 *Road Traffic Act 1961* (SA); dictionary, *Road Transport (General) Act 1999* (ACT) and s.5 *Motor Vehicle Act* (NT)); or the person *driving or in charge of* the vehicle (schedule 4, *Transport Operation and Road Use Management Act* (Qld)). Courts may consider a definition used in a closely related transport act in a MAII action, but generally only in the absence of a clear definition in the MAII law.

This means there will be no gap in cover, and an injured person would be covered under the MAIL scheme without the need to recognise an ADS in the definition of driving. However, in fault based schemes, it may be difficult to show that this ‘driver’s’ behaviour was negligent.

C.1.2 Indemnified persons

Who is an ‘indemnified party’ is important when it comes to the issue of whose liabilities will be paid by the public authority or private insurer under fault-based MAIL schemes (see Appendix D:).

If an ADS is not an indemnified party, authorities and insurers may have no responsibility to pay an injured person’s damages. An injured person would have to identify and sue the legal person whose negligence caused the injury or take action under product liability laws. Two options are:

- Option 1: Include in the definition of ‘indemnified person’ an ADS when engaged⁵⁶. This would close a gap for injured people but would pass the cost of injuries from ADS crashes onto vehicle owners and insurers. Insurers would have to take action to recover the costs from a manufacturer or ADSE.
- Option 2: make the ADSE an indemnified party. As well as passing costs for ADS crashes onto vehicle owners and insurers, this possibility may preclude the insurer taking action to recover costs from the ADSE because it would be suing its own insured person⁵⁷.

It should be noted that in the Australian Capital Territory and Tasmania, ‘users’ of the motor vehicle are insured parties. In an era of automated vehicles with possibly less private ownership and more pay-for-service use of vehicles, could a fleet operator such as Uber, or a manufacturer who only leases its vehicles, be regarded as the user of the vehicle, even if only when the vehicle is moving without occupants between jobs? This may be an unexpected extension of these schemes that needs to be explored and clarified.

C.1.3 Fault

The requirement for fault in fault-based MAIL schemes and in hybrid MAIL schemes (to the extent claims in negligence are permitted) arises in two ways.

- If fault or wrong-doing is part of the definition of accident/injury, the scheme cannot be enlivened where an ADS is engaged because an ADS is a machine and is not capable of the necessary mental element.
- Insurers are only obliged to pay the liabilities of ‘insured persons’ which includes drivers. Some MAIL schemes require a liability in negligence, others do not specify what type of liability. An ADS is unlikely to be considered an insured person because it is not a ‘person’ and unlikely to be considered a ‘driver’.

In these circumstances, the injured person would have to proceed with a claim in negligence against the ADSE or manufacturer or in a product liability action against the manufacturer. We suggest two options:

⁵⁶ In the *Transport Accident Act 1986* (Vic) ‘driver’ includes a ‘person in charge of a vehicle’. This means it would be unnecessary for Victoria to make the ADS an insured person.

⁵⁷ A similar problem has been identified by Queensland with its current Motor Accident Insurance Act 1994 (Qld) whereby clause 2 of the Schedule: Policy of Insurance (which potentially makes a manufacturer an insured party) and s.58(4) (which allows recovery against the manufacturer) read together may prevent the use of the recovery provision.

- Option 1: make the ADS, or the manufacturer or ADSE an insured party when the ADS is engaged. This would ensure the injured person had an insured party to claim against. Although an insurer may decline to pay the insured persons liabilities unless negligence was established against the ADS, ADSE or manufacturer. This approach would also shift a manufacturer's or ADSE's costs onto motor vehicle owners and insurers, and would not provide a clear cost signal to the manufacturer or ADSE. It is also likely to create problems for the insurer who may not be able to recover costs from a manufacturer or ADSE who is also an insured.
- Option 2: deem an ADS crash to be the fault of the manufacturer or ADSE in the absence of proof to the contrary, placing the onus on the manufacturer or ADSE to prove it was not negligent. Manufacturer defences may also be necessary, such as failure of the registered operator to install software updates; failure of a fallback-ready user to respond as required; and unauthorised modifications or repairs. This would send a clear cost signal to the manufacturer. It would relieve the injured person of the obligation to prove that the injuries were caused by the manufacturer's or ADSE's negligence.

Appendix D: Insured parties

Type of scheme and people protected from liability

State/territory law	Type of scheme – fault-based, no-fault, hybrid	Party insured/indemnified (protected from liability)
Northern Territory <i>Motor Accidents (Compensation) Act 1979</i>	No fault. Actions for damages in common law or under statute are abolished (s 5).	s 6(1) ... owner or driver of a Territory motor vehicle where injury occurred outside the Territory but within Australia
Victoria <i>Transport Accident Act 1986</i>	Hybrid. No-fault scheme (s 35, Part 3), with access to common law claims for people with serious injuries and certain levels of impairment (s.93, Part 6).	'the owner or driver of a registered motor vehicle in respect of any liability for injury or death of a person caused by or arising out of the use of the motor vehicle' (s 94)
Tasmania <i>Motor Accidents (Liabilities and Compensation) Act 1973</i>	Hybrid. Access to no-fault benefits (s.23) and (generally) unrestricted access to common law (s.14).	'an owner or user of a motor vehicle, or his legal personal representatives, in respect of any liability (not being a contractual liability) incurred by him' (s 14)
New South Wales <i>Motor Accident Injuries Act 2017</i>	Hybrid (for accidents from 1 Dec 2017) - No fault benefits and common law damages for claimants whose injuries are not minor injuries.	owner and 'any other person who at any time drives the vehicle' for liability where they are at fault (s 2.3).
South Australia <i>Motor Vehicles Act 1959</i>	Fault-based/common law with some statutory modifications, principally the <i>Civil Liability Act 1936</i> .	Owner and 'any other person who at any time drives or is a passenger in or on the vehicle' (s.104 MVA)
Western Australia <i>Motor Vehicle (Third Party Insurance) Act 1943</i>	Fault-based (s.6(1)(b)).	negligence incurred 'by the owner or any person who drives the motor vehicle' (s.6(1) TPI Act)
Queensland <i>Motor Accident Insurance Act 1994</i>	Fault-based/common law (s.5(1)(b)).	'owner, driver, passenger or other person whose wrongful act or omission in respect of the insured motor vehicle causes the injury' and 'any person who is vicariously liable for the wrongful act or omission' (cl.2, Schedule, MAI Act).
Australian Capital Territory <i>Road Transport (Third-Party Insurance) Act 2008</i>	Fault-based Court-based model to establish fault and resolve claims (unfettered access).	'a person who uses an insured motor vehicle' and 'anyone else who is vicariously liable for the person's use of the insured motor vehicle' (s 20). Liability risks not included in cover: '(d) liability for personal injury, damage or loss—

		(i) that arises independently of a wrongful act or omission; or (ii) to the extent that the personal injury, loss or damage is attributable to the injured person's own wrongful act or omission' (s.22).
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Appendix E: Types of risk associated with automated vehicles

Type of risk	Risk	Best placed to manage risk
Design risks (inadequately designed and tested ADSs or associated modifications have the potential to lead to crashes)	New risks or hazards could include: ▪ technological failure (malfunction due to poor design) ▪ cyber security failure (for example, hack or attack due to poor design) ▪ software updates introducing new safety issues (poor quality control, or the update is not supported by the vehicle's operating system) ▪ failure to function as expected in approved operating environments or conditions (system not up to the task) ▪ the ADS not being suited to Australian environmental or driving conditions ▪ the after-market system does not integrate safely with the existing vehicle ▪ the vehicle meets design criteria but still causes a safety risk in operation.	Vehicle manufacturer ADSE
Organisational risks	Organisational risks include: ▪ failure by the ADSE to address safety issues that emerge over time (software or hardware) for example, through lack of appropriate support ▪ failure to monitor the performance of the system ▪ failure to adapt the system to changes in regulation over time ▪ failure to adapt the system to changes in the road environment over time ▪ insolvency of the ADSE ▪ the ADSE no longer supports legacy versions of the ADS ▪ the company deploys an ADS (native, after-market or through software upgrade) that has not been through the self-certification process ▪ failure to monitor and issue security updates as required.	Vehicle manufacturer ADSE
Operational/use risks	Operational/use risks include: ▪ use in inappropriate environments/conditions ▪ technological failure (degradation of hardware due to poor maintenance/repair) ▪ cybersecurity failure (for example, hack or attack due to failure to follow security protocols)	Vehicle manufacturer ADSE ADS repairers Registered owners or operators

Type of risk	Risk	Best placed to manage risk
	▪ software updates (failure to apply) ▪ divided/competing or contradictory responsibilities (between the driver and the ADS) ▪ unclear responsibilities of human drivers in different vehicles ▪ after-market fitment and vehicle modifications adversely impacting the ADS's performance ▪ vehicle repairs adversely impacting the performance of the ADS due to error or lack of understanding of the ADS's operation ▪ repairers unable to assess the impact of repairs to an ADS.	

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