

REGULATING FUTURE DRIVING: AUTOMATED VEHICLES AND THE HARMONISATION OF AUSTRALIAN LAWS

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Harmonisation of Australian laws to ensure national consistency will be an important aspect of the introduction of automated vehicles in Australia. This paper analyses the current Australian regulatory landscape and considers the opportunities for harmonisation of Australian law and policy. It begins in Part II with an overview of automated vehicles. Part III considers the harmonisation of Australian transport regulation in relation to automated vehicles. Part IV of the paper analyses four key areas for the introduction of automated vehicles: vehicle operator licensing; application of existing road rules to automated vehicles; the proposal for a national in-service safety regulator; and compulsory third-party insurance. Each of these areas is analysed in terms of the challenges they pose, as well as the opportunities for harmonisation. We argue that the introduction of automated vehicles represents a unique, historic opportunity to modernise and harmonise Australia's road transport laws.

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I INTRODUCTION

Australia has had partially automated vehicles ('AVs')¹ on its roads for some time. Many vehicles sold in Australia already have features such as parking assistance, driver assistance, lane maintaining systems and adaptive cruise control. However, as vehicles become more automated,² regulatory issues are becoming increasingly relevant for Australian drivers, regulators and vehicle industry stakeholders. The increased automation of vehicles, it is claimed, will save lives, time and money by reducing the impact of human error on road safety while improving traffic flow and increasing personal mobility.³ The introduction of AVs brings a range of legal challenges that will need to be addressed if AVs are to be introduced successfully on Australian roads. The scale of the challenge is substantial. In 2016, the Australian National Transport Commission ('NTC') identified 53 Acts and regulations that could potentially be affected by the introduction of AVs.⁴ There was recognition of the importance of developing a nationally consistent approach to the regulation of AVs that was also consistent with international standards.⁵ A 2020 study by KPMG ranked Australia 15th among 30 countries in terms of readiness for AVs.⁶ Australia was one of four countries to receive the top score for assessment of its AV regulations,⁷ and was rated ninth for infrastructure readiness.⁸

This paper analyses the Australian regulatory landscape and evaluates both the challenges and opportunities that are presented by the introduction of AVs for national harmonisation of Australian law and policy. Part II provides an overview of AVs, the differing levels of automation, and the various federal, state and

- 1 'Automated vehicles are vehicles that have one or more element of the driving task that is automated and therefore do not require a human driver for at least part of the driving task': National Transport Commission, 'Regulatory Options for Automated Vehicles' (Discussion Paper, May 2016) 20 (emphasis omitted) ('Regulatory Options').
- 2 According to the federal government, '[o]ver the coming decades, vehicles will become more and more automated. Eventually a human may not need to drive at all': 'Connected and Automated Vehicles', *Department of Infrastructure, Transport, Regional Development, Communications and the Arts* (Web Page) <www.infrastructure.gov.au/infrastructure-transport-vehicles/transport-strategy-policy/office-future-transport-technology/connected-automated-vehicles>. See also Joint Standing Committee on Road Safety (Staysafe), Parliament of New South Wales, *Driverless Vehicles and Road Safety in NSW* (Report No 2/56, September 2016) 8 ('*Driverless Vehicles and Road Safety Report*').
- 3 For discussion of the literature in this area, see Yuchao Sun et al, 'Road to Autonomous Vehicles in Australia: An Exploratory Literature Review' (2017) 26(1) *Road and Transport Research* 34.
- 4 'Regulatory Options' (n 1) 65.
- 5 National Transport Commission, 'Regulatory Reforms for Automated Road Vehicles' (Policy Paper, November 2016) 20 ('Regulatory Reforms').
- 6 KPMG International, *2020 Autonomous Vehicles Readiness Index* (Report, July 2020) 1 <<https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/07/2020-autonomous-vehicles-readiness-index.pdf>> ('*AVs Readiness Index*').
- 7 *Ibid* 26, 50.
- 8 *Ibid* 57. Infrastructure readiness was measured in terms of the density of electric vehicle charging stations, quality of mobile internet, 4G coverage, broadband, quality of roads, and readiness of technology infrastructure for change: at 56.

territory initiatives that support the development and introduction of AVs. Part III discusses historical issues around the development and harmonisation of transport law in Australia, and the decision to harmonise AV regulation. Part IV evaluates four key areas for reform in the implementation of AVs: licensing of vehicle operators, road rules, general safety regulation, and compulsory third party ('CTP') insurance. It then analyses these areas in terms of the barriers and challenges they pose for Australian governments, as well as any opportunities for harmonisation of law. Finally, in Part V, this paper concludes that regulatory reform for AVs represents a unique opportunity for successful harmonisation of Australia's transportation laws.

II THE INTRODUCTION OF AUTOMATED VEHICLES

Research suggests that fully automated vehicles promise a revolution in mobility as well as cheaper, safer, more sustainable and more comfortable travel.⁹ Access to this form of transport may also substantially reduce travel costs and provide mobility to children, the elderly and people with disabilities that is not contingent on the availability of a separate human driver.¹⁰ AVs will potentially result in road capacity gains and stabilised traffic flow.¹¹ Models of car ownership may also change, moving from the traditional property model of vehicle ownership to hybrid models of shared ownership and mobility as a service ('MaaS').¹² Arguably, AVs are likely to make road networks more efficient,¹³ reduce congestion and traffic delays,¹⁴ and may generally 'make car travel more efficient and appealing'¹⁵ depending upon the level of automation in use.

The Society of Automotive Engineers International ('SAE') standard J3016 identifies six primary levels of automation that can be used to clarify which of the

9 Jonas Meyer et al, 'Autonomous Vehicles: The Next Jump in Accessibilities?' (2017) 62 *Research in Transportation Economics* 80; Sven A Beiker, 'Legal Aspects of Autonomous Driving: The Need for a Legal Infrastructure that Permits Autonomous Driving in Public to Maximize Safety and Consumer Benefit' (2012) 52(4) *Santa Clara Law Review* 1145, 1146–52; Mark Brady, 'Is Australian Law Adaptable to Automated Vehicles?' (2019) (Law and Human Dignity in the Technological Age) *Griffith Journal of Law and Human Dignity* 35, 58–9. See also 'Regulatory Reforms' (n 5) 26; Greg Miskelly, 'Driverless Cars Could Lead to Transport Revolution, New Approach to Urban Planning', *ABC News* (online, 9 September 2016) <<https://www.abc.net.au/news/2016-09-09/will-driverless-cars-trigger-shared-transport-revolution/7832220>>.

10 Meyer et al (n 9) 80–1.

11 Sun et al (n 3) 35–6.

12 Miskelly (n 9); Sun et al (n 3) 40; Susan Shaheen and Adam Cohen, 'Mobility on Demand (MOD) and Mobility as a Service (MaaS): Early Understanding of Shared Mobility Impacts and Public Transit Partnerships' in Constantinos Antoniou, Dimitrios Efthymiou and Emmanouil Chaniotakis (eds), *Demand for Emerging Transportation Systems: Modeling Adoption, Satisfaction, and Mobility Patterns* (Elsevier, 2020) 37, 54–5.

13 Infrastructure Victoria, *Advice on Automated and Zero Emissions Vehicles Infrastructure* (Report, October 2018) 18.

14 Ibid 19.

15 Ibid.

three primary actors, ‘the (human) user, the driving automation system, and other vehicle systems and components’,¹⁶ will be considered in control of the dynamic driving task (‘DDT’) of a vehicle.¹⁷ According to J3016:

The levels of driving automation are defined by reference to the specific role played by each of the three primary actors in performance of the DDT and/or DDT fallback. ‘Role’ in this context refers to the expected role of a given primary actor, based on the design of the driving automation system in question and not necessarily to the actual performance of a given primary actor.¹⁸

Levels 0 and 1 are primarily human driven, with some active driver support systems in operation,¹⁹ while levels 2 to 5 include vehicles capable of increasingly automated operation.²⁰ Level 0 has no automation but the driving task may be enhanced by active safety systems such as a collision warning.²¹ Level 1 is categorised as vehicles with driver assistance.²² For example, ‘[t]he driving automation system may take control of steering *or* acceleration and braking (speed), but the human driver is responsible for the rest of the driving task’.²³ Level 2 vehicles are partially automated and

may take control of all of the steering, acceleration and braking in defined circumstances, but the human driver must continue to monitor the driving environment and the driving task, and intervene if required.²⁴

The critical part of an AV is defined as the ‘automated driving system’ (‘ADS’). The NTC defines the ADS as

the hardware and software collectively capable of performing the entire dynamic driving task on a sustained basis without human input. It is a type of system used in

16 SAE International, *Recommended Practice J3016: Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles* (April 2021) [1] (emphasis omitted) (‘SAE J3016’).

17 SAE J3016 defines DDT as ‘[a]ll 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’: *ibid* [3.10] (emphasis omitted).

18 *Ibid* [1].

19 ‘SAE Levels of Driving Automation Refined for Clarity and International Audience’, *SAE International* (Web Page, 3 May 2021) <<https://www.sae.org/blog/sae-j3016-update>>.

20 *Ibid*.

21 See National Transport Commission, ‘Clarifying Control of Automated Vehicles’ (Policy Paper, November 2017) 26 (‘Clarifying Control’). ‘Active safety systems’ are ‘vehicle systems that sense and monitor conditions inside and outside the vehicle for the purpose of identifying perceived present and potential dangers’: at 26 n 10.

22 *Ibid* 26.

23 *Ibid* (emphasis in original). The ‘driving automation system’ means the ‘hardware and software that are collectively capable of performing *part or all* of the dynamic driving task on a sustained basis’: at 26 n 11 (emphasis in original).

24 *Ibid* 26.

vehicles with Society of Automotive Engineers International (SAE) levels 3, 4 or 5 of automation ...²⁵

Levels 3 to 5 refer to the ADS' capacity in relation to the dynamic driving tasks, as well as journey planning, fault diagnosis and avoidance.²⁶ In late 2021, Mercedes-Benz was approved in Germany for the sale and use on public roads of level-3-equipped vehicles.²⁷ This paper will primarily discuss AVs with ADS capabilities of level 3 to 5 automation. At level 3, the vehicle is *conditionally automated* and '[t]he ADS drives the vehicle for sustained periods of time' although the 'fallback-ready user' may have to resume control at any time.²⁸ Level 4 consists of *highly automated* vehicles where 'no human driver is required to monitor the driving environment',²⁹ nor is the human driver 'required to intervene, because the ADS can bring the vehicle to a safe stop unassisted'.³⁰ Level 5 is *fully automated* where the ADS 'undertakes all aspects of the dynamic driving task'.³¹

Because of the need for a human driver to be the 'fallback-ready user',³² a vehicle with a level 3 ADS would retain the conventional driver's seat, steering wheel and pedals. However, a vehicle with a level 4 or 5 ADS might not have these controls.³³ In the same way that current level 2 automated driver assistance functions are switchable at the discretion of the driver, it is anticipated that in many ADS-equipped vehicles the user might be able to choose the level of automation.³⁴ This leads to complexity when considering the law, regulation and liabilities in relation to AVs, as a vehicle with a level 5 ADS might not be operated at that level by the user. Furthermore, it is possible that automation will lead to significant

25 National Transport Commission, 'A National In-Service Safety Law for Automated Vehicles' (Policy Paper, May 2021) 19 ('ISSLAV Policy Paper').

26 *SAE J3016* (n 16) [3.18.4].

27 Jack Quick, 'Mercedes-Benz Level 3 Autonomous Driving Approved for Road Use', *CarExpert* (Web Page, 10 December 2021) <<https://www.carexpert.com.au/car-news/mercedes-benz-level-3-autonomous-driving-approved-for-road-use>>.

28 'Clarifying Control' (n 21) 26. In the ISSLAV Policy Paper, the 'fallback-ready user' is defined as

a human in a vehicle with SAE level 3 automation who can operate the vehicle, and who is receptive to requests from the ADS to intervene and to evident dynamic driving task performance-relevant system failures. The fallback-ready user is expected to respond by taking control of the vehicle.

'ISSLAV Policy Paper' (n 25) 19–20.

29 'Clarifying Control' (n 21) 26.

30 'ISSLAV Policy Paper' (n 25) 20.

31 *Ibid.* See also 'Clarifying Control' (n 21) 26.

32 Ching-Yao Chan, 'Advancements, Prospects, and Impacts of Automated Driving Systems' (2017) 6(3) *International Journal of Transportation Science and Technology* 208, 210. See also 'ISSLAV Policy Paper' (n 25) 19–20.

33 See National Transport Commission, 'Changing Driving Laws to Support Automated Vehicles' (Policy Paper, May 2018) 11 ('Changing Driving Laws Policy Paper').

34 See generally Chan (n 32).

specialisation of vehicles.³⁵ While it might be imagined that the privately owned vehicle, even if equipped with a level 4 or 5 ADS, might resemble a current vehicle with a dedicated driver's seat, steering wheel and pedals to allow the driver/owner to choose their preferred level of automation; it is highly likely that levels 4 and 5 ADS-equipped public transport or MaaS vehicles might have no capacity for the human passengers to interact with the ADS.

In Australia, some states have introduced legislation to enable trials of AVs on public roads. South Australia introduced legislation in 2016.³⁶ Victoria³⁷ and New South Wales³⁸ have followed, clarifying issues around administration, authorisation, and insurance of AV trials. Within this landscape, questions arise about the potential for Australia to develop harmonised regulatory reform to support the introduction of AVs. These issues are analysed in Part III below.

III TRANSPORT REGULATION AND THE HARMONISATION OF REGULATORY REFORM

Transport history demonstrates that regulatory consistency within Australia's federal system is essential when new forms of technology are implemented. For example, it was not until the 1990s that there was a standard gauge railway track connecting Australian cities.³⁹ The legacy of a mixed gauge railway system arose because of the autonomy of the Australian colonies and a failure to recognise the future need for a harmonised national rail system.⁴⁰ Within the federation, transportation law and policy predominantly rest with the states and territories.⁴¹ In relation to AVs specifically, the states and territories have jurisdiction over ensuring compliance with vehicle standards,⁴² provision of the road rules through

35 For a comprehensive overview of the predicted impact of automated vehicles, see Todd Litman, Victoria Transport Policy Institute, *Autonomous Vehicle Implementation Predictions: Implications for Transport Planning* (Report, 21 June 2023) <<https://www.vtpi.org/avip.pdf>>.

36 *Motor Vehicles (Trials of Automotive Technologies) Amendment Act 2016* (SA).

37 *Road Safety Amendment (Automated Vehicles) Act 2018* (Vic).

38 *Transport Legislation Amendment (Automated Vehicle Trials and Innovation) Act 2017* (NSW).

39 Philip Laird et al, *Back on Track: Rethinking Transport Policy in Australia and New Zealand* (UNSW Press, 2001) 44.

40 See John Mills, 'Australia's Mixed Gauge Railway System: A Reassessment of Its Origins' (2010) 96(1) *Journal of the Royal Australian Historical Society* 50, 50; Heejin Lee, Jonathan Liebenau and Vladislav V Fomin, "'Breaks of Gauge" in Australian Railway History: The Significance of Standardisation in National Infrastructures' (2019) 13(1–2) *International Journal of Services and Standards* 46.

41 GE Docwra and HM Kolsen, 'Transport and Australian Federalism: 1901–1972' (1989) 10(1) *Journal of Transport History* 59, 70.

42 See National Transport Commission, 'Regulatory Barriers to More Automated Road and Rail Vehicles' (Issues Paper, February 2016) 6 ('Regulatory Barriers'); *Road Transport (Vehicle*

state and territory laws,⁴³ vehicle registration⁴⁴ and driver licensing.⁴⁵ The Commonwealth sets the national vehicle design rules.⁴⁶ The emergence of AVs provides both the opportunity for a coherent, national AV-enabled transport future, but also the risk of unnecessary economic costs and social inconvenience if states and territories go it alone. As such, there is strong national interest in effective and efficient harmonisation of laws and regulation in relation to AVs.

In federal systems, intergovernmental cooperation is accepted as a critical aspect of the facilitation and development of successful regulatory frameworks.⁴⁷ A core strategy is legal harmonisation⁴⁸ as a means to counteract uncertainty for individuals and businesses caused by multiple regulatory regimes, and barriers to

Registration) Regulation 2000 (ACT) ch 6 ('ACT Registration Regulations'); Road Transport (Vehicle Registration) Regulation 2017 (NSW) pt 5 ('NSW Registration Regulations'); Motor Vehicles Act 1949 (NT) sch 4 ('NT Act'); Motor Vehicles (Standards) Regulations 2003 (NT); Transport Operations (Road Use Management — Vehicles Standards and Safety) Regulation 2010 (Qld) pt 2; Road Traffic (Light Vehicle Standards) Rules 2018 (SA); Vehicle and Traffic (Vehicle Standards) Regulations 2014 (Tas); Road Safety (Vehicles) Regulations 2009 (Vic) sch 2 ('Vic Regulations'); Road Traffic (Vehicle Standards) Rules 2002 (WA).

- 43 'Regulatory Barriers' (n 42) 6; *Road Transport (Road Rules) Regulation 2017 (ACT); Road Transport Act 2013 (NSW) ('NSW Act'); Road Rules 2014 (NSW); Traffic Regulations 1999 (NT); Transport Operations (Road Use Management) Act 1995 (Qld) ('Qld Act'); Transport Operations (Road Use Management — Road Rules) Regulation 2009 (Qld) ('Qld Road Rules'); Road Traffic (Road Rules — Ancillary and Miscellaneous Provisions) Regulations 2014 (SA); Road Rules 2009 (Tas); Road Safety Road Rules 2017 (Vic); Road Traffic Code 2000 (WA).*
- 44 'Regulatory Barriers' (n 42) 6; *Road Transport (Vehicle Registration) Act 1999 (ACT); ACT Registration Regulations (n 42); NSW Act (n 43) ch 4; NSW Registration Regulations (n 42) pt 2; NT Act (n 42) pt 2; Transport Operations (Road Use Management — Vehicle Registration) Regulation 2010 (Qld); Motor Vehicles Act 1959 (SA) pt 2 ('SA Act'); Motor Vehicles Regulations 2010 (SA) pt 2 ('SA Regulations'); Vehicle and Traffic Act 1999 (Tas) pt 5 ('Tas Act'); Vehicle and Traffic (Driver Licensing and Vehicle Registration) Regulations 2010 (Tas) pt 4 ('Tas Licensing and Registration Regulations'); Vic Regulations (n 42) ch 2; Road Traffic (Vehicles) Act 2012 (WA).*
- 45 'Regulatory Barriers' (n 42) 6; *Road Transport (Driver Licensing) Act 1999 (ACT); Road Transport (Driver Licensing) Regulation 2000 (ACT); NSW Act (n 43) ch 3; Road Transport (Driver Licensing) Regulation 2017 (NSW); NT Act (n 42) pt 2; Transport Operations (Road Use Management — Driver Licensing) Regulation 2010 (Qld); SA Act (n 44) pt 3; SA Regulations (n 44) pt 4; Tas Act (n 44) pt 3 div 1; Tas Licensing and Registration Regulations (n 44); Road Traffic (Authorisation to Drive) Act 2008 (WA); Road Traffic (Authorisation to Drive) Regulations 2014 (WA).*
- 46 'Regulatory Barriers' (n 42) 6; *Motor Vehicle Standards Act 1989 (Cth)*. See also the 2006 Australian Design Rules, which are a series of 'national standards for vehicle safety, anti-theft and emissions': 'Third Edition Australian Design Rules', *Department of Infrastructure, Transport, Regional Development, Communications and the Arts (Web Page)* <<https://www.infrastructure.gov.au/infrastructure-transport-vehicles/vehicles/vehicle-design-regulation/australian-design-rules/third-edition>>.
- 47 Brian R Opeskin, 'The Architecture of Public Health Law Reform: Harmonisation of Law in a Federal System' (1998) 22(2) *Melbourne University Law Review* 337, 348.
- 48 Legal harmonisation has been described as 'utilising legislative or other formal instrument-based mechanisms to achieve parity between legal systems': House of Representatives Standing Committee on Legal and Constitutional Affairs, Parliament of Australia, *Harmonisation of Legal Systems: Within Australia and between Australia and New Zealand* (Report, November 2006) 1.

economic growth caused by jurisdictional regulatory inconsistency.⁴⁹ The legacy of the railway gauges provides a salient reminder in transportation policy of the need for cooperation between Australian jurisdictions to implement harmonisation.

A National Legal and Policy Harmonisation

The highest-level transport law and policy harmonisation entity is the Infrastructure and Transport Ministers' Meeting ('ITMM'),⁵⁰ formerly the Transport and Infrastructure Council ('TIC'). In 2016, the TIC adopted the *National Policy Framework for Land Transport Technology* ('*National Policy Framework*'), with its 2016–19 Action Plan updated in 2019 with one for 2020–23.⁵¹ The *National Policy Framework* sets out 'an agreed national approach to policy, regulatory and investment decision-making for technologies in the land transport sector'.⁵² The 2020–23 Action Plan focuses on five key issues: safety, security and privacy; digital and physical infrastructure; data; standards and interoperability; and positioning for disruption and change.⁵³

According to the 2020–23 Action Plan, it will ensure that 'individual actions by Australian governments are appropriately prioritised, avoid duplication and encourage greater collaboration and sharing of key learnings'.⁵⁴

B Key Organisations: National Transport Commission and Austroads

While the ITMM and the *National Policy Framework* provide the high-level support and framework for national harmonisation, the NTC and Austroads both play a key role in Australia in the development of policy in relation to AVs.

The NTC, a Commonwealth statutory body, has ongoing responsibility to 'develop, monitor and maintain uniform or nationally consistent regulatory and operational reforms relating to road transport, rail transport and intermodal

49 Ibid 5–6.

50 'Infrastructure and Transport Ministers' Meetings', *Department of Infrastructure, Transport, Regional Development, Communications and the Arts* (Web Page) <<https://www.infrastructure.gov.au/infrastructure-transport-vehicles/transport-strategy-policy/infrastructure-and-transport-ministers-meetings>>.

51 Transport and Infrastructure Council, *National Land Transport Technology Action Plan 2020–2023* (Report, August 2019) 2 <https://www.infrastructure.gov.au/sites/default/files/migrated/transport/land-transport-technology/files/national_land_transport_technology_action_plan_2020-2023.pdf>.

52 Ibid.

53 Ibid.

54 Ibid.

transport'.⁵⁵ The NTC seeks 'to develop a flexible and responsive regulatory environment for the commercial deployment of automated vehicles that supports safety and innovation'.⁵⁶ In 2015, the TIC asked the NTC to identify 'regulatory or operational barriers' to the introduction of automated road and rail vehicles,⁵⁷ and in 2017, state and national transport Ministers endorsed the goal of developing an end-to-end regulatory system for AVs.⁵⁸

In 2016, the NTC began a consultative process to identify issues that were likely to arise as a result of the implementation of AV technology, including identification of the short, medium and long term reforms needed to regulate the on-road use of AVs.⁵⁹ In recent years, the NTC has released a series of discussion papers and reports on critical issues which have the potential to affect the safe and effective introduction of automated vehicles and driving systems.⁶⁰ Issues that have been addressed by the NTC include:

- regulatory options for the safe introduction of AVs into Australia,⁶¹
- potential changes to driving laws in order to support AVs,⁶² and
- national enforcement guidelines in relation to AVs.⁶³

55 *National Transport Commission Act 2003* (Cth) s 3(a). See also 'National Transport Commission', *Department of Infrastructure, Transport, Regional Development, Communications and the Arts* (Web Page) <<https://www.infrastructure.gov.au/infrastructure-transport-vehicles/transport-strategy-policy/transport-australia/national-transport-commission>>.

56 'ISSLAV Policy Paper' (n 25) 3.

57 'Regulatory Reforms' (n 5) 8.

58 National Transport Commission, *Automated Vehicle Program* (Report, October 2019) 4 ('*AV Program*').

59 'Regulatory Options' (n 1) 28–9, 116–18.

60 For a list of different reports, discussions and policy papers since 2016, see 'Publications', *National Transport Commission* (Web Page) <<https://www.ntc.gov.au/publication>>.

61 See National Transport Commission, 'Regulatory Options to Assure Automated Vehicle Safety in Australia' (Discussion Paper, June 2017); National Transport Commission, *Safety Assurance for Automated Driving Systems: Decision Regulation Impact Statement* (Report, November 2018); 'ISSLAV Policy Paper' (n 25).

62 See National Transport Commission, 'Changing Driving Laws to Support Automated Vehicles' (Discussion Paper, October 2017) ('*Changing Driving Laws Discussion Paper*'); 'Changing Driving Laws Policy Paper' (n 33); 'Clarifying Control' (n 21).

63 See National Transport Commission, *National Enforcement Guidelines for Automated Vehicles* (Report, November 2017) ('*National Enforcement Guidelines*').

Further NTC reports have addressed motor accident injury insurance ('MAII'),⁶⁴ and government access to data.⁶⁵ In 2020, the NTC released a further program of reform in relation to AVs,⁶⁶ including the proposed establishment of an 'in-service' safety regulator to ensure the safe operation of ADS by automated driving system entities ('ADSE').⁶⁷ In 2021, it noted that due to the similarities in modelling between the National Heavy Vehicle Regulator ('NHVR') and the proposed in-service safety regulator for AVs, there may 'potentially be overlapping areas of responsibility between the NHVR and the in-service regulator'.⁶⁸

In addition to the NTC, Austroads has also played a significant role in attempting to facilitate harmonisation of law and policy in relation to AVs. Austroads is 'the collective of the Australian and New Zealand transport agencies, representing all levels of government'.⁶⁹ In 2017, Austroads released their report, *Registration, Licensing and CTP Insurance Issues Associated with Automated Vehicles*.⁷⁰ In 2019, it published a further series of reports focused on the infrastructure needed to support AVs on rural and urban highways and freeways.⁷¹ In 2017, the national *Guidelines for Trials of Automated Vehicles in Australia* was released jointly by the NTC and Austroads.⁷² In 2018, Austroads published a research report, *C-ITS Compliance Assessment Framework for Australia and New Zealand*.⁷³ Recently,

- 64 National Transport Commission, 'Motor Accident Injury Insurance and Automated Vehicles' (Discussion Paper, October 2018) ('MAIIAV Discussion Paper'); National Transport Commission, 'Motor Accident Injury Insurance and Automated Vehicles' (Policy Paper, August 2019) ('MAIIAV Policy Paper').
- 65 National Transport Commission, 'Regulating Government Access to C-ITS and Automated Vehicle Data' (Discussion Paper, September 2018); National Transport Commission, 'Regulating Government Access to C-ITS and Automated Vehicle Data' (Policy Paper, August 2019); National Transport Commission, 'Government Access to Vehicle-Generated Data' (Discussion Paper, May 2020).
- 66 *AV Program* (n 58).
- 67 'ISSLAV Policy Paper' (n 25); National Transport Commission, 'A National In-Service Safety Law for Automated Vehicles' (Discussion Paper, October 2020) ('ISSLAV Discussion Paper').
- 68 'ISSLAV Policy Paper' (n 25) 115 [9.3.4].
- 69 'About Austroads', *Austroads* (Web Page) <<https://austroads.com.au/about-austroads>>.
- 70 Mitchell L Cunningham, Michael A Regan and John Catchpole, Austroads, *Registration, Licensing and CTP Insurance Issues Associated with Automated Vehicles* (Research Report No AP-R540-17, March 2017) ('*Registration, Licensing and CTP Insurance Issues*').
- 71 Modules 1–5 of the report are available at 'Publications', *Austroads* (Web Page) <<https://austroads.com.au/publications>>.
- 72 Austroads and National Transport Commission, *Guidelines for Trials of Automated Vehicles in Australia* (Report, 2017). These guidelines were updated in 2020: Austroads and National Transport Commission, *Guidelines for Trials of Automated Vehicles in Australia 2020* (Report, 2020) <<https://www.ntc.gov.au/codes-and-guidelines/automated-vehicle-trial-guidelines>>.
- 73 Jesper Engdahl, Cornelie van Driel and David Green, Austroads, *C-ITS Compliance Assessment Framework for Australia and New Zealand* (Research Report No AP-R585-18, October 2018).

Austrroads has released a number of technical reports concerned with minimum standards for AV infrastructure.⁷⁴

The importance of a harmonised national approach to Australian AV reform has been recognised at the parliamentary level. In 2016, a NSW parliamentary committee acknowledged the importance of a national approach to the development of regulation of AVs, stating:

a national framework is the best way to maximise the benefits of the technology and minimise the risks, and particularly the road safety benefits and risks. A national framework will eliminate any state-based approaches which might fragment the regulation of the technology, and will ensure that Australia's stake in a global market is protected and enhanced.⁷⁵

The NTC has also acknowledged the importance of a national approach, including the risk of inconsistent state and territory regulation, as well as 'a risk that regulations will be inconsistent with relevant international standards and conventions'.⁷⁶ If Australia were to develop regulatory approaches inconsistent with international approaches it 'would constitute a significant barrier to the introduction of [AVs] in what is primarily a global and import-based market'.⁷⁷

Part IV below analyses four areas — vehicle operator licensing, road rules, proposals for a national in-service safety regulator, and CTP insurance — in terms of the degree to which it appears possible to develop a harmonised response to the regulatory challenges posed by AVs.

IV AUTOMATED VEHICLES AND REGULATORY REFORM: OPPORTUNITIES FOR HARMONISATION?

The introduction of AVs presents a unique opportunity for comprehensive reform of Australia's transport laws. As discussed below, the development of harmonised law and policy for AVs is a complex task. Reform of driver licensing, reform of the road rules, establishing general safety requirements, and reform of CTP insurance present different challenges for the harmonisation of Australian transport laws. In some of these areas, such as vehicle operator licensing and the road rules, some level of harmonisation already exists. In other areas, such as CTP insurance,

74 Simon Xue, Elnaz Irannezhad and Charles Karl, Austrroads, *Minimum Physical Infrastructure Standard for the Operation of Automated Driving* (Research Report No AP-R665-22, 25 January 2022) <<https://austrroads.com.au/publications/connected-and-automated-vehicles/ap-r665-22>>; David Yee and Samantha Yee, Austrroads, *Road Authority Data for Connected and Automated Vehicles: Guidance for Agency Data Provision to Connected and Automated Vehicles* (Research Report No AP-R662H-21, December 2021); Michael A Regan et al, Austrroads, *Education and Training for Drivers of Assisted and Automated Vehicles* (Research Report No AP-R616-20, March 2020).

75 *Driverless Vehicles and Road Safety Report* (n 2) 1.

76 'Regulatory Reforms' (n 5) 10.

77 *Ibid.*

considerable variations already exist between the states and territories, and it is unclear that these will be resolved through law reform focused on AVs. However, greater opportunities for harmonisation appear to exist in those areas where laws and policies are developed specifically in relation to AVs. We discuss these opportunities in the context of proposals for a national in-service safety regulator.

A Vehicle Operator Licensing

AVs will present challenges for the current system of driver licensing. While current state and territory laws require drivers to be licensed for the class of vehicle they are operating,⁷⁸ AVs raise the question of whether a driver's licence will still be required, by virtue of the very fact that the vehicle will be 'driverless'. For this reason, it has been suggested that higher levels of automation may spell the end of current driver licensing systems.⁷⁹ Indeed, AVs may open up new mobility options for people who are currently unable to drive due to age or disability.⁸⁰ However, for vehicles with level 3 automation, the position is more complex as the human driver will be required to be a 'fallback-ready user'.⁸¹ This in turn raises the question of the training required for drivers of level 3 ADS-equipped vehicles. This is not unique to level 3 vehicles. It is possible that level 4 and 5 ADS-equipped vehicles could be switchable, and when switched off they will require a human to undertake the dynamic driving functions.

Australia has a mostly harmonised approach to driver licensing. The National Driver Licensing Scheme ('NDLS') was introduced in 1997 and was adopted in all states and territories.⁸² It provides for mutual recognition of licences in different jurisdictions, thereby facilitating harmonisation by enabling drivers who have obtained their licences in one state or territory to drive in any other Australian state or territory.⁸³ Further, current driver licensing systems in all states and territories

78 *Registration, Licensing and CTP Insurance Issues* (n 70) 32. A licence holder is also permitted to drive a vehicle of a lower class but not one of a higher class. Thus, a person who holds a driver's licence for a car is not permitted to drive heavy vehicles, but a holder of a licence for a heavy vehicle is permitted to drive a car.

79 Kieran Tranter, 'The Challenges of Autonomous Motor Vehicles for Queensland Road and Criminal Laws' (2016) 16(2) *Queensland University of Technology Law Review* 59, 66–7. Tranter argues that with level 4 ADS-equipped vehicles, 'the law and regulation around persons driving [will be] superseded': at 67.

80 *Registration, Licensing and CTP Insurance Issues* (n 70) 45; Simone Pettigrew, Sophie L Cronin and Richard Norman, 'Brief Report: The Unrealized Potential of Autonomous Vehicles for an Aging Population' (2019) 31(5) *Journal of Aging and Social Policy* 486; Simone Pettigrew, 'Why Public Health Should Embrace the Autonomous Car' (2017) 41(1) *Australian and New Zealand Journal of Public Health* 5, 6.

81 See 'ISSLAV Policy Paper' (n 25) 19–20. See also Mark Brady, Kieran Tranter and Belinda Bennett, *Applicability of State and Territory Roadside Enforcement Powers to Automated Vehicles* (Report, 28 July 2021) 7–8.

82 *Registration, Licensing and CTP Insurance Issues* (n 70) 32, citing 'Australian Driver Licensing', *Austrroads* (Web Page) <<https://austrroads.com.au/drivers-and-vehicles/registration-and-licensing/australian-driver-licensing>> ('Australian Driver Licensing').

83 *Registration, Licensing and CTP Insurance Issues* (n 70) 33, citing 'Australian Driver Licensing' (n 82).

include graduated licensing systems ('GLS') for learner, provisional, and full licences.⁸⁴ However, there are differences in some GLSs. For example, some Australian jurisdictions impose on provisional drivers a reduced speed limit for open road driving.⁸⁵ Some jurisdictions also impose conditions related to vehicle transmission, such as by restricting provisional drivers from driving a manual car if they had passed their driving test using an automatic car.⁸⁶ Driving privileges may also be restricted, for example, due to health conditions which may impair driving ability.⁸⁷

The 2017 NTC recommendation for a purpose-built national law included that the law should provide for duties on a fallback-ready user, including a duty to 'hold the appropriate licence for the vehicle type'.⁸⁸ The 2021 NTC Policy Paper, 'A National In-Service Safety Law for Automated Vehicles' ('ISSLAV Policy Paper'), indicated that Ministers had

agreed that fallback-ready users will be regulated by state and territory road transport and enforcement agencies, who regulate human drivers today. Fallback-ready users will have duties to ensure they are fit to drive including having to:

- remain sufficiently vigilant to respond to ADS requests, mechanical failure and emergency vehicles and to regain control of the vehicle without undue delay when required
- be appropriately licensed
- comply with drug, alcohol and fatigue driver obligations.⁸⁹

A vehicle with level 3 automation is one in which

[t]he ADS can perform the entire driving task for a sustained period without a human monitoring the system, but the human is expected to intervene with the driving task if requested or if there is an evident vehicle system failure.⁹⁰

However, a driver may be distracted due to reliance on the automated system,⁹¹ or a driver may intervene but not have the same level of situational awareness they

84 *Registration, Licensing and CTP Insurance Issues* (n 70) 33.

85 *Ibid.*

86 *Ibid* 34. In New South Wales, Victoria and the Northern Territory, this restriction expires once the driver gains more experience. The report notes, however, that in Western Australia, 'a driver who passes the practical driving test in a vehicle with an automatic transmission is only permitted to drive automatics until passing another test in a vehicle with a manual transmission'.

87 *Ibid.*

88 'Changing Driving Laws Policy Paper' (n 33) 52.

89 'ISSLAV Policy Paper' (n 25) 22.

90 'Clarifying Control' (n 21) 9.

91 Lilla Thiele-Evans et al, 'Navigating a New Terrain: Developing Autonomous Vehicle Liability Pathways in Australia in Light of International Experience' (2021) 95(11) *Australian Law Journal* 875, 878–80.

would have had if driving manually.⁹² It has been argued that being ready to resume control of the dynamic driving tasks ‘may prove to be a daunting challenge, as drivers may become inattentive or even incapable of performing the required tasks after being relieved of driving tasks for a long time’.⁹³

In its proposals for a national safety law, the NTC has recommended ‘education and training’ as one of the safety criteria against which ADSEs would be required to self-certify in their pre-market Statement of Compliance.⁹⁴ Amongst the issues that the NTC stated that such training and education should consider were:

- training human drivers and fallback-ready users to safely disengage and re-engage the ADS and the driving task [and]
- informing human drivers of their obligations and responsibilities, particularly any fallback-ready user obligations.⁹⁵

Training for level 3 ADS-equipped vehicles would need to include training on the interface and interaction between the ADS and the fallback-ready user. However, driver training for manual operation of a vehicle would also be required. The need for drivers to resume control, where required, of a level 3 vehicle means that drivers would still need to retain their driving skills for non-automated vehicles.⁹⁶ Potentially, this would extend to levels 4 and 5 ADS-equipped vehicles that retain the option for human driving.⁹⁷ In relation to ADS levels 3 and 4 vehicles, one option is that drivers who already hold licences be required to obtain a licence condition or endorsement for their operation of a level 3 vehicle, which would require the licence holder to undergo an on-road test of the driving skills required for the operation of a level 3 vehicle.⁹⁸

The requirements for drivers’ knowledge and skill in relation to the operation of AVs has implications for reform of the laws relating to driver licences. Managing driving privileges according to the degree of automation, such as in the SAE categories of automation, is one possible way of addressing some of these issues.⁹⁹ Although there are some jurisdictional differences in laws relating to drivers’ licences in Australia, the NDLS, as with the model *Australian Road Rules* discussed in Part B below, does provide a framework for the development of harmonised approaches to licensing in the context of AVs.

92 Dylan LeValley, ‘Autonomous Vehicle Liability: Application of Common Carrier Liability’ (2013) 36 *Seattle University Law Review* *Supra* 5, 16.

93 Chan (n 32) 210.

94 ‘ISSLAV Policy Paper’ (n 25) 165.

95 *Ibid.*

96 *Registration, Licensing and CTP Insurance Issues* (n 70) 36.

97 *Ibid.*

98 *Ibid.* 80.

99 *Ibid.* 44.

B Road Rules

One of the primary barriers to the introduction of AVs identified by the NTC has been the lack of legal certainty regarding who (or what) is in control of a vehicle at the relevant point in time and therefore responsible for any infringements of the law or any injuries or damage.¹⁰⁰ In its work on driving laws, the NTC indicated that a ‘clear and nationally consistent approach’¹⁰¹ would provide legal certainty to consumers, manufacturers, and enforcement agencies concerning whether an ADS would be permitted to perform a driving task, and which legal entity would be responsible for an ADS action when the ADS is engaged.¹⁰² Consumers would also benefit by knowing that they could take full advantage of their ADS without being held responsible for actions outside their control.¹⁰³

The *Australian Road Rules* (‘*Road Rules*’),¹⁰⁴ as the model for Australian state and territory road rule legislation, provides an illustration of the challenges posed by AVs. Applying the *Road Rules* to AVs is problematic because the *Road Rules* were drafted to govern vehicles that were driven by humans. In the *Road Rules*, a ‘driver’ is defined as someone driving a vehicle, which includes being ‘in control of’ a vehicle.¹⁰⁵ An example given in the *Road Rules* is ‘a person steering and pushing a stalled motor vehicle’.¹⁰⁶ Control is therefore a concept which assumes that a driver is a human person who is at all times capable of physically operating a vehicle.¹⁰⁷ A person may breach road rules if they do not have ‘proper control’ of a vehicle,¹⁰⁸ such as by not having a hand on the steering wheel. Tranter views the construction of this concept as envisaging the human driver as ‘the active agent, “in control of” (driving) a passive object (the vehicle)’.¹⁰⁹ AVs, particularly fully or highly automated vehicles, do not fall within this paradigm because they are active objects when they perform the dynamic driving tasks.¹¹⁰

100 ‘Regulatory Options’ (n 1) 74.

101 ‘Changing Driving Laws Discussion Paper’ (n 62) 16.

102 Ibid; ‘Changing Driving Laws Policy Paper’ (n 33) 17.

103 ‘Changing Driving Laws Policy Paper’ (n 33) 17–18.

104 See Australasian Parliamentary Counsel’s Committee, *Australian Road Rules* (10 December 2021) <https://pcc.gov.au/uniform_legislation_official_versions.html> (‘*Road Rules*’).

105 Ibid r 16(1) note 2.

106 Ibid 13.

107 See ‘Changing Driving Laws Policy Paper’ (n 33) 8, 16.

108 Tranter (n 79) 67, citing *Old Road Rules* (n 43) r 297. See also *Road Rules* (n 104) r 297(1), which likewise states that a driver ‘must not drive a vehicle unless the driver has proper control’.

109 Tranter (n 79) 65, citing Douglas Brown, *Traffic Offences and Accidents* (LexisNexis Butterworths, 4th ed, 2006) 5.

110 Tranter (n 79) 65–6. These issues are not unique to Australia: see, eg, Nynke E Vellinga, ‘Automated Driving and Its Challenges to International Traffic Law: Which Way to Go?’ (2019) 11(2) *Law, Innovation and Technology* 257.

Higher levels of automation do not require a human driver for substantial periods of time (if at all) and therefore fall outside the accepted legal construction of the key concepts of ‘control’ and ‘driving’. This is the ‘driver’ dilemma of AVs.¹¹¹ Accordingly, determining responsibility becomes a more complex matter. For example, at level 3 the ADS can require varying degrees of intervention or ‘dynamic driving’ from the ‘fallback-ready user’¹¹² and the responsibility for operating an AV will, at times, be fluid.¹¹³ Highly automated vehicles can operate without human intervention but may also require either constant or intermittent human monitoring of the driving environment and resumption of control if required.¹¹⁴ As the human driver takes diminishing responsibility with increasing automation, these issues are further confounded by the likelihood that level 4 and 5 ADS-equipped AVs may be designed without the traditional features linked to the human operation of a vehicle, such as a steering wheel.¹¹⁵ In such circumstances, designating a driver becomes more difficult for authorities attempting to attribute liability for the purposes of the road rules due to a lack of physical connection to the act of driving. Regulation of AVs will therefore need to be responsive to any practical and legal difficulties that may arise during the process of innovation.

A final complication relates to the formal definition of ‘driver’ as it is enacted in state and territory laws. ‘Driver’ is defined as a ‘person’.¹¹⁶ However, under the respective jurisdictions’ interpretation Acts, ‘person’ is defined as either a natural person or a corporation.¹¹⁷ An ADS in an AV is neither a natural person nor a corporation. Therefore, when the ADS is responsible for the dynamic driving tasks, it is ‘in control’ of the vehicle as defined in the *Road Rules* — yet it cannot at law be considered the ‘driver’ as it is not a natural nor corporate person.¹¹⁸ Accordingly, both level 3 AVs (when the ADS is operating) and levels 4 and 5 ADS-equipped AVs (in normal operation) will be vehicles without ‘drivers’. As such, the provisions of the state and territory road rules, in so much as they are directed to

111 Brady, Tranter and Bennett (n 81) 14–18.

112 *SAE J3016* (n 16) 31 [5.4].

113 ‘Changing Driving Laws Discussion Paper’ (n 62) 16–17.

114 See above nn 28–34 and accompanying text.

115 ‘Changing Driving Laws Policy Paper’ (n 33) 11.

116 See, eg, *Road Safety Act 1986* (Vic) s 3(1) (definition of ‘driver’) (*Vic Road Safety Act*); *NSW Act* (n 43) s 4 (definition of ‘driver’). The position is the same across all states and territories. See also Brady, Tranter and Bennett (n 81) 14.

117 See, eg, *Interpretation of Legislation Act 1984* (Vic) s 38 (definition of ‘individual’), (definition of ‘person’); *Interpretation Act 1987* (NSW) s 21(1) (definition of ‘individual’), (definition of ‘person’). The position is the same across all states and territories. See also *Acts Interpretation Act 1901* (Cth) ss 2B (definition of ‘individual’), 2C(1). See also Brady, Tranter and Bennett (n 81) 14.

118 For further discussion of these issues, see Brady, Tranter and Bennett (n 81) 14.

drivers, will not apply to those AVs.¹¹⁹ An example is in s 67 of Queensland's *Transport Operations (Road Use Management — Road Rules) Regulation 2009*:

- (1) This section applies to a *driver* at an intersection without traffic lights who is facing a stop sign or stop line.
- (2) The *driver* must stop as near as practicable to, but before reaching—
 - (a) the stop line; or
 - (b) if there is no stop line — the intersection.

Maximum penalty — 20 penalty units.¹²⁰

The Queensland principal Act defines 'driver' as including 'the person driving or in charge of any vehicle, tram, train, vessel, or animal'.¹²¹ As an operating ADS cannot be a driver, then it follows that level 3 AVs, when the ADS is in control, and levels 4 and 5 ADS-equipped AVs (where the ADS is normally in control) in Queensland are not subject to s 67 and, as such, the rules do not technically require an ADS-operating vehicle to come to a halt at a stop sign. To allow such a situation to arise would be highly problematic. There appears to be a need for wholesale reform of the road rules in each state and territory to ensure predictability of vehicles on Australian roads. However, in this there is a danger of states and territories going it alone, creating AV-specific road rules in each jurisdiction. The purpose of the *Road Rules* has been to ensure commonality between the rules of the states and territories.¹²²

The NTC has identified three options to address the status of the ADSE with respect to the 'driver' dilemma.¹²³ The first is to insert a definitional section into the relevant Acts or regulations providing that, for the purpose of the relevant rules, an ADS operating an AV is deemed to be a 'driver'. The second is to '[e]xclude the ADS from the definition of driver' but '[m]ake the ADSE responsible for the safe operation of the vehicle ... when the ADS is engaged'.¹²⁴ The third option is for a

119 Ibid 14–18.

120 *Old Road Rules* (n 43) s 67 (emphasis added).

121 *Old Act* (n 43) sch 4 (definition of 'driver').

122 The objects of the *Road Rules* are to 'provide uniform rules across Australia for all road users' and to 'specify behaviour for all road users that supports the safe and efficient use of roads in Australia': *Road Rules* (n 104) r 3. The NTC has noted:

For the most part, each state and territory has incorporated the model *Australian Road Rules* into their own laws. However, not every provision has been copied exactly in each state and territory. Additionally, there are a number of provisions in the model *Australian Road Rules* that specifically leave certain matters to state and territory governments to determine.

'Changing Driving Laws Policy Paper' (n 33) 23 n 11.

123 See 'Changing Driving Laws Discussion Paper' (n 62) 56; 'Changing Driving Laws Policy Paper' (n 33) 18.

124 'Changing Driving Laws Discussion Paper' (n 62) 56. See also 'Changing Driving Laws Policy Paper' (n 33) 18.

new Act setting out obligations in relation to the dynamic driving task.¹²⁵ The various road rules impose penalties and are subject to roadside enforcement. Failure to halt at a stop sign in Queensland, for example, could lead to a fine of up to twenty penalty units.¹²⁶ Redrafting the *Road Rules* to deem an ADS a driver, or to impose liability directly on the vehicle, would disconnect the normative denunciation carried by penalty and enforcement, because neither the ADS nor the vehicle has legal personality. There would be a consequent need for further reforms deeming an entity that has legal personality — a corporation or a human occupant of the AV (or someone who is otherwise associated with the AV) — responsible. The NTC notes that:

A collaborative approach with industry will be required to help create and maintain industry incentives for continual safety improvement. Therefore, the early identification and resolution of ... safety incidents or risks through collaboration is preferred to identifying and punishing safety incidents or risks that may reoccur. ... A purely punitive approach risks creating an uncooperative regulatory environment. This could create incentives for coercion and deceit and any penalties may be accepted by industry as the cost of doing business.¹²⁷

While there are pragmatic reasons relating to general safety and consumer expectations for why an ADS ought to and would comply with the substance of road rules, at present there would appear to be no pathway to enforcement of offences in relation to an AV when the ADS is in control. Recommending the third option above, the NTC has proposed a regulatory scheme through which there would be an identifiable legal entity responsible for the safety and safe operation of AVs.¹²⁸ It has recommended that a national, purpose-built law be developed to allow an approved ADS to perform the dynamic driving task for an AV, and to clarify that the ADSE is the responsible legal entity when the ADS is in control and the vehicle is operating at conditional, high, or full automation.¹²⁹ This approach was viewed as an opportunity to provide clarity and certainty.¹³⁰ The NTC has also recommended that the new law impose duties on a ‘fallback-ready user’ to resume control of the vehicle when required, hold a driver’s licence for the vehicle type they are operating, and comply with the driver obligations relating to drugs, alcohol and driver fatigue.¹³¹ Significantly, the NTC’s 2019 *Automated Vehicle Program* noted that ‘Australia’s transport ministers ha[d] already agreed

125 ‘Changing Driving Laws Discussion Paper’ (n 62) 56; ‘Changing Driving Laws Policy Paper’ (n 33) 18.

126 From 1 July 2023, the value of one penalty unit in Queensland is \$154.80: ‘Sentencing Fines and Penalties for Offences’, *Queensland Government* (Web Page, 2023) <<https://www.qld.gov.au/law/fines-and-penalties/types-of-fines/sentencing-fines-and-penalties-for-offences>>.

127 ‘ISSLAV Policy Paper’ (n 25) 85.

128 ‘Changing Driving Laws Policy Paper’ (n 33) 18, 22.

129 Recommendation 3 has been approved by the relevant Ministers: *ibid* 3. See also *Registration, Licensing and CTP Insurance Issues* (n 70) 44.

130 ‘Changing Driving Laws Policy Paper’ (n 33) 17.

131 *Ibid* 52.

several key elements of the automated vehicles end-to-end framework'.¹³² A component of this is the development of a 'purpose-built nationally consistent law'.¹³³ This includes provision for the ADSE to hold legal responsibility for operation of an AV, and that 'the fallback-ready user remain sufficiently vigilant to respond to ADS requests and failures, and regain control when required'.¹³⁴

C National In-Service Safety Regulator

In 2021, the NTC outlined a proposal for the creation of a 'new national law for the in-service safety of automated vehicles'.¹³⁵ The proposal includes new laws and a new regulatory agency to directly address the challenges posed by AVs.

The proposal has a number of core features:

- legislating for ADSEs to be responsible for ADSs;
- legislating a general safety duty on ADSEs and their executive officers;
- establishing a national in-service regulator to regulate ADSs and ADSEs;
- providing a whole-of-use safety assurance framework for AVs, including: compliance at first supply; in-service safety, updates and modifications; and end-of-use.¹³⁶

The proposed national law and in-service safety regulator represent significant opportunities for harmonisation in relation to AVs. If implemented, they would ideally provide for a nationally consistent framework around safety and responsibilities for AVs across all of Australia and provide a single regulator for ADSEs. However, implementation of the national law and in-service safety regulator depends on agreement by the states and territories. There appears to be strong intergovernmental support for the development of the national law. In February 2022, the ITMM announced an agreement that the national law will be introduced as a Commonwealth Act, supported by the intergovernmental agreement and complementary state and territory laws commencing in 2026.¹³⁷ This agreement is a significant, promising step in providing for a national AV-enabled transport future.

There has also been progress in relation to a national approach to safety assurance for AVs at first supply. In 2020, Transport Ministers agreed to an approach that

132 *AV Program* (n 58) 10.

133 *Ibid* 10 n 1.

134 *Ibid* 10.

135 'ISSLAV Policy Paper' (n 25) 8.

136 *Ibid* 6–9, 148–55.

137 '16th Infrastructure and Transport Ministers' Meeting', (Communique, Department of Infrastructure, Transport, Regional Development, Communications and the Arts, 11 February 2022) <https://www.infrastructure.gov.au/sites/default/files/documents/16th_itmm_communi que_11_february_2022.pdf>.

would ‘be governed by the *Road Vehicle Standards Act 2018* ... administered by the Commonwealth’.¹³⁸ A first example of the introduction of new standards that directly relate to AV technology is the proposed *Vehicle Standard (Australian Design Rule 90/01 — Steering System) 2021* that relates to automated and driver-assisted steering systems.¹³⁹

The February 2022 ITMM agreement on the national law and in-service regulator, and the consultation around changes to the *Australian Design Rules* that accommodate some AV technologies, suggest the possibility that the unique safety and regulatory challenges of AVs are leading to a harmonised national response.

D CTP Insurance

Although not entirely consistent across the states and territories, the road rules and the licensing rules do demonstrate a strong degree of harmonisation. Furthermore, the proposal and in-principle agreement by the ITMM for a national in-service safety regulator also represent an opportunity for a national approach. However, this may not be the case with existing statutory insurance schemes designed to provide compensation for personal injuries sustained in motor vehicle accidents. In Australia, two statutory regimes provide compensation for personal injury and/or death from motor vehicle accidents: CTP insurance schemes and the National Injury Insurance Scheme (‘NIIS’). The NIIS has been described as a ‘federated model of separate, state-based no-fault schemes’,¹⁴⁰ which together ‘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’.¹⁴¹ The NIIS is funded in each state or territory by a levy, premium or charge that is paid when a vehicle is registered.¹⁴²

CTP insurance attaches to a registered vehicle (not a person) and ‘covers vehicle owners and drivers who are legally liable for personal injury caused ... in the event of a motor vehicle crash on a public road’.¹⁴³ CTP insurance schemes vary between ‘at-fault’ and ‘no-fault’ approaches,¹⁴⁴ meaning that a person’s access to compensation may be contingent on where they live, where a vehicle is registered,

138 ‘ISSLAV Policy Paper’ (n 25) 11.

139 *Vehicle Standard (Australian Design Rule 90/01 — Steering System) 2021* (Cth) (Consultation Draft) <<https://www.infrastructure.gov.au/sites/default/files/migrated/vehicles/design/files/adr-90-01-consultation-draft.pdf>>.

140 Treasury (Cth), ‘National Injury Insurance Scheme’ (Web Page) <<https://treasury.gov.au/programs-initiatives-consumers-community/niis/>>.

141 ‘MAIIAV Discussion Paper’ (n 64) 16.

142 Ibid.

143 *Registration, Licensing and CTP Insurance Issues* (n 70) 48. See also Mark Brady et al, ‘Automated Vehicles and Australian Personal Injury Compensation Schemes’ (2017) 24(1) *Torts Law Journal* 32.

144 ‘MAIIAV Policy Paper’ (n 64) 14.

or where an accident occurs. In Queensland,¹⁴⁵ South Australia¹⁴⁶ and Western Australia,¹⁴⁷ CTP insurance covers injury caused by a motor vehicle, but only if the ‘at-fault’ motorist is identifiable and negligence can be proven.¹⁴⁸ If negligence cannot be proven, a claim under CTP insurance cannot be made and an injured person will not receive compensation. In NSW, Tasmania and Victoria, hybridised ‘no-fault’ schemes are utilised to protect injured parties.¹⁴⁹ In these jurisdictions, proving negligence or blame is unnecessary for injury claims falling under a certain monetary limit; any claims over this limit revert to the requirement that fault must be proven.¹⁵⁰ More specifically, in some hybridised jurisdictions only a relatively serious injury will trigger access to common law personal injury claims.¹⁵¹ In the Northern Territory and the ACT, motor vehicle accident-based personal injury insurance is in the form of no-fault schemes.¹⁵²

The introduction of AVs will present a number of challenges to ensuring compensation for persons injured by AV accidents:¹⁵³

- Similar to the *Road Rules*, current statutory insurance schemes contain definitions of ‘control’ and ‘driver’¹⁵⁴ that are inapplicable to higher-level automated vehicles.¹⁵⁵ The legislation governing these schemes generally

145 *Motor Accident Insurance Act 1994* (Qld) s 5(1)(b) (‘*Old MAI Act*’).

146 See *SA Act* (n 44) pt 4.

147 *Motor Vehicle (Third Party Insurance) Act 1943* (WA) s 4(1) (‘*WA CTP Insurance Act*’).

148 ‘MAIIAV Discussion Paper’ (n 64) 15. For establishing negligence-based liability, see generally *Civil Liability Act 2003* (Qld); *Old MAI Act* (n 145); *Civil Liability Act 1936* (SA); *SA Act* (n 44) pt 4; *Civil Liability Act 2002* (WA); *WA CTP Insurance Act* (n 147); *Insurance Commission of Western Australia Act 1986* (WA).

149 *Registration, Licensing and CTP Insurance Issues* (n 70) 49; ‘MAIIAV Discussion Paper’ (n 64) 15. *Motor Accident Injuries Act 2017* (NSW) (‘*NSW MAI Act*’); *Transport Accident Act 1986* (Vic) (‘*Vic MAI Act*’); *Motor Accidents (Liabilities and Compensation) Act 1973* (Tas) (‘*Tas MAI Act*’).

150 *NSW MAI Act* (n 149) s 1.3; *Vic MAI Act* (n 149) s 35; *Tas MAI Act* (n 149) ss 14, 23.

151 *NSW MAI Act* (n 149) s 4.4; *Vic MAI Act* (n 149) s 93(2); *Tas MAI Act* (n 149) s 22(1A); Brady et al (n 143) 46–7.

152 See *Motor Accident Injuries Act 2019* (ACT) (‘*ACT MAI Act*’); *Motor Accidents (Compensation) Act 1979* (NT) (‘*NT MAI Act*’).

153 ‘MAIIAV Policy Paper’ (n 64) 7–8.

154 *NSW MAI Act* (n 149) s 1.4(1) (definition of ‘driver’); *Vic MAI Act* (n 149) s 3(1) (definition of ‘driver’), adapting the definition of ‘drive’ from *Vic Road Safety Act* (n 116) s 3(1); *Old Road Rules* (n 43) sch 5 (definition of ‘driver’), s 16; *Australian Road Rules 2014* (SA) sch 5 (definition of ‘driver’), r 16 (‘*SA Road Rules*’); *WA CTP Insurance Act* (n 147) s 3(1) (definition of ‘driver’); *ACT MAI Act* (n 152) s 3, the definition of ‘driver’ contained in the Dictionary being adopted from s 11(1) of the *Road Transport (General) Act 1999* (ACT) (‘*ACT Road Act*’); *NT Act* (n 42) s 5(1) (definition of ‘driver’). See also ‘MAIIAV Discussion Paper’ (n 64) 28–9.

155 ‘MAIIAV Discussion Paper’ (n 64) 20. See also Brady et al (n 143) 36, 44–5.

requires an ‘injury’¹⁵⁶ to be caused by the ‘driving’¹⁵⁷ of a ‘motor vehicle’¹⁵⁸ as a result of an ‘accident’.¹⁵⁹ Each of these elements must be met to allow an injured person to access the CTP schemes.¹⁶⁰ An accident must result from the driving of a vehicle; it is therefore likely that vehicles with higher levels of automation will not fall within the traditional definitions or statutory thresholds, because they lack a ‘driver’ who is ‘driving’.¹⁶¹ This has the potential to restrict access to compensation for personal injury caused in an AV crash.¹⁶²

- Proving fault in ‘at-fault’ jurisdictions is likely to be problematic when a human driver is not in evidence or able to be attached to an event.¹⁶³ Definitions of ‘driver’ and ‘driving’ and the inability to establish fault may result in differential entitlement to compensation for these victims.¹⁶⁴ Brady et al have argued that

uncertainty on how CTP schemes and [the] NIIS will deal with automated vehicles and lack of clarity regarding liability in fault-based

156 *NSW MAI Act* (n 149) s 1.9; *Vic MAI Act* (n 149) s 35(1); *Qld MAI Act* (n 145) s 5(1)(a); *SA Act* (n 44) s 99(3); *Tas MAI Act* (n 149) s 2(4); *WA CTP Insurance Act* (n 147) s 3(7); *ACT MAI Act* (n 152) s 9; *NT MAI Act* (n 152) s 4A. See also Brady et al (n 143) 43–4.

157 See above n 154.

158 *NSW MAI Act* (n 149) s 1.4(1) (definition of ‘motor vehicle’), which adopts the definition in the *NSW Act* (n 43) s 4(1) (definition of ‘motor vehicle’); *Vic MAI Act* (n 149) s 3(1) (definition of ‘motor vehicle’), which adopts the definition in the *Vic Road Safety Act* (n 116) s 3(1) (definition of ‘motor vehicle’); *Vic MAI Act* (n 149) s 3(1) (definition of ‘motor car’), which adopts the definition in the *Motor Car Act 1958* (Vic) s 3(1) (definition of ‘motor car’); *Qld Act* (n 43) sch 4 (definition of ‘motor vehicle’); *SA Act* (n 44) s 5(1) (definition of ‘motor vehicle’); *Tas MAI Act* (n 149) s 2(1) (definition of ‘motor vehicle’), which adopts the definition in the *Tas Act* (n 44) s 3(1) (definition of ‘motor vehicle’); *WA CTP Insurance Act* (n 147) s 3(1) (definition of ‘motor vehicle’); *ACT MAI Act* (n 152) s 3, the definition of ‘motor vehicle’ contained in the Dictionary being adopted from s 11(1) of the *ACT Road Act* (n 154); *NT MAI Act* (n 152) s 4 (definition of ‘motor vehicle’). See also Brady et al (n 143) 42.

159 *NSW MAI Act* (n 149) ss 1.4(1) (definition of ‘motor accident’), 1.9; *Motor Accidents (Lifetime Care and Support) Act 2006* (NSW) s 3(1) (definition of ‘motor accident injury’); *Vic MAI Act* (n 149) ss 1, 3(1) (definition of ‘transport accident’), 3(1A), 35(1); *Qld MAI Act* (n 145) ss 5(1), 31(1); *National Injury Insurance Scheme (Queensland) Act 2016* (Qld) s 4(1); *Motor Vehicle Accidents (Lifetime Support Scheme) Act 2013* (SA) s 3 (definition of ‘motor vehicle accident’); *SA Act* (n 44) s 99(3); *Tas MAI Act* (n 149) s 2(1) (definition of ‘motor accident’); *Motor Vehicle (Catastrophic Injuries) Act 2016* (WA) s 4; *WA CTP Insurance Act* (n 147) s 4(1); *ACT MAI Act* (n 152) ss 9, 10; *Lifetime Care and Support (Catastrophic Injuries) Act 2014* (ACT) s 3, Dictionary (definition of ‘motor accident injury’); *NT MAI Act* (n 152) ss 4A(1), 7. See also Brady et al (n 143) 43–4.

160 ‘MAIIAV Policy Paper’ (n 64) 19–20. See Brady et al (n 143) 43–6.

161 ‘MAIIAV Policy Paper’ (n 64) 20; Brady et al (n 143) 44–5.

162 ‘MAIIAV Policy Paper’ (n 64) 20; Brady et al (n 143) 45; Thiele-Evans et al (n 91) 889–90.

163 Brady et al (n 143) 52–3. Leiman has argued that improvements to safety through the use of advanced driver assistance systems raise questions about ‘whether it continues to be reasonable ... for “un-augmented human drivers” to operate motor vehicles’: Tania Leiman, ‘Law and Tech Collide: Foreseeability, Reasonableness and Advanced Driver Assistance Systems’ (2021) 40(2) *Policy and Society* 250, 265.

164 ‘MAIIAV Policy Paper’ (n 64) 20.

schemes need to be addressed to facilitate the introduction of automated vehicles on Australian roads.¹⁶⁵

- Insurance schemes historically have been designed to cover injuries that have been a consequence of human error rather than product fault.¹⁶⁶ As most AV crashes may be caused by faults in product systems, such as software, or control system hardware, current motor accident injury insurance legislation may not provide sufficient protection for AV passengers and users.¹⁶⁷

Brady et al argue that not resolving existing disparities in CTP insurance is the incorrect approach to take in the context of AVs,¹⁶⁸ and that the continuation of ‘at-fault’ schemes and outmoded threshold definitions could result in less access to insurance or greater obstacles to accessing compensation than is experienced with human-driven vehicles.¹⁶⁹ In the context of non-automated vehicles, jurisdictional variability in CTP insurance schemes has resulted in injured parties receiving ‘differential entitlement’ or arbitrary exclusion depending on where an accident has occurred or where a vehicle is registered.¹⁷⁰ The NTC presented, in their 2018 discussion paper entitled ‘Motor Accident Injury Insurance and Automated Vehicles’ (‘MAIIAV Discussion Paper’),¹⁷¹ a number of reform options in relation to injury compensation arising from AV accidents:

- no change to the existing legal framework;
- exclusion of injuries caused by an ADS from motor injury insurance schemes;
- expansion of motor injury insurance schemes to cover injuries caused by an ADS;
- a purpose-built scheme for AVs;
- the setting of minimum benchmarks; and

165 Brady et al (n 143) 33.

166 ‘MAIIAV Policy Paper’ (n 64) 20.

167 ‘MAIIAV Policy Paper’ (n 64) 20. For an analysis of the challenges that consumers may face in proving liability by AV manufacturers in negligence or under the *Australian Consumer Law*, see Tom Mackie, ‘Proving Liability for Highly and Fully Automated Vehicle Accidents in Australia’ (2018) 34(6) *Computer Law and Security Review* 1314. For further discussion of manufacturers’ liability, see Thiele-Evans et al (n 91) 881–5, 890–1.

168 Brady et al (n 143) 53–4.

169 Ibid 53, 55; ‘MAIIAV Discussion Paper’ (n 64) 19.

170 See Brady et al (n 143) 33.

171 ‘MAIIAV Discussion Paper’ (n 64).

- allowing private insurers to provide comprehensive policies that include injuries caused by an ADS.¹⁷²

In the same paper, the NTC also presented a set of principles that it argued should inform any reform proposal.¹⁷³ The MAIIAV Discussion Paper formed the basis of consultation and stakeholder engagement with state and territory transport authorities, the legal profession, and public and private insurers.¹⁷⁴ In the subsequent policy paper entitled ‘Motor Accident Injury Insurance and Automated Vehicles’ (‘MAIIAV Policy Paper’),¹⁷⁵ the NTC presented two main points of agreement for CTP reform in response to AVs. The first was a set of nationally agreed principles, which included:

Ensur[ing] no person is better or worse off, financially or procedurally, in the relevant jurisdiction, if they are injured by a vehicle whose automated driving system was engaged than if they were injured by a vehicle controlled by a human driver.¹⁷⁶

The second was ‘a national approach to cover ADS-caused injuries ... achieved by expanding MAII schemes’.¹⁷⁷ A critical aspect of this national approach was reforms to the existing CTP schemes to access a ‘right-of-recovery’ from ‘at-fault’ parties, for injuries connected to the operation of an ADS.¹⁷⁸

Within the specific context of addressing the challenges of AVs for injury compensation, the MAIIAV Policy Paper represents national agreement for some form of harmonised response. However, this only goes so far. The policy paper provides for the existing and different state and territory CTP schemes to continue, including the current differences on fault:

172 ‘MAIIAV Discussion Paper’ (n 64) 40–58. For further discussion on the ‘MAIIAV Discussion Paper’, see John Ward, ‘Who’s Liable? Developing a CTP Insurance Framework for Automated Vehicles’ (2019) 41 *Bulletin (Law Society of South Australia)* 26. An example of an expansion of motor injury insurance schemes to cover injuries caused by the ADS is the *Automated and Electric Vehicles Act 2018* (UK). Part 1 of the Act provides that the compulsory insurance in place on the vehicle will also cover victims, including the driver, of an accident caused by a fault in the AV itself, thereby relieving such individuals of the need to sue the manufacturer of the vehicle. The insurer would then be entitled to seek recovery of its loss from the vehicle manufacturer: see Explanatory Notes, *Automated and Electric Vehicles Bill 2017* (UK) 5 [11]–[12]. For further discussion, see Thiele-Evans (n 91) 886–7.

173 ‘MAIIAV Discussion Paper’ (n 64) 18–19.

174 ‘MAIIAV Policy Paper’ (n 64) 16.

175 ‘MAIIAV Policy Paper’ (n 64).

176 *Ibid* 29. Other principles addressed ‘simplicity and flexibility’; ‘affordable, efficient and fair funding arrangements’; ‘reasonable and timely access to compensation’; ‘[p]romot[ing] transparency and certainty in accessing compensation’; ‘[m]inimis[ing] potential litigation’; ‘[p]romot[ing] safety innovation’; and ‘efficient processes to access ... reliable and verifiable vehicle crash data’.

177 *Ibid* 38.

178 *Ibid*.

Based on almost unanimous support from stakeholders, the NTC proposes that a national approach to cover ADS-caused injuries [be] achieved by expanding MAII schemes. The approach will offer cover in the short to medium term and can be reviewed when automated vehicles are a statistically sufficient portion of registered vehicles to enable assessment of their safety risks.¹⁷⁹

Furthermore, the potential that there will be national consistency within the CTP schemes in relation to AVs depends on significant reform activities within each state and territory, with the NTC noting: ‘Responsibility for MAII schemes rests with state and territory governments, and they are the appropriate authorities to consider reforms to harmonise MAII schemes.’¹⁸⁰

V CONCLUSION

Harmonisation of regulation is an effective and important means of supporting technological innovation and the incorporation of AVs into Australia’s transport system. Cooperation between the states, territories and the Commonwealth has been viewed as critical to the success of this venture. The introduction of AVs represents a unique, historic opportunity to modernise and harmonise Australian road transport laws. A purpose-built, harmonised law for AVs which clarifies the entity subject to the road rules will be capable of successful implementation. This model of harmonisation has already been proven with the adoption of the *Road Rules*, and more recently through the proposed implementation of national AV legislation and a national in-service regulator for AVs governed by the *Road Vehicle Standards Act 2018* (Cth). That proposal has been accepted and endorsed by the states, territories and the Commonwealth.¹⁸¹ For this reason, Australia would be likely to achieve a nationally consistent approach to driving laws that apply to AVs. However, as discussed above, the CTP framework remains fragmented, and national consistency appears elusive at present. It suggests that while the introduction of AVs will provide some opportunities for harmonisation of Australian transport laws, it is unlikely to result in the harmonisation of all laws. In the absence of broader reforms, jurisdictional variations appear likely to remain a feature, at least in relation to CTP insurance, across the various regulatory frameworks.

179 Ibid.

180 Ibid 49.

181 ‘ISSLAV Policy Paper’ (n 25) 11.