STEERING THE COURSE FOR FUTURE DRIVERLESS VEHICLE REGULATION IN AUSTRALIA

The National Transport Commission's recommendations on the evolution of regulation

November 2016
On 4 November the Transport and Infrastructure Council (all of Australia's Transport Ministers) approved the recommendations of the National Transport Commission (NTC)\(^1\) on how Australia’s regulatory framework should evolve in response to automated vehicles.

The NTC’s objective is to remove unnecessary legal barriers to automated vehicles and facilitate on-road testing, but at same time ensure these vehicles can operate safety. It is also keen avoid inconsistent regulatory regimes across states and territories.

The NTC has adopted a cautious approach. It doesn’t want Australian Governments to jump the gun and regulate ahead of the curve, and instead prefers a more tentative approach where Governments wait until the risks are better understood and evidence of market failure starts to emerge. This is sensible, given the risks associated with more highly automated vehicles are uncertain and the costs of imposing new regulation in advance of widespread commercial deployment of more highly automated vehicles could inhibit innovation and the development of market-led responses, and unnecessarily shift responsibility from industry to Government (ie. taxpayers).

The NTC’s recommendations are largely as expected.\(^2\) However, they depart in some respects from the direction that the United States of America and perhaps other countries are heading. The most notable departure is on the issue of who should be legally responsible for the actions of the next generation of automated vehicles, where the vehicle assumes primary responsibility for watching the road, thereby allowing the human driver to take his or her eyes off the road for extended periods to read a book or perform other non-driving tasks.

By making the driver responsible for these next generation vehicles, it is also more likely that the human driver (as opposed to the vehicle manufacturer) will be liable for any property damage or personal injury caused by the vehicle when operating in autonomous mode. But it doesn’t necessarily follow that the driver will be liable, as a failure of the automated driving system might be a significant contributing factor. In fact, it is highly likely with these vehicles that a number of factors will be relevant to the ultimate determination of who is liable.

The Transport and Infrastructure Council has also determined that a new national safety assurance regime should be developed for automated vehicles with an initial focus on vehicles that will still require a licensed human driver to be ready to take back control when requested. The initial rationale for the new safety assurance regime was the absence of the safety assurance provided by a licensed driver with demonstrated minimum competencies needed to safely drive a motor vehicle. Accordingly, it was previously proposed that any new safety assurance regime would only apply to automated vehicles that don’t require a human driver.

So the position for manufacturers is mixed. While manufacturers will take less responsibility for the actions of the vehicle, they will have to submit a safety case for the vehicle to the Australian regulator even though the vehicle can only operate with a human driver.

**LEVELS OF AUTOMATION**

To understand where driverless vehicle regulation is heading, you must first understand the different types (or levels) of automation, and when it is expected that higher levels of automation will be commercially deployed. The NTC has adopted the SAE International Standard J3016 for classifying automated vehicles. The below diagram summarises the different levels of automation under this international standard. The dates for each level have come from the Australia Driverless Vehicle Initiative.

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The automated vehicle that most readers will be familiar with is the Tesla Model S. This is the vehicle that crashed into a truck, killing the driver of the Tesla. The Tesla Model S is a level 2 partially automated vehicle. When operating in autonomous mode, the driver of the vehicle is required to watch the road (or, to use the language of the SAE International Standard, "monitor the driving environment") at all times. The automated driving system (ADS) in this vehicle is not yet sophisticated enough to assume responsibility for watching the road, so as to allow the driver to do other things, such as read a newspaper.

The next level will be level 3 conditionally automated vehicles. These vehicles will have an ADS that is capable of assuming responsibility for monitoring the driving environment in some situations (eg. on a dual carriageway), but on the basis that the human driver must be ready to take back control when requested. When the ADS is responsible for watching the road, the human driver will be allowed to do other things, so long as he or she is ready to take back control when requested and alert to evident system failures.

The amount of warning that the vehicle gives the driver before he or she must be ready to take back control will significantly influence the non-driving tasks that the driver can perform while the ADS is watching the road. It won’t be safe for the driver to read a book if the driver must be ready to take back control the instant that the vehicle first requests the driver to do so. But if the ADS provides sufficient warning before the human driver is expected to take back control, it will be safe for the driver to engage in certain non-driving activities while the ADS is doing the driving.

A DIVERGENCE OF VIEWS – WHO IS IN CONTROL OF A LEVEL 3 VEHICLE?

The primary point of departure between the NTC and its US equivalent seems to be around the issue of who is driving or in control of the vehicle when it is operating in an automated mode. In particular, who is responsible for compliance with road rules?

The US Department of Transportation has suggested that the answer to this question turns on who is responsible for monitoring the driving environment. According to the US Department of Transportation, if the ADS is responsible for monitoring the driving environment, then it should be deemed to be the driver and therefore responsible for compliance with road rules, even if a human driver must be ready to take back control when requested.
The NTC, however, has suggested a different approach. It considers the human driver should remain responsible for compliance with road rules while ever the human driver must be ready to take back control when requested.

The approach which Australia ultimately adopts will be critical to level 3, conditionally automated vehicles. Under the US approach, it is the ADS that will have control of the vehicle, and be responsible for complying with the road rules, when it is operating in level 3 mode. Under the NTC approach, the human driver will continue to have control of the vehicle, and remain responsible for complying with the road rules, when the vehicle is operating in level 3 mode.

The difference of opinion has arisen because of uncertainty surrounding the requirement to be ready to take back control when requested. The vehicle will request the human driver to retake control as it approaches the end of the environment in which it can operate in level 3 mode (the operational design domain), or if there is an ADS failure. But how much warning will the ADS give the human driver? Must the human driver be ready to take back control at the instant the ADS requests this? Or will the ADS give the driver a minimum period of warning? Will the period of warning be sufficient to allow the human driver to resume control of the vehicle if he or she has been engaged in non-driving activities? These are all good questions, which remain to be answered. Initially, the answers may differ between manufacturers, as the market works out what consumers want.

This last possibility could cause significant issues for the police. If the amount of warning the vehicle will give, and consequently the non-driving tasks that a human driver can safely perform when the vehicle is operating in level 3 mode, will vary depending on the particular manufacturer or model of vehicle, how will police know whether the human driver is ready to resume control of the vehicle if requested by the ADS?

One thing is certain, however. If the NTC approach is adopted, level 3 vehicles will less popular than they would be under the US approach. Even if the manufacturer agrees to reimburse the human driver for all speeding fines and other infringements, the operator of the vehicle would still lose the licence demerit points. But the NTC’s approach may be welcomed by manufacturers. The US position requires manufacturers and ADS providers to take on greater legal responsibility, which could delay the commercial deployment of level 3 vehicles and associated safety and productivity benefits.

PHASED REFORM PROGRAM

The NTC has proposed that our regulatory environment is reformed in phases, in step with the development of the technology and international standards. It has categorised its proposed reforms into:

- near-term actions, which should commence as soon as possible, to meet current demand for on-road testing;
- medium-term actions, which should commence within two years, to deal with level 2 and level 3 vehicles that still require a human driver; and
- long-term actions, which should commence within three to five years, to deal with level 4 and level 5 vehicles that don’t require a human driver.
NEAR-TERM ACTIONS: COMMENCE AS SOON AS POSSIBLE, TO MEET CURRENT DEMAND FOR ON-ROAD TESTING

USE OF EXEMPTION POWERS TO ALLOW TESTING

Our current road rules and other laws assume that vehicles will be driven by a human driver. Accordingly, highly automated vehicles that are capable of operating without a human driver cannot do so legally under our current laws.

State and Territory road agencies can grant exemptions from road rules and other laws that would otherwise make the testing of highly automated vehicles on public roads illegal. But there is a significant risk that the use of exemption powers will result in a patchwork of conditions for trials across different States and Territories, and result in higher than necessary compliance costs for industry. Also, there are differences in the exemption powers enjoyed by different States and Territories. Some jurisdictions don't have a broad exemption power, but instead rely on more specific exemption powers for vehicle standards or road rules. And some jurisdictions don't have the ability to attach conditions to exemptions.

Accordingly, the NTC has recommended that:

- each road agency reviews its exemption powers, to ensure they are sufficient to manage on-road testing; and
- the NTC and Austroads develop national guidelines, to establish consistent exemption requirements and conditions for on-road trials.

The NTC has suggested that each jurisdiction should consider the possibility of cross-border trials and legislative mechanisms to mutually recognise trial exemptions in other jurisdictions. It is unlikely, however, that any State or Territory will allow another jurisdiction to authorise the testing of highly automated vehicles on its roads. Each jurisdiction will want to retain control over the locations within its borders at which testing can be conducted, and the conditions which must be met in connection with the testing.

The NTC will need to move quickly on the development of national guidelines for on-road testing, and consult extensively with the road agencies, if a patchwork of inconsistent exemption requirements and conditions is to be avoided. Fortunately, other countries have already developed guidelines for on-road testing and the only Australian jurisdiction to have already done so is Victoria (which based its guidance on that released by the UK), so it shouldn't be too difficult to devise a single guideline that all States and Territories can live with.
CLAIRIFYING WHO IS RESPONSIBLE FOR ENSURING THE VEHICLE COMPLIES WITH ROAD RULES

Our current laws are based on the principle that the human driver is in control of the vehicle and responsible for what the vehicle does. If the vehicle is speeding, it is the driver of the vehicle that is responsible.

As mentioned above, there is a difference of opinion as to who is in control of a vehicle that is operating in level 3 mode. The Americans think it is the ADS, but the NTC thinks it should be the human driver, given the human driver must be ready to take back control and receptive to any evident system errors.

As mentioned above, the correct answer probably depends on the amount of warning that an ADS must give the human driver before the human driver must indicate he or she is ready to take back control, and how "ready" the human driver must be.

The reality is that it isn't reasonable to expect a human driver that is engaged in certain non-driving tasks (e.g. sending a text) to be ready to take control the moment the ADS first requests this. Accordingly, manufacturers of conditionally automated vehicles that want to allow the human driver to undertake non-driving tasks will need to ensure the ADS remains capable of controlling the vehicle between the time the vehicle request that the human driver retakes control of the vehicle, and the time the human driver can reasonably be expected to resume control of the vehicle.

The fundamental difference between level 2 and level 3 automated vehicles is that the latter will finally allow the human driver to take their eyes off the road. This feature will be highly attractive to human drivers, as it will enable them to do other things while the ADS is watching the road. But the manufacturer will only be able to market the feature if the vehicle can give the human driver adequate warning before the human driver must retake control.

What if the occupant of a level 3 vehicle is drunk? If the journey from the pub to the occupant's home is wholly within the operational design domain that a vehicle can operate in level 3 mode, is it appropriate for the occupant to expect the vehicle to drive itself home safely? We think not, given the possibility that the ADS might fail, and the need for the human driver to be the fall back in these circumstances.

The NTC is understandably keeping its powder dry by suggesting that it should develop guidelines that clarify the concept of who is in control of the vehicles for different levels of automated vehicles.

In the meantime, Transport Ministers have approved the following policy position:

- the human driver has legal control of a level 2 or level 3 automated vehicle, unless or until a new position is developed; and
- the human driver should only undertake non-driving tasks currently permitted by road rules and enforcement guidelines, unless or until a new position is developed, or an exemption is granted by a road agency.

As to the non-driving tasks that a driver may perform, Australia's road rules presently prohibit the driver from using a mobile phone while the vehicle is moving, except for the purpose of making or receiving a phone call so long as the phone is mounted or, if not mounted, is not being held by the driver, and the use of the phone does not require the driver to press anything on the phone or to otherwise manipulate the phone. The use of a mobile phone as a GPS navigator is also permitted, provided the phone is mounted. Our road rules also prohibit a driver from driving a vehicle that has a television receiver or visual display unit in the vehicle operating while the vehicle is moving, if any part of the image on the screen is visible to the driver, or is likely to distract another driver. There is an exception for mounted visual display units that are used as a driver’s aid (e.g. sat nav). Accordingly, our road rules will need to be amended if drivers are to be allowed to use their mobile phones or tablets for other purposes – for example, to send or read a text or email, or to surf the internet – while a vehicle is in level 3 mode.
PROPER CONTROL – DO YOU REALLY NEED TO HAVE A HAND ON THE STEERING WHEEL?

Our current road rules state that a driver must not drive a vehicle unless the driver has proper control of the vehicle.

To date the police have interpreted this rule to mean that the human driver must have at least one hand on the steering wheel.

But this interpretation of the rule is already out of date. Level 2 vehicles presently have the ability to control the steering of the vehicle without the need for the human driver to have a hand on the steering wheel. A human driver that is watching the road and is ready to instantly take back control of the vehicle to prevent a crash clearly has proper control of the vehicle, even though he or she doesn't have a hand on the steering wheel.

The rule and its current interpretation also presents problems for valet parking functions. If the technology in the vehicle is capable of parking the vehicle without the driver being in the vehicle, let alone having a hand on the steering wheel, why should the human driver need to have a hand on the steering wheel to have proper control of the vehicle?

The Transport and Infrastructure Council has tasked the NTC with developing national enforcement guidelines that clarify the regulatory concepts of control and proper control for partial, conditional, highly and fully automated vehicles.

Enforcement guidelines, rather than regulatory change, are a sensible approach given the barrier is in existing enforcement guidelines as opposed to the road rules. Also, as we move forward, guidelines can be more readily changed in response to developments in technology. We have already seen that technology can change the ways by which a person can exercise proper control over a vehicle. Further changes are likely.
MEDIUM-TERM ACTIONS: COMMENCE WITHIN TWO YEARS, TO DEAL WITH LEVEL 2 AND LEVEL 3 VEHICLES THAT STILL REQUIRE A HUMAN DRIVER

A NATIONAL SAFETY ASSURANCE REGIME

It is predicted that automated driving systems will result in a step-change to road fatality statistics, by eliminating human error as a cause of road accidents. About 90% of all road accidents are due to human factors such as behaviour and error. These include fatigue, speed, driver distraction, impairment due to the use of alcohol and drugs, health issues, inexperience and risk-taking. As automated driving systems take more responsibility for the driving task, it is likely that the percentage of accidents attributable to a failure of the ADS will increase, but the expectation is that as automated driving systems become more sophisticated they won't make as many mistakes as human drivers. But there will undoubtedly be human casualties in the future as a result of ADS failures. The challenge for Governments is a tricky one – if they unduly restrict the testing and deployment of automated vehicles due to current safety concerns, the significant safety benefits that automated vehicles could deliver in the future will be unnecessarily delayed.

Driver licensing requirements play an important role in our current safety assurance framework. Under our current laws, vehicles can only be driven by persons that have obtained a licence to do so, and licences can only be obtained by a person demonstrating that they have the minimum competencies needed to drive a motor vehicle safely.

When automated vehicles cease to need a human driver (levels 4 and 5), this element of our safety assurance framework will disappear. There seems to be broad consensus among industry and regulators that it will need to be replaced with safety assurance regime for level 4 and level 5 automated vehicles, notwithstanding the powerful commercial incentive that Australian product liability law provides for manufacturers to ensure that these vehicles are safe for their intended use.

Accordingly, it is not surprising that that the Transport Ministers have asked the NTC to develop a national performance-based safety assurance regime for automated vehicles.

What is surprising, however, is that the regime will initially focus on vehicles with level 3 automation. It is surprising because level 3 vehicles will still require a licensed human driver to be ready to take back control when requested. The rationale for requiring the new safety assurance regime to apply to level 3 vehicles is unclear. If it is to apply to level 3 vehicles, why shouldn’t it also apply to level 2 vehicles? Perhaps Australia’s Transport Ministers are uneasy about level 3 vehicles assuming responsibility for watching the road without first proving themselves to be safe. The rationale for applying the regime to level 3 vehicles might be more compelling if we were proposing to adopt the US position on who is in control of a level 3 vehicle, as it could be argued that if the vehicle is to be controlled by something other than a licensed human driver, it needs to have proven itself capable of safely doing so.

NTC considers that level 3 vehicles won’t be commercially deployed until around 2020, so it has some time to help our Commonwealth, State and Territory Governments develop appropriate safety assurance system
for these vehicles. Like the US Department of Transport, the NTC is aiming for a nationally consistent system.

The system could take several forms. We consider a system similar to that used in the rail, aviation and mining sectors would make sense. Such a system would require applicants to prepare safety cases that demonstrate the safe performance of the vehicle, and the relevant Government regulator would develop processes to validate the applicant's claims. The system being developed by the US Department of Transportation could be a suitable model for Australia. Key questions to be resolved include:

- Who should be the applicant for accreditation?
- Should it be the vehicle manufacturer?
- Should it be the owner/operator of the vehicle? How would this work if the majority of vehicles continued to be owned and operated by individuals, rather than fleet owners?
- How will maintenance and vehicle modifications be addressed, especially if performed by entities other than the original vehicle manufacturer?

The NTC will need to move quickly, if the system is to be ready for the commercial deployment of level 3 vehicles. The NTC is not expecting level 3 vehicles to be commercially deployed until around 2020, but we have already seen instances of drivers of level 2 vehicles becoming too confident in their vehicles' capabilities, and taking their eyes off the road, putting themselves and others at risk, despite warnings from the vehicle manufacturer not to. We can expect more incidents like the Tesla fatality, and for the consequences of such risk-taking to extend to persons other than the operator of the vehicle. A new safety assurance system that also addresses this risk would help to reduce unnecessary road trauma.

SHOULD THE CONCEPT OF DRIVER BE EXTENDED TO INCLUDE AN AUTOMATED DRIVING SYSTEM?

A concept that permeates Australian road rules and vehicle regulation is that of the "driver". Our laws make the driver responsible for complying with road rules and for controlling the vehicle.

A full reading of our road rules reveals that the driver can only be as traditionally understood (ie. the human that is controlling the vehicle, from the driver's seat). For example, rules 50 and 55 allow a driver to give a hand signal for changing direction to the right, or for stopping or suddenly slowing, and rule 264 requires the driver to wear a seat belt unless reversing or exempt.

However, as we move to more highly automated vehicles, where the ADS not only performs the driving task but also monitors the driving environment, the concept that a human driver, who may not even be in the vehicle, should remain responsible for controlling the vehicle and ensuring it complies with road rules becomes strained. Indeed, the US Department of Transportation's policy guidance suggests the States may wish to deem an ADS that conducts the driving task and monitors the driving environment to be the "driver" of the vehicle. For vehicles in which the human is primarily responsible for monitoring the driving environment, the US policy recommends that the States consider the human to be the driver for the purposes of traffic laws and enforcement.

Australia's Transport Ministers support of the idea of expanding the definition of driver to include an entity responsible for an ADS. The NTC says this entity could be the manufacturer, the operator, the owner of the AV or another entity. It seems the NTC is not yet convinced that the ADS entity should be the driver of vehicle operating in level 3 mode, given a human must be ready to take back control when requested, and be receptive to any system errors.

The Transport and Infrastructure Council has tasked the NTC to develop legislative reform options to clarify the application of current driver and driving laws to more highly automated vehicles, and to establish legal obligations for ADS entities by May 2018.

The NTC considers that the regulatory issues associated with the concept of the driver can be managed via exemptions until there is large-scale commercial deployment.
ACCESS TO COMPULSORY THIRD-PARTY INSURANCE SCHEMES

There is uncertainty whether current compulsory third-party insurance schemes, including national injury insurance schemes for catastrophic injuries, will apply to automated vehicles if a human driver cannot be identified. Some schemes require there to be "a person driving the vehicle" (or words to similar effect). If the vehicle is being driven by an ADS, this eligibility requirement may not be met.

There is concern that persons injured by automated vehicles could end up worse off than persons involved in human-driven crashes. Although the injured person may be able to bring a product liability or negligence claim against the manufacturer of the automated vehicle, the process is likely to take longer and be more costly that the process available under a compulsory third-party insurance scheme.

That said, we think some claimants will prefer to pursue a product liability or negligence claim against the manufacturer, even though it may take longer and be more costly than claiming under a compulsory third-party insurance scheme. This is because most compulsory third party insurance schemes cap the damages that can be recovered under the scheme, whereas the damages recoverable via a product liability/negligence claim against a manufacturer of a defective vehicle are not so capped. Accordingly, the claimant may receive more compensation via a claim against the manufacturer than it can receive under a compulsory third-party insurance scheme, even if the process takes longer and is more expensive. Action-shopping by injured plaintiffs choosing a cause of action and/or defendant/insurer to maximise the quantum of compensation recoverable could become an unhealthy feature of our road trauma compensation arrangements.

To address the concern of injured persons being worse off because they cannot access a compulsory third-party insurance scheme, the NTC has recommended that State and Territory Governments review these schemes to identify any eligibility barriers to occupants of automated vehicles, or those involved in a crash with an automated vehicle.

It is possible that these reviews could result in more comprehensive root and branch reform to our compensation schemes for victims of road accidents, as industry participants and insurers seek to address other issues such as obligations to prove fault and the capping of damages recoverable by claiming outside the schemes.
LONG-TERM ACTIONS: COMMENCE WITHIN THREE TO FIVE YEARS, TO DEAL WITH LEVEL 4 AND LEVEL 5 VEHICLES THAT DON’T REQUIRE A HUMAN DRIVER

VEHICLES STANDARDS

Newly manufactured or imported second hand vehicles must comply with the Australia Design Rules (ADRs) at the time of manufacture and supply to the Australian market. The ADRs are generally performance-based and cover issues such as occupant protection, structures, lighting, noise, engine exhaust emissions, braking, anti-theft controls and a range of miscellaneous items.

There are ADRs that require features that are only relevant if the vehicle is driven by a human, such as steering columns, control panels, brake pedals and mirrors. These features will be redundant on vehicles that are only ever intended to be driven by the ADS. Unless these ADRs are amended, such vehicles will not be able to operate in Australia without an exemption or without redundant components.

It is also expected that new international vehicle standards will be developed to deal with issues such as the exchange of data between vehicles and between vehicles and road side infrastructure, and the risk of cybersecurity attacks.

Everyone agrees that it is important that Australian standards develop in line with international vehicle standards, and that we minimise the need for "unique Australian requirements" that could isolate Australia from the global automotive market.

The NTC consider that it is unlikely that the current ADRs will become a barrier until industry is ready to start commercially deploying vehicles that never require a human driver. It doesn’t expect this to occur before 2020.

Accordingly, the NTC has recommended that Commonwealth Government continues the current approach of engaging with the United Nations Working Party, and harmonising ADRs with international vehicle standards.

Until such time as international standards are developed for highly and fully automated vehicles, the NTC suggests that industry can continue to rely on Commonwealth, State and Territory exemptions, granted on a case-by-case basis and the yet to be developed national safety assurance system.
MODIFICATION, MAINTENANCE AND REPAIR

In addition to complying with the ADRs when they are introduced to the Australian market, vehicles must comply with State and Territory in-service standards while they are in use. Like the ADRs, these standards relate to vehicle components designed to ensure safety. However, the current standards do not yet deal with features of automated vehicles that could be safety critical, such as cybersecurity risks.

It is one thing for an automated vehicle to be safe when it is first introduced to the Australian market, but what if the vehicle ceases to be safe as a result of subsequent modifications, maintenance or repairs? What about the retrofitting of automated driving systems to second-hand vehicles? And what if the modification, maintenance or repair is performed by someone other than the original manufacturer of the vehicle or ADS?

Unnecessary restrictions on the ability of third parties to modify, maintain and repair automated vehicles would adversely affect competition for the provision of these services, and the prices that consumers end up paying. But allowing third parties to access the computer and other systems in vehicles could make vehicles more vulnerable to cybersecurity attack.

Negligence and other laws, including the Australian Consumer Law, will provide a commercial incentive for those who install, modify, maintain or repair automated driving systems to ensure that an ADS is or remains safe for its intended use. Those same laws will also motivate manufacturers to ensure that the ADS safeguards vehicle occupants and others against foreseeable risks, including cybersecurity risks.

Even so, there have been suggestions that Governments should specifically regulate these activities to address community concerns about the impact these activities could have on the safety of other road users. But additional regulation would impose additional burdens on manufacturers, technology providers and repairers.

Accordingly, the NTC has appropriately suggested that Governments should:

- wait for evidence of a market failure before attempting to adjust the current regulatory framework for these activities; and
- support industry development of best practice guidance in relation to the modification (including software updates), maintenance and repair, and clearly defined rules managing commercial access to data.
OTHER MATTERS

LIABILITY LAWS

Consistent with our views, the NTC considers that current laws are capable of assigning liability for property damage and personal injury arising out of accidents involving automated vehicles. There is no appetite, at this time, from the NTC to move to a strict liability regime under which manufacturers of highly or fully automated vehicles would be deemed to be liable for property damage or personal injury arising out of accidents caused by the vehicle unless the manufacturer can demonstrate negligence by the owner or operator of the vehicle.

According to the NTC, the greatest uncertainty in relation to liability is the issue of who is in control of the vehicle as the level of automation increases. The NTC considers that “if governments and industry can clarify the meaning of driver and control — and therefore responsibility for a crash or incident — for many stakeholders (particularly insurers) the issue then becomes one of access to relevant data.”

We think it could be more complicated than that. It doesn’t necessarily follow that the person or entity that is in control of a vehicle will be legally liable for property damage or personal injury caused by the vehicle.

Achieving clarity on who is in control of the vehicle may assist in absolving the human driver from liability for any injury or property damage caused by an automated vehicle where the automated vehicle is at fault. If a properly maintained level 3 vehicle is being used in level 3 mode as intended by the manufacturer, and it crashes into another vehicle due to a failure of the ADS (without warning), it is hard to see how the human driver or owner of the vehicle could be held liable for any resulting personal injury or property damage. What did the human driver do that was wrong or blameworthy? Or more precisely (in legal terms), what did the human driver do (or not do) that caused it to breach its duty of care to other road users? The human driver wasn’t required to watch the road, and the ADS didn’t ask the human driver to take back control.

But would the manufacturer be liable in this scenario?

The manufacturer will only be liable in negligence to the injured person if the manufacturer failed to take all reasonable steps to safeguard other road users against the foreseeable risks of injury. And it will be up to the injured party to prove this.

Let’s assume the failure was due to a cybersecurity attack against the vehicle. The risk of cybersecurity attacks is certainly foreseeable. But the manufacturer may have done everything that could reasonably have been expected of it to guard against cybersecurity attacks. In these circumstances the manufacturer would not be liable in negligence to the injured party. Unless the injured party can identify the attacker, or bring a claim against the manufacturer on a basis other than negligence — for example, for breach of a contractual or statutory obligation to ensure that the vehicle is of acceptable quality (defect free) and fit for its intended purpose — the injured party may be left with no one to sue to recover its loss.

3 Above n1, p60
Finally, what if the vehicle warned the human driver that the ADS system was failing and requested the
driver must take back control, but the driver was distracted by a non-driving task and failed to resume control
quickly enough to prevent the crash? What if the non-driving task was one the driver was permitted to
perform? What if the warning period was so short that the driver couldn't have avoided the crash even if he
or she hadn't been distracted?

These are all good questions, and our existing legal framework is capable of providing answers to them, so
long as the relevant facts are known and not disputed. The ability of parties to prove the relevant facts will
become vital, and access to relevant data will play an important role in this regard.

ACCESS TO DATA

Vehicle manufacturers are equipping vehicles with sophisticated data recorders. Many vehicles already
record data that is used for the purposes of maintaining the vehicle. Event data recorders can also
accurately record the events leading up to an accident or incident. Access to this data will help to establish
who was in control of a vehicle at a particular time, to determine responsibility for compliance with road rules
and liability for accidents. Access to this data also raises privacy concerns.

Presently, vehicle manufacturers generally control the data that is collected by vehicles. Even though the
data is generated by vehicles owned by others, vehicle manufacturers generally obtain the right to collect
and retain the data under the contracts under which the vehicles are sold or maintained. Accordingly, if an
owner of an automated vehicle that receives a speeding fine wants access to the data to prove that the ADS
was in control of the vehicle at the relevant time, the vehicle owner would need to negotiate this with the
manufacturer.

The NTC believes that enforcement agencies, regulators and courts should, in the future, be able to identify
who has control of a vehicle at a point in time. It also believes that, as automated vehicle and data-sharing
technology matures, Governments should investigate options to manage access to vehicle data.

Insurers are also keen to have access to this data. However, providing mechanisms that allow insurers and
other third parties to remotely access a vehicle's event data could increase the vehicle's vulnerability to
cybersecurity attacks.

In the near- and medium-term, the NTC considers that law enforcement agencies should continue to take
enforcement action for traffic offences against the human driver or the registered operator of the vehicle, and
that it should be the responsibility of the human driver or the registered operator to nominate someone else
as responsible for the offence. By "medium-term" the NTC considers that this arrangement should apply to
level 3 vehicles. It is only for level 4 and level 5 vehicles that the NTC considers the ADS should have legal
responsibility for complying with road rules. As mentioned above, US Department of Transportation has
suggested a different position.

For now, the NTC has been tasked with developing options to manage Government access to automated
vehicle data, with a view to achieving road safety and network efficiency outcomes and efficient enforcement
of traffic laws, balanced with sufficient privacy protections for users of autonomous vehicles.

The NTC considers that it is too soon for Governments to intervene and regulate access to data, and has
suggested that Governments wait until evidence of a market failure emerges. In this regard, the NTC notes
that the Productivity Commission is investigating ways to improve the availability and use of public and
private sector data, and that the Australian Competition and Consumer Commission is conducting a study
into the new car retailing market that will consider third-party access to vehicle data from a competition
perspective. The NTC suggests that Governments reconsider the issue following the completion of these
inquiries.

Finally, the NTC has not, at this stage, expressed a view on the sharing of data between manufacturers.
The policy guidance issued by the US Department of Transportation, on the other hand, strongly encourages
manufacturers to share the data that they collect on accidents and cybersecurity attacks with their
competitors. The US regulator considers that the sharing of this data will accelerate knowledge and
understanding and, in turn, the safety benefits that automated vehicles offer. It says industry members
should not have to experience the cyber vulnerabilities and safety incidents in order to learn from them.
These are laudable objectives, but are they commercially realistic? Driverless technology is being fuelled by
aggressive investment by leading auto-makers around the world. The race to develop a marketable and
suitably safe vehicle is extremely competitive. At the heart of this race is continuous testing and the collation of data. Accordingly, we are not surprised that the NTC has remained silent on this issue.

PROTECTING PRIVACY

The NTC considers that our existing privacy and surveillance laws are sufficient, for the time being, to protect the privacy of any personal information that is collected and retained by manufacturers and technology providers. However, it has noted that certain Government agencies, including law enforcement agencies, are exempt from certain privacy obligations. Accordingly, the NTC has suggested that, in the longer term, Governments should consider developing nationally consistent legislation to regulate Government agency access to automated vehicle data. Such legislation could also address broader data access issues including access to data to support crash analysis, network performance monitoring and infrastructure planning.
The approval of the NTC’s recommendations is a significant step forward for Australia in creating a regulatory framework that will support the timely adoption of increasingly automated vehicles.

Aside from the Americans, we are not aware of any nation that is advanced as Australia in developing a suitable regulatory framework.

The divergence of views between the Australian and American regulators on the question of who is responsible for complying with road rules in the case of the next generation of automated vehicles (level 3) is an interesting development. Manufacturers will be pleased with this development from a liability perspective, and will probably consider the obligation to submit a safety case to the regulator for level 3 vehicles to be a small price to pay. But don’t be surprised if the Australian and American view reconverge at a future point.
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access to automated vehicle data. Such legislation could also address broader data access issues including access to data to support crash analysis, network performance monitoring and infrastructure planning.