



11 March 2016

Att: Automated Vehicle Team  
National Transport Commission  
Level 15  
628 Bourke Street  
MELBOURNE VIC 3000

## **Regulatory barriers to more automated road and rail vehicles – Issues Paper**

IAG welcomes the opportunity to comment on the National Transport Commission's (NTC) Regulatory barriers to more automated road and rail vehicles issues paper ("the issues paper").

IAG supports the development of a national regulatory framework to prepare Australia for increasing levels of automation in motor vehicles and recognises the importance of the role of the NTC in leading the public discussion on this issue.

We recognise that this issues paper serves to provide an initial scoping of the various aspects of regulation that will need to be addressed for autonomous vehicles, and that a more in depth discussion paper will be released in mid 2016. Critical to the success of any policy framework is the extent of consultation – not only in written papers, but also in further discussions and workshops.

We believe that automation in vehicles and associated smart infrastructure both have the potential to significantly impact a wide range of industries, creating both opportunity and disruption. It will be important for Australia's economic future to ensure the regulatory settings are right to harness the potential economic, road safety and environmental benefits of this technology.

IAG recognises the importance of innovation and technology as we move to the digital revolution and as the shared economy continues to develop. Harnessing this technology to help manage risk and operate a 'safe system' will be critical. We need to be able to respond if this system fails as the impact has the potential to be catastrophic. As such, ensuring the risks and complexities of the issues identified are considered in detail will be key to ensuring a safe system overall. This is particularly important as the nature of 'who' or 'what' is in control of a vehicle changes, relative to the level of the

vehicle's automation. It is easy to assume a broad shift in liability from the human driver to the vehicle manufacturer or software developer; however, we do not believe this is necessarily the appropriate course. We would also caution against assuming that the liability will shift entirely to manufacturers. There is a clear role for safety bodies such as ANCAP to continue to inform the vehicle design both in terms of crash safety as well as occupant safety. Additionally, consumers will continue to face liability and costs associated with ownership of, and responsibility for their asset.

We expect there will be downstream impacts to the significant changes we anticipate will occur not only in regulation, but in consumer behaviour and the expectations some people have (for example driving as a rite of passage and forms of identity such as driving licenses).

Overall, IAG supports the NTC's principles of national consistency, flexibility and performance-based regulation. In terms of the regulatory areas identified in the paper, we do not see significant gaps; rather we believe there is a need for greater consideration of specific areas such as:

- the design of statutory personal injury schemes,
- the complexity of liability for consumers, manufacturers and third parties across national borders;
- the nature, use and security of data in a digital and globalised world, and;
- ensuring safe design for vehicle occupants.

IAG looks forward to participating in more in-depth consultation on the regulatory issues specified in the issues paper.

## **INTRODUCTION**

### **Who we are**

IAG is the largest general insurer in Australia and New Zealand, with a growing presence in Asia. We have a purpose to "help make your world a safer place" which means we are working to create a safer, stronger and more confident tomorrow for our customers, partners, communities, shareholders and our people throughout the Asia Pacific.

IAG has built a strong reputation on understanding the unique needs of Australians, and being a steadfast supporter of the community. Today, we are one of the leading insurance providers in Australia, with branches located in most states. We pride ourselves on helping our customers understand insurance and to make uncomplicated choices to protect the things they value.

For generations, our extensive range of general insurance products and services has helped people and communities recover and rebuild from the impact of loss and natural disasters. Our scale,

experience and network allow us to be there for our customers when they need us now, and to see further ahead to anticipate the challenges of tomorrow.

Last year, IAG insured over \$2 trillion worth of assets, collected \$11.4 billion in premiums and paid out almost \$9 billion in claims. Throughout the Asia Pacific, we employ over 15,000 people, providing career opportunities, and a diverse and inclusive workplace.

We have leading customer brands in the IAG network which include: NRMA Insurance, SGIO, SGIC, CGU, WFI and Swann insurance (Australia); NZI, State and AMI (New Zealand); Safety and NZI (Thailand); AAA Assurance (Vietnam); and Parolamas (Indonesia). IAG also has general insurance joint ventures in Malaysia, India and China.

IAG is the only Australian insurer to own and operate a Research Centre to carry out physical research, working with the automotive industry to carry out the physical testing and data analysis to help reduce the cost of comprehensive car insurance. The IAG Research Centre also advises consumers on car safety issues and provides technical information for the smash repair industry.

IAG, through its commercial brand CGU, is also a 50% shareholder of National Transport Insurance (NTI). NTI has over 40 years experience and is a market leader in the heavy vehicle motor insurance industry.

IAG is also a core partner of the Australian Driverless Vehicle Initiative (ADVI) which is a co-operative of partners from government, academia and industry. The key aim of ADVI is to explore the impacts and requirements of this new automation technology in a truly Australian context and make recommendations on ways to safely and successfully bring driverless vehicles to Australian roads.



## IAG's INTEREST IN THE ISSUES PAPER

As one of the largest motor vehicle insurers in the Asia-Pacific, IAG develops, underwrites, sells and manages claims for general insurance products that are sold directly to customers and businesses. IAG insures over 10 million vehicles and sells around 2.4 million Compulsory Third Party (CTP) personal injury insurance policies in NSW and ACT each year. IAG will also commence selling CTP in South Australia from July 2016.

A snapshot of the Australian insurance industry is provided at **Appendix A**.

IAG is aware that there is a rapid uptake of technology and that consumers' expectations are continually changing based on the availability of new technology and services. The role of IAG (and insurers generally) will continue to change as we become more and more a part of the digital and shared economies.

IAG is committed to identifying customers' evolving needs and offering products and coverage to meet those needs. Examples of this include IAG's agreement to provide certainty, and cover our customers who use their private vehicle occasionally for Uber services when there was uncertainty in relation to the liability of Uber. Similarly, we developed a product to assist our customers to manage risks associated with the sharing economy, ensuring their homes and contents are covered by insurance when their home is rented to others through recognised platforms such as AirBnB or Stayz.

A more in depth review of disruption and insurance is included at **Appendix B**.

## SUMMARY OF RESPONSES TO ISSUES RAISED

For ease of reference, a summary of IAG's responses to the questions raised in the issues paper is included below.

#	Issue	Position	Reference
1	<b>What are automated road vehicles?</b>	IAG supports the use of the SAE International Standard to classify automated road vehicle functions	Page 6
2	<b>Role of government</b>	IAG recommends that Government should coordinate a national approach to regulation of automated vehicles, that is flexible enough so as not to stifle innovation but still enable clear determination of liability	Page 8
3	<b>Issues with regulating the driver</b>	IAG agrees with a principle based, nationally consistent approach to road rules and to statutory personal injury insurance schemes. IAG also supports the amendment of "driver" and the definition of "proper control" in the Australian Road Rules.	Page 11
4	<b>Issues with regulating light vehicles</b>	IAG submits that it is unlikely that Australia will be able to apply unique Australian Design Rules requirements for autonomous vehicle functionality	Page 12
5	<b>Issues with regulating heavy vehicles</b>	IAG submits that interstate heavy vehicles are possibly the most appropriate first application for fully automated vehicle operation in Australia.	Page 12
6	<b>Liability</b>	Consumers require and deserve to have certainty in relation to liability and clarity as to as to how any losses can be remedied.	Page 12
7	<b>Privacy and access to data</b>	IAG submits that the review must cover ownership of vehicle data and that ownership of vehicle data must remain with the consumer.	Page 13
8	<b>Supporting on-road trials</b>	IAG supports the development of a Code to Practice, published at a national level, to facilitate on-road trials of more automated vehicles	Page 14
9	<b>Supporting more automated rail</b>	No response	Page 14
10	<b>Other issues</b>	Consideration for an extensive consultation process	Page 15



## CONSIDERATION OF ISSUES RAISED

### What are automated vehicles?

**Question 1 – Do you support the use of the Society of Automotive Engineers (SAE) International Standard to classify automated road vehicle functions? Do you have any issues with using the SAE International Standard?**

IAG supports the use of the SAE International Standard to classify automated road vehicle functions as it provides a simple framework for understanding the issues relating to the different levels of automation, which become increasingly complex as the level of vehicle automation increases and the level of human control decreases. Finding a way to embed a common way of describing the level of vehicle automation is critical for consumers, law makers, insurers, manufacturers and those underwriting statutory personal injury schemes. There will need to be a detailed understanding of how this framework will be applied particularly in a mixed fleet scenario, where there will be multiple levels on the road at the same time. It will be critical to work with a broad set of stakeholders on this to ensure proper consideration of the complex liability issues which will arise.

**Table 1 SAE Levels and Regulatory Considerations**

Level		Steering, acceleration deceleration	Who Monitors the Environment	Who is on back-up if something goes wrong	What driving modes	Simple View Responsibility (liability)	Technology driven role of Driver
0	No automation	Human	Human	Human	n/a	Human	Traditional driving
1	Driver assistance	Human	Human	Human	Some	Human	Traditional driving
2	Partial automation	System	Human	Human	Some	Human	Traditional driving
<i>For levels 3 – 5, the current regulatory framework will likely need to expand (3) or be overhauled (5)</i>							
3	Conditional automation	System	System	Human	Some	Human	Passive Monitoring with active intervention only if something goes wrong
4	High automation	System	System	System	Some	Manufacturer (Some human)	Passive monitoring in case called on to intervene by the system – however, if no human intervention, the car will come to a stop aiming for minimal risk
5	Full automation	System	System	System	All	Manufacturer	Passenger – no driving task

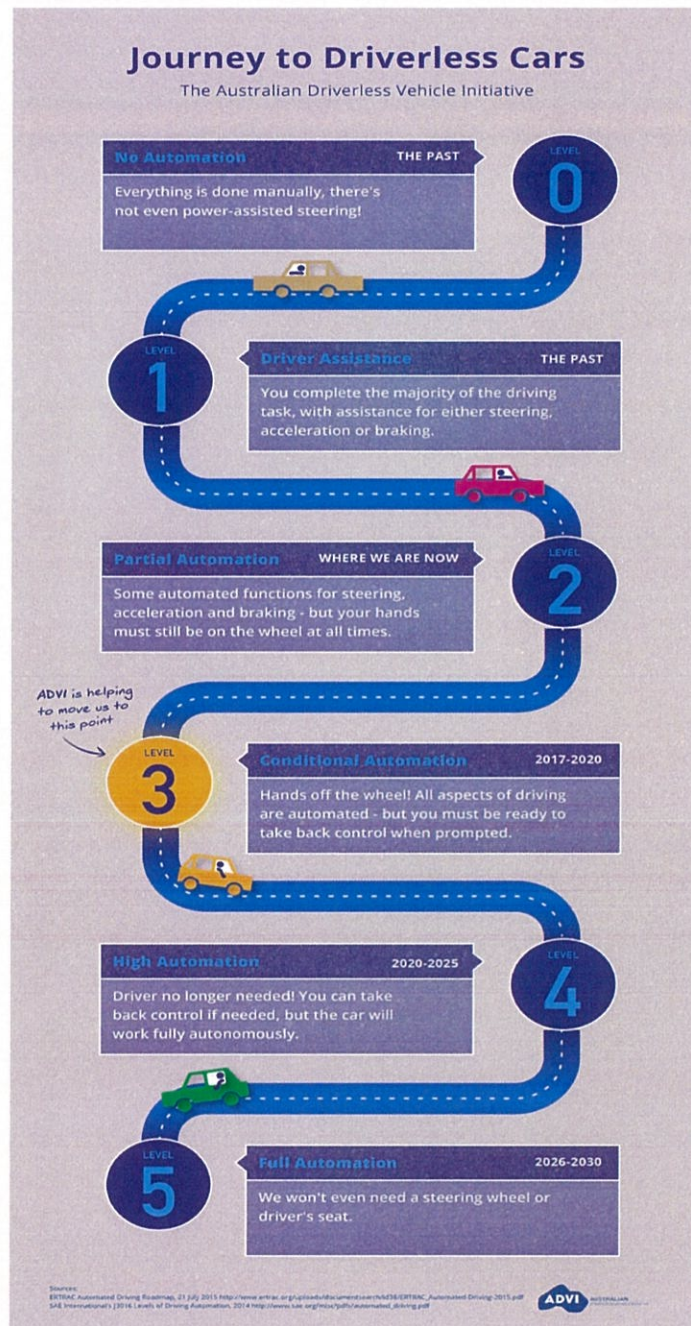
Current

Emerging

IAG also suggests that a simpler, consumer-friendly version of the Standard be developed and utilised to facilitate a greater understanding of automated vehicles across the broader Australian community. The Australian Driverless Vehicle Initiative (ADVI) has developed the roadmap to automation extracted below.



Figure 1: ADVI Automation Levels



## Role of government

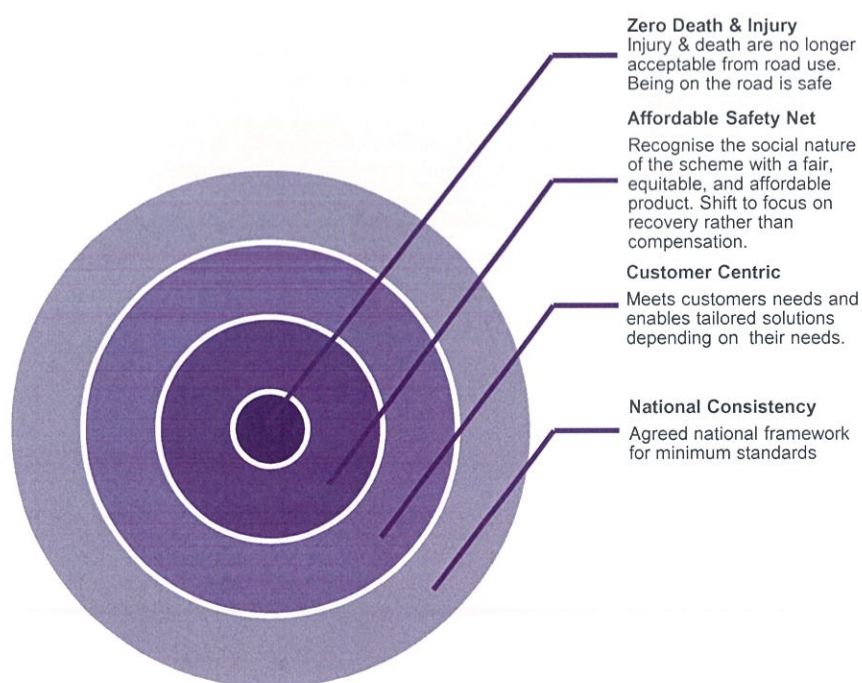
### Question 2 – What do you think the regulatory role of governments should be to support the introduction of automated vehicles in Australia?

IAG notes that the NTC's issue paper is, understandably, written from the perspective of transport authorities. However, regulation of automated vehicles also covers statutory insurance (personal injury) as much as transport legislation and both must be considered with equal priority.

IAG agrees with a principle-based, nationally consistent approach and considers that this is essential for the achievement of a fair and equitable personal injury scheme.

IAG considers that a nationally consistent approach is one of four key principles for best practice motor vehicle personal injury compensation scheme design:

Figure 2: IAG Best Practice Principles for Scheme Design



We believe that there needs to be immediate priority placed on aligning the various state and territory Compulsory Third Party insurance (CTP) schemes as part of the consideration of who has proper control and operation of vehicles.

This is a considerable undertaking, however is necessary given that CTP schemes across Australia are different in their approach to 'fault' and 'no fault' and do not offer the same benefits to those injured in a motor crash.



Aligning CTP schemes across the states through a set of minimum standards can be achieved in a similar way to the agreement across states to implement the National Injury Insurance Scheme (NIIS). This will ensure consumers can access the same level of personal injury cover regardless of which state or territory the incident occurs and enables a clear national liability framework to be understood by manufacturers, insurers and other parties.

We also need to ensure that the regulatory settings make it easy for consumers to access appropriate compensation or treatment without needing to go to the courts. It is worth considering why CTP was introduced in the decades following the introduction of the motor car. The principle purpose of CTP was to protect the motor driver from financial loss due to being sued for damages in court, and to ensure an injured third party was able to access the appropriate medical treatment and compensation in event of injury. Since the early years of these schemes there has been an evolution with some state schemes operating a 'no fault' model which means benefits can be accessed without needing to prove fault, whilst others operate 'fault' based models.

While automated vehicles have the potential to reduce death and injury on our roads, we must ensure the entire system can respond in event of catastrophic failure arising from environmental, product, infrastructure, software, or security interference.

The current schemes are appropriate for SAE level 2, however as levels increase in sophistication, the current framework will be tested (for example level 3) and for levels 4 and 5, need change or overhaul. Similarly, we must design with a mixed fleet in mind, with vehicles having different levels of automation intersecting in real-time on the roads.

As such, IAG makes the following responses to the three possible methods of regulation outlined in the NTC's issues paper:

**1. Accommodate automated road vehicles within the existing exemption framework**

IAG submits that this is not an appropriate approach to regulation of more automated road vehicles. As is set out in the issues paper, the current Australian Road Rules are designed on the assumption of a human driver.

The regulation of level 3 automated vehicles can be accommodated by the current Australian Road Rules. However, amendments would need to be made to accommodate the regulation of level 4 and 5 automated vehicles. Given the time taken to enact changes to legislative frameworks, IAG submits that the framework be amended as soon as possible to prevent any further barriers to the introduction of more automated vehicles as technology develops.

The first trial of autonomous vehicle in Australia, in Adelaide last year was facilitated by the South Australian Government pushing through changes to the state's road rules to allow autonomous vehicles to drive on public roads.

The ACT Government has also recently issued a draft bill to allow autonomous vehicles to be trialled on roads in the ACT.

The urgency shown by the respective governments in proposing and/or making these legislative amendments to facilitate trials, as well as the proposed trial of the Navya driverless, electric shuttle bus in Western Australia later this year demonstrates the need for regulation to catch up to automated technology to facilitate the safe and timely introduction of more automated vehicles.

Amendments to the current framework now would also advance Australia's position in relation to the sharing economy. Uber was able to establish itself in the Australian market, over and above the Australian law, simply because consumers wanted their ridesharing services. This further demonstrates that the Australian regulatory environment is not ready for the level of disruption that is occurring even though consumers are.

## **2. Create a framework for automated road vehicles that sits alongside the current regulatory framework**

IAG agrees that this approach could be considered, however, this approach would not allow for the necessary reform of personal injury schemes across Australia. For this reason, we do not consider that this the preferred approach.

Additionally, if the regulatory frameworks for traditional motor vehicles and more automated road vehicles were parallel, it is not clear how the two frameworks would intersect, particularly in circumstances where the road may be shared by vehicles across three or four levels of automation.

## **3. Amend current laws and remove barriers within the current regulatory framework**

This approach, an overhaul of the current 'Safe System' is favoured by IAG. It is suggested that the entire legislative framework be amended to embed a nationally consistent approach across key principles and enable non-prescriptive parallel legislation.

This would allow state ministers to agree to a consistent approach through minimum benchmarks (or national standards). The National Injury Insurance Scheme (NIIS) is an example of this approach. Following the introduction of the NIIS in 2013, the ACT and South Australia have introduced no-fault compensation schemes for people catastrophically injured in motor vehicle accidents. Western Australia has also announced the introduction of such a scheme and Queensland is currently considering doing the same.



### Issues with regulating the driver

**Question 3 – Have we identified the key issues relating to the Australian Road Rules and state and territory road safety and traffic laws? Are there other issues that should be assessed as part of the NTC review?**

IAG agrees with a principle based, nationally consistent approach to Road Rules and considers that this is essential for the successful and safe introduction of more automated road vehicles within Australia.

IAG considers that “proper control” should be defined to include “monitoring” and “intervention” to allow for the use and operation of partially automated vehicles which do not require the driver to physically control the vehicle at all times.

IAG also supports the proposition that the term ‘driver’ in the Australian Road Rules should be defined to include automated vehicle systems to allow for the safe introduction of level 3, 4 and 5 automated vehicles. It is noted that the United States’ National Highway Traffic Administration (NHTSA) has confirmed it will consider the Google Artificial Intelligence (AI) system a driver:

*“If no human occupant of the vehicle can actually drive the vehicle, it is more reasonable to identify the ‘driver’ as whatever (as opposed to whomever) is doing the driving.”*

However, while this helps to address some concerns about assigning liability, it is difficult to imagine how an AI driver would pass appropriate licence and training tests. These issues must be worked through in detail, and we may need to ensure the regulatory approach is flexible enough to respond to emerging issues, yet firm enough to enable the management of the whole system.

When defining the driver of an automated vehicle, consideration should also be given to the roles of the owner, the registered operator and the person operating the vehicle and under what circumstances these individuals may be considered the driver of vehicle.

As well as clarity of the definition of driver, there must also be technology available to identify responsibility (or the driver) for the vehicle at any one time. This clarity of driver and responsibility is essential to avoid costly and lengthy legal disputes between manufacturers and consumers or between manufacturers and insurers.

A further issue for consideration is the lack of consistency in road markings and in some cases road rules. For example, in NSW roundabout regulations vary depending on the location and shape of the roundabout and road markings can allow a right turn from the left lane.

#### **Issues with regulating light vehicles**

**Question 4 – Have we identified the key issues relating to the Australian Design Rules and other vehicle standards? Are there other issues that should be assessed as part of the NTC review?**

A question has been raised on the ability for Australia to apply unique Australian Design Rules (ADR) requirements for autonomous vehicle functionality. We believe this will be challenging as the Rules have been aligning with Economic Commission for Europe (ECE) regulations for some time. In this regard it is important to consider the global nature of the transformation of vehicles and automation and how Australia can ensure the safe operation of vehicles.

A significant concern is the need for necessary standardisation and consistency of road markings, roadside fixtures and furniture (eg bus shelters, guiderails, road signs and traffic lights) to ensure consistent and reliable recognition by automated vehicle systems.

#### **Issues with regulating heavy vehicles**

**Question 5 – Have we identified the key issues relating to heavy vehicles? Are there other issues that should be assessed as part of the NTC review?**

IAG submits that interstate heavy vehicles are possibly the most appropriate first application for fully automated vehicle operation in Australia. For example, operation from an outer suburb depot in Melbourne to an outer suburb depot in Sydney could be possible with extensions of the systems available in several European and US vehicles.

However, significant emphasis must be placed on early monitoring and rules around transition from semi automated or fully automated to human-guided vehicle operation until there is certainty that the systems can operate safely.

#### **Liability**

**Question 6 – Have we identified the key issues relating to liability of drivers, manufacturers, service providers and road managers? Are there other issues that should be assessed as part of the NTC review?**

One of the biggest impacts of autonomous vehicles will be the likely shift from personal liability to manufacturer's liability (according to the World Economic Forum). However, this is a broad view and there are complexities which mean other parties will share liability, and there will still be issues for consumers to grapple with.



Consumers require and deserve to have certainty in relation to the safe operation of a vehicle, and in event of a crash, certainty on liability and remedy for any losses incurred. Where there is misadventure, consumers must have a clear path to compensation without the need for legal proceedings. Similarly, vehicle owners should expect to have the peace of mind that insurance offers – for their own negligence and for any fault of their vehicle.

As is noted in the issues paper, liability concerns may mean that automated vehicles need to log actions in significant detail to enable the tracing of causation and to make clear whether the driver or the system was in control at a particular time (inclusion of “black box” technology).

Until full automation (level 5) is achieved and while control of the vehicle is shared between a human driver and the automated driving system, there will continue to be a need for both personal insurance (CTP and property damage) and manufacturers’ liability insurance. In these circumstances, “black box” technology is essential determine fault and liability.

Additionally, liability for loss, injury or damage may also be borne by parties responsible for the infrastructure which supports automated vehicles, for example, telecommunication providers and road authorities.

Further to that, consideration must also be given to who is responsible for any incidences of cyber attack or hacking of automated driving systems and how these events are to be remedied and consumers be compensated in the event of any resulting loss, injury or damage. This is particularly important in a global and digitised world.

Finally, consideration must also be given to liability for vehicles which may be fitted with automated driving features after their manufacture (“retro-fitted”). IAG’s customers have already embraced this technology, particularly for agricultural vehicles.

#### **Privacy and access to data**

**Question 7 – Have we identified the key issues relating to privacy and access to data by government agencies? Are there other issues that should be assessed as part of the NTC review?**

It is noted that the issues paper considers data and privacy; however, it does not deal with the question of data ownership, the secure access of vehicle data and operation via the internet and supporting infrastructure. The development of automated vehicle technology means that cloud-based computing and telecommunication system operation is as much a part of infrastructure as the bitumen and white lane markings which form a road.

IAG submits that the NTC review will need to address the complex issue of vehicle and consumer data management, ownership and privacy in a global context. This issue will not only affect consumers' privacy, but also the business models of manufacturers, repairers, mechanics and insurers as they utilise vehicle and driver data to provide services to consumers such as in-vehicle telematics, usage-based insurance, vehicle servicing and repair, roadside assistance and other services that may emerge over time.

It is also submitted that any regulation of data ownership and access must be nationally consistent to prevent any complication and difficulty arising data access when a vehicle travels interstate.

#### **Supporting on-road trials**

**Question 8 – Have we identified the key issues relating to the on-road trials of automated road vehicles? Are there other issues that should be assessed as part of the NTC review?**

IAG supports Australia taking an active lead in developing on-road trials of automated vehicles as there are many countries now seeking to take advantage of the economic, social and environmental benefits this technology promises. There is an international race to harness the economic value of these technologies and Australia has the opportunity to be a leader in the field of testing and innovation given our unique geographic distances, ability to generate nationally consistent regulations and different climatic conditions to the northern hemisphere where much of this activity is underway.

Trials and demonstrations are a means to test and further develop technology and to promote awareness and understanding of automated vehicles in the community; and, they should all be undertaken with a keen focus on appropriate controls to ensure the safety of all involved and the general public.

IAG supports the development of a national Code to Practice endorsed by all states and territories. This Code could be similar to those developed by NHTSA in the United States and the Department for Transport in the United Kingdom with safety as a primary focus.

This Code of Practice should be used in conjunction with the existing powers of the Commonwealth and the states and territories to exempt automated vehicles from legislative restrictions for the purposes of on-road trials.

#### **More automated rail**

**Question 9 – Have we identified the key issues relating to more automated rail operations? Are there other issues that should be assessed as part of the NTC review?**

IAG makes no response to this question.



**Other issues**

**Question 10 – Are there additional issues or risks that should be considered in the NTC’s assessment of regulatory barriers to more automated vehicles?**

The NTC paper has broadly considered the range of risks, however as outlined earlier, there are considerable implications for personal injury schemes, liability and other areas which may need to be worked through in detail with stakeholders through workshops and further discussion papers to ensure emerging issues and impacts are able to be addressed. Given the extent of impact that increasing vehicle automation is likely to have not only to legislation but to industries and consumers, we must be forward thinking, and consult extensively.

Should you wish to discuss this submission or make further enquiries, please contact the following:

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- **Anna Taperell**, Manager, Public Policy & Industry Affairs (anna.taperell@iag.com.au or 02 9292 9582)
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IAG would be pleased to discuss aspects of this submission in greater detail and look forward to participating in the next phase of discussion on the national framework for automated vehicles.

Yours sincerely



**Tracy Green**  
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## APPENDIX A - SNAPSHOT OF THE AUSTRALIAN INSURANCE INDUSTRY

The Australian economy has prospered due to the unprecedented natural resources boom. The Reserve Bank of Australia reports that by 2013 it raised per capita household disposable income by 13%, raised real wages by 6% and had lowered the unemployment rate by 1.25%<sup>1</sup>.

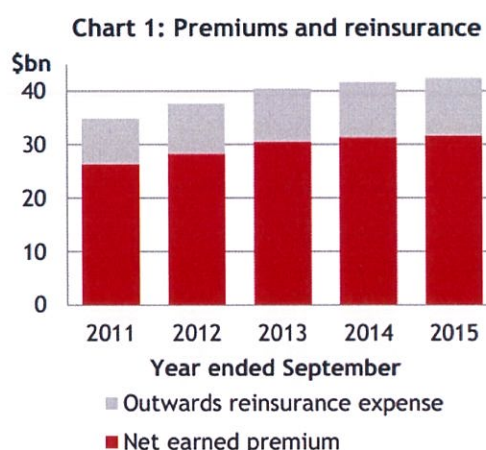
Similarly, the general insurance industry has maintained a strong financial position, experiencing years of consecutive growth of net earned premium which has been in large part driven by the profitability of personal lines. Policy holders have more choice than ever before with which to insure their personal assets and/or businesses. As such, general insurance continues to be a well capitalised, stable contributor to the Australian economy.

As at 30 September 2015, there were 112 insurers licensed to conduct general insurance business. Net earned premium for the industry in the year ended 30 September 2015 was \$31.6 billion, up 1.1% from the previous year (\$31.3 billion). Of this, direct insurers wrote \$30.2 billion (95.4%). The remaining \$1.5 billion (4.6%) was written by reinsurers<sup>2</sup>.

The mining investment boom, along with a low public debt level and a strong prudential sector has successfully protected our economy from otherwise challenging macro economic conditions. Even amidst the global financial crisis, weak investment returns reflecting the low interest rate environment, the appreciating Australian dollar and a number of severe weather events, the general insurance industry has maintained strong performance.

However, the insurance industry is operating on the brink of a technology-led change. Disruptive change has always been a fact of life for many industries, yet unprecedented advances in technology are accelerating this change. Traditional businesses, such as insurers need to adapt to the rapidly changing landscape despite the uneven playing field in government regulation, compliance and licensing.

In the general insurance sector, we are seeing sustained competition – supported in large part by a digital approach by competitors – which is has had an impact on gross premium. The premium growth rate slowed throughout March 2015 and increased only slightly in the June quarter<sup>3</sup>.



<sup>1</sup> The Effect of the Mining Boom on the Australian Economy, Research Discussion Paper, Reserve Bank of Australia, 2014

<sup>2</sup> APRA Statistics, Quarterly General Insurance Performance Statistics, September 2015 (issued 19 November 2015)

<sup>3</sup> KPMG General Insurance Industry Review 2015, Responding to a Challenging Environment, October 2015



## **APPENDIX B – DISRUPTION AND INSURANCE**

IAG has seen first-hand the transformation of the insurance sector as new digital technologies emerge and customers become more mobile. The three major transitions we have seen are in product design, underwriting and distribution. These three areas are of relevance when considering the transition to more automated vehicles.

### **Product design**

New and emerging technologies have the potential to transform our existing products and make conventional products obsolete.

IAG recognises that more automated vehicles have the potential to improve the safety of our roads and provide mobility solutions for a broad cross-section of people. This could potentially leave some motor insurance products out-dated or irrelevant over the next couple of decades.

We have partnered with the Australian Driverless Vehicle Initiative (ADVI) to help spearhead the development and testing of new innovations that will help build safer and stronger communities. IAG will be supporting the three-year ADVI program through the sharing of our extensive road safety knowledge and expertise, and providing access to the IAG Research Centre.

### **Underwriting**

Big data and smart analytics means that our underwriting models will evolve and become more predictive than ever before.

- We see huge potential in the Internet of Things – where a network of physical objects is embedded with technology which enables objects to collect and exchange data.
- For insurers, this creates the opportunity to combine customer data with other data sources such as wearable devices or black boxes, to price risks more accurately than previously possible.
- The Internet of Things is also fuelling telematics insurance, where a device is fitted into your car to allow your insurer monitor and reward good driving behaviour.
- This enables insurance companies to better monitor risk and reduce premiums for safe drivers, significantly changing the underwriting process in a competitive motor market.
- Clearly there are huge opportunities in this space as vehicles become more automatic – our role as an insurer is twofold: to enable a technology that has the potential for significant positive impact on vehicle and road safety, while continuing to protect our customers and the vehicles that individuals and/or businesses own.

## Distribution

The digital revolution has created a new, mobile only generation who rely on this technology to consume products and services, to help generate income, with the concept of “the sharing economy” now deeply embedded in purchasing decisions.

- As an insurer, our first priority is to protect our customers and meet the changing needs of Australians in the digital age.
- With more than 45,000 Australians earning income from the sharing economy over the last year, we are evolving our products and services to provide better protection for customers who choose to participate in this economy.
- We are the first insurer in Australia to offer insurance cover for part-time Uber drivers through our NRMA brand, better protecting both drivers and passengers participating in the ride sharing economy.
- Shared vehicles
- The future of autonomous vehicles goes beyond individual vehicle owners to shared vehicles, and to fleets of autonomous vehicles that include cars, trucks, and public transportation. Shared vehicles, for example, could be available for rental on an as-needed basis. Insurance might be included as part of the price of rental, thereby easing consumers into the idea of the autonomous functionality in a more economically feasible manner than purchasing a fully autonomous vehicle.

Overall, we see digital disruption as a huge opportunity to evolve our products and services to better serve our customers before, during and after an accident or disaster. Within IAG, Digital Labs has been set up to drive digital and design innovation while identifying and harnessing disruptive technology. Innovation is a core part of our culture and we are already an industry leader in leveraging emerging digital technologies and offering enhanced protection for the sharing economy.