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# FCAI Submission to NTC Issues Paper: Regulatory barriers to more automated road and rail vehicles

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## EXECUTIVE SUMMARY

The Federal Chamber of Automotive Industries (FCAI) is the peak industry organisation representing the manufacturers and importers of light passenger vehicles, light commercial vehicles and motorcycles in Australia.

The FCAI member companies recognise the potential for automated and connected vehicles to provide significant safety and environmental benefits to Australia through reductions in crashes and congestion. New light vehicles (passenger cars, SUVs and LCVs) being introduced into Australia are being fitted with increasing levels of automation, and models introduced from late 2017 or early 2018 are expected to be equipped for connectivity (i.e. V2V, V2I communications).

The requirements that need to be met for vehicles to operate in an Australian automated and connected vehicle environment are:

- A standardised interface harmonised with the European standards as Australian vehicle safety and environmental regulatory standards are harmonised with the European standards.
- A regulatory model that ensures vehicles fitted with C-ITS being delivered to Australia meet the European standards and will operate within the specified spectrum.
- The 5.9 GHz spectrum to be allocated.

Before the safety and environmental benefits of automated and connected vehicles can be realised a number of matters need to be considered - one of the most important of which is the regulatory environment.

The FCAI has addressed the various questions from the Issues Paper with the overall strategy of maintaining or creating harmonization with international standards rather than introduce (or continue with) unique Australian vehicle related standards or regulations. The FCAI recognises that some of the non-vehicle related regulations, standards, guidelines and codes (e.g. privacy principles and some road rules) will need to be different due to the prevailing operating and legal environment within Australia.

The FCAI welcomes the NTC's review and looks forward to providing further input into the draft policy paper when it is released.

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## 1.0 INTRODUCTION

The Federal Chamber of Automotive Industries (FCAI) is the peak industry organisation representing the vehicle manufacturers and importers of passenger vehicles, light commercial vehicles and motorcycles in Australia.

The FCAI member companies recognise the potential for automated and connected vehicles to provide significant safety and environmental benefits to Australia through reductions in crashes and congestion. New light vehicles (passenger cars, SUVs and LCVs) being introduced into Australia are being fitted with increasing levels of automation, and models introduced from late 2017 or early 2018 are expected to be equipped for connectivity (i.e. V2V, V2I communications).

The automotive industry is a globally integrated industry with many product lines sharing platforms and major components to achieve productivity gains from economies of scale. Even with more than one million new vehicles sold annually, Australia comprises less than 1.5% of global vehicle production. Australia has a very competitive automotive market and vehicles sold in Australia are designed, developed and built in all parts of the world including Japan, Korea, Thailand, India, Europe and the US (see Appendix A). All vehicles are designed and developed in accordance with the OEM's global standards. As such, any additional requirements imposed on vehicles being imported into Australia will mean either that those vehicles simply will not be available in Australia or they will cost more as a result.

The relatively small size of the Australian new vehicle market means that any new unique Australian vehicle regulations cannot be justified. Implementing any unique Australian vehicle regulations may not have the desired effect of 'leading' the world. It may in fact be counter-productive as the increased cost of developing unique model specifications for such a relatively small market will limit Australia's ability to access new state of the art technology.

Many billions of dollars are being spent on developing automated and connected vehicles in other parts of the world where potential markets are significantly greater than in Australia. For Australia to receive the benefits from the increasing levels of automation and connectivity, any related regulations need to be consistent with European regulations and standards so as not to impede the introduction and correct operation of the new technology. Consequently, any of the vehicle related regulatory or policy response (e.g. introduction of standards, guidelines or codes) must be harmonized with the corresponding European regulations, standards, guidelines or codes. The FCAI recognises that some of the non-vehicle related regulations, standards, guidelines and codes (e.g. privacy principles and some road rules) will need to be different due to the prevailing operating and legal environment within Australia.

In addition to a consistent approach between Australia and other countries there also has to be consistency within Australia, i.e. between the States, Territories and Federal Governments. As outlined in the Issues Paper, the State and Territory Governments have

responsibility for regulating road rules, while the Federal Government has responsibility for regulating vehicle standards. Both are relevant for automated and connected vehicles. The road rules in each of the states and territories (notwithstanding that they all are based on a common set of model road laws) have some subtle differences. It is important that the inconsistencies between states and territories are eliminated. If they are not, overseas-based manufacturers are likely to take the "lowest common denominator" and treat this as the Australian default standard.

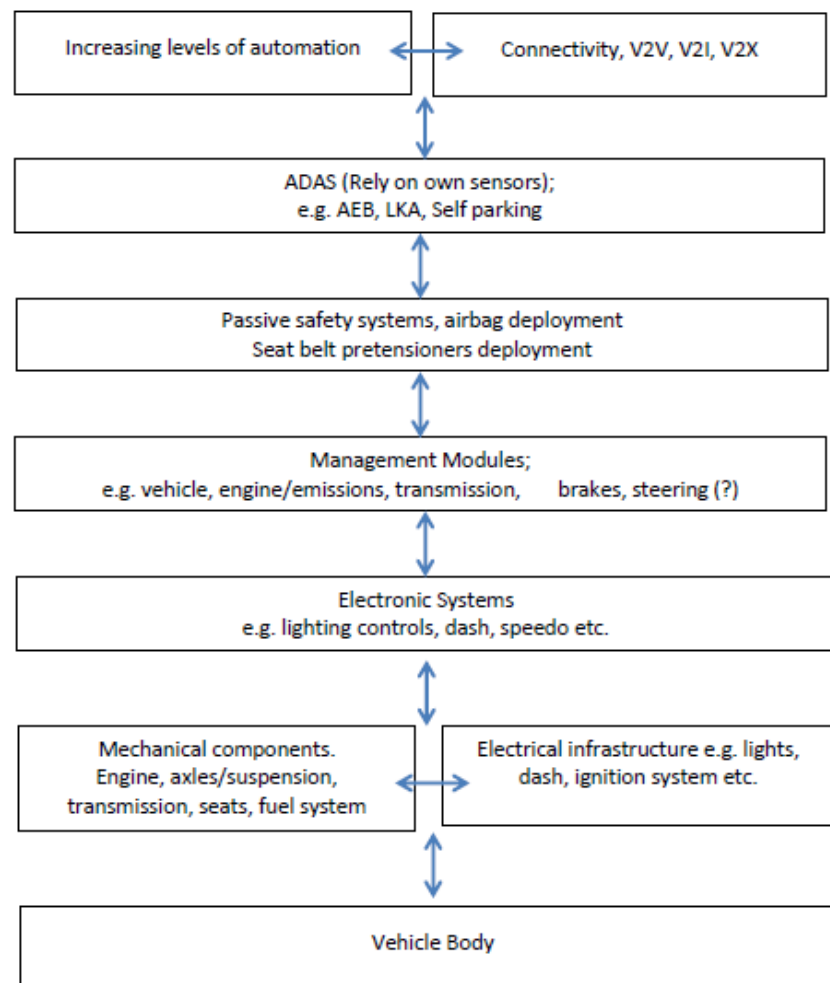
Vehicle manufacturers are researching, developing and progressively introducing new technologies to make vehicles more automated and connected. Before the safety and environmental benefits of automated and connected vehicles can be realised a number of matters need to be considered - one of the most important of which is the regulatory environment. The FCAI welcomes the NTC's review and looks forward to providing further input into the draft policy paper when it is released.

## 2.0 AUTOMATED AND CONNECTED VEHICLES

### 2.1 Introduction

Modern vehicles are very complex with a range of sophisticated mechanical and electrical components and electronic modules that are integrated to deliver the performance, safety and emissions expected by customers and government. Figure 2.1 (below) represents how the various systems are integrated and need to be inter-operable to operate correctly. Adopting standards from different markets, would require additional resources/development to achieve the required system inter-operability.

**Figure 2.1 Block Diagram showing Inter-operability of Vehicle Systems**



Improvements in safety are being delivered by the next generation of collision avoidance systems including Autonomous Emergency Braking (AEB), Lane Departure Warning and Lane Keep Assist. Cooperative Intelligent Transport Systems (C-ITS), including Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) communications, are designed to mitigate the consequences of driver error. V2V systems offer the greatest opportunity for reduction of side impact crashes, particularly at intersections and need to be encouraged by government support through appropriate regulatory measures and raising consumer awareness and acceptance of these systems and their benefits.

The importance of harmonising with the relevant overseas market standards was recognised at the Austroads workshop held on 28 January 2016 to consider what standards to adopt and how to ensure compliance with those standards. The workshop participants (comprising federal and state governments, both private and government infrastructure owners as well as industry) all agreed that Australia should adopt the European standards.

## 2.2 *Increasing levels of automation in vehicles*

Competition is one of the main drivers of development and introduction of new technology. In response to consumer demand, FCAI member brands introduce new safety systems and technology with new models in a similar timeframe to other advanced markets. Each brand develops strategies for the introduction of new safety technologies/systems to meet consumer expectations (and/or government regulations) in their main markets.

### 2.2.1 *Autonomous Emergency Braking (AEB)*

Autonomous Emergency Braking (AEB) are systems which can alert the driver to an imminent crash and can help to use the maximum braking capacity of the car, and which can also apply the brakes independently of the driver if the situation becomes critical. The most basic form of AEB (and the most common) can only detect other vehicles at low speeds (typically in a speed range from about 5 km/h to 30-50 km/h). The more sophisticated AEB systems detect other vehicles over a much wider speed range than the basic AEB systems (i.e. can detect other vehicles at much higher speeds than the basic AEB systems).

Research conducted by Euro NCAP and ANCAP (funded by the Australian government) showed a “38% reduction in real-world, rear-end crashes for vehicles fitted with low speed AEB.”<sup>1</sup>

Again the industry has taken the lead, in the absence of any regulation, and begun fitting AEB as new models are introduced. Data from IHS Polk shows that AEB fitting rates in Australia in 2015 (Figure 2.2);<sup>2</sup>

- Passenger cars – 23% (up from 17% in 2014 and 5% in 2013)
- SUVs – 21% (up from 10% in 2014 and 5% in 2013).

Australia’s AEB fitting rate is consistent with many European countries as shown in the Euro NCAP 2013 AEB Fitment Survey<sup>3</sup> and also Thatcham Research’s January 2016 estimate that around 17% of new vehicles available for sale in the UK have AEB as standard.<sup>4</sup>

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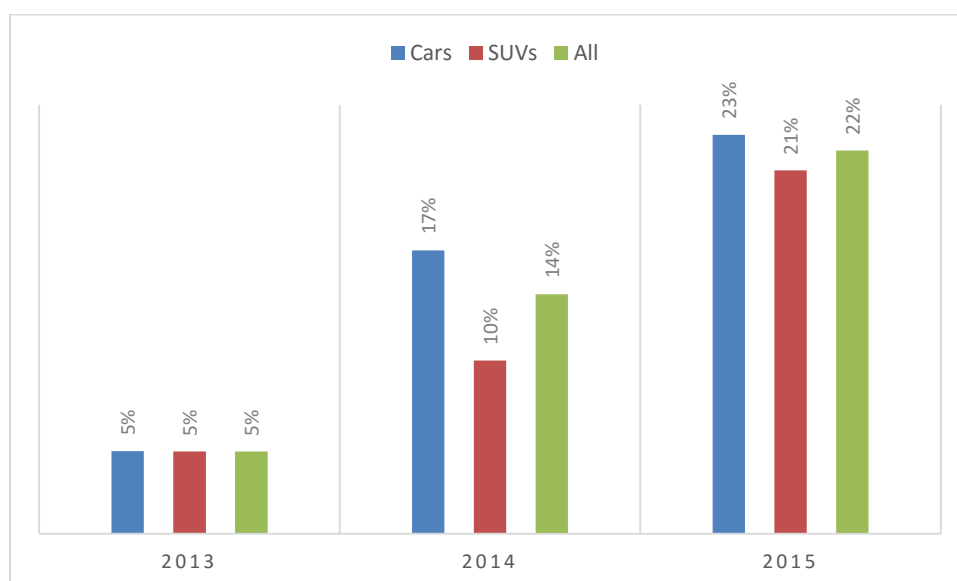
<sup>1</sup> Fildes, B. et al, 2015, Effectiveness of low speed autonomous emergency braking in real-world rear-end crashes, *Accident Analysis and Prevention*, vol. 81 (2015) pp. 24-29

<sup>2</sup> Data supplied by IHS Polk. Same data is supplied to Transport for NSW and Vicroads

<sup>3</sup> EuroNCAP, EuroNCAP’s AEB Fitment Survey 2012, [www.euroncap.com](http://www.euroncap.com), [accessed 11 March 2016]

<sup>4</sup> Thatcham Research, Autonomous Emergency Braking (AEB), January 2016 Q&A. [www.thatcham.org](http://www.thatcham.org) [accessed 11 March 2016]

**Figure 2.2 AEB Fitting Rates for New Car and SUV Sales**



### 2.2.2 Emerging Automated Systems

Autonomous emergency braking (AEB) is just one of a range of emerging automated systems, commonly referred to as advanced driver assistance systems (ADAS) that are entering the market with the arrival of new models. ADAS assist the driver with warnings or automatic braking to help avoid or mitigate accidents.<sup>5</sup>

ADAS systems that are currently being delivered to the market in Australia include:

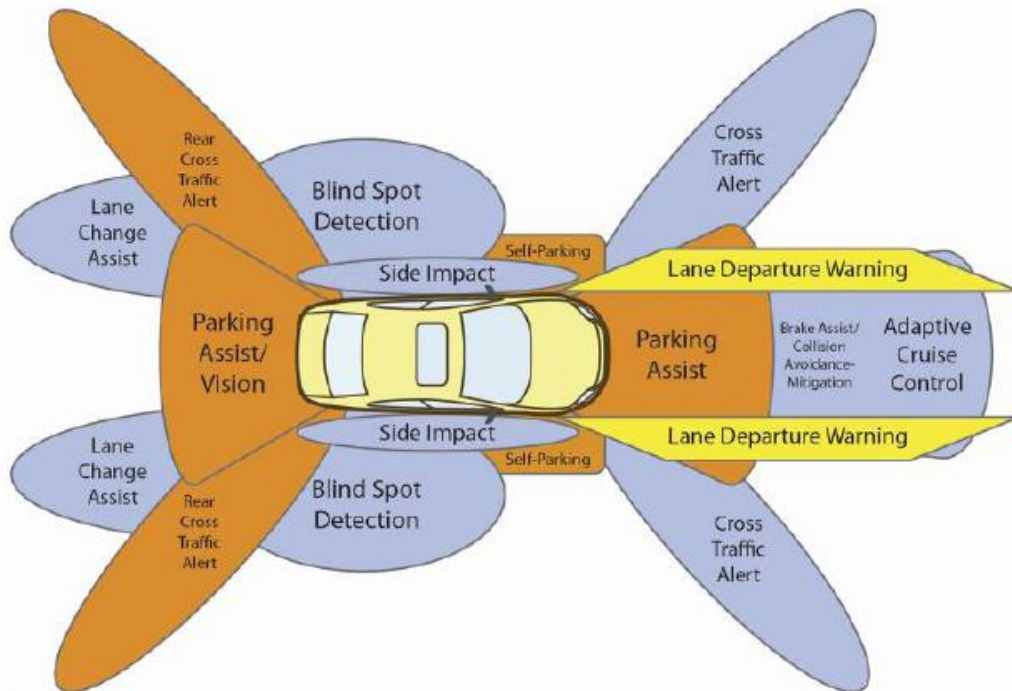
- blind spot monitoring,
- adaptive cruise control,
- safe following distance warning,
- lane keep assist,
- lane departure warning,
- self-parking (included in Issues Paper),
- adaptive headlights,
- fatigue warning, and
- traffic-jam assist.

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<sup>5</sup> Insurance Institute for Highway Safety, Crash avoidance technologies, [www.iihs.org](http://www.iihs.org) [accessed 6 October 2015]



Figure 2.3 ADAS Systems<sup>6</sup>



### 2.3 Connected Vehicles or Cooperative – Intelligent Transport Systems (C-ITS)

It has been widely acknowledged that connected vehicles, or cooperative intelligent transport systems, have significant potential to deliver safety benefits. Cooperative Intelligent Transport Systems (C-ITS) enables communication and real-time information sharing between vehicles (V2V) and roadside infrastructure (V2I) as well as to pedestrian and cyclists via wireless consumer devices, in order to improve safety, productivity, efficiency and environmental outcomes.

The C-ITS environment offers a fundamental and long term economically and environmentally sustainable solution to improve road safety and the transport of people and freight. Implementation of C-ITS will provide benefits in terms of:

- Reduced traffic accidents with reductions in injuries and fatalities
- Reduced traffic congestion
- Reduction in energy consumption (i.e. less CO<sub>2</sub> and pollutant emissions) in road transport
- Reduction in transport costs with economic benefits
- Improved inter-modal transport with reduction in transport costs and traveler benefits.

In their Advance Notice of Proposed Rule Making<sup>7</sup> (ANPRM), the United States government quoted a study that found V2V technology had the potential to reduce up to half of all

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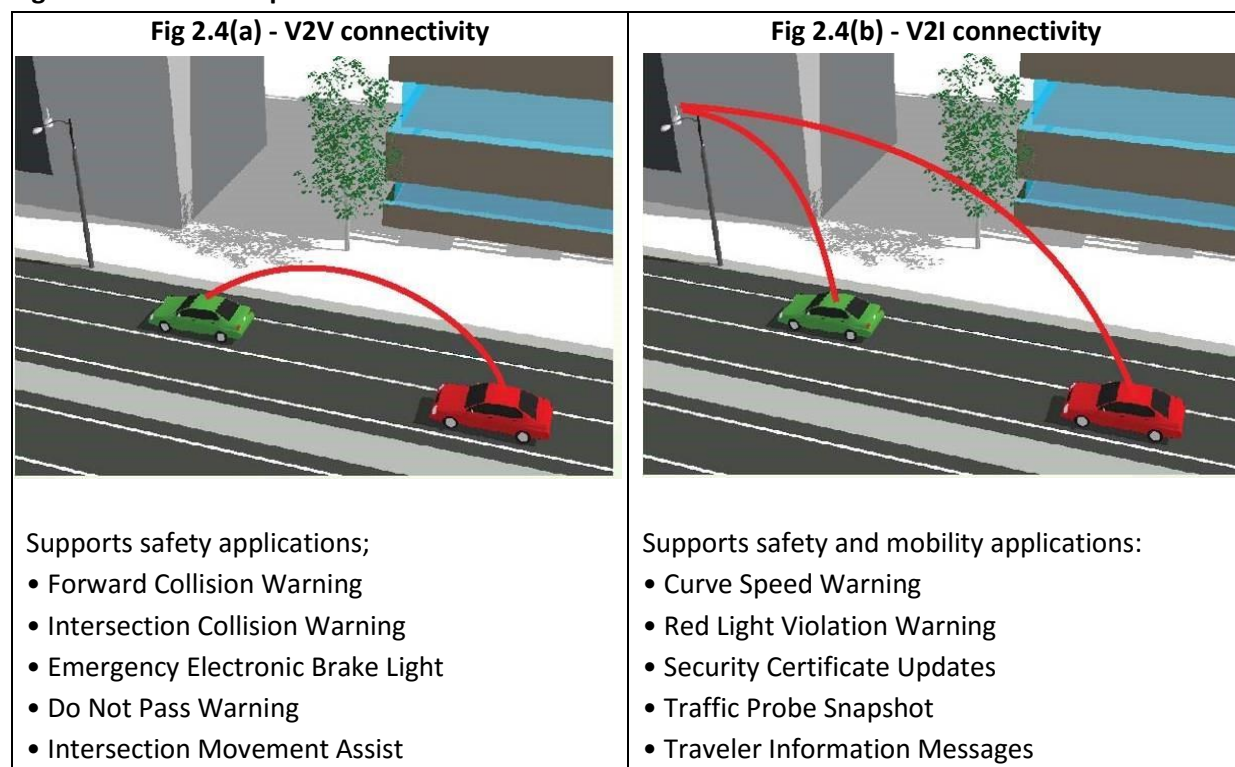
<sup>6</sup> Lund, A.K., 2015, Insurance Institute for Highway Safety and Highway Loss Data Institute, "Vehicle Safety: Where It's Been and Where It's Heading" Washington, D.C. 15 January 2015. [www.iihs.org](http://www.iihs.org) [accessed 5 August 2015]

<sup>7</sup> US NHTSA 43-14, 18 August 2014, Notice and NHTSA report outline promise of cutting-edge technology, [www.nhtsa.gov](http://www.nhtsa.gov) [accessed 5 Sep 2014]

intersection crashes. The ANPRM identifies two particular crash warning applications (V2V systems), Intersection Movement Assist and Left Turn Assist, that is likely to address intersection crashes.

Over the next few years, FCAI member brands will introduce vehicles with car-to-car (V2V) and car-to-infrastructure (V2I) communications technology. For example, GM will introduce C-ITS on their 2017 model Cadillac CTS using software developed by Cohda Wireless in Australia.<sup>8</sup>

**Figure 2.4 Examples of C-ITS**



To facilitate the introduction of vehicles with C-ITS, and to inform governments on the standards for road infrastructure, the FCAI has advised various levels of government of its view on spectrum allocation, the standards required and has offered to work with government to develop an appropriate regulatory model.

The FCAI has requested that ACMA allocate the 5.9 GHz spectrum with the European channel allocations by 1 January 2017.<sup>9</sup>

All vehicle brands are working to develop this technology at a global level and for Australia to receive the safety (plus environmental and traffic management) benefits, its introduction must be managed at a national level. Unfortunately, not all markets are using the same frequency bands for C-ITS. For example the next generation V2V and V2I safety systems

<sup>8</sup> Cohda Wireless press release, 17 September 2014, Cohda applauds news of GM's first 'connected car', [www.cohdawireless.com.au](http://www.cohdawireless.com.au), [accessed 7 July 2015]

<sup>9</sup> FCAI wrote to ACAM on 22 June 2015

from Japan will not work in Australia, and moreover, the radio transmitters in these vehicles may cause harmful interference to other licensed spectrum users.

The Japanese DSRC systems operate in the 5.8GHz band. This is used in Japan for toll collection as well as vehicle to infrastructure communication for traffic congestion, parking, etc. These systems may interfere with Australia's freeway toll collection systems if not turned off or otherwise addressed.

Japanese C-ITS systems operating in the 700 MHz band will most likely interfere with new services in the "Digital Dividend" band. The Japanese V2V band (715 – 725 MHz) occupies part of the band that Telstra purchased from the Australian Communications and Media Authority (ACMA) for \$1.3 billion for next generation mobile telecommunication applications.

While the United States and Europe are both using the 5.9 GHz band there are different channel allocations within this band. Therefore vehicles specified and manufactured for these two markets would not be able to communicate with each other, negating the safety benefits of V2V technology.

As a vehicle's electronic safety sensors and management systems are integrated to maximise the safety benefit, modifying an existing vehicle to operate within another market's C-ITS network is not possible and the full safety and traffic management benefits would not be realised.

#### *2.4 Conclusion*

The requirements that need to be met for vehicles to operate in an Australian automated and connected environment and the Australian community to derive the optimal benefits are:

- A standardised interface harmonised with the European standards as Australian vehicle safety and environmental regulatory standards are harmonised with the European standards.
- A regulatory model that ensures vehicles fitted with C-ITS being delivered to Australia meet the European standards and will operate within the specified spectrum.
- The 5.9 GHz spectrum to be allocated.

## 3.0 RESPONSES TO ISSUES PAPER QUESTIONS

### 3.1 NTC Topic: What are automated vehicles?

Question 1. Do you support the use of the SAE International Standard to classify automated road vehicles? Do you have any issues with using the SAE International Standard?

The NTC Issues Paper has proposed using the SAE International Standard to classify automated road vehicles. This standard has six levels of automation from no automation (Level 0) through to full automation (Level 5).

The FCAI considers it is important that Australia adopt an international standard, and at this time the SAE International Standard is the most comprehensive series of definition available. As such Australia should adopt the SAE International Standard as the basis of any ongoing analysis of how to manage the increasing levels of automation in road vehicles.

As noted in the meeting with the NTC on 22 February 2016, the international forum for vehicle standards (attended by the Federal Government's Department of Infrastructure and Regional Development) WP 29 Informal Group on Intelligent Transport Systems and Automated Driving (ITS & AD) is considering many of the same issues including legal responsibility, liability, security and data protection. In addition the international Informal Group is looking at establishing guidelines and data/information exchange.

Also, the UN's international forum on Road Traffic Safety, WP. 1 has been considering the role of the driver with increasing levels of automation and what changes, if any, are required to the Convention on Road Traffic, commonly referred to as the Vienna Convention. Australia should monitor this process and consider if any similar changes will be needed to any Australian legislation or standards for international consistency.

In summary, it is important Australia adopts international definitions to classify automated road vehicles rather than develop its own unique definitions for automation. As the SAE International Standard is the most comprehensive definition currently available, Australia should utilize this until a more relevant global definition is developed.

### 3.2 NTC Topic: Role of government

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

An important regulatory role of government to support the introduction of automated and connected vehicles is to set the appropriate regulations. However, as noted in the NTC's Issues Paper:

*"It is important that governments and markets do not regulate too early if this stifles innovation or results in locking a technology path in regulation. In the context of automated vehicles, it is important that regulations do not create artificial barriers between conditional, highly and fully automated vehicles."*

The FCAI has not conducted an exhaustive analysis of the various pieces of legislation that could potentially impact on the introduction of automated vehicles. However, it suspects

that the required changes will not be substantial (which is not to say that they are not important). The FCAI again emphasises: these changes must ensure consistency across the various Australian jurisdictions and consistency with European standards.

One example where a consistent approach is important is in the allocation of the spectrum that is needed to operate intelligent transport systems. For the introduction of connected vehicles (i.e. C-ITS) the government needs to allocate the 5.9GHz spectrum along with the European channel allocations. The FCAI has written to ACMA, as the relevant regulatory body, requesting that the spectrum be allocated by 1 January 2017 at the latest.

At a recent workshop facilitated by Austroads it was agreed that as Australia intends to adopt the European 5.9 GHz spectrum for C-ITS, Australia should also adopt the European C-ITS standards for vehicles, infrastructure and other potential users. The question of whether or not there is a need to regulate the vehicle standard was not settled at that workshop. The FCAI view is that a minimum set of standards should be regulated under the ADRs to ensure compatibility and limit the potential for interference. The FCAI stresses that this should be an “if fitted” regulation, i.e. not mandated but any vehicle (or aftermarket component) supplier that is seeking to utilise this technology must meet the standards.

While not a regulatory, role, an important role for government as the infrastructure owners, is to introduce the necessary road infrastructure (e.g. road side units) to enable V2I communications and also to introduce the necessary road infrastructure standards (e.g. lane markings) that are required for the vehicle automated systems to operate as intended. A coordinated approach across all three tiers of government is important here.

### 3.3 *NTC Topic: 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?

The main issue currently related to regulating the driver is when is the driver in control and if there is a need for the driver to have their hands on the steering wheel. This is urgent as some brands already offer (either in Australia or an overseas market) vehicles that have conditional automation that will allow some hands-off driving in certain circumstances. The most common example is auto-parking, where the vehicle is able to perform a parallel-parking manoeuvre autonomously. This technology is available in many mainstream brands as well as most premium brands.

As referred to above, the FCAI has not conducted an exhaustive analysis of the road safety and traffic laws. It understands that this will be done by the NTC and/or Austroads. Clearly some changes will need to be made – as pointed out in the Issues Paper the concepts of ‘control’ and ‘driver’ will need to be carefully considered.

Having identified the road safety and traffic laws that will need to be modified to enable automated vehicles to operate on Australian roads, it is important that the states and territories make those modifications consistently. However, having consistent laws will not be enough - the laws must also be interpreted and applied consistently across the 8 state and territory jurisdictions. This might present a more difficult challenge.

### 3.4 NTC Topic: Issues with regulating the road vehicle

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?

As noted in the Issues Paper, national standards for vehicles to be introduced into Australia, the Australian Design Rules (ADRs) are regulated by the Motor Vehicle Standards Act (MVSA). Continued compliance with the relevant ADRs are regulated by each state/territory through their own legislation based on the national model law, the Australian Light Vehicle Standards Rules (ALVSRs). The ALVSRs (and as reflected in state/territory regulations) require a vehicle to continue to comply with the relevant ADRs, except:

- Where the regulations provide specific differences, i.e. window tinting and tyre speed rating; or
- When a vehicle can meet a later version of that relevant ADR.

The FCAI notes that the NTC is undertaking work with an Amendment Package to remove some differences between the ADRs and the ALVSRs. These amendments will need to be reflected in each state/territory legislation.

Any vehicle specific regulation (e.g. setting standards for C-ITS as outlined above) must be included in either of the current regulatory mechanisms.

If a regulatory standard needs to apply to a vehicle entering the market (e.g. ensuring its C-ITS will be inter-operable with the Australian network) this standard must be included in the ADRs. This will ensure that any certification and enforcement activity will be captured within the existing vehicle type approval system administered by the DIRD. Setting up a separate or parallel scheme will only add significant and unnecessary cost to both vehicle brands and the government.

As noted above, as Australia has adopted the international vehicle safety and emission regulatory standards (i.e. UN Regulations) which are predominately European based, Australia also needs to adopt the European standards for automated and connected vehicles.

It is also important to note that while the majority of vehicles entering the market are new vehicles supplied via the official Australian representative of the brand, there are changes proposed to the Motor Vehicle Standards Act to encourage (by introducing new or expanding existing concessional arrangements) parallel imports of both new and used vehicles. If these vehicles are brought in from another market with different C-ITS standards (e.g. Japan) without the correct oversight to ensure compatibility with the Australian network, there is a significant risk of interference which could result in not delivering the optimal safety and environmental benefits to Australia.

As mentioned in the Issues Paper, modifying ADR compliant vehicles is a matter that will require additional focus when dealing with automated vehicles – particularly fully automated vehicles as their operation is wholly reliant upon their componentry. The FCAI suggests that the current State based compliance regime (through the Australian Light Vehicle Standard Rules) might be adequate but, in the context of automated vehicles, the enforcement focus may need to be increased.

Another related issue is that even though modifications made to a vehicle may not be major, they might have a significant impact on an automated vehicle. For example, a minor modification could partially obscure an important sensor, causing it not to function correctly or even fail completely. This issue should be addressed, perhaps by expanding the scope of the AVSRs.

### 3.5 *NTC Topic: 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?

While this topic is not directly relevant to FCAI member brands, it must be acknowledged that heavy vehicles share the road network with light vehicles and motorcycles (i.e. products of FCAI member brands) and therefore the FCAI positions on standards for interoperability extends to all other road users including heavy vehicles.

### 3.6 *NTC Topic: Liability*

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

As the Issues Paper has identified, there are a number of challenging and complex questions that will need to be resolved which deal with the liability of the various and many companies, organisations and individuals involved in supplying, maintaining and operating automated vehicles on Australian roads.

There is currently a comprehensive and relatively well understood set of laws which deals with liability issues for the vehicles currently operating on Australian roads. The FCAI's initial position is that these laws, in broad terms, are able to, and should, be used for automated vehicles. If there are to be any significant difficulties, they are likely to arise when dealing with the liabilities as between the various companies and organisations involved in intelligent transport systems.

As a general principle, the FCAI members accept that, subject to applicable terms and conditions, they are responsible and accept liability for the vehicles that they manufacture and sell, at whatever levels of automation the vehicles might have.

### 3.7 *NTC Topic: 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?

As identified in the Issues Paper, a significant amount of information will be generated by a comprehensive intelligent transport system. This is likely to be sought by Government agencies which require access to the information for lawful purposes and third parties who may want the information for their own commercial purposes.

The FCAI currently has a concern about releasing vehicle information. For third parties to be able to interpret vehicle data it is necessary for them to be given access to specific software that would allow access to the vehicle's entire operating system. The FCAI considers that this creates significant safety and security issues which will be exacerbated when that information relates to an automated and connected vehicle.

### 3.8 NTC Topic: Supporting on-road trials

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

The FCAI considers that an important part of facilitating on-road trials in Australia of automated and connected vehicles is to develop nationally consistent guidelines for the conduct of any trial to ensure it is conducted safely and adds to the knowledge base needed to facilitate and accelerate the introduction of automated and connected vehicles.

The FCAI is aware that many states are either presently conducting on-road trials (e.g. NSW CITI project) or in the process of developing an on-road trial (e.g. Queensland's ITS Pilot Project).

### 3.9 NTC Topic: More automated rail

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

While this topic is not directly relevant to FCAI member brands, it must be acknowledged that some rail vehicles (e.g. light rail, suburban rail) vehicles share the road network with light vehicles and motorcycles (i.e. products of FCAI member brands) in many of our major cities. Therefore the FCAI positions on standards for interoperability extends to all other road users including rail vehicles.

Two areas to be considered in relation to rail are:

- Light rail/trams share the road with both light and heavy vehicles and also with pedestrians and cyclists.
- Suburban, long distance freight and passenger trains. While these do not regularly share the road as do light rail, there are numerous rail crossings where light/heavy vehicles will interact with rail.

As such, any automated rail planning will need to be integrated into the automated/connected vehicle system.

### 3.10 NTC Topic: 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?



In addition to the heavy vehicles and rail vehicles (as noted in sections 3.5 and 3.9), the road network is also shared by pedestrians and cyclists (commonly referred to as vulnerable road users). As such any consideration of regulation of vehicles (light, heavy and rail) need to consider their interaction with pedestrians and cyclists.

Pedestrians and cyclists share the road with both light and heavy vehicles. As such, an automated or connected vehicle needs to take into account any particular regulations controlling the interaction. For example, many states have introduced a 1 metre clearance for cyclists.

## 5.0 CONCLUSION

The FCAI welcomes the opportunity to provide a submission to the NTC's Issues Paper on Regulatory Barriers to More Automated Vehicles.

The FCAI member companies recognise the potential for automated and connected vehicles to provide significant safety and environmental benefits to Australia through reductions in crashes and congestion. Initial steps that need to be taken for vehicles to operate in an Australian automated and connected vehicle environment are:

- A standardised interface harmonised with the European standards as Australian vehicle safety and environmental regulatory standards are harmonised with the European standards.
- A regulatory model that ensures vehicles fitted with C-ITS being delivered to Australia meet the European standards and will operate within the specified spectrum.
- The 5.9 GHz spectrum to be allocated.

The FCAI has addressed the various questions from the Issues Paper with the overall strategy of maintaining or creating harmonization with international standards rather than introduce (or continue with) unique Australian vehicle related standards or regulations. The FCAI recognises that some of the non-vehicle related regulations, standards, guidelines and codes (e.g. privacy principles and some road rules) will need to be different due to the prevailing operating and legal environment within Australia.

The FCAI welcomes the NTC's review and looks forward to providing further input into the draft policy paper when it is released.

## APPENDIX A THE AUSTRALIAN AUTOMOTIVE INDUSTRY

The FCAI is the peak industry organisation representing vehicle manufacturers and importers of passenger vehicles, light commercial vehicles and motorcycles in Australia.

The automotive industry is a major contributor to Australia's lifestyle, economy and community and is Australia's largest manufacturing industry. The industry is wide-ranging—it incorporates importers, manufacturers, component manufacture and distribution, retailers, servicing, logistics and transport, including activity through Australian ports and transport hubs.

The Australian automotive industry employs nearly 280,000 people directly and indirectly throughout Australia. Approximately 66,000 people are employed across more than 4,500 dealerships, and the industry generates around \$62 billion in revenue.<sup>10</sup>

There are now around 67 brands in the Australian market, with just over 1.1 million new vehicle sales per year. That is a lot of brands to service a market of our size equating to only 16,597 new vehicles sold per brand. The following table provides a comparison of the competitiveness of global markets with double the number of new vehicles sold per brand in Canada, almost three times as many in the United Kingdom and more the 255,000 new vehicles sold per brand in the United States.

**Table A.1 Competitiveness of Global Vehicle Markets<sup>11</sup>**

	Australia	Canada	UK	USA
<b>No. of brands in market</b>	67	49	53	51
<b>Sales</b>	1,112,032	1,620,221	2,249,483	13,040,632
<b>Market size per brand</b>	16,597	33,066	42,443	255,699

Australia is one of the most open and competitive light vehicle markets in the world with more than 60 brands, 350 models and 20 source countries. In 2012, only 13 percent of new vehicles sold were manufactured locally with the remaining 87 per cent of new vehicles imported from many countries and regions of the world including Asia (more than 60 per cent), Europe (14 percent), North and South America (3 per cent), and South Africa (3 percent) (see Table A.2).

Motor vehicles are more technologically advanced today than ever before. While the structural changes in the Australian market, in terms of lower tariffs and more brands, has resulted in significant consumer benefits with improved affordability and choice it has also greatly increased the knowledge base required of repairers. The repair industry has had to change to compete in this global market place and cannot slow the rate of adoption of these technologies, or limit consumer choice.

<sup>10</sup> <http://www.ibisworld.com.au/industry/default.aspx?indid=434>

<sup>11</sup> Australian Government, Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, March 2013 Automotive Update.

**Table A.2 Country/Region of Origin for New Vehicle Sales in 2015<sup>12</sup>**

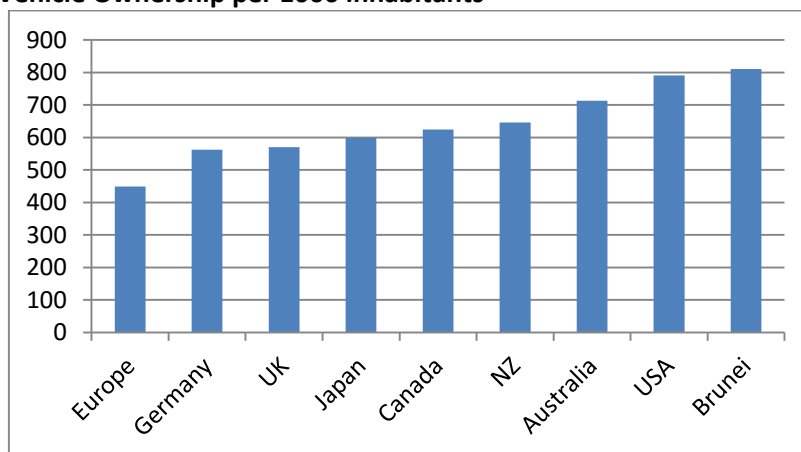
Country/Region of Origin	% of New Vehicle Sales
Japan	29%
Thailand	22%
Europe	18%
Korea	12%
Australia	8%
Americas	6%
Other Asia (incl China and India)	1%
Other (incl South Africa)	4%

The expansion of new and global brands and models into the market has led to the introduction of advanced security, safety and environmental features in motor vehicles. The introduction of these features is in response to increasingly strict environmental regulations and growing demands from consumers for advanced security and safety features.

Vehicle brands face a range of de-facto regulations in the form of safety and environmental star ratings and buyer requirements. They face a range of competitive pressures to continually improve environmental performance and safety standards. For example, around 30–50 percent of vehicle sales are sold to governments and fleets that frequently require a 5 star ANCAP rating and/or 4 star GVG rating.

The FCAI considers that the Australian car market is one of the most competitive in the world. For a relatively small market that comprises only 1.5 per cent of global production Australia has around 67 brands and 350 models competing for around 1.1 million sales. This has come about for a number of reasons. Principally, as the tariff barriers on automotive products have reduced from 57.5 per cent in the 1980s to between 3 and 4 per cent and the number of vehicle brands and models in the Australian market has increased.

**Figure A.3: Vehicle Ownership per 1000 inhabitants<sup>13</sup>**



Figures A.3 and A.43 show vehicle ownership among a selection of countries demonstrates that Australia has among the highest ownership levels of vehicles with an ownership concentration of 713 vehicles per 1000 inhabitants. In comparison, the United States has ownership levels of 791 vehicles per 1000 head of population, NZ is at 646, Canada is 624,

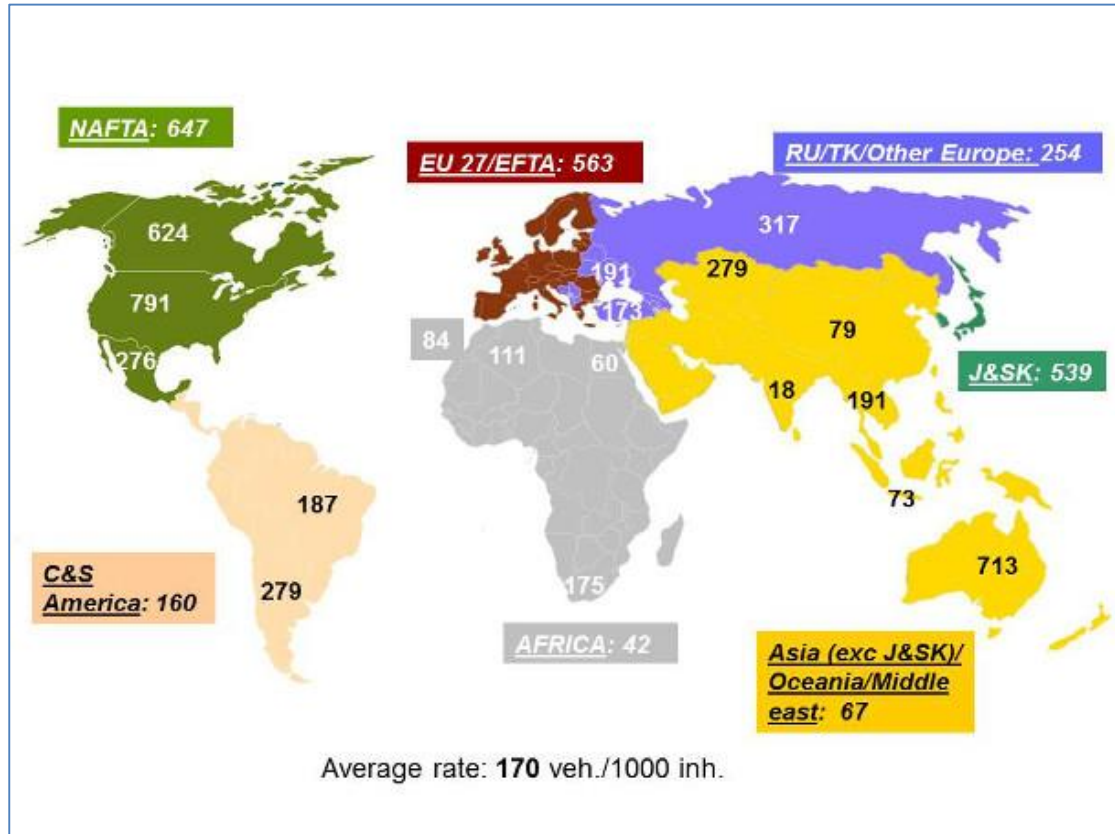
<sup>12</sup> FCAI, VFACTS National Report, New Vehicle Sales, December 2015.

<sup>13</sup> Organisation Internationale des Constructeurs automobiles (OICA), Total World Vehicles In Use, [www.oica.net](http://www.oica.net), [accessed 26 September 2014]

and Japan, the United Kingdom and Germany are all below 600 vehicles per 1000 head of population.

Therefore, it would appear that the market is effective in Australia through providing a wide range of consumer choice and providing access to vehicles that have resulted in some of the highest vehicle ownership levels in the world.

**Figure A.4: Vehicle Ownership Rates for Regions<sup>14</sup>**



<sup>14</sup> Organisation Internationale des Constructeurs automobiles (OICA), [www.oica.net](http://www.oica.net), [accessed 26 September 2014]