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The Automated Vehicle Team,
In-service safety for automated vehicles
National Transport Commission
Level 3, 600 Bourke Street,
Melbourne, VIC, 3000
Submissions to: www.ntc.gov.au

Subject: TIC submission to the National Transport Commission's – In-service Safety for Automated Vehicles Consultation Regulatory Impact Statement (RIS), released July 2019

The Truck Industry Council (TIC) is the peak industry body representing manufacturers and distributors of heavy commercial vehicles (that is, with Gross Vehicle Mass above 3.5 tonne) or trucks in Australia. TIC members are responsible for producing, or importing and distributing 16 brands of truck for the Australian market, totalling more than 41,000 new heavy on-road vehicles sold in 2018. Of those vehicles, TIC members supplied to market over ninety-nine (99) per cent of trucks above 4.5 tonne Gross Vehicle Mass (GVM) last year. Additionally, TIC members also included two dedicated engine manufacturer's and two dedicated driveline manufacturers who supply major engine and driveline systems for both on highway and off highway truck applications.

In this submission TIC will respond only to issues that relate to heavy road transport vehicles (that is, with GVM above 3.5t), however TIC believes that a united and uniform approach must be taken for both light vehicle and heavy vehicle regulation for Automated Vehicles (AV's) and as such the details contained in this submission should apply for any on-road AV.

Question 1. *To what extent has the consultation RIS fully and accurately described the problem to be addressed, including the in-service safety risks? Please provide detailed reasoning for your answer.*

The TIC supports the previous and current work being undertaken by the National Transport Commission (NTC) to develop a regulatory system for automated vehicles of (SAE) Levels 3, 4 or 5. TIC is pleased with the outcome of the "provide to market" Automated Vehicle (AV) review and that the Transport and Infrastructure Council supported TIC's recommendation that the current ADR process under the Motor Vehicle Standards Act (MVSA) and its proposed replacement legislation the Road Vehicle Standards Act (RVSA), was accepted as the appropriate regulatory pathway.

The challenge of regulation for in-service operation of AV's including demonstration of on-going compliance with standards, as well as "end of life" provisions for the AV system/features, or "whole of vehicle", is something that is being discussed currently in many global markets. TIC is unaware of regulatory action that has been undertaken in any global region to control on-road in-service AV's, though there is considerable work currently being conducted in this area, particularly in Europe. TIC also points out that the

commercial deployment of AV's has not occurred in any global region, with at best, only closely controlled trials of AV's to date.

TIC believes that the NTC's *In-service Safety for Automated Vehicles Consultation Regulation Impact Statement* (the RIS) has adequately highlighted the potential in-service problems and safety risks of the initial deployment/uptake of AV's in Australia. However, TIC believes that the RIS does not adequately apportion risk, or level of risk, correctly across the parties nominated/highlighted. Also, TIC believes that the RIS is fundamentally flawed and lacks balance and objectivity in a number of significant areas, including:

- The RIS does not detail the projected future commercial availability and take-up rate of AV's and hence the relative size/scale of the AV "problem", or "risk", that the NTC is proposing to address. Neither the size (number of AV's) nor the timeline for take-up of AV's has been addressed. Hence the RIS does not outline the size of the problem, or the risk, that it is trying to address in the short, mid, or long term. It must be noted that the actual current use/take-up of AV's in Australia amounts to a handful of closely monitored on-road trial vehicles. Hence the current "problem", or "risk", is very low.
- The RIS does not present a balanced case (actually there appears to be no consideration) for the impediment to the commercial availability and take-up of AV's if Australia were to introduce the "duty of care" and ADSE regulations proposed in the RIS. The legal risk to Australian truck manufacturers/distributors, both companies and company employees, under the RIS proposed "duty of care" and ADSE regulations would be significantly greater than in other global vehicle markets. What is the economic cost of vehicle manufacturers not releasing AV's in Australia because of a unique AV legal framework? This question has not been considered in the RIS.
- Australia is a "technology taker" in most vehicle technologies and specifically in with AV technology fitted by multinational vehicle manufacturers. In 2018, Australia had record heavy vehicle sales, greater than 41,000 new trucks were sold, however this amounted to approximately 0.8 of one percent (0.8%) of global new truck sales last year. Australia is simply not a significant driver of road vehicle development, including AV technologies. If unique AV regulations are developed by Australia that add to the legal complexity and risk to be faced by a vehicle manufacturer/distributor and its employees, global vehicle manufacturers will simply look to other markets (in the case of truck manufacturers, the other 99.2% (5 million) trucks they sell) to launch and distribute AV's. Markets where the cost of unique, or specific, AV development to mitigate potential legal and financial risks are significantly lower and sales volumes higher. Markets where the release of AV's has a far more compelling business case than in Australia.
- In Europe, Regulators and Industry are working on developing regulations for effective cyber security of AV systems (systems within and external to the AV), a regulated "black box" in-vehicle data recorder that will capture predetermined AV data that will be required to determine who, or what, was controlling the vehicle, speeds, avoidance actions, etc in the event of an AV "incident" (who, or what, was at fault). AV data access protocols are also being developed internationally. All these (and likely many more) systems will need to be in-place and standardised by regulation, before any useful consideration can be given to regulating an in-service AV "duty of care" and/or ADSE, or anything of a similar nature. The RIS does not acknowledge the requirement, or existence, of these technologies and systems and the need that this technology would have to be "put in place" (regulated) before a regime of "duty of care" and an ADSE could work effectively. The RIS also does not consider the timeline for such deployment of regulations and systems in international markets. These actions would need to happen before suitable AV's could be released in Australia that would have the technology and systems that could legally support a regime of "duty of care" and/or ADSE.
- The RIS draws parallels between Australian OH&S/Work Cover and Chain of Responsibility laws and potential AV "duty of care" and/or ADSE regulation. This argument is also flawed. Current OH&S/Work Cover and Chain of Responsibility laws reasonably expect that managers in an organisation must look after the welfare of their employees and that all persons in the management/decision chain through to the company CEO must accept a level of responsibility. This

is fair and reasonable, as those persons can directly, or indirectly, affect the health and wellbeing of their workforce. However, in the case of an AV, the systems and technology will most likely be developed beyond Australian shores, beyond any knowledge, or control, that the Australian vehicle manufacturer/distributor, or any employee in that organisation, could possibly exercise. A good example is the Volkswagen diesel emission cheating system. A situation that effected Volkswagen vehicles in many international markets, but was created by a few Volkswagen employees in Germany. The RIS is suggesting that the Australian vehicle manufacturer/distributor and a suitable employee within that organisation, should be held legally responsible for an AV whilst it is in autonomous operation. If this were the case and such Australian laws were created, this would act as a significant deterrent for vehicle manufacturers/distributors and their employees to release AV's in Australia. TIC also points out that the most senior person (the most likely target for legal action under the NTC's proposed "duty of care" and/or ADSE regulation) in the majority of Australian vehicle manufacturers/distributors is not an Australian citizen, but in fact a posting from the global parent company's head office in Asia, Europe or the USA.

- The RIS does not review the most likely causes, or scenarios, that would lead to an AV incident, or crash, then "test" the RIS proposed actions against these incident, or crash, instigators, to determine if the RIS proposals offer a realistic solution. These causes, or scenarios, would include:
 - AV system/vehicle manufacturer (most likely to be an overseas organisation) deliberately sets out to make an unsafe AV. Whilst an unlikely scenario, it is possible. In this case the suggested actions in the RIS, "duty of care" and/or ADSE regulations, would not address a failing of an international organisation, or person, based outside of Australia.
 - AV system/vehicle manufacturer (most likely to be an overseas organisation) despite the best of intentions, testing and development, inadvertently develops an unsafe AV. A more realistic scenario. As above, in this case the suggested actions in the RIS, "duty of care" and/or ADSE regulations, would not address a failing of an international organisation, or person, based outside of Australia.
 - AV system/vehicle manufacturer (most likely to be an overseas organisation) who has completed all the required testing and development as an AV control system. However once in-service the AV encounters a driving event that was not foreseen and crashes. Again, a realistic scenario. As above, in this case the suggested actions in the RIS, "duty of care" and/or ADSE regulations, would not address a driving event that was not foreseen in an AV vehicle, or system, that was developed by an international organisation, or person, based outside of Australia.

The above examples illustrate that none of the proposed actions in the RIS address the fundamental issue that an Australian vehicle manufacturer/distributor, or their employees, are likely to have any control over an AV, or AV control system, that will be developed beyond Australian shores. Yet these Australian regulations would target only the vehicles local manufacturer/distributor and their employees. Persons who, in most instances, will have no control over the AV systems design, nor anyway of testing/verifying the functionality of the AV system.

If Australia pursues an AV "duty of care" and/or ADSE, or such like regulation, before the necessary AV in-vehicle and external system regulations are in place and before any like regulation is introduced in major vehicle manufacturing markets (in particular Europe, given Australia's international obligations to align with UN regulations), truck manufactures will simply not fit, or disable, AV systems in Australian vehicles because the potential legal risk of enabling such technologies in the Australia market will simply be too great in the short to mid term. The directive for such action will likely come from the AV's international parent company, who will look to minimise their legal exposure in Australia. This action will significantly limit AV availability and significantly delay the take-up of advanced driver assist features, AV's and AV technologies in Australia. This will deprive Australia of the potential safety, mobility and productivity/economic benefits that could be gained from being an earlier adopter of advanced driver assist systems, AV's and AV technology. Further to this, some TIC members have indicated that such on-road, in-service, AV "duty of care" and/or ADSE, or such like regulation, would likely halt current and any

future AV trials, be they on-road (public land), or off-road (private land), in Australia. Even if the planned AV “duty of care” and/or ADSE regulations only applied to on-road (public land) vehicle use, the very existence of such laws could potentially, in a court of law, be reasonably applied to the operation of an AV operating off-road (on private land). Thus making the local vehicle manufacturer/distributor company and company employees legally responsible for vehicles that they did not directly design or develop. Again, to mitigate potential legal risk, such trials in Australia would be stopped (or never started) by the international parent organisation, who would choose countries to trial AV’s where their legal risk was less.

Question 2. *Have we correctly identified the parties with an influence on the in-service safety of automated vehicles and accurately described their role? If you identify additional parties, please explain what their role is.*

TIC believes that the RIS has identified the parties with an influence on the in-service safety of AV’s at this point in time. However, as AV technology develops this list may change and a parties influence may well change. For example, if AV’s were to become totally dependent on cellular network coverage (5G for example) for V2X communication, then the influence and responsibility of the cellular network provider would increase substantially. A parties level of risk should not be assumed to be “static” or “fixed”.

Question 3. *Have we accurately assessed each party’s influence on the in-service safety of automated vehicles? If not, please provide details.*

TIC believes that the human driver’s responsibility (“duty of care”) has not been adequately addressed in the RIS. In Level 3 and 4 AV driving it is most likely that the driving control functions will be shared between the AV’s control system (ADSE, or similar) and a human driver. In such vehicles the human driver has a significant role to play/responsibility/“duty of care” in ensuring that the AV is properly maintained and repaired, for example in the event of a crash, no matter how minor (a minor “bump” may misalign an AV sensor. Something that might not be capable of being noticed by the vehicle owner (assuming a different person to the AV’s human driver) and repaired, or detected by the AV’s self-diagnostic systems that may show the sensor working, but in reality, is not performing correctly due to some level of misalignment). As with any current on-road vehicle, the human driver is responsible for ensuring that the car is roadworthy. For AV’s that cannot ever be driven by a human, then there is no human driver (only passengers) and passengers should not have a “duty of care” responsibility. Refer to TIC’s response to Question 2 for comments regarding a parties change of influence and responsibility over time.

Question 4. *Have we accurately described the regulation that already applies to relevant parties that would help ensure the in-service safety of automated vehicles?*

TIC believes that the RIS has identified and detailed the regulation that already applies to relevant parties that would help ensure the in-service safety of AV’s.

Question 5. *Do you think there are any new risks posed by second-hand ADS components, after-market modifications or the transfer of ownership of automated vehicles, which may not be adequately addressed by existing regulation designed for conventional vehicles?*

TIC believes that there are considerable safety risks posed by non-genuine and second-hand service and repair parts, as well as after-market modifications. In time these issues need to be addressed by Australian regulation, however as AV technology is currently in its infancy, specific regulation recommendations are difficult to make at this point in time, other than to state the obvious, that AV’s and AV systems should only be serviced and/or repaired using genuine Original Equipment Manufacturers (OEM) parts, by OEM trained and authorised personal. TIC also notes the the RIS does not address the in-service issues of AV change of ownership, nor AV “end of life”. While it is likely that many AV’s will not be sold to customers, but rather leased, enabling the vehicle manufacturer/distributor to maintain legal control over the vehicle, there may be circumstances where the AV is sold to a customer. In proposing new AV “duty of care” and/or ADSE regulation, the NTC must consider how such laws would impact on AV change of ownership and AV “end of life”, for the existing owner, the purchaser on a used AV and the vehicle manufacturer/distributor.

Question 6. *Do you think the parties with an influence on in-service safety are sufficiently covered by Australia's current legal frameworks?*

TIC believes that given the infancy of AV technology currently, it is too early to determine if parties with an influence on in-service safety are sufficiently covered by Australia's current legal frameworks and that further review is required.

Question 7. *Do you think that a general safety duty to ensure the safe operation of the ADS 'so far as reasonably practicable' is appropriate to address the safety risks?*

No, TIC does not support the adoption of a general safety duty as proposed by the NTC's RIS. TIC believes that for the foreseeable future, the human driver must remain responsible for a vehicle's control and that Australian road laws should continue to reflect that position. Refer to TIC's response to Question 1 for further comments regarding this issue.

Question 8. *If a general safety duty were introduced, which parties should it apply to?*

TIC does not support the adoption of a general safety duty as proposed by the NTC's RIS. Refer to TIC's response to Question 1 for further comments regarding this issue.

Question 9. *If a general safety duty were introduced, should it apply on public and private land (such as residential driveways)?*

TIC does not support the adoption of a general safety duty as proposed by the NTC's RIS. Refer to TIC's response to Question 1 for further comments regarding this issue.

Question 10. *Should people injured by breaches of the general safety duty have a cause of action, or should the ability to enforce a general safety duty be limited to a regulator?*

TIC does not support the adoption of a general safety duty as proposed by the NTC's RIS. Refer to TIC's response to Question 1 for further comments regarding this issue.

Question 11. *Do you think there should be specific driving rules for ADSs like the Australian Road Rules, or would it be sufficient to simply require them to 'drive safely'?*

TIC does not support specific driving rules for an AV, or an ADS. The Australian Road Rules should be the same for an AV/ADS as they are for a human driver, as it is the fundamental responsibility of both driver "types" (human, or machine) to drive safely.

Question 12. *What approach to regulating the dynamic driving task for ADSs most efficiently achieves safe outcomes? Please provide reasons.*

TIC does not support regulating the dynamic driving task for an ADS, nor the concept of regulation of an ADSE. TIC believes that for the foreseeable future, the human driver must remain responsible for a vehicle's control and that Australian road laws should continue to reflect that position. Refer to TIC's response to Question 1 for further comments regarding this issue.

Question 13. *What functions and powers does the regulator need to effectively manage in-service safety? Would these differ depending on whether the regulator is enforcing a general safety duty, or only prescriptive duties?*

TIC believes that for the foreseeable future, the human driver must remain responsible for a vehicle's control and that Australian road laws should continue to reflect that position. Therefore, current enforcement regimes and practices should continue to apply. Refer to TIC's response to Question 1 for further comments regarding this issue.

Question 14. *Have we accurately described the scope of the regulatory task? Please provide data and evidence where possible to support your answer.*

TIC does not support regulating the dynamic driving task for an ADS, nor the concept of regulation of an ADSE. As such no change to the current regulatory task is required. TIC believes that for the foreseeable

future, the human driver must remain responsible for a vehicle's control and that Australian road laws should continue to reflect that position.

Question 15. *Have we accurately captured the benefits of the regulator being:*

- a. A government body or an independent body?***
- b. A national body or state and territory level bodies?***
- c. An existing body or a new body?***

TIC does not support regulating the dynamic driving task for an ADS, nor the concept of regulation of an ADSE. As such a regulator is not required.

Question 16. *What are your initial views on how the regulator should be funded?*

TIC does not support regulating the dynamic driving task for an ADS, nor the concept of regulation of an ADSE. As such a regulator is not required, nor is there any funding requirement.

Question 17. *Have we adequately and accurately captured the key legislative implementation models for in-service safety of automated vehicles?*

Please refer to TIC's response to Question 5 for comments regarding AV servicing, repair, replacement parts and vehicle modifications. Also comments regarding change of ownership and end of life provisions for AV's. As it is TIC's position that the human driver must remain responsible for a vehicle's control and that Australian road laws should continue to reflect that position, hence no regulatory change is required in this area.

Question 18. *Do you think there are any transitional or constitutional issues that could arise when Australia establishes a national law for automated vehicles? If so, please explain what the issues are, and if they differ depending on the legislative implementation model used.*

TIC does not support specific AV regulation in Australia, except for regulation governing new AV provision to market and in-service AV service, repair and modification. Such regulation should be carefully considered, nationally consistent, developed and implemented only when required and preferably aligned with similar regulatory requirements in Europe. As such there should be minimal transitional or constitutional issues in establishing these national laws.

Question 19. *Have we accurately described how each option could work, as well as the advantages and disadvantages of each option?*

TIC believes that the RIS has not accurately considered the impediment to the commercial availability and take-up of AV's, if Australia were to introduce the "duty of care" and ADSE regulations proposed in the RIS. The legal risk to Australian truck manufacturers/distributors, both companies and company employees, under the RIS proposed "duty of care" and ADSE regulations would be significantly greater than in other global vehicle markets. Truck manufacturers would simply not fit, or disable, AV systems in Australian vehicles, because the potential legal risk of enabling such technologies in the Australia market would simply be too great in the short to mid term. Refer to TIC's response to Question 1 for further comments regarding this issue.

Question 20. *Which option most effectively addresses the problem statement? Please consider your answer in conjunction with the PwC cost-benefit analysis.*

TIC supports Option 1 in the RIS:

Options 1 is the baseline option. It does not introduce any new safety duties or obligations for the in-service safety of automated vehicles. Instead, in-service safety is managed separately by each state and territory through existing regulatory frameworks.

Please refer to TIC's response to Question 18 for comments regarding the need for nationally consistent in-service regulations. And noting, that given the infancy of AV technology currently, it is too early to determine if parties with an influence over in-service safety are sufficiently covered by Australia's current legal frameworks and that further review is required. Any regulation that is developed governing new AV

supply to market, in-service AV's and/or AV operation, service, repair and modification must be uniform and nationally consistent across all Australian States and Territories and preferably aligned with similar regulatory requirements in Europe.

Question 21. *Is there another option, or combination of options, which could more effectively address the problem statement? In particular, please consider whether there is a preferable combination of the elements of each option (governance arrangements, duties, legislative implementation)*


TIC makes the following recommendations:

1. TIC recommends that for the foreseeable future, the human driver must remain responsible for a vehicle's control and that Australian road laws should continue to reflect that position. AV systems/features should be used only as drivers aids.
2. TIC recommends that Australia does not introduce unique AV "duty of care" and/or ADSE, or such like regulations for in-service AV's. To do so, would seriously slow the availability, development and take-up of AV's in Australia.
3. TIC recommends that the NTC review, via industry and public consultation, the steps and technical regulations that are being currently discussed and developed, particularly in Europe, that will mandate specific system requirements for new vehicles with Level 3, 4 and 5 of automation. These international regulations will be the real enabler of AV's, not Australian duty of care" and/or ADSE, or such like regulation. These European automated vehicle, data and cyber security regulations need to be identified and implemented (as Australian Design Rules, common law, etc) before Australia can move to any form of effective in-service "duty of care" and/or ADSE, or such like regulation. To introduce the "duty of care" and/or ADSE regulation proposed by the NTC, before these other steps are taken will halt AV deployment in Australia in the short to mid term.
4. TIC recommends that any regulation that is developed governing new AV supply to market, in-service AV's and/or AV operation, service, repair and modification must be uniform and nationally consistent across all Australian States and Territories and preferably aligned with similar regulatory requirements in Europe. This should extend to cover all parties involved.

I trust that you find TIC's submission acceptable and that the issues that have been raised in this document will be considered in the review and formulation in-service regulations and road laws to support higher levels of Automated Road Vehicles in Australia.

Please contact the undersigned, on 0408 225212 or m.hammond@truck-industry-council.org for any questions about this submission.

Yours faithfully,



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