NATIONAL ROAD TRANSPORT ASSOCIATION

Submission to the National Transport Commission

Regulatory options to assure automated vehicle safety in Australia

28 July 2017

Introduction

1. The National Road Transport Association (NatRoad) is pleased to make comments on the discussion paper released by the National Transport Commission (NTC) in June 2017 entitled *Regulatory Options to Assure Automated Vehicle Safety in Australia* (Discussion Paper).

2. NatRoad is Australia's largest national representative road freight transport operators' association. NatRoad represents road freight operators, from owner-drivers to large fleet operators, general freight, road trains, livestock, tippers, express car carriers, as well as tankers and refrigerated freight operators.

3. NatRoad's position relating to a number of policy questions raised by the introduction of automated vehicles was set out in a submission dated 16 January 2017 made in response to the NTC's discussion paper entitled *National guidelines for automated vehicle trials* and in a submission dated 2 June 2017 made in response to the NTC's discussion paper entitled *Clarifying control of automated vehicles.*

4. NatRoad surveyed members about a number of the issues raised by the introduction of automated vehicles. This survey formed the basis of our previous submissions. While automated heavy vehicles have the potential to deliver improvements in safety, productivity, congestion management and environmental performance, NatRoad members have raised concerns about the impact automated vehicles will have on their jobs and the need to place safety at the forefront of the matters that guide the introduction of higher levels of automation.

5. In this context, we note the conclusions of an overseas study[1] that a large number of truck drivers are expected to be displaced if driverless technology develops and is introduced in the coming decade. The report says that "this is true in spite of the purported shortage of skilled drivers to undertake the current and future road freight task."[2]

6. The welfare of those displaced from their employment due to automation is a paramount issue and should be included in the scope of projects that consider the introduction of driverless technology.

7. NatRoad notes the Discussion Paper addresses options for the safety assurance of automated vehicles generally and does not differentiate between light and heavy vehicles. Due to their size and mass, heavy vehicles pose different safety risks than light vehicles and are currently subject to additional regulatory requirements. Heavy vehicles are often modified to suit the freight task and once on the road will be used in different trailer combinations and configured to accommodate particular loads. These variables will make a safety assurance system for automated heavy vehicles more complex.

8. NatRoad therefore contends that automated heavy vehicles require a different set of safety criteria than light vehicles, and potentially also a different safety assurance system. This submission addresses the questions raised in the Discussion Paper in this context.

The role of government in assuring automated vehicle safety

9. Government intervention and more prescriptive regulations are generally considered appropriate for industries which lack the maturity or resources to self-regulate, as is the case

[1] International Transport Forum *Managing the Transition to Driverless Road Freight Transport* https://www.itf-oecd.org/managing-transition-driverless-road-freight-transport
[2] Id at p51

in some high-risk industries dominated by small business and independent contractors. While the level of intervention should be proportionate to the risk, non-regulatory options should always be considered first.

10. The appropriate response to automated vehicle safety will depend on an assessment of the safety risk and community confidence in the industry to provide safe vehicles and services. As noted in paragraph 7 of this submission, heavy vehicles pose different safety risks than light vehicles. With the introduction of automation, it is likely that the safety risk of vehicle integrity may increase and the safety risk of human performance may decrease.

11. However, it will be difficult for government to assess the risks with any certainty while the technology supporting automated vehicles is still being developed, tested and trialled. NatRoad recommends governments collect data on the outcomes of automated heavy vehicle trials and use this information to make a more accurate assessment of the safety risks.

12. Road transport is already highly regulated, particularly the heavy vehicle sector. NatRoad does not support additional regulation unless the safety benefits clearly outweigh the costs. We recommend using existing regulatory mechanisms where possible and making amendments to these, rather than creating entirely new laws. We expect that a number of amendments to the Heavy Vehicle National Law (HVNL) will be required to support the introduction of automated heavy vehicles.

13. It is likely that the automated driving system entities subject to a proposed safety assurance process are well-resourced corporations with mature risk management systems. In this context, a self-regulatory or quasi-regulatory approach during the initial stages of introducing automated vehicles may be suitable. It will allow industry to innovate and governments to monitor how the industry responds to a 'light touch' approach before deciding whether explicit regulation is needed.

Level of safety

14. NatRoad believes there is a general expectation that automated vehicles should be safer than conventional vehicles, as the risk of human driver error is eliminated or minimised. But, as the Discussion Paper notes, this depends on whether we are comparing automated vehicles to a novice human driver, the average human driver or an expert human driver.

15. We agree that safety could be defined and measured according to the rate of technical failure and incidents that result in harm to people. As there will be a need to compare the safety of automated vehicles with conventional vehicles, crash rates will still need to be measured, in addition to rates of technical failure.

16. NatRoad submits that responsibility should be placed on the automated driving system entity to demonstrate the methods they have adopted to identify and manage safety risks (Option 3 in section 4.2 of the Discussion Paper). In the absence of agreed technical standards and testing processes, this option is the most feasible approach. It supports innovation, encourages continuous improvement and recognises that governments currently do not have specialist capabilities in evaluation and validation of automated vehicle safety.

17. However, this approach should be reassessed depending on the agreed regulatory option, the direction in which international practices develop and whether a market failure warrants increased evaluation and validation by government.

18. The same standard of care should be applied to automated driving system entities as that used in Work Health and Safety (WHS) laws, the Rail Safety National Law and the new chain of responsibility provisions in the HVNL, requiring duty holders to ensure safety so far as is reasonably practicable.

19. The flexibility inherent in a primary safety duties approach to regulation allows for innovation within a risk management framework and takes into account the circumstances at a particular time, the nature of the risk and the level of influence and control that the duty holder has in eliminating or minimising the risk.

20. However, additional primary safety duties may be unnecessary depending on the regulatory option that is chosen, as discussed further below.

Assessment criteria

21. NatRoad supports the following assessment criteria proposed in the Discussion Paper against which the regulatory options are evaluated:

    - safety
    - innovation, flexibility and responsiveness
    - accountability and probity
    - regulatory efficiency
    - international and domestic consistency
    - safe operational domain
    - timeliness, and
    - other policy objectives such as cybersecurity, traffic management and environmental protection.

Regulatory options

22. The Discussion Paper proposes four options to assure automated vehicle safety in Australia:

    - *Option 1: Continue the current approach* using existing safeguards with no additional regulatory oversight or reporting to government; noting that current regulatory reforms to place legal obligations on the automated driving system entity will help ensure that manufacturers manage safety
    - *Option 2: Self-certification* whereby manufacturers provide a statement of compliance against high-level safety criteria developed by government while existing safeguards continue to apply
    - *Option 3: Pre-market approval* where governments certify automated driving systems as meeting minimum prescribed technical standards, prior to market entry, and
    - *Option 4: Accreditation* where governments accredit an automated driving system entity.

23. NatRoad submits that a higher level of regulatory oversight is necessary to assure automated vehicle safety than continuing with the current approach. Therefore Option 1 is not supported.

24. Self-certification (Option 2) and accreditation (Option 3) are the most feasible options until such time that automated vehicle technology matures and Australian or international standards are developed for inclusion in the Australian Design Rules.

25. Both these options align with our view that the responsibility for managing safety should be placed on the automated driving system entity as indicated in paragraph 16 of this submission. Persons or entities creating the risks should be responsible for controlling them.

26. Self-certification or accreditation (or possibly a hybrid of both systems) could be used for the safety assurance of automated heavy vehicles. Accreditation as proposed in the Discussion Paper could be implemented more easily for automated heavy vehicles because there are likely to be fewer automated driving system entities to regulate compared to light vehicles.

27. The HVNL already has a performance based safety assurance framework set up for heavy vehicles under the Performance Based Scheme (PBS) and the National Heavy Vehicle Accreditation Scheme. NatRoad recommends that the NTC consider expanding these schemes with new requirements for automated driving system entities to ensure the safety of automated heavy vehicles.

28. If self-certification is chosen as the preferred option, we believe the system should be mandatory to be effective for both heavy and light vehicles. Mandatory self-certification will provide government with information on the range of automated vehicles and functionalities on the market and will allow registration authorities and road managers greater oversight of automated vehicle access to the road network. It will also provide a level playing field for manufacturers.

29. The Discussion Paper proposes that self-certification could be supported by a legislated primary safety duty for manufacturers, suppliers and automated driving system entities to ensure safe automated vehicles. Automated heavy vehicles will be used in workplaces and can be captured under existing WHS laws as an item of 'plant'. Designers, manufacturers, importers and suppliers of plant that will be used, or could reasonably be expected to be used, at a workplace have duties under WHS laws to ensure it is safe so far as is reasonably practicable. This duty includes carrying out any testing that may be necessary.

30. Automated vehicles that are not captured by the WHS laws may be covered by the Australian Consumer Law (ACL), for example through the use of mandatory safety standards and/or information standards. Such standards apply at the point of supply.

31. A mandated safety standard for a consumer product such as an automated vehicle can set requirements for the product's design and construction, stipulate testing (during or post manufacture) and the form and content of any warnings or instructions that need to accompany the product. The performance based safety principles and criteria set by government such as those proposed in Table 7 of the Discussion Paper could form the basis of the mandatory safety standard under the ACL.

32. Mandatory information standards under the ACL can require that certain information is provided about a product. Mandatory information standards could therefore be the basis for requiring the automated driving system entity to provide a statement of compliance.

33. To implement this option, the Australian Competition and Consumer Commission (ACCC) would need to follow the Commonwealth regulatory development process, including consultation with industry and the development of a regulation impact statement.

34. Self-certification should include providing an updated statement of compliance for safety-critical changes in functionality of the automated system and reporting of system failures.

35. While self-certification may work for light vehicles, an accreditation regime may be more appropriate for automated heavy vehicles given the different risks associated with their use. There is also a national regulator for heavy vehicles which could function as the accreditation body.

36. The benefits associated with accrediting the automated driving system entity for heavy vehicles include:
    - Safety can be assured throughout the life cycle of the automated driving system, not just at market entry.
    - It allows more comprehensive assurance and monitoring of key safety risks relevant to heavy vehicles such as the operating environment, loads and combinations, the interaction of the human operator with the automated vehicle and cybersecurity.
    - It requires the accredited party to monitor system performance and report all safety-critical events (such as technical malfunctions) and changes to the automated functionality (including changes by software-updates) to the accreditation agency.

Implementation

37. As the Discussion Paper notes, the type of institutional arrangements will depend on which regulatory option is chosen for assuring automated vehicle safety. It is important that a nationally consistent approach be applied and therefore NatRoad does not support Option 4 in section 10.1 of the Discussion Paper. We prefer that a single entity manages the assurance system. For heavy vehicles, this could be the National Heavy Vehicle Regulator (NHVR), provided it is adequately resourced to undertake this function.

38. In relation to road access, NatRoad supports a national approach that incorporates automated vehicle registration and road network access into the safety assurance process. The PBS experience highlights the problems associated with road managers approving access independently of the safety assurance process. These problems include inconsistent decisions and significant time delays.

39. Furthermore, we have doubts about the ability of Australia's current infrastructure to support high levels of automation. Therefore, close interaction between the automated driving system entity and the state and territory registration authorities and road managers during the initial stages of the safety assurance process will be critical to ensure the compatibility of the operational design domain and road network access.

40. The options for approval to access the road network will depend on the type of regulatory safety assurance process that is used and whether the vehicle is light or heavy.

41. While Option 3 reduces the disconnect between the approval of a vehicle and road network access, failing to involve road managers may increase the risk of some types of automated vehicle being incompatible with the operating environment. Option 3 also means that the treatment of non-automated vehicles would be inconsistent.

42. As an alternative option, the safety assurance scheme should make it a requirement that the automated driving system entity or manufacturer consults with road managers, and where relevant, toll operators, as part of the assurance process (e.g. included in the statement of compliance). The outcomes of this consultation must be reflected in the automated vehicle's operational design domain. The agency responsible for the safety assurance scheme can then confirm the road access with the road managers, rather than seeking their approval.

43. This consultation may help road managers gain a better understanding of automated vehicle functionality as it evolves, improve decision making on upgrading infrastructure to support automated vehicles and also assist manufacturers ensure their vehicles can operate safely on the road network.

44. How best to ensure compliance with the safety assurance system will depend on the agreed regulatory model. For example, under a mandatory self-certification system it would be an offence to supply an automated vehicle without providing a statement of compliance.

45. NatRoad supports primary duties generally as a way to improve safety. As indicated in paragraph 29 there are already primary safety duties under WHS laws which apply to designers, manufacturers, importers and suppliers of heavy vehicles as an item of plant used in workplaces.

46. The HVNL could be amended to enable automated heavy vehicles that meet the performance based safety criteria to operate on roads that are within the limits of the vehicle's operational design domain. This could operate in a similar way to the current PBS scheme, but without necessarily seeking road manager approval. The current disconnect between PBS approvals for non-automated vehicles undertaken by the NHVR and the road access decisions of road managers should also be addressed.

47. A review of the driver offences in the HVNL will be required to determine whether they are still appropriate and whether they need to be extended to automated driving system entities.

Conclusions

48. Whilst we agree that a safety assurance system is required for automated vehicles, the details are difficult to determine while there are still many unanswered questions about how automated systems will cope with various road freight tasks. We expect that there will be phases of transition to higher levels of automation and that different regulatory boundaries may be needed for each of these stages.

49. NatRoad recommends that the NTC specifically consider the safety assurance of automated heavy vehicles. Further consultation with the heavy vehicle industry on implementation issues will be necessary before a decision is made on the final regulatory option.

50. The main contextual issues at the forefront of NatRoad member concerns are the social disruption and job losses that the introduction of automated vehicles in the freight task will bring. Australia is not ready for the social effects that automated vehicle technology is likely to cause.

51. Government policies must also consider the level of uptake of automated heavy vehicles and how this may impact on transport sectors that are unable to adopt automated systems. Both the safety and broader social impacts of the technology must be addressed.