GM Holden

National Transport Commission Paper: Safety Assurance for Automated Driving Systems Consultation Regulation Impact Statement

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GM Holden contact:
David Magill
Director – Government Relations and Public Policy

191 Salmon Street
Port Melbourne
Victoria 3207 Australia

All correspondence to:
GPO Box 1714 Melbourne
Victoria 3001 Australia

Telephone: (03) 9647 1111
Facsimile: (03) 9647 2550
www.holden.com.au

General Motors Holden Australia NSC Ltd
ABN 60 603 486 933

General Motors (GM) is leading the way globally in defining the future of mobility and Transport as a Service, including advancing the development and testing of safe, self-driving Level 4 highly automated vehicles (HAVs).

HAVs have the potential to bring significant safety and mobility benefits to consumers. Because human error leads to the vast majority of vehicle crashes, technology that eliminates the human driver has the potential to avoid many crashes and crash-related deaths every year.

GM engineers are actively testing HAVs on public roads in US cities. GM is the first automaker to implement full-scale automobile assembly plant manufacturing of self-driving HAVs and has recently completed the production of 180 fully integrated self-driving Cruise electric HAVs alongside other production vehicles at its automotive assembly plant in Orion, Michigan. GM's vehicles are purpose-built from the ground up, seamlessly integrating the hardware and software of the self-driving system into the vehicle.

GM believes its latest generation HAVs meet the redundancy and safety requirements necessary to operate without a driver. GM also expects that the first commercial deployments of its HAVs will be in an on-demand ridesharing network utilising HAVs built and owned by GM, within select cities starting during 2019.

GM supports policies that promote safety as the top consideration, while also enabling and not hampering innovation in developing HAVs. Self-driving vehicle technology is still developing and will continue to evolve as new ways are found to make roads ever safer. Public policies should be flexible to adapt to this evolution, otherwise overly prescriptive and technically-specific policies will quickly become out-of-date and will stymie the safe and continuous development of HAVs.

GM Holden (Holden) is a national sales company and Engineering and Design R&D operation wholly owned by GM. Holden has been a progressive Australian company in transport and mobility innovation since being established as a saddlery in Adelaide in 1856. Holden's world-class Engineering and Design facilities in Australia are fully integrated with GM global product development and R&D programs. Holden works closely with GM's global HAV subsidiary, GM Cruise.

GM Cruise is developing HAV technology in one of the most complex driving environments possible — San Francisco — to ensure that its vehicles can drive safely even in the most unpredictable circumstances and conditions. GM, with Holden and GM Cruise, is combining the best of Detroit, Silicon Valley and its teams around the world to continuously improve performance and safety throughout the design, development and deployment of HAV technology.

Please find below responses and comments from Holden, in full consultation with GM and GM Cruise, with regard to the Regulation Impact Statement (RIS) put forward by the Australian National Transport Commission (NTC).

Holden Comments to the NTC Consultation RIS

Holden supports the submission of the Federal Chamber of Automotive Industries (FCAI) dated 6 July 2018 to the NTC Consultation RIS: Safety Assurance System for Automated Driving Systems. Holden provided input to the FCAI submission.

Holden believes that the most effective process to certify HAVs is to make it part of the existing certification process, administered by the Vehicle Safety Standards branch of the Department of Infrastructure, Regional Development and Cities (DIRDC). The creation of another national body to undertake HAV certification would create additional complexity and administrative cost without significant additional benefit over incorporating it into the current vehicle certification administration.

Holden supports a self-certification model for new and evolving technology and for the testing and deployment of HAVs. The self-certification process is well suited to this and is important for promoting innovation. Holden believes that attempting to regulate other aspects of HAVs is premature and may inhibit innovation that is occurring by creating unnecessary hurdles or barriers to development.

It is important to encourage the development and deployment of HAVs to offer new safety opportunities and services to customers and to get real world data on the performance of this new technology. Regulatory development should not be prohibitive and should incentivise potential business models that may be key to uptake of HAVs.

International regulations may lag the pace of industrial development of HAV technologies, especially with respect to vehicles without human driver controls. To account for this, the Australian regulatory system should be adapted to remove impediments that would prevent efficient paths for the safe introduction of HAVs.

Holden supports the use of definitions of terms established in the SAE J3016. These terms have been adopted by the National Highway Traffic Safety Administration (NHTSA) in the USA and are in general use throughout the automotive industry.

GM has no current plans to develop or deploy a Level 3 vehicle. GM is deploying vehicles with many features that incorporate safety technologies that are Level 1 and Level 2 automation. However, because Levels 0-3 all require the involvement of a human driver, GM and Holden believe that the existing laws and regulatory structure should generally apply to these levels of automation without the need for any changes.

Holden believes that regulatory efforts related to automated vehicles should be focused on Level 4 and Level 5 HAVs. These vehicles are different from partially automated systems at Levels 1-3 because they are directly impacted by laws and regulations that were made assuming a human always remains in control of the vehicle.

Harmonisation of the Safety Assurance Statement of Compliance with international markets is important to encourage supply of HAVs to Australia. The 11 criteria in the RIS are mostly harmonised with the NHTSA requirements and are supported by Holden.

Holden agrees with the FCAI that an extra primary safety duty regulation is not required. There is no evidence that existing liability and consumer protection laws are inadequate to account for HAVs and there is no data that suggests a new legal and regulatory model is necessary. In addition, it is a broad leap to conclude that a new and unproven model would improve safety and avoid impeding the development of automated driving systems (ADS) and their attendant safety advantages.

Holden agrees with the FCAI in opposing the NTC's recommendation of Option 4 and believes Option 4 does not reflect reality in its presumptions regarding consumer acceptance and HAV development.

With the potential safety benefits for consumers of HAVs in mind, Holden agrees with the NTC's efforts that are aimed at promoting innovation and progressive, safe introduction of HAVs to consumers. Holden believes these efforts should include:

- Updating laws and regulations to remove unnecessary legal and regulatory barriers to testing and deployment of HAVs, including HAVs without humans 'behind the wheel';

- Adopting a self-certification model, not an application based, pre-approval approach, for both testing and deployment of HAVs;

- Allowing commercial deployment of HAVs when an entity satisfies financial responsibility requirements and certifies that the vehicle is capable of complying with applicable traffic and motor vehicle laws and meets other statutory requirements;

- Relying on existing liability and consumer protection laws and principles to protect consumers and adapt to new technologies, as those laws have successfully adapted in the past, and allowing real-world experience to guide any changes that may be desirable in the future;

- Allowing new business models for HAVs to develop safely without legislating or regulating their design.

Holden believes the approach embodied in the foregoing principles will promote innovation and progressive, safe introduction of HAVs to consumers.

The ASDE's responsibility for maintaining the vehicle in service is adequately covered by existing state vehicle standards rules, the new Road Vehicle Standards Act and the

Australian Consumer Law (ACL). These laws should be updated only as informed by real world experience, not speculation. A primary safety duty regulation unique to Australia is likely to prevent manufacturers from bringing HAVs to Australia.

In cost assessments to government for reforms, Holden notes that potential savings that ADS technology may deliver through improved safety and reduction in the cost of road trauma, by reducing crashes due to driver error, should be taken into account. The potential value of new and transformative mobility options should also be taken into account.

Holden also recommends an additional administrative process be set up to consult with vehicle manufacturers about new driving laws (road rules) to ensure that they are incorporated into HAV software before coming into effect. This process could be similar to, or incorporated into the existing TLG process used for ADRs.

The NTC's RIS demonstrates its continued commitment to facilitating the development and deployment of AV technology and in the process, developing a safer automotive transportation future. Holden, GM and GM Cruise look forward to working with the NTC as we advance these efforts and appreciate the opportunity to provide these comments to the NTC.