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National Transport Commission
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Re: Response to the National Transport Commission's Regulation Impact Statement on Safety Assurance for Automated Driving Systems

Uber's Advanced Technologies Group ("Uber") is pleased to provide this written feedback to the National Transport Commission's Regulation Impact Statement on Safety Assurance for Automated Driving Systems ("Impact Statement"). Uber shares the Commission's clear commitment to the safe and expeditious deployment of emerging technology, and is eager to partner with the Australian government towards achieving these ends.

Uber is developing automated driving systems for both light and heavy vehicles to make vehicle operation safer and more efficient. Each year, more than 1.3 million lives are lost on the world's roads. The overwhelming majority of these deaths are due to human error. For this reason, Uber -- along with traditional vehicle manufacturers and other technology-focused companies -- has committed significant effort to developing autonomous vehicles. Self-driving technology could be instrumental in addressing this growing problem by helping to prevent tragedies on our roads. Computers are not subject to fatigue or distraction. They hold the promise to perceive better, calculate faster, and react earlier—which means they ultimately should drive more safely than people. And, in addition to the safety benefits, this technology can also help contribute to broader transportation access to those currently excluded by traditional options. For seniors, persons with disabilities, and those underserved by transit, fully self-driving vehicles offer a new solution to support independent living and expand economic participation.

Uber recognises that the public will rightly pose questions about the safety of any new technology, and that the successful operation of self-driving cars will depend on consumer knowledge and public trust. For this reason, among others, Uber fully supports the basic policy objectives underlying the Impact Statement -- to promote the safe deployment of AV technology and to facilitate education of the Australian public about the technology Uber is developing. Specific reactions to the Impact Statement -- and to the policy prospects reflected therein -- follow.

1. **The Regulation of Automated Driving Systems Should Remain Flexible to Account for Continuous Improvement in AV Technology, Testing, and Standards**

The Impact Statement recognises two important factors that should guide the deployment of AV Technology and the related regulation of that technology. The first, of course, is safety: the Commission has appropriately recognised the imperative of safe deployment -- a commitment that Uber shares.

Second, because of AV technology's potential to reshape the transportation landscape, the Impact Statement recognises the importance of shaping the relevant regulatory framework with an eye towards encouraging adoption of these safety promoting improvements (Impact Statement at 5-6).

This goal informs the appropriate regulatory structure: Because AV technology is developing quickly, regulations tied to present-day information risks inhibiting further improvements and delaying deployment of these safety technologies. In tandem, these factors counsel against establishing an overly prescriptive regulatory framework based on a very impermanent state of technology. Whichever approach the NTC chooses, we recommend that it ensure a regulatory framework that is sufficiently flexible and responsive to support the effective development, and regulation, of AV technology in Australia.

The technology powering Automated Driving Systems is still at a very nascent stage. As such, the technology remains subject to continuous improvement and fluidity. At the same time, various organisations are beginning efforts to construct standards appropriate for AV technology, and testing mechanisms tailored to measure such standards. Regulatory requirements without sufficient flexibility may impede this continued dynamism in AV technology, and ultimately hinder safety developments in the emerging technology.

Importantly, we believe the Commission can continue to advance safety and innovation by emphasising priority focus criteria for AV safety. This topic is addressed in the Impact Statement through its discussion of particular safety criteria. See Impact Statement at 33-37. A

flexible regulatory approach for such criteria communicates the Commission's particular safety priorities while preserving the flexibility necessary to promote the continued advancement of AV technology. The U.S. Department of Transportation has opted for a similar approach -- thereby focusing the industry on particularly important AV safety elements, and more broadly crafting a framework by which AV Developers can describe their own safety advancements and thereby facilitate public education on AV issues.[1]

In short, establishing prescriptive rules too quickly, in the absence of proven and definitive best practices for validation or for safety standards, risks hampering the ability to develop maximally safe technology. Further, such a regulatory approach likely would fail to account for the developments and variability across different AV products.

2. Regulating Self-Driving Vehicles Does Not Require a Radical Departure from Traditional Mechanisms of Regulating Vehicle Safety

More generally, Uber encourages the Commission to approach the regulatory questions on AV technology as not radically dissimilar from the regulatory questions posed by prior transportation innovations.

As noted above, Automated Driving Systems hold the potential to transform transportation throughout the world. However, the need to test and deploy safe transportation innovations is nothing new. Although the technology may not yet be sufficiently ripe to definitively fix the appropriate safety standard, the basic concepts at play are familiar. Once the technology is sufficiently mature, all relevant stakeholders can collaborate to develop the appropriate safety standard(s) to respond to this new technology, just as prior safety standards have been developed in response to innovations in brakes, tyres, airbags, and many other innovations.

In the interim, there may be regulatory and administrative options that combine aspects of the recommendations described in the Impact Statement. For example, Option 2 contemplates self-certification against principles-based safety criteria. This approach can sensibly establish safety assurance for new AV technology (assuming general consistency with comparable criteria established in other jurisdictions) while more specific or prescriptive performance standards are under development.

[1] See U.S. Department of Transportation, National Highway Traffic Safety Administration, Automated Driving Systems: A Vision for Safety Version 2.0, available at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf (2017)

Similarly, any assessment of a primary safety duty for ADS technology should be mindful of the broader regulatory landscape in Australia, as well as the likely early use cases for this technology. For example, ridesharing regulations in Australia require participants in that industry to perform self assessments of the risks associated with their operations. Over 3.8 million Australians regularly choose Uber to find a safe, affordable and reliable ride. Uber is currently subject to a primary safety duty, specific to its role as a booking service, in the rideshare business in Australia. This primary safety duty helps ensure that Uber identifies potential safety related risks and undertakes mitigating actions appropriate for the safety of rideshare customers.

The development of AV technology, particularly as deployed in the fleet-managed ridesharing context, need not change that approach to assuring safety. Uber appreciates the importance of applying the existing primary safety duty whether transportation is provided via human driver or ADS technology. At the same time, the advent of ADS technology need not generate a wholly separate set of duties aimed at achieving the same end -- safety for transportation customers. At least in the rideshare context, where a primary safety duty already exists, we encourage the Commission to further evaluate whether the deployment and popularisation of ADS technology merits a new, primary safety duties layered on top of existing duties that already govern the same basic transportation relationship.

Uber looks forward to actively partnering with the Australian government as it continues to develop regulatory tools aimed at facilitating the safe deployment of AV technology, and further looks forward to direct engagement with any regulator interested in participating in this process.

Sincerely,

/s/ Matthew Burton

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