August 28, 2019

The Honorable Heidi Renate King
Deputy Administrator
Docket Number NHTSA-2019-0036
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Removing Regulatory Barriers for Vehicles with Automated Driving Systems, Advanced Notice of Proposed Rulemaking [Docket No. NHTSA-2019-0036]; 84 *Fed. Reg*. 24433 (May 28, 2019)

Dear Deputy Administrator King:

Lyft, Inc. ("Lyft") submits these comments to the Advanced Notice of Proposed Rulemaking ("ANPRM") published by the National Highway Traffic Safety Administration ("NHTSA" or "the Agency") on May 28, 2019, Docket No. NHTSA-2019-0036. 84 *Fed. Reg*. 24433 (May 28, 2019). Lyft appreciates the Agency's continued attention to these very important issues and further appreciates the opportunity to comment on the ANPRM.

Lyft's Role in Autonomous Vehicles

Lyft's mission is to improve people's lives with the world's best transportation. In the last seven years, we have made significant progress towards that mission, and solidified our role as a powerful driver of positive change with respect to economic empowerment, enhancing the efficiency of public transportation, and connecting communities previously underserved by prior transportation options. Since our launch in 2012, Lyft has worked to reduce traffic and congestion, increase mobility options, reduce D.U.I.s, stimulate local economic activity, and provide economic opportunities to our drivers. We believe this is only the beginning.

Looking ahead, Lyft believes that self-driving vehicles will have the ability to improve the safety of America's roads and highways. Today, 94% of the nearly 38,000 on-road deaths per year are the result of human error. Lyft's commitment to self-driving technology stems from our belief that we can foundationally change these statistics. To accomplish this, autonomous technology itself must be safe, reliable, and accessible. This is why we have taken a two-pronged approach to self-driving: Lyft's Open Platform for self-driving seeks to accelerate and democratize the deployment of self-driving technology by partnering with the world's leading automated driving system ("ADS") developers; while Lyft's Level 5 team is building Lyft's own proprietary ADS technology. This hybrid approach makes us unique in the market, both as a deployment partner of other large automotive OEMs and technology companies, and as an ADS development leader.

Thus, we applaud the Agency's efforts in this ANPRM, which seeks input regarding approaches that would address the barriers of certain Federal Motor Vehicle Safety Standards ("FMVSSs") to the safe development of Automated Driving System-Dedicated Vehicles ("ADS-DVs"). 84 *Fed. Reg.* at 24434. Lyft appreciates this opportunity to present its views with respect to certain areas where NHTSA is seeking public comment. We believe it is important for the Agency to consider input from non-traditional ADS developers, such as ride hailing operators, who often have a unique and valuable perspective on improving vehicle safety. And we welcome the opportunity to discuss these ideas in-person with the Agency in the upcoming months.

Consistent Regulatory Framework For All Stakeholders

As the Agency considers amendments to the current safety standards to remove barriers to adoption of ADS technologies, Lyft urges NHTSA to adopt technology-neutral policy solutions that provide a level playing field for the diverse participants in this emerging industry. Lyft further encourages NHTSA to consider the current regulatory inequalities facing non-automotive OEMs

in this area and develop a regulatory framework that is sufficiently flexible to accommodate all stakeholders developing or deploying ADS-DVs. To promote innovation and ensure that ADS technology reaches its full life-saving potential, it is critical that NHTSA apply its statutory authority and regulations in a manner that does not unfairly privilege particular stakeholders. Thus, as the provider of an Open Platform, Lyft urges NHTSA to create a regulatory environment that ensures vehicle manufacturers, ride hailing operators, equipment manufacturers, alterers, and modifiers each have transparent, objective, equitable, and reasonable pathways to develop and deploy compliant ADS-DVs.

Modify FMVSSs With Manual Control Requirements For ADS-DVs As A Separate Vehicle Type

In order to promote the safe development of ADS-DVs, Lyft believes NHTSA should focus on the underlying intent of the FMVSS – safety performance outcomes – rather than meeting prescriptive design requirements developed for traditional vehicles. We believe this can be done by recognizing ADS-DVs as a separate vehicle classification. This would allow NHTSA to more expediently remove regulatory barriers and modify FMVSS that reference a human driver and/or assume some manual control element within the test procedure.

Lyft agrees with NHTSA that manual control requirements in the FMVSS 100 series impede the development and deployment of ADS-DVs in the United States. For example, in FMVSS 108, the manual controls for turn signal actuation devices bear no meaningful relevance for ADS-DVs as there would be no human driver to actuate the turn signal. However, the illumination requirements within FMVSS 108 for the turn signal lamps to illuminate when turning or switching lanes would remain relevant to ADS-DVs for conspicuity purposes. There, an ideal solution would be for NHTSA to remove the requirements for manual controls but retain the illumination requirements for ADS-DVs, while leaving the FMVSS unchanged for traditional vehicles. By recognizing ADS-DVs as a new vehicle classification, NHTSA could more easily

modify existing FMVSS to remove specific regulatory barriers irrelevant to performance results of ADS-DVs, while not having to re-author the entire regulatory framework that underpins vehicle safety.

A "Technical Documentation For System Design Verification" Approach Would Allow Consistent Certification Verification For All Stakeholders

The ANPRM wisely raises questions about how NHTSA will be able to test ADS-DVs to ensure that they meet the revised standards. "Without traditional controls, NHTSA will have to confront such varied issues as: how to get a vehicle it purchases for compliance from [sic] the test facility; how it will direct the vehicle to perform the required test procedure; how it will deal with a vehicle whose ODD does not include a test facility; and so on." 84 *Fed. Reg.* at 24440. Lyft shares NHTSA's concern but raises another that faces non-OEMs. Lyft, like presumably other ride hailing operators, has no plans to make available any ADS-DVs for retail sale; thus Lyft would have no retail inventory from which NHTSA could test.

In order to best verify the safe functionality of ADS-DVs from all stakeholders, NHTSA's regulatory framework should provide economical and feasible compliance verification options to enable them to meet their obligations,[1] where applicable. However there currently is no consensus on a technical approach to demonstrating or verifying compliance for ADS-DVs, and no comprehensive technical approaches have been proposed. As such, Lyft supports FMVSS compliance verification that primarily relies on technical documentation for system design verification. This approach would also avoid the logistical concerns NHTSA identified, particularly complications from a limited Operational Design Domain ("ODD").

Technical documents would be created prior to commercial deployment of the ADS-DV and thus would be available to the Agency, as necessary, for self-certification verification. Further, to the extent there was an issue that presented itself in an ADS-DV that was not reflected in the

[1] *See* 49 U.S.C. §§ 30112 and 30115 "reasonable care" and "make inoperative" obligations.

technical documents and arose post-deployment, NHTSA still has the Office of Defect Investigations to investigate issues in a particular ADS-DV or population/fleet of particular ADS-DVs. For all these reasons, we believe the most reliable and robust method to verify ADS-DVs self-certification would be to use a "technical documentation for system design verification" approach.

Simulation-based verification on the other hand, is not currently desirable as such an approach would require a significant body of research and regulatory work, and be very difficult in practice to implement. For example, NHTSA would perhaps need to build its own simulator that could accommodate the various stakeholders technology architecture and ODDs, at considerable expense and time investment. Even if NHTSA were to somehow eventually achieve this, the delay in doing so could in itself create a regulatory barrier for ADS technology development, as stakeholders may have to delay development in order to focus on meeting NHTSA simulator requirements.

If NHTSA were to alternatively try and use each of the stakeholders' simulators for compliance verification, NHTSA might have to verify with some level of uniformity across the various simulators, thereby creating de facto simulator compliance requirements. This simulator verification exercise alone (not accounting for the actual performance of the ADS-DV) would inevitably have numerous complexities and could lead to misinterpretation of simulator results, confusion of performance within varying ODDs, and an overall inconsistent compliance verification approach across the various stakeholder simulators.

A "technical documentation for system design verification" approach would more easily preserve the traditional self-certification method for compliance verification. Such a uniform compliance verification approach would promote a repeatable process NHTSA could employ to gauge safety compliance across all ADS-DVs. In addition, such an approach could be deployed

across the spectrum of stakeholders, from traditional OEMs who may have ADS-DV available for retail sale to those using ADS-DVs purely in ride hailing applications.

Conclusion

Lyft again appreciates the opportunity to comment on the ANPRM. As the Agency considers its approach to removing barriers to vehicle automation, Lyft looks forward to continuing its pivotal role in the development and safe deployment of ADS technology.

Sincerely,

Lauren E. Belive

Lauren Belive
Director of Federal Government Relations