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April 1, 2021

Dr. Steve Cliff  
Acting Administrator  
National Highway Traffic Safety Administration  
1200 New Jersey Avenue S.E., West Building  
Washington D.C. 20590-0001

**Re: Framework for Automated Driving System Safety  
Docket No. No. NHTSA-2020-0106**

Dear Acting Administrator Cliff,

Luminar Technologies, Inc. (Luminar) welcomes the opportunity to submit comments to the National Highway Traffic Safety Administration (NHTSA) concerning the Advanced Notice of Proposed Rulemaking (ANPRM) on the development of a framework for Automated Driving System (ADS) safety. Luminar applauds the agency's commitment to the development of a framework for Automated Driving System (ADS) safety and to supporting American innovation.

As a manufacturer, Luminar provides lidar sensors to more than 50 commercial partners worldwide, including seven of the world's top 10 automakers. These partners are at the forefront of bringing automated driving system innovations to America's roadways. Regulatory modernization is crucial to realizing the lifesaving potential of autonomous vehicles and that modernization must take into account all factors to ensure safety.

Luminar recommends that in its evaluation of Automated Driving Systems' sensing capabilities the Agency consider all sensing technologies within their respective unique characteristics and strengths to promote the safest systems under all conditions. To that end, evaluations for Automated Driving Systems should be conducted in various light and weather conditions. Current New Car Assessment Program tests are performed in daylight on dry pavement. However, according to the National Safety Council although just one quarter of driving takes place at night, 50% of traffic deaths happen at night<sup>1</sup>. Additionally, according to the Federal Highway Administration approximately 21% of crashes, nearly 1,235,000, are weather-related, and the vast majority of most weather-related crashes happen on wet pavement and during rainfall<sup>2</sup>. For Automated Driving Systems to be truly safe they must be equipped with sensing technologies that permit operation in all domains, including in inclement weather and difficult light conditions. Lidar is particularly well equipped to handle low visibility due to both

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<sup>1</sup>National Safety Council. (2020). *Driving at Night - National Safety Council*. <https://www.nsc.org/road-safety/safety-topics/night-driving>

<sup>2</sup> Federal Highway Administration. (2020). *How Do Weather Events Impact Roads?* [https://ops.fhwa.dot.gov/weather/q1\\_roadimpact.htm](https://ops.fhwa.dot.gov/weather/q1_roadimpact.htm)

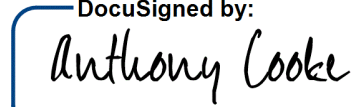
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challenging conditions and time of day. What's more, the greater sensing distance afforded by lidar permits all levels of autonomous functionality to gather data that allows more time to anticipate and, accordingly, perform at greater speeds, even for highways. NCAP procedures should encourage the use of all available technologies to meet the real-life risks.

In sum, Luminar respectfully recommends that the development of a framework for Automated Driving System (ADS) safety consider all sensing technologies within their respective unique characteristics and strengths to promote the safest systems under all conditions. Luminar appreciates the opportunity to provide input to NHTSA on this important topic. We look forward to any opportunity to expand upon these comments further.

Respectfully submitted,

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Anthony Cooke

Vice President of Policy & Regulation

Luminar