April 1, 2021

Dr. Steven Cliff, Acting Administrator
National Highway Traffic Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue SE
West Building Ground Floor, Room W12-140
Washington, DC 20590-0001

Re: Advance Notice of Proposed Rulemaking on a Framework for Automated Driving System Safety, Docket No. NHTSA-2020-0106, 85 Fed. Reg. 78058

Dear Acting Administrator Cliff:

The Self-Driving Coalition for Safer Streets, an organization comprised of the leading autonomous vehicle developers, welcomes the opportunity to provide these comments in response to NHTSA's advance notice of proposed rulemaking ("ANPRM") regarding the development of a framework for Automated Driving System ("ADS") safety.[1] The Coalition commends NHTSA's efforts to seek input on and provide guidance relating to the development of vehicles equipped with ADS, including through research reports, guidance documents, advance notices of proposed rulemakings, and a notice of proposed rulemaking.[2] These continued efforts to identify and address regulatory barriers to deploying vehicles that are equipped with ADS technologies are paving the way for the safe deployment of autonomous vehicles ("AVs").

Background on Coalition

The Self-Driving Coalition for Safer Streets represents the autonomous vehicle industry. The Coalition's membership consists of the world's leading developers of autonomous vehicle technology from a broad cross-section of the technology, ridesharing, and automotive sectors. Members include Argo AI, Aurora, Cruise, Embark, Ford, Kodiak, Lyft, Motional, Nuro, TuSimple, Uber, Volvo Cars, Waymo, and Zoox.[3] Our mission is to advance and promote the benefits of fully autonomous vehicles (i.e., SAE Level 4 and 5 vehicles) and support the safe and rapid deployment of these innovative and potentially life-saving technologies.

[1] *See* U.S. Dep't of Transp., Nat'l Highway Traffic Safety Admin., Framework for Automated Driving System Safety, Advance Notice of Proposed Rulemaking, Docket No. NHTSA-2020-0106, 85 Fed. Reg. 78058 (Dec. 3, 2020), https://www.govinfo.gov/content/pkg/FR-2020-12-03/pdf/2020-25930.pdf ("ANPRM"); *see also* U.S. Dep't of Transp., Nat'l Highway Traffic Safety Admin., Framework for Automated Driving System Safety; Extension of Comment Period, Docket No. NHTSA-2020-0106, 86 Fed. Reg. 7523 (Jan. 29, 2021), https://www.govinfo.gov/content/pkg/FR-2021-01-29/pdf/2021-01150.pdf (extending comment period to April 1, 2021).

[2] *See* U.S. Dep't of Transp., Nat'l Highway Traffic Safety Admin., Occupant Protection for Automated Driving Systems, Notice of Proposed Rulemaking, Docket No. NHTSA-2020-0014, 85 Fed. Reg. 17624 (Mar. 30, 2020), https://www.govinfo.gov/content/pkg/FR-2020-03-30/pdf/2020-05886.pdf.

[3] *See* https://www.selfdrivingcoalition.org/.

The Coalition works collaboratively with lawmakers, regulators, and the public to develop and promote policies that safely and thoughtfully advance fully autonomous cars and trucks in order for the technology to realize its full safety and mobility benefits. We also work with stakeholders to understand the broader societal and economic opportunities of AVs. With its broad array of technical expertise and experience in the technology, automobile, and transportation network sectors, the Coalition looks forward to our continued engagement with NHTSA in an effort to develop the right solutions that will facilitate the testing and deployment of fully autonomous vehicles to U.S. roads and highways.

Introduction

NHTSA has long recognized the benefits of AVs and ADS. As the ANPRM explains, if developed and deployed safely, ADS can aid in achieving the agency's mission of saving lives, preventing injuries, and reducing economic costs.[4] This potential stems from the substantial role that human factors like distraction, impairment, and fatigue play in contributing to crashes.[5] Indeed, an estimated 94% of all crashes are due to human error, including reckless, drunk, and distracted driving.[6] In addition, as the ANPRM observes, ADS-equipped vehicles have the potential to enhance accessibility (e.g., for those with visual impairments or who are otherwise incapable of driving) and to improve productivity (e.g., allowing people to reclaim time spent in transit).[7] A federal framework that helps advance the safe and timely deployment of AVs at scale can bring these benefits to the public sooner. The Coalition therefore applauds NHTSA's decision to "plac[e] a priority on the safe development and testing of ADS that factors safety into every step toward eventual deployment."[8]

As the ANPRM explains, up until this point the agency's efforts to develop a federal framework have been focused largely on addressing the challenges involved in determining which requirements of the existing Federal Motor Vehicle Safety Standards ("FMVSS") are relevant to the safety needs of ADS-equipped vehicles without traditional manual controls, and adapting or developing the requirements and the associated test procedures so that the requirements can effectively be applied to the novel vehicle designs that may accompany such vehicles without adversely affecting safety.[9] In this regard, NHTSA's regulatory efforts have been focused

[4] ANPRM, 85 Fed. Reg. at 78061.
[5] *Id.*
[6] Press Release, U.S. DOT Releases 2016 Fatal Traffic Crash Data (Oct. 6, 2017), https://www.nhtsa.gov/press-releases/usdot-releases-2016-fatal-traffic-crash-data (noting that human choices are linked to 94% of serious crashes).
[7] ANPRM, 85 Fed. Reg. at 78061.
[8] *Id.*
[9] *Id.* at 78058-59. In part, this focus seems to reflect the corollary recognition that "NHTSA's current safety standards do not prevent the development, testing, sale, or use of ADS built into vehicles that maintain the traditional cabin and control features of human-operated vehicles." *See* U.S. Dep't of Transp., Automated Vehicles 3.0: Preparing for the Future of Transportation 6-7 (Oct. 2018), https://www.transportation.gov/av/3/preparing-future-transportation-automated-vehicles-3.

primarily on the design of a subset of ADS-equipped vehicles rather than on the performance of the ADS itself. While not the focus of this ANPRM, we encourage the agency to continue these regulatory efforts in parallel with the development of the ADS safety framework, as these efforts can provide certainty to developers and have the potential to make the rulemaking process more responsive to developments in ADS technology.

In this proceeding, NHTSA recognizes that, with many companies actively developing and testing ADS technology throughout the country, it is appropriate to start considering how the agency may properly use its regulatory authority and leadership position to encourage a focus on safety in performance as ADS technology continues to develop. NHTSA explains in the ANPRM that it is "looking beyond the existing FMVSS and their application to novel vehicle designs and is considering the creation of a governmental safety framework specifically tailored to ADS."[10] Such a framework, rather than prescribing by rule specific design characteristics or other elements for ADS, would "use performance-oriented approaches and metrics that would accommodate the design flexibility needed to ensure that manufacturers can pursue safety innovations and novel designs in these new technologies."[11]

The Coalition fully supports NHTSA's efforts in this proceeding to begin developing a safety framework for the performance evaluation of ADS. Our comments focus on the following set of recommendations.

First, NHTSA should avoid at this time issuing traditional FMVSS for ADS that are focused on discrete safety features with prescriptive metrics and test procedures. The Coalition agrees with the agency that taking such action would, among other reasons, be premature given the current state of AV deployment.[12]

Instead, NHTSA in the near term should prioritize developing and administering an ADS safety framework that is flexible and adaptive, and that employs tools such as guidance documents and consumer materials that will provide the information needed for the safe deployment of ADS technology without imposing prescriptive rules that may prove unsuitable when ADS deployment reaches a more mature stage. Such an approach would enable NHTSA to engage in careful study of ADS deployment over the long term and determine, based on accurate and reliable data, whether formal regulation can further enhance the ADS safety framework.

Second, the Coalition agrees with NHTSA that process measures may be better suited than engineering measures to address safety issues that cannot be efficiently or adequately addressed through FMVSS. Furthermore, we note that guidance measures in this area would not be inconsistent with the U.S. government's self-certification approach to motor vehicle safety, an

[10] ANPRM, 85 Fed. Reg. at 78059.
[11] *Id.*
[12] *See id.* at 78072.

approach that is likewise well-suited to ensuring the safety of AVs and ADS technology and fostering innovation. The Coalition therefore does not support NHTSA's deviating from this self-certification approach for the ADS safety framework in favor of requiring third-party validation.

Third, Coalition Members recognize that industry initiatives can play an important role in bolstering safety and transparency in connection with the deployment of ADS technology, and therefore Members are committed to taking a number of voluntary steps to achieve this objective and complement NHTSA's own efforts in devising an effective ADS safety framework.

I. The ADS Safety Framework Should be Flexible and Adaptive

A. NHTSA Should Avoid Issuing Prescriptive Rules for ADS at This Time

The Coalition agrees with NHTSA that "issuing performance standards for ADS competency has been and remains premature because of the lack of technological maturity and the development work necessary to support developing performance standards."[13] ADS technology remains primarily in the development phase, and therefore insufficient data exist at this time to determine whether prescriptive rules like traditional FMVSS are needed in the ADS context and, if they are, what the development of traditional FMVSS regulations in this context should look like. Indeed, the ongoing development of certain ADS technology suggests that a prescriptive, rule-based regulatory approach such as FMVSS may ultimately prove unworkable for some of the technology. For example, ADS are being designed with a range of sensors and software that could make it impractical for NHTSA to try to regulate through an engineering standard akin to current FMVSS. ODD variations, which as NHTSA has recognized are a feature of ADS development, likewise complicate any effort to fashion one-size-fits-all ADS-focused FMVSS. As ODDs vary, the scenarios to test would also vary based on the specific ODD and deployment characteristics.

For these reasons, NHTSA should avoid at this time promulgating traditional FMVSS for ADS that are focused on a single or a few discrete safety design features with prescriptive metrics and test procedures. The Coalition agrees with NHTSA that proceeding to an FMVSS regulation too soon could in fact have unintended and negative consequences on the innovative development of the technology, even undermining safety. To the extent FMVSS may eventually be needed, a better approach would be to wait and assess the relevant data as it becomes available. Such an approach would allow for the development (if necessary) of a new generation of FMVSS that could account for the unique considerations of ADS and other technologies and make sure that manufacturers of vehicles, sensors, software, and other technologies needed for ADS have the flexibility to change and improve without the need for frequent modifications to the regulations.

In the meantime, NHTSA has available several tools to assess vehicles equipped with ADS and promote and ensure the safety of our roadways. For example, NHTSA will administer the

[13] ANPRM, 85 Fed. Reg. at 78072.

existing FMVSS that do not involve ADS-specific features, but nonetheless have a bearing on safety. Also, NHTSA, through its exemption authority, can conduct case-by-case safety analysis as it evaluates whether the deployment of ADS-equipped vehicles that do not conform to existing FMVSS demonstrate an equivalent level of safety. NHTSA can use the exemption process to gather specific, relevant data from AV companies that will inform the development of future FMVSS relating to ADS.[14] Moreover, NHTSA will continue to exercise its safety enforcement authority to prevent "unreasonable risks" to motor vehicle safety. Finally, NHTSA's authority to recall vehicles provides another mechanism to address any indications of potential safety concerns with ADS-equipped vehicles.

B. NHTSA Should Instead Employ More Flexible and Adaptive Tools as Part of the ADS Safety Framework

Rather than promulgate prescriptive rules for ADS such as FMVSS, NHTSA should seek to administer an ADS safety framework through the issuance of guidance and consumer information that can be prepared and issued in the near term based on current information and ADS deployment today and over the intermediate future, with agency regulation and the development of FMVSS being reserved over the longer term after more data is gathered. Even without resorting to permanent FMVSS, NHTSA can meaningfully inform the safe design of FMVSS by helping to develop consensus around the types of standards and substantive content that can help establish AV operational safety. An approach that prioritizes flexible administrative action would allow for the safe deployment of ADS technology in the near term so that the clear and tangible safety and mobility benefits of self-driving technology reach the public more quickly. This approach would also allow the agency to more ably update and modify the safety framework over time in light of new technological developments.

The Coalition supports NHTSA's efforts to examine what industry standards and best practices may be appropriate for ADS so that industry can continue to develop safe, innovative technology while providing transparency to NHTSA and the public. Based on the continued development of the technology, the Coalition encourages NHTSA to focus these efforts on issuing guidance addressing best practices, providing information to consumers and developers, and describing different approaches to research and summarizing the results of research, rather than proceeding through formal FMVSS regulation or issuing rules requiring reporting and disclosure of information. NHTSA can spotlight safety approaches (including bases for measuring safety, and the types of safety targets that reasonably would promote AV safety) and help highlight developing standards and best practices, which NHTSA could identify as such, that appear to provide assurance on safe AV design and operation. As discussed above, the Coalition recognizes that a new generation of agency rules that account for the unique considerations of ADS and other

[14] The Coalition would recommend, however, that NHTSA refrain from using the exemption process to extract data from AV companies that is unrelated to measuring the specific elements informing the exemption request.

technologies may be both necessary and beneficial in the future, but at this time, when ADS is rapidly innovating, NHTSA should focus on crafting flexible and adaptive safety measures, including encouraging industry to implement process measures that document the steps taken to ensure the safety of ADS.

NHTSA has many tools at its disposal short of formal regulation. For instance, NHTSA could employ its leadership position and its convening authority to spotlight ADS safety and issue guidance on which aspects of these pieces of outside content are effective in promoting safety. The agency could also work to elevate the profile of standards-setting organizations that are developing ADS standards, where appropriate; study emerging metrics and opine on their utility in addressing ADS safety; and undertake other similar actions to develop a safety framework in the short term that would provide key guidance to ADS developers and offer assurances to the public of the technology's safety. This could, as one example, include offering guidance on (or even attention to) industry efforts to develop AV-related safety metrics and bases for measuring safety performance that allow for a meaningful evaluation of AV safety profiles.

As the agency moves to develop its flexible and adaptive ADS safety framework, the Coalition encourages NHTSA to remain focused on ADS safety performance, rather than addressing elements of functional safety or related issues such as privacy. Moreover, while NHTSA defines ADS as including Level 3 systems, which require a human to be involved in the dynamic driving task, the agency should be thoughtful when considering how the ADS framework treats L3 ADS that require a human driver and L4+ ADS that can operate without any human involvement. Similarly, the agency should aim to avoid pursuing efforts in this rulemaking to address L2 collision avoidance and other advanced driver assistance systems ("ADAS") technologies that raise issues and considerations distinct from those that arise in the ADS context, including those related to driver engagement and monitoring.

II. Process Measures Should Form an Important Part of an ADS Safety Framework

The Coalition agrees with NHTSA that process measures may be better suited to addressing "safety issues that cannot be efficiently or thoroughly addressed" than engineering measures or traditional FMVSS drafted in a highly performance-oriented manner.[15] As NHTSA develops guidance related to ADS, therefore, the Coalition supports NHTSA's leveraging or providing voluntary guidance related to existing process-oriented standards, including Functional Safety (ISO 26262), Safety of the Intended Functionality (SOTIF), UL 4600, and ISO 21448. Such standards have the potential to play an important role in AV developers' own documentation and development of ADS technology.

[15] ANPRM, 85 Fed. Reg. at 78065.

As an important caveat, although the Coalition supports NHTSA's examination and potential use of existing standards in assessing and developing an ADS safety framework, the Coalition does not support NHTSA's requiring validation by third parties as part of the framework. There is no reason to deviate from the government's self-certification approach to motor vehicle safety with respect to AVs and ADS, as this approach is well-suited to ensuring the safety of these technologies and to fostering innovation.

III. Industry Is Committed to Bolstering NHTSA's Ongoing Development of an ADS Safety Framework

Coalition Members recognize that industry initiatives can play a key role in enhancing safety and transparency in connection with the deployment of ADS technology, and therefore Members are committed to taking a number of voluntary steps to achieve this objective and complement NHTSA's own efforts in devising an effective ADS safety framework.

The Coalition supports voluntary mechanisms that can be used to implement the elements of a safety framework, including for monitoring, influencing, and encouraging greater care. The Coalition believes that safety self-assessment and other similar disclosure or reporting mechanisms will strike the appropriate balance between ensuring that the agency and the public have the information they need, while avoiding hampering safety and innovation or otherwise adversely affecting safety. To that end, the Coalition is working toward releasing in the near future a program that promotes safety and transparency.

Conclusion

We appreciate the opportunity to provide comments on NHTSA's Advance Notice of Proposed Rulemaking on a Framework for Automated Driving System Safety. These comments represent the continued engagement of the Coalition with NHTSA and other stakeholders on these important issues affecting the automotive industry and consumers around the world, and the Coalition looks forward to providing further comments and specific proposals to assist NHTSA in developing and advancing this important initiative.

Sincerely,

/s/

Ariel S. Wolf
General Counsel
Self-Driving Coalition