3/31/2021

James C. Owens
Deputy Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
West Building
Washington, DC 20590

Re: Docket No. NHTSA-2020-0106, Advance Notice of Proposed Rulemaking

Dear Mr. Owens:

I am pleased to submit the following comments in response to the Advance Notice of Proposed Rulemaking (ANPRM) published by the National Highway Traffic Safety Administration (NHTSA) regarding a prospective federal framework for automated driving system (ADS) safety. 85 Fed. Reg. 78058 (Dec. 3, 2020).

The ANPRM was published pursuant to NHTSA's authority under the National Traffic and Motor Vehicle Safety Act ("Safety Act") to issue federal motor vehicle safety standards (FMVSS) that are "practicable, meet the need for motor vehicle safety, and [are] stated in objective terms." 49 U.S.C. § 30111(a). Any future FMVSS applying specifically to ADS would be codified in 49 C.F.R. § 571. The ANPRM follows the issuance by NHTSA of several rounds of voluntary guidance documents that facilitate developers of ADS technology in self-certifying their compliance with various elements of ADS safety. *See, e.g.,* Nat'l Highway Traffic Safety Admin., DOT HS-812-442, Automated Driving Systems 2.0: A Vision for Safety (2017) ("ADS 2.0"). NHTSA's authority to issue such guidance is contained in 49 U.S.C. § 30111(f)(1).

Introduction

As a consumer in the market for motor vehicles, a frequent traverser of our nation's highways, and a law student with a strong interest in regulatory policy, I have a personal stake in any future safety standards for ADS issued by NHTSA. ADS is an exciting and rapidly growing field of technology that offers manifold opportunities for increased traffic safety, decreased casualty losses and healthcare expenditures from vehicle accidents, and expanded accessibility of transportation for disabled individuals and other underserved members of society.

The following comments will show that NHTSA, utilizing its existing statutory and regulatory authority, should: (1) focus its near-term research to establish objective measures by which manufacturers may self-certify compliance with ADS safety elements; (2) continue to encourage self-certification and public dissemination of Voluntary Safety Self-Assessments (VSSAs); (3) establish an ADS Advisory Council to collaborate with industry stakeholders and educate the

public; and (4) long-term, work to develop a federal ADS regulatory framework that is iterative, collaborative, and embodies the principles of planned adaptive regulation.

In the near term, NHTSA should focus its ADS research on identifying objective metrics for demonstrating compliance through process measures and engineering measures

The voluntary ADS guidance released by NHTSA to date has focused not on standardized, objective measures of compliance, but instead has highlighted general elements of ADS safety such as operational design domain (ODD), human machine interface, and vehicle cybersecurity. *See* ADS 2.0. Developers of ADS technology are given the option to demonstrate, via a VSSA, how their proprietary system achieves the safety imperatives of each relevant element identified by NHTSA. *Id*. Given the burgeoning nature of the ADS field, and NHTSA's stated desire not to stifle innovation with unnecessary regulatory roadblocks, the general and voluntary nature of this guidance is sound policy. *Id*. However, as private sector actors continue to develop, assess, and measure the safety outcomes of various ADS technologies, it will become increasingly practical and useful for NHTSA to develop guidance containing more specific and objective metrics by which developers may demonstrate compliance with ADS safety elements.

Developers can demonstrate compliance with ADS safety elements through engineering measures and process measures. Multiple players in the ADS field have identified the need for NHTSA to promulgate more specific guidance identifying objective metrics by which developers may demonstrate compliance with ADS safety components through process and engineering measures. *See, e.g.,* Insurance Institute for Highway Safety, Highway Loss Data Institute, Comment Letter on Proposed Rule for a Framework for Automated Driving System Safety (Jan. 28, 2021) ("[W]e recommend that NHTSA begin by formulating specific guidance based on the process and engineering measures described in the notice."); Mapless AI, Inc., Comment Letter on Proposed Rule (Dec. 29, 2020) ("Validation of the ADS product can be supported by data from NHTSA research concerning the expected value of the types of accident and outcomes for the intended ODD of the product. This data from NHTSA enables all ADS suppliers to argue that these expected values have been improved through validation results based on simulation, analysis, and testing.") It is significant that both of the foregoing comments also highlighted ISO 26262 and ISO 21448 as ideal process measures to be observed by ADS developers. *Id*. Both comments also mention Mobileye's Responsibility-Sensitive Safety (RSS) as a relevant engineering measure. *Id*.

Given the relative novelty of ADS technology and the resultant dearth of data concerning the application of various process and engineering measures to ADS development, NHTSA's use of voluntary guidance continues to be a sound approach. Nevertheless, NHTSA's research in the immediate future should focus on establishing objective measures by which ADS developers can demonstrate compliance with safety elements, focusing especially on ISO 26262, ISO 21448, and RSS. NHTSA has statutory authority to engage in vehicle safety research under 49 U.S.C. § 30182(a). These objective metrics should be used in more specific guidance and, eventually, a binding regulatory framework. Such clear, objective goals will provide increased certainty to

developers of ADS, help educate the public at large as to NHTSA's vision for ADS safety, and bolster consumer confidence in the efficacy of new ADS technology.

Near term, NHTSA should continue to encourage voluntary self-certification through Voluntary Safety Self-Assessments

As discussed above, NHTSA has committed to a nonregulatory approach to ADS safety as the technology continues to grow and develop. By eschewing binding regulations in favor of voluntary guidance, NHTSA has allowed for unimpeded private sector innovation while still advancing its own vision of ADS safety. NHTSA has also continued to encourage ADS developers not only to demonstrate compliance through VSSAs, but also to make those assessments public to help educate consumers. *See* Nat'l Highway Traffic Safety Admin., Automated Vehicles 3.0: Preparing for the Future of Transportation (2018) ("ADS 3.0").

These twin policy goals of safety and education remain of paramount importance and should continue to be emphasized. Moreover, as NHTSA develops the objective metrics discussed above, it can release more specific voluntary guidance to further these goals. VSSAs published in response to this more specific guidance would not only discuss the overall safety elements present in an ADS, but could also detail the objective metrics from the guidance that apply to that ADS and how the manufacturer has demonstrated compliance through its process and engineering measures.

NHTSA should further bolster this guidance-based regime by incorporating a voluntary ADS safety component into its New Car Assessment Program pursuant to its statutory authority to conduct research, gather information, and conduct inspections contained in 49 U.S.C. §§ 30181, 30182, 32302, 30166. Such a component should focus on engineering measures, as those are the measures most easily demonstrated through testing of a completed vehicle. Finally, NHTSA could even further incentivize testing and self-assessment by promulgating new rules streamlining the process for applying for and approving temporary exemptions from FMVSS contained in 49 C.F.R. § 555. *See also* Matthew Roth, Regulating the Future: Autonomous Vehicles and the Role of Government, 105 Iowa L. Rev. 1411, 1443. By making it quicker and easier for ADS developers to obtain an exemption from FMVSS, NHTSA could increase the volume and variety of ADS field tests in operation.

NHTSA should form an ADS Advisory Council to collaborate with industry stakeholders, publicize research findings, and educate consumers

This comment thus far has emphasized the importance of incentivizing innovation by ADS developers and educating the consumer public about ADS safety. These twin goals would be substantially bolstered if NHTSA were to establish an ADS Advisory Council consisting of ADS developers, representatives of state and local governments, NHTSA officials, independent engineers, and consumer representatives. NHTSA could form such a council by utilizing its

authority to award grants to states, localities, and nonprofit groups under 49 U.S.C. § 30182(b)(4). *See also* Roth, *supra*, at 1445.

The formation of an ADS Advisory Council would comport with NHTSA's past actions to foster collaboration and information sharing, such as its cooperative agreement with the American Association of Motor Vehicle Administrators to create the Autonomous Vehicle Best Practices Working Group. *See* ADS 2.0. The Advisory Council would also encourage cooperation between NHTSA and state and local governments, a critical imperative identified by other commenters on this ANPRM. *See, e.g.*, National Conference of State Legislatures, Comment Letter on Proposed Rule for a Framework for Automated Driving System Safety (Jan. 18, 2021); California State Transportation Agency, Comment Letter on Proposed Rule (Mar. 4, 2021). Finally, the Advisory Council could facilitate the public dissemination of research conducted by NHTSA, state and local pilot programs, and industry stakeholders, thereby educating the public and increasing consumer confidence in ADS technology.

Longer term, NHTSA should seek to create a federal ADS regulatory framework that is iterative, collaborative, and embodies "planned adaptive regulation"

Industry stakeholders, state and local governments, and legal scholars agree that ADS technology is still too early in its development for NHTSA to issue ADS-centric FMVSS with prescriptive and preemptive force. *See, e.g.*, Mapless AI, Inc., *supra* ("More prescriptive regulation is not recommended. More prescription requires more experience."); *see also* Shili Shao, Iterative Autonomous Vehicle Regulation and Governance, 2020 U. Ill. J. L. Tech. & Pol'y 325, 352 (2020). Nevertheless, by continuing its current nonregulatory course and conducting research to determine objective metrics by which to demonstrate ADS safety, NHTSA can amass over time the data, knowledge, and expertise necessary to create a compulsory regulatory framework for ADS.

Policy experts have consistently held that such a regulatory framework should be flexible, iterative, collaborative, and should contain ample room for flexibility as opposed to ossified prescription. Shao envisions a flexible framework that revolves around a single regulatory agency (in this case, NHTSA) and involves multi-stakeholder oversight groups to help regulators adopt changes. Shao, *supra*, at 345. This latter component is embodied in the ADS Advisory Council described above. Carp, in a similar analysis, proposes a federal ADS regulatory framework that conforms to the tenets of "planned adaptive regulation." *See* Jeremy A. Carp, Autonomous Vehicles: Problems and Principles for Future Regulation, 4 U. Pa. J. L. & Pub. Aff. 81 (2018). Planned adaptive regulation involves an iterative, four-step process: (1) initial regulation, (2) intensive data collection, (3) assessment and recommendations, and (4) agency consideration and adjustment. *Id*. at 141. This would require an initial commitment by NHTSA to "subject [its] policy to periodic re-evaluation and potential revision." *Id*. at 140.

A federal ADS framework built around planned adaptive regulation would allow for the development of FMVSS without stifling innovation. Because NHTSA would have already

accepted that any initial regulation would be periodically re-evaluated, those regulations would be permissive in nature, requiring adherence only to minimum safety standards within an ADS system's designated ODD. Indeed, many observers within the ADS community have identified the utility of ODD-specific standards. *See, e.g.,* California State Transportation Agency, *supra*; Insurance Institute for Highway Safety, Highway Loss Data Institute, *supra*. NHTSA's commitment to periodic re-evaluation of these standards could be reflected by issuing them as interim final rules under the "good cause" exemption contained in 5 U.S.C. § 553(b)(B). ADS developers would then engage in extensive testing to demonstrate compliance with those standards and report their data to NHTSA, ensuring consistent input by industry stakeholders. The third step, assessment and recommendation, would allow regulators and stakeholders to collaborate on revising or bolstering the existing regulations, which would then be implemented after the fourth step, agency consideration and adjustment. This last step acts as a bulwark to ensure that ADS regulation is ultimately not an exercise in industry self-regulation.

Planned adaptive regulation is the ideal regulatory model for ADS safety because it comports with NHTSA's current permissive approach, does not unduly impede innovation with strict prescriptive regulations, allows for consistent stakeholder input, and encourages collaboration, all while advancing NHTSA's mission to increase traffic safety. Most importantly, NHTSA could use its existing authority to issue FMVSS to actualize this framework. This is significant because many policy experts have advocated for NHTSA to adopt a pre-market approval framework for ADS regulation, but such a process would require Congressional action and as such is beyond the scope of the ANPRM to which this comment is responding. *See, e.g.*, Spencer A. Mathews, When Rubber Meets the Road: Balancing Innovation and Public Safety in the Regulation of Self-Driving Cars, 61 B.C. L. Rev. 295 (2020).

Conclusion

The continued development of ADS offers a tremendous opportunity to utilize technology to improve traffic safety, prevent unnecessary deaths and injuries, and promote the accessibility of automobiles to disabled persons who might otherwise have never known the privilege of owning a car. NHTSA, pursuant to its mandate to promote highway safety, prevent unnecessary death and injury, conduct research, and promote education, can help ADS realize that opportunity. By focusing its current research on objective metrics to create more specific voluntary guidance, forming an ADS Advisory Council, and moving toward a system of planned adaptive regulation, NHTSA can achieve its mandate, collaborate with ADS stakeholders, educate the public, and bolster consumer confidence in ADS technology. I appreciate the opportunity to comment on this crucial area of federal policy.

Sincerely,

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