



Motor & Equipment Manufacturers Association

Comments to

U.S. Department of Transportation

National Highway Traffic Safety Administration

RE: Advanced Notice of Proposed Rulemaking; Framework for Automated Driving System Safety

Docket No. NHTSA-2020-0106; RIN 2127-AM15

April 1, 2021

The Motor & Equipment Manufacturers Association (MEMA) submits the following comments regarding the National Highway Traffic Safety Administration's (NHTSA) Advanced Notice of Proposed Rulemaking (ANPRM) on a Framework for Automated Driving System Safety.¹

Introduction

MEMA represents more than 1,000 companies that manufacture original equipment (OE) and aftermarket motor vehicle parts, components, systems, and materials for use in passenger vehicles and commercial trucks.² Vehicle suppliers provide 907,000 direct jobs, making it the nation's largest manufacturing sector with jobs in all 50 states and contributing 2.5 percent of U.S. GDP.³ Our members lead the way in developing advanced technologies that enable safer, smarter, and more efficient vehicles. Vehicle suppliers conceive, design, and manufacture the OE components and systems that make up two-thirds of the value in every vehicle. Additionally, vehicle suppliers manufacture aftermarket parts and materials for the maintenance and repair of 290 million vehicles on the road.

Motor vehicle parts manufacturers are key developers of the components and software for automated driving systems (ADS) that enable highly automated vehicles. Vehicle suppliers have developed a wide range of advanced driver assistance systems (ADAS) technologies, as well as integrated active/passive safety systems that lay the foundation for ADS. Safety data analysis shows that over 36,000 people lost their lives on U.S. roads and over 2.74 million were injured in 2019.⁴ Utilization of automated technology utilization supports the NHTSA mission to save lives, prevent injuries, and reduce the economic costs of vehicle crashes. Widely deployed, automated technologies have the potential to radically improve vehicle safety by reducing fatalities and injuries. On top of saving lives, these technologies can also reduce congestion, improve vehicle fuel efficiency, and enhance personal mobility.

¹ 85 Fed. Reg. at 78058

² MEMA represents its member companies through its four divisions: Automotive Aftermarket Suppliers Association (AASA); Heavy Duty Manufacturers Association (HDMA); MERA - The Association for Sustainable Manufacturing; and Original Equipment Suppliers Association (OESA).

³ In addition, direct, indirect, and induced vehicle supplier employment accounts for over 4.8 million U.S. jobs. [U.S. Labor and Economic Impact of Vehicle Supplier Industry](#), MEMA and IHS Markit. February 2021.

⁴ "Traffic Safety Facts: Overview of Motor Vehicle Crashes in 2019," DOT HS 813 060. U.S. DOT/NHTSA. December 2020.

Suppliers are committed to improving vehicle safety and are leading the way in developing the technologies necessary to reduce fatalities and injuries. MEMA is encouraged by NHTSA's ongoing endeavors to assess the complexities of ADS and the impact it will have on our existing regulatory framework. At the same time, industry must have policy certainty to adequately plan for the safe introduction and long-term deployment of these future technologies. Certainly, NHTSA recognizes that rapidly evolving technology is a challenge for the current, traditional federal system's architecture. Federal policies, foundational regulations, and other voluntary mechanisms are available and should be utilized to support innovation and encourage deployment of ADS. Implementing a variety of strategies is necessary for the U.S. industry to remain a global leader.

As NHTSA continues its exploration of a framework for ADS, MEMA provides the following comments for the Agency's consideration.

Pragmatic Framework Development

On the outset, ADAS encompass a range of crash avoidance technologies that offer real-world benefits today. Suppliers are key developers of ADAS, which are the foundational, building-block technologies that will enable future ADS-equipped vehicles to realize their full potential. And while suppliers continue to work very closely with their vehicle manufacturer customers to bring ADSs to market, these systems will not be broadly available for many years. Exposing consumers now to ADS building block technologies is a desirable pathway for them to gain experience with and build confidence in these types of systems. As NHTSA is well-aware, MEMA has long urged the Agency to update and modernize the U.S. NCAP to include several ADAS crash avoidance technologies. The more attention and focus directed to increasing the presence of crash avoidance systems in the U.S. vehicle fleet is an opportunity for NHTSA to have an impact on reducing vehicle fatalities, injuries, property damage claims, and societal costs. These are benefits that can be realized with the ADAS technologies of today – benefits that will continue to improve as we transition to the ADS technologies of tomorrow. Moreover, since ADS is defined by SAE International to include Levels 3, 4 and 5, MEMA advises that NHTSA use caution when considering how an ADS framework would address Level 3 ADS, which needs a human driver, and Levels 4 and 5, which do not require human driver engagement. MEMA encourages NHTSA to consider ways to enhance consumer understanding about ADAS and ADS technologies with easily accessible educational materials and information sharing.

In the ANPRM, NHTSA indicates it is "taking care that its actions do not result in unforeseen problems in the development or deployment of ADS."⁵ For the near term, MEMA recommends that NHTSA create an ADS safety framework through the provision of guidelines, recommendations, and consumer information. These guidelines and recommendations should be based on information and data that is currently available and take a technology-neutral approach. The U.S. self-certification approach to motor vehicle safety helps to ensure and promote product and technology innovation. Agency regulation and development of Federal Motor Vehicle Safety Standards (FMVSS) should be deferred until more data is gathered over a longer time horizon. This approach facilitates safer deployment of ADS technology today and allows the Agency to better update the safety framework in the future as new technological developments arise rather than through regulation alone.

Due to the variability of Operational Design Domain (ODD) in deployment and the pace of technological development, at this point in time, NHTSA should refrain from utilizing a traditional

⁵ 85 Fed Reg at 78070

FMVSS focused on a select number of safety features with set prescriptive metrics and test procedures. First, MEMA agrees with NHTSA that it is too early to tell if a traditional FMVSS is required to address ADS safety performance. Companies that are creating ADS are currently in the development phase, and there is not enough data available to construct an ADS-specific FMVSS and justify it at that level of granularity. Again, moving too quickly to implement regulations could inadvertently impede technological developments to improve safety. Second, the design of ADS includes a variety of sensors and software that would make it challenging for NHTSA to regulate through a standard like a traditional FMVSS. Component and software inputs change much more quickly than traditional motor vehicle systems. Third, there are significant challenges in being able to create repeatable, reproducible, reliable tests for various ADSs with different ODDs; each scenario would vary widely and increase testing complexity. Lastly, MEMA believes NHTSA should focus on the core ADS safety functions of sensing, perception, planning, and control.

While voluntary approaches are appropriate at this time, NHTSA should take to create a bridge between today's voluntary approach and future mandates. As such, MEMA welcomes an opportunity for the supplier community to discuss with NHTSA possible next steps, such as a safety assurance framework. Certainly, the U.S. vehicle industry is preparing for these future transportation and mobility needs. Over the years, there have been dockets and projects that address different aspects of how to prepare for an ADS future. U.S. Transportation Secretary Pete Buttigieg has made it clear that automated and electric vehicles are coming and are integral to preparing the U.S. for this transition to meet future transportation and mobility needs. MEMA urges NHTSA to keep ADS as one of its top priorities. Indeed, MEMA recognizes the Agency's need to balance and consider multiple priorities to achieve these future goals. In the past, MEMA has urged NHTSA to use a roadmap approach for how the Agency plans to incorporate ADAS into the U.S. NCAP. Therefore, MEMA encourages NHTSA to forge a path as to how ADS-equipped vehicles are treated and develop a clear roadmap. Having clarity on this front would be very important for the vehicle industry overall. Such a plan would provide more certainty and clarity about how and when the U.S. DOT and NHTSA intend to move forward and/or complete related ADS efforts already underway, which will enhance how the industry can prepare products to support these endeavors.

Process Measures

In the ANPRM, NHTSA states, "Unlike engineering measures, process measures address safety issues that cannot be efficiently or thoroughly addressed through the FMVSS approach to testing, since process standards help to ensure reliability and robustness of designs over the life of the vehicle, and in 'edge' cases—both of which are difficult or impossible to verify through one-time testing a finished vehicle." MEMA agrees with the Agency's viewpoint and the standards' principles outlined in the ANPRM are indeed useful in ADS development. Companies that develop ADS should be able to utilize a range of sources to document safety through process measures.

Voluntary Mechanisms

MEMA continues to support using voluntary mechanisms because they can help implement an ADS safety framework. Voluntary Safety Self-Assessments (VSSAs) and other similar disclosure/reporting methods offer pathways to ensure that NHTSA has the data it needs as ADSs develop and evolve. MEMA supports using the VSSA parameters where appropriate because they provide entities with the flexibility to customize their assessments and the ability to be transparent and address various applicable safety elements without divulging proprietary information. The flexibility to address which safety elements are relevant to the VSSA is important particularly for

vehicle suppliers/ADS developers that conduct ongoing testing of various modules and systems. Also, making the VSSAs publicly available online enhances transparency and understanding. The latest Agency endeavor of the AV TEST initiative is another transparent avenue for stakeholders to share information about ADS-enabled vehicles and on-road tests.

Overall, MEMA supports approaches like guidance and best practices, as applied to ADS, because industry can continue to develop safe technology while concurrently assuring NHTSA and the public about ADS safety and correlating benefits. At this stage, the prudent approach is for the government to continue seeking public input on Agency guidance/best practices, to encourage ongoing voluntary reporting from stakeholders, and to provide consumers information on public websites and other forums. The statutory authority available to NHTSA today is adequate for the Agency to address any ADS safety concerns. That notwithstanding, MEMA recognizes that there will be a time in the future where a self-certified FMVSS will be appropriate and necessary. However, for where we are today, the voluntary approach is best suited to allow ADS developers to continue to innovate and refine these complex systems.

Exemptions

Suppliers have a long history of testing prototype technologies and bringing them safely and responsibly to market. Many examples of such efforts can be seen by looking at the multitude of new driver assistance, braking, and steering advancements that are available in the market. The supplier industry would strongly support NHTSA oversight of these testing activities to ensure that they are carried out in an appropriate manner.

As was noted in the ANPRM, a critical step in the ADS development process is to verify and validate the technology through on-road testing. Unfortunately, the current statutory and regulatory framework presents significant challenges for entities other than traditional vehicle manufacturers (OEMs) from testing on public roads. This disparity poses a significant hurdle for qualified, non-OEM ADS developers. In the ANRPM, NHTSA notes how it addresses exemption requests for imported ADS-equipped vehicles for research and demonstration purposes.

Suppliers, like OEMs, need the ability to test on public roads to collect real-world data to further develop and refine ADS components, modules, or systems. Suppliers need the ability to test without significant, burdensome impediments that impact their ability to validate and continuously innovate. Vehicles used for testing and evaluation during developmental phases of a given vehicle technology system are often existing vehicles, purchased “off the lot,” and then modified and instrumented with test equipment. Examples of modifications may include disabling the systems controlling the vehicle’s air bags and vehicle stability control systems. Test vehicles, which are company-owned and maintained, are driven by testing engineers who are specifically trained by the company conducting the test evaluation.

Consistent with the goals of the Agency to enhance ADS innovation and development, MEMA urges NHTSA to revisit issuing its Notice of Proposed Rulemaking (NPRM) regarding an expansion of the temporary exemption program for domestic manufacturers for research, demonstrations, and other purposes. As noted in our letter last year to NHTSA,⁶ *“The Agency’s efforts to launch the AV TEST Initiative would be complemented by both the issuance of the NPRM to expand the eligible entities who can utilize the temporary exemptions for AV development and by implementation of a*

⁶ Letter to NHTSA Acting Administrator James Owens from MEMA and the Alliance for Automotive Innovation, August 6, 2020.

*pilot program along the lines put forward by NHTSA in their 2018 proposed rulemaking.*⁷ MEMA does not support an open-ended allowance for any entity to test a prototype vehicle on public roads. Rather, MEMA supports efforts to create additional opportunities for qualified ADS developers to safely test their vehicles on public roads subject to NHTSA oversight.

Commercial Vehicle Considerations

The ANPRM seems to mostly address ADS from the vantage point of light passenger vehicles. As NHTSA is aware, there is a great deal of ADS development for the commercial vehicle sector. Thus, MEMA encourages the Agency to ensure that any ADS policy implications ensure consideration for heavy-duty commercial vehicles and equipment. These vehicles have unique applications and operational differences compared to light vehicles. MEMA has noted in other comments regarding advanced safety technology issues that the commercial vehicle segment has a more closed-loop ecosystem of customer-supplier-fleets/owners-service relationship that is much different than the consumer passenger market. Moreover, many commercial vehicles are heavily customized (e.g., fleet specifications, service applications, etc.), which may add to the complexity of an ADS. NHTSA should recognize these differences and consider a more tailored focus or strategy relative to the commercial vehicle sector (e.g., product lifetime, service applications, physical size, and standardization).

Innovation and Competitiveness

U.S. policymakers are at a critical phase. MEMA supports federal policies that will provide the necessary certainty for motor vehicle suppliers to continue to invest in research, development, and continued product innovation in the United States. These investments will help the U.S. remain a global leader in technology development. The federal government plays an important role to support an integrated framework of laws, policies, guidelines, voluntary standards, and regulations that foster these critical investments. MEMA members are global companies that depend on an integrated, worldwide network of suppliers and customers for continued viability and growth. U.S. policy-development activities impacting future vehicles cannot be done in isolation or be significantly outpaced by our global counterparts in Europe and Asia. MEMA urges the U.S. DOT and NHTSA to continue their leadership role in global forums – such as the UN WP. 29 – and explore opportunities to collaborate and be as aligned as possible. Additionally, regular engagement with industry standard development groups can be ways for ongoing collaboration, identifying and overcoming commonly identified challenges. Any opportunity to create harmonized approaches on ADS will increase efficiencies, provide certainty, and reduce costs of testing, evaluation, and compliance for both government and industry. Strong leadership and cooperation in addressing ADS, global endeavors to develop aligned standards and regulations have the potential to enable expedited implementation and streamline test development efforts. Overall, these alignments enhance global competitiveness for U.S. industry.

Conclusion

Vehicle suppliers are committed to improving vehicle safety and efficiency. Many are essential ADS developers. MEMA supports an iterative, flexible, voluntary, and transparent approach to addressing complex ADS technology. A unified guidance approach – in the context of a federal framework with clearly defined parameters – is the right approach for the near term as these

⁷ NHTSA Advance Notice of Proposed Rulemaking (ANPRM): *Pilot Program for Collaborative Research on Motor Vehicles with High or Full Driving Automation*, 83 Fed. Reg. at 50872.

innovative technologies are rapidly developing. This gives the Agency and industry stakeholders the ability to be transparent with the public while safeguarding research and development information that is commercially sensitive and proprietary. As the primary developers of ADS components, modules and systems, these needs are even more critical for vehicle suppliers to adequately validate products for their customers.

MEMA is pleased to have the opportunity to provide NHTSA with our general feedback and input on its ANPRM on an ADS Framework. For any additional information or questions, please contact Leigh Merino, vice president of regulatory affairs at lmerino@mema.org or (202) 312-9249.