



Motor & Equipment Manufacturers Association
Comments to the
National Highway Traffic Safety Administration

RE: Request for Comments; Automated Driving Systems: A Vision for Safety
Docket No. NHTSA-2017-0082
November 14, 2017

Introduction

The Motor & Equipment Manufacturers Association (MEMA) submits these comments in response to the National Highway Traffic Safety Administration's (NHTSA) *Federal Register* notice of public availability and request for comments, 82 Fed. Reg. 43321 (Sept. 15, 2017), on its voluntary guidance on automated driving systems, entitled *Automated Driving Systems 2.0: A Vision for Safety* (Guidance).¹

MEMA is the leading international trade association in the fast-changing mobility industry, and represents 1,000 vehicle suppliers that manufacture and remanufacture components and systems for use in passenger cars and heavy trucks as new original equipment (OE) and aftermarket parts to service and repair vehicles on the road today.² The motor vehicle components manufacturing industry is the largest direct employer of manufacturing jobs in the United States directly employing more than 871,000 Americans, generating a total employment impact of 4.26 million jobs and contributing nearly \$435 billion to the U.S. GDP. In total, motor vehicle parts suppliers contribute more than 77 percent of the value in today's vehicles.³

MEMA commends the leadership from the U.S. Department of Transportation (USDOT) and NHTSA on their proactive, pragmatic, iterative approach to providing industry guidance for automated driving systems (ADS) thus far. The voluntary nature of the Guidance accounts for the fast pace of technology development and provides the Agency and entities with the flexibility needed to adapt to new information and technology progressions. MEMA supports this approach as it provides entities with a flexible federal framework of voluntary guidance that applies to ADSs for all vehicles – passenger cars and

¹ The Guidance is available at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf

² MEMA represents its members through four divisions: Automotive Aftermarket Suppliers Association (AASA); Heavy Duty Manufacturers Association (HDMA); Motor & Equipment Remanufacturers Association (MERA); and, Original Equipment Suppliers Association (OESA).

³ "[Driving the Future: The Economic Impact of the Motor Vehicle Parts Manufacturing Industry on the United States](#)," MEMA and Boston Consulting Group, January 2017.

commercial vehicles – as well as guidance to the States clarifying their respective roles related to the testing and deployment of ADSs.

Our members are key developers of advanced, transformative technologies that enable safer, smarter, and more efficient vehicles. Collectively, these technologies are increasingly becoming available on a range of vehicles with the capacity to provide significant safety benefits and lay the foundation to an automated vehicle fleet that could substantially reduce traffic fatalities. Vehicle suppliers have made significant investments in research and development, design, and validation testing to produce a wide range of advanced crashworthiness, crash avoidance, and mitigation safety innovations for their vehicle manufacturer customers, a.k.a. original equipment manufacturers (OEMs). Such technologies include, among others: advanced driver assistance systems (ADAS), advanced vehicle architectures, dedicated short range communications (DSRC)-capable devices enabling vehicle-to-vehicle (V2V) and vehicle-to-everything (V2X), as well as ADS technologies for highly automated vehicles (HAVs). Working collaboratively with OEMs, suppliers are critical in the ongoing creation, refinement, and implementation of these technologies, which are the building blocks necessary to allow HAVs to reach their full potential.

In our comments, MEMA provides some additional feedback for NHTSA’s consideration addressing some residual concerns and Guidance elements that are important to suppliers. Public outreach, workshops, and other forums are important as the Agency continues to review, assess, and revise future iterations of the Guidance. The momentum behind ADS is building and necessitates open and efficient channels of communication to remain up to speed in the dynamic nature of this exciting technology. MEMA applauds NHTSA’s commitment to staying current and making revisions to the Guidance. At a Nov. 2 public appearance, Transportation Secretary Elaine Chao said, “Work is advancing so quickly ... that an updated version [of 2.0] is already in the works. That’s how fast technology is changing.”⁴

As this is an iterative, open, and transparent process, MEMA supports NHTSA’s utilization of Guidance documents and will continue to be part of the ongoing dialogue with the Agency and other stakeholders. MEMA appreciates NHTSA’s consideration of our comments and are available to discuss them further, as appropriate.

Voluntary Guidance

Vehicle-related fatalities and injuries continue to rise, with recent data showing 37,461 Americans died in 2016 – a 5.6 percent year-over-year increase in fatalities. Since human error is a key factor in approximately 94 percent of crashes, the technology vehicle suppliers are developing for their OEM customers will have a profound impact on vehicle safety. ADSs/HAVs will have a widespread impact on reducing vehicle-related fatalities,

⁴ “USDOT Preparing Sweeping AV Policy Update, 3.0, Including Trucks and Buses” ENO Transportation Weekly, Oct. 30, 2017.

injuries and property damage claims, which cost society more than \$910 billion annually.⁵ Moreover, ancillary benefits of HAVs include improving access to mobility for more communities (e.g., elderly and persons with disabilities) and facilitating more efficient transportation by reducing traffic congestion and fuel consumption.

The vehicle industry, at large, is on the leading edge of these evolutionary technologies that show great promise and potential to improving safety. These are rapidly developing, complex advancements and, therefore, require public policies that are nimble, flexible, and strike an appropriate balance and cooperation among all public and private stakeholders, without stifling innovation and generating unintended consequences.

The NHTSA Guidance is intended to keep this balance, and MEMA appreciates that the Agency's latest iteration includes some clarifications and refinements important to all industry stakeholders and provides a flexible, federal framework for ADS deployment. A guidance approach – in the context of a national framework with a clearly defined role for the states – illuminates the pathways needed to navigate the complexities of automated vehicle technologies and vehicle supply chains.

ADS Safety Elements

Scope – MEMA appreciates the changes NHTSA made by modifying the scope of the 2017 Guidance, applying it to the SAE Level 3-5 vehicles, as defined by J3016. Previous guidance under the 2016 Federal Automated Vehicles Policy (FAVP) had included SAE Level 2 vehicles. This inclusion was problematic and retroactive, as these Level 2 systems are already deployed. Therefore, MEMA thanks the Agency for this important clarification.

Additionally, since MEMA represents suppliers to light- and heavy-duty vehicle OEMs, we appreciate NHTSA taking the lead to oversee ADS technologies for all types of vehicles and motor vehicle equipment under NHTSA's jurisdiction. Although the Federal Motor Carrier Safety Administration (FMCSA) is the lead Federal agency responsible for overseeing the operational safety of interstate motor carriers and their drivers, trucks today have a range of safety features and technologies, such as driver assistance technologies with increasing levels of automated braking and steering stability controls. As such, MEMA encourages NHTSA to continue to collaborate with FMCSA (as well as other State and Federal agencies) as ADS technology develops to ensure a harmonized regulatory framework to avoid any conflicting Federal and state laws and regulations or other roadblocks to testing ADS on roadways or, ultimately, deploying ADS in fleets.

Safety Elements vis-à-vis Testing and Evaluation – MEMA appreciates NHTSA consolidating the safety elements from the FAVP's 15 to the latest Guidance's 12, as this allows for flexibility on the information provided. It is especially helpful to entities, like suppliers, to tailor their assessments more appropriately to the testing and evaluation environment. Most suppliers are testing their systems in modified test vehicles, which should not be considered and treated the same as production vehicles. Typically, these

⁵ MEMA and BCG, "[A Roadmap to Safer Driving Through Advanced Driver Assistance Systems](#)" pg. 5, Sept. 2015

company-owned vehicles, are operated only by trained employees, and are not intended for the production or sale to the public. Thus, MEMA is pleased that the Agency recognizes that during testing phase, some of the 12 elements are not applicable and, therefore, offers entities the opportunity to include an acknowledgement within the Voluntary Safety Self-Assessment (VSSA) stating that a particular “element is not applicable.”

At the same time, as we address in more detail below, MEMA believes it would be advantageous for NHTSA to assert this point more explicitly in future iterations of the Guidance.

Data Recording – MEMA appreciates that NHTSA revised its previous approach to data sharing as outlined in the 2016 FAVP, clarifying that its current focus is on data recording needed for crash reconstruction.⁶ In general, all companies – not just those in the automotive sector – safeguard proprietary intellectual property and other confidential business information, such as this, from dissemination. Suppliers likewise remain concerned with safeguarding commercially sensitive information, especially given their ongoing investments in research and development and validation testing of their product innovations of the various components, modules, and sensors that comprise ADSs. Because this data is critically essential in the development of ADS technology, MEMA appreciates NHTSA’s clarifications on its current limited focus on crash reconstruction data, and looks forward to working with the Agency to help distinguish safety data from that which could be used for other non-safety-related purposes.

MEMA would also like to highlight that testing and validation of ADS-related components and systems are implemented not only in virtual “hardware in the loop” scenarios, but also via real-world exposures. Data collected during the testing phase are highly proprietary pieces of information as it is primarily being collected by the company’s testers for the purposes of refining and advancing the capabilities of the component, module, or system. At the same time, while MEMA understands the desire for communal and continual learning, such matters are best addressed through industry standard development bodies, such as SAE International. MEMA posits that in the event the Agency needs more information from a particular entity, then assurances should be given that any confidential information provided in response to an Agency request will be properly safeguarded and protected by appropriate means, including but not limited to, Agency’s standard Confidential Business Information protocols.

Voluntary Safety Self-Assessments

Clarity on Voluntary Submissions – First, MEMA appreciates the reassurance and clarification from NHTSA that (1) the VSSAs are voluntary – although, strongly encouraged – “concise” publications; (2) there are no requirements or means to compel an entity to submit a VSSA; and, (3) there is no federal VSSA “approval process.” Again, at this stage in the development of ADS-related technology, MEMA agrees that these are

⁶ See “Frequently Asked Questions,” *available at* <https://www.nhtsa.gov/manufacturers/automated-driving-systems>

appropriate parameters for the Guidance, primarily because they provide entities with the flexibility to customize their assessments to address the various applicable safety elements without divulging proprietary information or being constrained by submission timetables.

However, MEMA would like to note that submission of these voluntary publications is also subject to the unique business relationships during the ADS testing phase. In addition to testing solely conducted by an individual supplier, sometimes the evaluations are done in conjunction with OEM customers or as a joint venture with another supplier or other entity. In a similar vein, testing of commercial vehicles ADS-related components are often a collaborative effort between several suppliers and an OEM – and, in some cases, a commercial fleet customer may also be involved. However, under the current Guidance, each company could submit duplicative VSSA information concerning these vehicles, which will require additional effort and coordination to ensure the objectives are met and clearly stated. Below we provide further comments on these issues, specifically addressing and reiterating the overall role of suppliers in ADS product development and deployment to their OEM customers.

VSSAs vis-à-vis Testing and Evaluation – During testing, a system is adjusted, tweaked, and refined – sometimes within hours and days, and, other times, over a period of weeks and months. Thus, MEMA is pleased to see that NHTSA is allowing for overall voluntary flexibility in submitting VSSAs.

MEMA also appreciates that NHTSA encourages entities to voluntarily publish their VSSAs to provide transparency for the public confidence and the flexibility for entities to submit the appropriate levels of information without risk of revealing proprietary intellectual property or other sensitive information. MEMA further appreciates NHTSA's recognition and agreement with 2016 FAVP comments from MEMA and others that some of the safety elements are simply not applicable during the evaluation and test phases. This offers entities, whose products are in the test phase, the flexibility to indicate which safety elements are relevant to the VSSA. This option is important, particularly for suppliers who conduct ongoing testing of their various components, modules, and systems.

Therefore, in its Guidance, NHTSA offers entities the opportunity to include an acknowledgement stating that an “element is not applicable.” MEMA strongly supports this option because it is indeed true – often, many of the safety elements noted in the Guidance, are not relevant during the testing phase. For example, elements like “Consumer Education and Training” and “Human Machine Interface” either are not relevant or are addressed at later stages during validation.

While an entity can indicate that an “element is not applicable” for some of the Guidance's safety elements, since these VSSA publications are intended to be high-level public documents, the optics of a VSSA with these elements not addressed may be taken out of context and misunderstood by the general public, including regulators and consumers alike. Considering this potential misunderstanding, MEMA encourages NHTSA to make this point clearly and explicitly in future iterations of the Guidance.

Supplier Role – Just as there are key differences between testing and production vehicles, there are also key differences among the various entities involved in the manufacturing, development, testing, and deployment of ADS. Specifically, MEMA re-emphasizes what we asserted in our 2016 FAVP comments and reiterates that NHTSA should acknowledge the different roles of suppliers and OEMs in the Guidance. OE suppliers most often do not have visibility into the full scope of issues to properly assess performance once a supplier’s component, module, or system has been integrated into a production vehicle. Details regarding how its specific equipment interacts with other components or systems in a production vehicle are not always known to the supplier. When developing a product, a supplier may create and develop that system independent of their OEM customer or, a supplier may create and develop that system collaboratively either with another supplier and/or with the OEM. In short, once the OEM has integrated ADS technology into a production vehicle’s system, there are many factors that are unknown to the supplier. Likewise, an OEM may also make modifications over time (e.g. over-the-air update) where, again, a supplier would not know the conditions of how an OEM updated the integrated HAV system.

Public Online Resource for VSSAs – As the Guidance and self-assessments are voluntary and because there is a public interest in the information offered, MEMA believes that a public website containing links to publicly disclosed VSSAs would be beneficial. This website could serve as a neutral database to securely upload and modify the VSSA, and further improve the accessibility and transparency of the information as a one-stop reference for the public. MEMA believes this resource would be a very efficient way to manage a wide array of information. Thus, MEMA encourages NHTSA to seek public feedback to evaluate this proposal, including on how best to achieve and implement this idea.

Federal & State Roles

MEMA fully supports NHTSA’s strong encouragement to the States not to codify the Federal, voluntary Guidance “as a legal requirement for any phases of development, testing, or deployment...” Real-world exposure on public roads is a critical stage in motor vehicle and equipment development, which is one of the key reasons MEMA continues to emphasize the need to differentiate ADSs for testing versus ADS-enabled production vehicles in the context of the Guidance and related public policies.

Suppliers’ Ability to Test on Public Roads – 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 the purposes of 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 professional drivers who are specifically trained by the company conducting the test evaluation.

This leads to another key area of concern for MEMA. As NHTSA is aware, Section 24404 of the 2015 FAST Act allows for vehicle manufacturers to test and operate vehicles that do not meet FMVSS, provided, among other things, they are not offered for sale. This exemption, on its face, is limited to OEMs and does not extend to manufacturers of motor vehicle equipment⁷ Thus, this creates additional barriers for suppliers and impedes their ability to test.

While there are efforts underway in Congress⁸ to fix these issues via legislation – there are no guarantees that legislative efforts will materialize. If this legislative solution is not solidified, the existing USDOT processes do not provide an adequate avenue for suppliers to obtain exemptions similar to their OEM counterparts, and could hinder suppliers' ability to efficiently research, test, and deploy life-saving ADS technologies. Therefore, MEMA urges the Department and the Agency to evaluate this matter and implement a process pathway such that suppliers can effectively obtain exemptions allowing testing on public roads. Doing so will avoid the unintended consequences that may hinder supplier development and innovation of ADSs, including those that delay or prevent opportunities for real-world testing experiences in various states.

Clarification of “Compliance Plan” – Under the section titled “Best Practices for State Highway Officials” under Item “C,” NHTSA references a “safety and compliance plan” and infers that having such a plan “could provide increased safety assurance to the State.” However, no such plan is mentioned anywhere else in the Guidance. In fact, NHTSA clearly emphasizes that the entirety of the 2017 Guidance is “entirely voluntary, with no compliance requirement or enforcement mechanism.” In any event, such a plan, should fall under the purview of the Federal agencies because it impacts the design, construction, and performance of a vehicle and its equipment. If NHTSA intended this to refer to the Voluntary Safety Self-Assessment, then it should be clearly referenced as such. But, since intention of this term is unclear, MEMA respectfully asks NHTSA to clarify its use of the term “compliance plan” in future iterations of the Guidance.

Conclusion

Suppliers are committed to improving vehicle safety and efficiency. Our members are leading the way by developing the technologies necessary to reduce fatalities and injuries. Policy guideposts and parameters are important in this process, and MEMA supports the iterative, transparent approach that the USDOT and NHTSA have undertaken. The Guidance provides entities with a flexible, voluntary approach that

⁷ See 49 U.S.C. § 30112(b)(10).

⁸ H.R.3388 “Safely Ensuring Lives Future Deployment and Research In Vehicle Evolution Act” (SELF DRIVE Act) and S.1885 American Vision for Safer Transportation through Advancement of Revolutionary Technologies Act” (AV START Act); 115th Congress.

applies to ADSs for all vehicles. A unified guidance approach – in the context of a federal framework with a clearly defined role for the States – is the right approach for the near term as these innovative technologies are rapidly developing. This gives the Agency and industry stakeholders the ability to be transparent with the public while safeguarding commercially sensitive, proprietary and research and development information. 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 feedback and input on its 2.0 Guidance document. We will continue to be part of the public discourse on this subject. For any additional information or questions, please contact Leigh Merino, senior director of regulatory affairs at lmerino@mema.org or (202) 312-9249.

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