

August 29, 2019

Docket Management Facility,
U.S. Department of Transportation,
Room W12-140,
1200 New Jersey Avenue SE,
Washington, DC 20590-0001

**Re: Docket No. NHTSA-2019-0036
Advance Notice of Proposed Rulemaking
Removing Regulatory Barriers for Vehicles With Automated Driving
Systems**

Enclosed are the comments of the Association of Global Automakers, Inc. ("Global Automakers") on NHTSA's May 28, 2019, Advance Notice of Proposed Rulemaking (ANPRM) seeking public comment on the near- and long-term challenges of testing and verifying compliance with existing crash avoidance (100-series) Federal Motor Vehicle Safety Standards (FMVSS) for certain automated driving system-dedicated vehicles.

Sincerely,



Paul Scullion
Senior Manager, Vehicle Safety and Connected Automation

Enclosure

**COMMENTS OF THE ASSOCIATION OF GLOBAL AUTOMAKERS, INC.,
IN RESPONSE TO THE NHTSA ADVANCE NOTICE OF PROPOSED RULEMAKING
ON ADDRESSING THE NEAR- AND LONG-TERM CHALLENGES OF TESTING AND
VERIFYING COMPLIANCE WITH EXISTING CRASH AVOIDANCE (100-SERIES)
FEDERAL MOTOR VEHICLE SAFETY STANDARDS FOR
AUTOMATED DRIVING SYSTEM DEDICATED VEHICLES.**

The Association of Global Automakers, Inc. (“Global Automakers”)¹ appreciates the opportunity to provide comments on NHTSA’s Advance Notice of Proposed Rulemaking (ANPRM) on removing regulatory barriers for Automated Driving System-Dedicated Vehicles (ADS-DVs). It is essential that both the Department of Transportation (DOT) and the National Highway Traffic Safety Administration (NHTSA) prioritize their efforts to ensure a modernized approach to regulation that supports continued innovation and helps advance safety, mobility, and transportation efficiency in the United States.

While the potential benefits of vehicle automation are well recognized, there are a number of significant issues within the existing regulatory framework that impact the deployment of ADS-DVs. More specifically, the development ADS-DVs without manual driving controls presents new challenges for the agency with the respect to the compliance certification of these vehicles. It is therefore essential that the agency take action to provide policy certainty to support meaningful deployment and overcome the practical limitations and process concerns associated with the current exemption process. We urge the agency to move expeditiously to address the near- and long-term challenges of testing and verifying compliance with existing Federal Motor Vehicle Safety Standards (FMVSS), including the *crash avoidance* (100-series) standards that are addressed in the ANPRM.

We are encouraged that this notice recognizes the need for a comprehensive approach to examine the range of issues that exist within the various crash avoidance standards and related test procedures. However, a robust process is needed to address these challenges quickly. As outlined in our comments below, it is essential that the feedback received in response to this notice inform the development of a more strategic, data-driven, and principles-based approach that addresses potential barriers in phases, as opposed to attempting to modify all regulations at one-time. Continuous progress by working at the numerous current barriers, addressing the “low-hanging fruit” first, would provide substantial near-term benefits to both manufacturers and the agency and would expedite the implementation of life-saving technology.

With a significant number of rules that may need to be updated to either incorporate minor changes, or in some cases more significant revisions, we believe it is imperative that the agency not delay in taking meaningful policy action. Based on an initial review of several 100-series FMVSSs, we believe NHTSA is positioned to initiate rulemaking for certain FMVSSs more quickly depending upon the type of barrier and the complexity in providing alternative compliance options based on the scope and original intent of the regulation. Consistent with Global Automakers prior comments on ADS related matters, we encourage NHTSA to expeditiously review stakeholder feedback in response to this notice to further inform the development of a *Research and Rulemaking Priority Plan* that outlines key milestones for implementing necessary changes. Also, in addition to the issues raised in

¹ The Association of Global Automakers represents the U.S. operations of international motor vehicle manufacturers, original equipment suppliers, and other automotive-related trade associations. Global Automakers’ mission is to educate and advocate for policies that help foster a vibrant, growing, free and open U.S. auto industry for all stakeholders. The Association collaborates with industry leaders, legislators, regulators, and other stakeholders in Washington, DC and 50 state capitals to create the kind of public policy that promotes innovation, vehicle safety and environmental responsibility. Our members account for 46 percent of retail vehicle sales and 37 percent of vehicle production in the United States For more information, visit www.globalautomakers.org.

the ANPRM, it is essential that NHTSA begin initiating action to remove barriers in the crashworthiness FMVSSs (200-series standards) and other standards, including issues related to telltales, indicators, and controls.

1 Efforts to Provide Guidance and Regulatory Certainty

Both NHTSA and DOT have taken important steps to support the testing and deployment of automated vehicles, which includes the publication of *Automated Driving Systems 2.0: A Vision for Safety* (AV 2.0) and *Automated Vehicles 3.0: Preparing for the Future of Transportation* (AV 3.0).^{2,3} These documents establish a flexible *safety assurance* process and provide guidance on several key safety elements that manufacturers should consider in the design and development of ADS-equipped vehicles. Consumer trust and confidence are critical to the adoption of new technology, and this approach provides the necessary flexibility to develop, test, and deploy highly automated vehicle systems, as NHTSA considers how best to modernize the existing regulatory framework. Despite these documents, more work is needed to enable future deployment.

We are also encouraged by DOT and NHTSA efforts to identify potential regulatory barriers, which include both the initial review conducted by the Volpe Center, as well as ongoing efforts by the Virginia Tech Transportation Institute (VTTI).^{4,5} This research is critical to understanding key issues that need to be addressed and should help inform and prioritize the agency's efforts moving forward. By modernizing existing standards to explicitly address automated vehicles and provide alternative compliance options, where necessary and applicable, the agency will reduce reliance on the exemption process as a pathway to deployment while still maintaining safety.

The exemption approach is administratively burdensome for both NHTSA and manufacturers, potentially delaying the introduction of automated driving systems. While we appreciate recent efforts to streamline aspects of the process, the reliance on exemptions provides no long-term regulatory certainty, and creates the public perception of reduced safety.⁶ These considerations further reinforce the need for NHTSA action to address regulatory barriers and provide increased regulatory certainty for deployment as this is critical moving forward. In the interim, however, given that exemptions may provide one of the few, if not only, deployment pathway for certain companies seeking to introduce ADS-DVs into the market, the agency should work to ensure all petitions are processed expeditiously. We also encourage the agency to advance efforts related to the development of a potential pilot program for collaborative research on motor vehicles with high or full driving automation.^{7,8}

² U.S. Department of Transportation, "Automated Driving Systems 2.0: A Vision for Safety," September 2017.

³ U.S. Department of Transportation, "Preparing for the Future of Transportation: Automated Vehicles 3.0," October 2018.

⁴ Kim, A., Perlman, D., Bogard, D., Harrington, R., "Review of Federal Motor Vehicle Safety Standards (FMVSS) for Automated Vehicles: Identifying potential barriers and challenges for the certification of automated vehicles using existing FMVSS," Volpe National Transportation Systems Center, April 1, 2016

⁵ Virginia Tech Press release "Transportation institute awarded federal contract to study alternative vehicle designs and how they affect current safety standards," November 9, 2017

⁶ 83 FR 66158

⁷ 83 FR 50872

⁸ Global Automakers Comments on NHTSA Proposed Rule: Pilot Program for Collaborative Research on Motor Vehicles with High or Full Driving Automation – See Docket: NHTSA-2018-0092-0066

2 Addressing Barriers in the FMVSS

The following sections provides feedback on the various strategies and approaches proposed by NHTSA to safely address regulatory barriers to the compliance verification of ADS-DVs without traditional controls and includes feedback on different approaches that may be considered.

2.1 Identifying Barriers

There are several challenges associated with the testing and compliance verification of ADS-DVs. As noted in the ANPRM, these regulatory barriers often include test specifications that assume the presence of a human driver, or requirements that reference interaction with manual driving controls, among others. While we generally agree with the three barrier types identified by the agency in the ANPRM, the approach for addressing each respective barrier within regulation will likely vary on a case-by-case basis.⁹ This will likely depend on, among other things, the original scope and intent of the regulation, and the appropriateness of the regulation to ADS-DVs, as discussed in more detail below.

The research conducted by Volpe and the ongoing efforts by VTTI will be important in identifying which regulations may need to be updated to support the deployment of ADS-DVs. However, NHTSA efforts to address certain barriers do not need to be predicated on the final publication of this research. Based on the review of FMVSSs for automated vehicles conducted by VOLPE, as well as the initial findings from the ongoing VTTI effort, NHTSA should be in a position to not only begin categorizing the types of barriers that may impact the certification of ADS-DVs, but also classifying each regulation based on potential complexity.¹⁰ This would help inform the agency's research and rulemaking prioritization as it would allow the agency to address less complex regulations in the near-term, with more challenging regulations (that may require additional research or discussion) being addressed in the mid- to long-term. Each standard that is addressed would remove or substantially reduce the burden on the agency and manufacturers to address that standard through the exemption process.

As discussed below, we strongly encourage NHTSA to adopt a phased approach to avoid overburdening the rulemaking process and to achieve near-term progress. This approach would not encumber the agency's ability to conduct research or solicit input on other regulations that may require further consideration.

2.2 Applicability of FMVSS to ADS-DVs

The complexity in addressing various regulatory barriers is based on a number of factors, including the type of barrier (as discussed in the previous section) and the possible approach for addressing the barrier. While the agency notes in the ANPRM that *"some equipment required under the current FMVSS provide safety benefits beyond what the agency had originally contemplated at the time each FMVSS was promulgated,"* and that *"such additional safety benefits must be considered in evaluating their continued necessity on an ADS-DV without manual controls,"* we have concerns this presupposition will result in a circumstance where regulatory barriers persist should the agency seek to unreasonably expand the scope of regulation to ADS-DVs where it may not be appropriate. Moreover, incidental benefits that are not within the originally intended scope of a standard will

⁹ NHTSA Identified the following barrier types in the ANPRM -- 1. The standard requires a manual control. 2. The standard specifies how the agency will use manual controls in the regulatory description of how it will test. 3. The definition or use of terms (e.g., "driver") in the FMVSS that assume human control of vehicles.

¹⁰ US DOT Stakeholder Meeting: FMVSS Considerations for Automated Driving Systems, November 28 - 29, 2018.

likely be small and will not generally have been quantified by the agency, making any effort to assure equivalence of safety extremely difficult.

For example, with respect to FMVSS 103 (*Windshield Defrosting and Defogging Systems*), it is likely that this standard is not appropriate for ADS-DVs – particularly given that the standard is intended to address forward visibility for the human driver, as measured from a specified eye point at the “driver’s” designated seating position. In this case, the availability of defroster/defogger systems becomes more of a customer satisfaction issue in these vehicles, which should be left to manufacturer discretion to address. The same considerations apply to FMVSS 104 (windshield wiping and washing systems).

Global Automakers agrees with the agency in its assessment that existing FMVSSs neither have provisions explicitly addressing the capabilities of ADSs nor prohibiting ADS hardware or software, but that unique aspects of ADSs may warrant further research to assess how to best structure any new regulations in a way that appropriately addresses safety issues (in the above example, weather-related forward visibility). For those standards that may not be appropriate for ADS-DVs without manual driving controls, it may be more appropriate to provide alternative policy suggestions for how potential safety concerns can be addressed, as opposed to applying regulatory requirements that may no longer be in scope due to the absence of a human driver or manual control. This could include the establishment of a new class, or series of regulations applicable to ADS equipped vehicles.

2.3 Equipment Barrier Classifications

It is essential that in addressing barriers within the existing FMVSS, NHTSA apply a consistent approach to evaluating the applicability of each standard based on the established scope and intent of the regulation. Indeed, not all existing FMVSS are appropriate for ADS-DVs. In the context of FMVSS No. 135 (*Light vehicle brake systems*) NHTSA lists four possible “*equipment barrier classifications*” for categorizing regulatory requirements for manual controls.

- *First, if the required control is necessary for motor vehicle safety on all vehicles, NHTSA would retain the requirement for all vehicles, even if that requires potentially redundant technologies for certain ADS-DVs without traditional manual controls.*
- *Second, if the required control is no longer necessary for motor vehicle safety for any vehicle, NHTSA could remove or otherwise modify the requirement, if permitted to by law.*
- *Third, if the required control is still necessary for motor vehicle safety for traditional vehicles, but not necessary for the safety of ADS-DVs without traditional manual controls, NHTSA could retain the requirement only for traditional vehicles and, if permitted by law, exclude ADS-DVs without controls.*
- *Fourth, if the required control is necessary for motor vehicle safety, but a different control (i.e., a non-human-actuated control) would be necessary for an ADS-DV to perform the same function, NHTSA may retain the existing requirement for traditional vehicles, but have a separate, different control or equipment requirement for ADS-DVs without traditional manual controls.*

We are concerned that the approach set forth by the agency for addressing AV barriers may be time-consuming and ultimately counterproductive. While the current FMVSSs are, in many cases, not ideally expressed in performance-neutral terms, attempting to revise them *all* to more performance-neutral terms would delay addressing the more immediate concern of removing unnecessary near-term certification barriers for ADS-DVs.

With regard to the first approach, above, we see no situation in which retaining equipment requirements for redundant manual controls and technologies for ADS-DVs would be a sensible solution. Such an approach would be economically wasteful at best and potentially confusing to occupants of such vehicles. The second approach, while perhaps desirable in the longer term, would delay addressing the more immediate concerns. The fourth approach suggests the creation of a new set of technology barriers that may quickly become obsolete as automated systems evolve.

NHTSA should ensure a simplified process that does not seek to dramatically overhaul the existing regulatory framework for conventional vehicles, but rather provide appropriate flexibility for alternative performance-based approaches to be considered for certifying ADS-DVs, where necessary. As an alternative, we encourage the agency to consider our recommendation of proceeding on two parallel tracks – addressing quickly the “low-hanging fruit” in the current FMVSSs to remove the more straight-forward barrier issues and pursue research to address such issues as alternative test procedures and the development of new, ADS-specific guidance and requirements.

As a fundamental starting point, the agency must first consider the scope, purpose, and applicability of the standard when considering whether to apply it to ADS-DVs -- this is similar to the third *equipment barrier classification* listed above. In each case, the initial step by NHTSA should be to determine whether the control is necessary to meet the standard. For example, with respect to FMVSS 135, the purpose (or function) of the standards is to “ensure safe braking performance under normal and emergency driving conditions.” While it is reasonable to expect that ADS-DVs should meet the performance requirements outlined in existing regulations (e.g. where braking performance is determined by measuring the stopping distance from a given initial speed), it should not be a requirement that manual controls be provided for ADS-DVs in order to achieve these objectives. Many of the early FMVSSs that were developed approximately 50 years ago were primarily descriptive of then-current technology rather than being based on an assessment that the technology of that day was the only appropriate method to meet the safety need. In some cases, a variation of the fourth *equipment barrier classification* listed above is more appropriate, where an alternative test methodology may be necessary to demonstrate compliance. This issue will be discussed further in the comments below. We do not, however, recommend that NHTSA mandate the use of a particular technology for automated vehicles; rather, the agency should specify a performance requirement and allow manufacturers to apply what they deem to be the most effective compliance technology to meet the required performance level (which could change over time).

While in some cases, it may be possible for existing standards to apply to both conventional vehicles and ADS-DVs, the first *equipment barrier classification* listed above presents a fundamental question as it relates to requirements associated with traditional manual controls and the extent to which ADS-DVs can be ultimately certified to comply with all applicable FMVSS as part of this effort. We have concerns to the extent that NHTSA may retain requirements for certain vehicle controls, where potential barriers may be addressed in one regulation but ultimately preserved in another (i.e. if one standard requires a manual steering wheel be provided, it becomes less relevant that similar barriers are addressed elsewhere). Again, we support the establishment of performance standards rather than design-restrictive technology mandates, which can limit innovation and become outdated. See statutory definitions of “motor vehicle safety” and “motor vehicle safety standard,” [49 U.S.C. 30102\(a\)\(9\) and \(a\)\(10\)](#). We see no reasonable basis to require the installation of conventional, manual controls on automated vehicles where such controls would have little or no practical use and may, in fact, create confusion for vehicle occupants.

2.4 Prioritizing FMVSS Barriers – Phased Approach

Global Automakers is generally supportive of the DOT Automation Principles highlighted in the ANPRM.¹¹ It is important that NHTSA build upon this strategic direction and develop a robust, results-oriented process that ensures a consistent, data-driven approach for assessing each FMVSS and completing the necessary rulemaking to address potential issues identified.

Consistent with Global Automakers' comments provided in response to ADS 2.0 and AV 3.0, we strongly urge DOT/NHTSA to develop a Research and Rulemaking Priority Plan (that would complement the existing regulatory agenda), and define near-, mid-, and long-term objectives for addressing regulatory barriers.^{12,13} The development of this plan should be informed by research conducted by Volpe and VTTI, as well as comments submitted to this ANPRM, and should be updated and reissued annually to include status updates with respect to any new or previously defined milestones and objectives. The development of such a plan would help ensure a well-organized, properly prioritized effort to complement the safety assurance framework within the agency and provide clear guidance to manufacturers with respect to future regulation.

In the near-term, we urge the Department to prioritize its research and rulemaking activities on removing barriers to innovation, since that approach will facilitate the early introduction of life-saving technologies. In conducting these activities, the Department should follow an informed, data driven process. It is also important to emphasize that NHTSA has a number of regulatory tools to begin addressing barriers and regulatory uncertainty prior to any such plan being finalized.

3 Discussion of NHTSA Questions on Alternative Test Procedures

Much of NHTSA's ANPRM focuses on alternative test approaches to enable compliance verification of dedicated automated vehicles, i.e., AVs that lack conventional driving controls such as the steering wheel, brake pedal, and accelerator pedal. The alternative approaches address what will likely prove to be the most challenging technical aspect of certification of these vehicles – how to make the test vehicle follow the path (e.g., speed, direction, application of brakes, etc.) that is specified in the current test procedures. The agency identifies six potential approaches that have been proposed by various parties:

1. Normal ADS-DV operation
2. Test Mode with Pre-Programmed Execution (TMPE)
3. Test Mode with External Control (TMEC)
4. Simulation
5. Technical Documentation for System Design and/or Performance Approach
6. Use of Surrogate Vehicle with Human Controls.

In our view, each of these approaches may be appropriate for specific vehicles and particular standards. However, at least in the near term, the suitability of each of these approaches is likely be highly vehicle- and standard-specific. If it is the agency's intent to mandate one or more of these approaches, we see the necessary implementation process as extending potentially for years, including a research phase and a public input phase.

¹¹ U.S Department of Transportation, "Preparing for the Future of Transportation: Automated Vehicles 3.0," October 2018

¹² See Docket: NHTSA-2017-0082-2874

¹³ See Docket: DOT-OST-2018-0149-0130

We encourage the agency to work with SAE and other relevant standards-setting organizations to ensure the most suitable pathway forward regarding alternative FMVSS test procedures.

While we support NHTSA efforts to refine these approaches, the need to complete an extended process to formalize these approaches should not be allowed to present an obstacle to near-term certification of dedicated AVs, considering the potential safety and mobility benefits of the technology. A different, more flexible approach is needed in the near term to enable certification, while assuring safe performance of these vehicles.

It is better in the near term to provide manufacturers with the ability to develop methods for AV driving to demonstrate FMVSS compliance for their vehicles – subject to NHTSA review and approval. Manufacturers know their own vehicles best and know which approach is best suited to demonstrate their technologies. NHTSA should not restrict manufacturers to a limited set of approaches, as new methods will likely continue to be developed. Moreover, agency consideration of these more flexible approaches would help inform how the agency updates existing regulations to include alternate compliance options through rulemaking. Further discussion on this matter is provided, below.

3.1 Consideration of alternative test procedures to support near term deployment

The agency should provide flexibility in the near term for certification of dedicated AVs – particularly in the absence of any standardized tools or methods. While NHTSA may eventually select a particular approach to assess performance with an FMVSS, the agency should provide a framework whereby alternate methods can be approved for use.

In the near term, Global Automakers recommends that NHTSA develop a process where manufacturers can propose and have the agency approve certain alternative test procedures for certifying compliance. The alternative test procedures would be used where existing methods may not be feasible or rely on physical interaction with manual vehicle controls. We request that NHTSA adopt a process based on the current NHTSA process for evaluating petitions for alternate procedures for testing dynamic automatic suppression systems (DASS) under FMVSS 208. The considerations that led NHTSA to develop the DASS petition process also apply in the context of fully automated vehicles – the technologies being developed are not currently mature, the current inability to establish a single test procedure for all affected technology, the potential range of technologies that manufacturers may develop, and the need for expedited consideration of the petition.¹⁴

The petition would contain a description of the proposed alternative procedure, along with verification information to support the equivalence of the alternative procedure to the currently specified procedure for conventional vehicles. NHTSA should use engineering judgment to determine whether alternative methods are equivalent and that the resulting test data will provide a valid basis for determining standards compliance.

Alternative test procedures would be approved only if they assure achievement of the performance level that is specified in the standard. In other words, the alternative test procedure would not enable compliance based on a less stringent level of safety. As part of this effort, NHTSA should establish a streamlined process for ensuring that there are no unnecessary delays (e.g., the agency expeditiously communicates what additional information may be necessary to enable its consideration of the manufacturer's request), as with the DASS process.

¹⁴ See 49 CFR Part 552, Subpart B, 65 Fed. Reg. 30680, May 12, 2000.

NHTSA asks whether more than one approach could be specified for the same requirement in the same FMVSS, and whether the agency could, in assessing compliance, choose one approach for one vehicle model, but another approach for a different model. Multiple approaches for the same requirement should be allowed, but the manufacturer should be allowed to choose which approach would be used for its vehicle in testing by the manufacturer and the agency. If the agency could choose one of several test procedures, the manufacturer would need to conduct certification tests using each available approach, in order to assure that its vehicle would pass the test conducted by the agency. Allowing the agency to select among multiple test procedures would substantially increase compliance costs with no significant benefit.

In the near-term, there may be benefit in NHTSA issuing guidance with respect to how each of the six approaches may be considered by manufacturers when making a proposal to NHTSA. The questions presented in the ANPRM regarding the six approaches for FMVSS testing serve as a good starting point for guidance to manufacturers regarding concerns that should be addressed in requesting the use of alternative test procedure.

3.2 Consideration of Alternative Test Procedures to Update Existing FMVSSs

As discussed previously, it is likely that not all regulations will require test procedure updates regardless of whether the requirements apply to vehicles with or without manual controls. Certification of dedicated AVs to several standards can be achieved with no change to the regulatory text, and certification to several other standards would be facilitated with minor changes to the text (such as revision to human driver references). We urge the agency to take steps expeditiously to adopt these relatively straight-forward changes to the text in order to facilitate the certification of automated vehicles.

3.3 Operation under normal conditions

NHTSA asks how it could ensure that the test vehicle's performance using the alternative compliance method is an accurate proxy for the ADS-DV's performance during normal operation. Under our proposal, it would be necessary for the manufacturer that proposes to use an alternative compliance method to demonstrate equivalence of performance. We anticipate that most alternative test approaches will provide a means of operating the test vehicle in accordance with the criteria specified in the current standards and test procedures (i.e., speed, direction, etc.). Existing standards provide representations of normal vehicle operation or in some cases worst case operation. The alternative approaches would be expected to provide the same vehicle operation. Unique operating criteria for automated vehicles should not be required unless there is clear evidence that the special features of the AV require such new criteria in order to assure safety. NHTSA should use appropriate discretion and engineering judgment to assess how alternative approaches proposed or adopted have been applied and whether the alternative method used is consistent with the procedures established for each applicable FMVSS.

NHTSA requests comment on whether, if the agency were to incorporate alternative test methods into its test procedures, there would be a need to adjust the performance criteria for each standard in order to adequately maintain the focus on safety for an ADS-DV. For existing test procedures that cannot currently be performed absent manual controls, the agency tentatively stated in the ANPRM that certain regulations were intended to address the performance of some other part of the vehicle rather than the manual control itself (e.g. FMVSS No. 126 (Electronic Stability Control)). In our view, the required performance level of the test vehicle should, in general, be the same regardless whether the test vehicle is conventional or automated. Some measurement criteria may need to be adjusted in order to maintain this consistency.

4 Additional Considerations

4.1 Definitions

In the ANPRM, NHTSA asks what other potential revisions or additions to terms, in addition to ‘driver,’ are necessary for crash avoidance standards that NHTSA should consider defining or modifying to better communicate how the agency intends to conduct compliance verification of ADS vehicles. However, it is unclear whether changes to this term are required.

We expressed initial concerns with the suggested proposal in AV 3.0 which discussed “adapt the definitions of “driver” and “operator” to recognize that such terms do not refer exclusively to a human but may in fact include an automated system.” While we recognize initial efforts by NHTSA interpreted the ADS as the driver in certain cases, we have questions on the extent to which such an approach could be applied more broadly, as this could have unintended consequences in terms of how certain FMVSSs are applied to conventional (and/or dual-use) vehicles. Moreover, this approach may send inappropriate policy signals to the states in terms of the need to establish licensing requirements for automated driving systems, deemed by the Department as being the “driver.” A more complete approach would be to define the term “automated driving system” (consistent with SAE J3016) and to modify regulatory language in each FMVSS to specify the appropriate requirements applicable to these automated driving systems in the context of that standard. We therefore recommend separately defining “automated driving system” and incorporating this term for use in appropriate situations.

Additional definitions are likely required however, and we recommend that NHTSA establish a process for identifying which additional terms may be needed to address ADS-DVs without manual controls. Global Automakers suggests NHTSA should only incorporate new definitions where necessary, and we urge consistency with SAE J3016.

4.2 Controls and Displays

The ANPRM states that NHTSA intends to issue an additional document to address telltales, indicators, and warning lights. However, these issues are relevant in the context of potential barriers within the 100-series standards, as several of these FMVSSs currently require certain telltales and indicators be provided to the driver. Additional telltale requirements are included in 200-series standards. We urge the agency to move quickly to issue any planned request for comment on this matter, as further delay will only limit the timeliness in addressing barriers associated with FMVSS 101 (*Controls and Displays*).

5 Conclusion

It should be a near-term priority of the Administration to address existing regulations and ensure FMVSSs are structured so that a vehicle equipped with an automated driving system can demonstrate compliance with applicable standards. We urge the agency to proceed expeditiously to:

- Assess the appropriateness of the FMVSS – based on the scope, intent, and structure of the regulation
- Review VOLPE/VTTI research results to support rulemaking prioritization
- Research and Rulemaking prioritization
 - Recommend phased approach
 - Next steps could include recommendations for future regulations

We urge the agency to move expeditiously to address the near- and long-term challenges of testing and verifying compliance with existing Federal Motor Vehicle Safety Standards (FMVSS), including the *crash avoidance* (100-series) standards that are addressed in the ANPRM. The development of a cohesive Research and Rulemaking Prioritization Plan is fundamental in ensuring the U.S. remains competitive in advancing automated vehicle technology. Given the potential impact this effort may have on the pace of deployment, we urge the agency to begin rulemaking in earnest to begin removing barriers to avoid further delay in the deployment of automated vehicles. NHTSA currently has authority to address a significant number of regulatory barriers within existing FMVSSs, and the agency should seek to utilize these tools as necessary.