



American Association of
Motor Vehicle Administrators

**safe drivers
safe vehicles
secure identities
saving lives!**

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

RE: Federal Motor Carrier Safety Regulations which may be a Barrier to Safe Testing and Deployment of Automated Driving Systems-Equipped Commercial Motor Vehicles on Public Roads [Docket No. FMCSA-2018-0037]

The American Association of Motor Vehicle Administrators (AAMVA) welcomes the opportunity to provide comments on the Federal Motor Carrier Safety Administration's (FMCSA) request for comments on existing Federal Motor Carrier Safety Regulations (FMCSRs) that may need to be updated, modified, or eliminated to facilitate the safe introduction of commercial automated driving systems (ADS) on our nation's roadways. Commercial motor vehicles (CMVs) carry the potential to lead global deployment of advanced ADS technologies. AAMVA looks forward to continued federal-state collaboration as the modern commercial motor vehicle fleet takes shape.

AAMVA emphasizes that the retention of regulations regarding the operational performance of any vehicle are essential, and encourages FMCSA to use discretion in the consideration of the removal or modification of a Federal Motor Carrier Safety Regulation that may have secondary or tertiary impacts on the crashworthiness, operational safety, or performance standards of the vehicle when considered in its entirety.

AAMVA recognizes the essential role that ADS technologies will serve in saving lives and applauds its integration into vehicle fleets. As these technologies are deployed to vehicles, it is essential for each ADS contribution towards vehicle performance to be readily available. AAMVA notes that the integration of FMCSRs and Federal Motor Vehicle Safety Standards (FMVSS) exists to standardize performance aspects of the vehicle. Removal of standardized performance or application of regulations may complicate universally applied regulations that apply important safety benchmarks to all vehicles (ADS equipped or not). While AAMVA understands that no responsible manufacturer would use regulatory removal as a platform for testing questionable vehicle performance technologies, the advent of autonomous features will attract a much larger swath of technology from developers that may or may not be acclimated to the standard protocol for compliance with FMCSRs. It is the uniform application of a federal regulatory model that the states rely on for making determinations regarding vehicle safety.

Intersection with State Policies and Law

Careful consideration must be given to how the removal or modification of FMCSRs will affect underlying state law and administrative policies. Given that some state vehicle and licensing code is directly related to the ability of a state to meet applicable FMCSRs, the potential to disrupt state law and standing administrative policies is significant and widespread. AAMVA recommends that FMCSA consider the continued inclusion of state governments in the FMCSR modification process, so that avoidance of unnecessary legal complications can be avoided and so that disruption to current administrative practice is minimized.

Differentiation by Level of Automation

Identification of regulations that may be obsolete or ripe for modification will likely vary by the expected level of automation assigned to the commercial vehicle. For instance, the potential for human interaction in a level 3 commercial vehicle may require greater retention of traditional FMCSRs than a level 4 or 5 vehicle due to necessary human operation of segments of the driving task. FMCSA will have to carefully consider how to differentiate applicability of regulations by level of automation as even within the “highly-automated” context, differing factors will require different reliance on ADS.

One factor that will inform safe ADS deployment will be the consistent classification and establishment of the SAE level designation of the commercial vehicle. Knowing exactly which functions each commercial vehicle is capable of will have a direct correlation to the regulations that may not be as applicable. AAMVA recommends that FMCSA carefully consider how to not only classify commercial vehicles based on their level of ADS integration and autonomous capabilities consistently across all manufacturers, but also consider how best to make that information readily available to all oversight and enforcement agencies. AAMVA further recommends that ADS technology and level of autonomy be established based on an observed level of comparability beyond simply accepting the designation of ADS designers. Accomplishing an equitable level of safety with different ADS technologies should require comparative testing and reliable supporting data.

Testing Methods and Aftermarket Modification of Vehicle Performance

AAMVA recommends that if there is a testing procedure for a functional component of a vehicle, that the same acceptable standard that applies to a vehicle equipped with ADS technologies be applied as it would to a vehicle dependent on a human driver (if not greater). The functionality of the system as a whole should operate as intended by the safety aspects of the standard unless it performs at least at a safety equivalency level, without outside instruction, as that of a human operator. Should FMCSA choose to allow ADS to meet certain functional aspects requiring testing, it is important that ADS technologies that only satisfy a component of that test not be separated from the suite of technologies that successfully demonstrate an equitable safety level for satisfaction of the entire operational test.

Mandatory Submission of Data Supporting Testing

AAMVA recommends that data supporting the testing of vehicle functionality be reported with direct correlation to the skills they augment or replace. Obviously each of the safety

technologies apply to a discrete function of the vehicle. New ADS technologies may work in tandem with other technologies, and it will be important to have the appropriate satisfactory technologies aligned with the appropriate skill level of the driver. While certain skills may eventually be replaced by emergent technologies in the distant future, for the near term, human drivers and their reliant skills will serve as the ultimate safety failsafe. It is important to ensure that the same principles for preexisting demonstrations of commercial vehicle safety apply to ADS-equipped vehicles whether there is a human driver or not. Unlike standard non-commercial licensing functions controlled by state law, the Commercial Driver's License (CDL) is subject to federal standards and oversight. With CMVs potentially transitioning to a driverless environment, AAMVA requests FMCSA document and share observed testing results for ADS technologies with its state partners.

Commercial Driver's License (CDL) Endorsements

FMCSA requests comment on whether or not an endorsement be considered for human drivers and operators of CMVs with ADS to ensure they (1) understand the capabilities and limitations of the advanced technologies, and (2) know when it is appropriate to rely on automatic rather than manual operation. AAMVA is currently in the process of formally exploring the application of an endorsement for an ADS-reliant CDL endorsement. Without knowing whether there is an absolute need for a specific endorsement, AAMVA believes that all drivers should be required to understand the capabilities and limitations of the advanced technologies equipped on their motor vehicles. AAMVA recognizes that the suite of technologies contributing to the driving task may be too extensive for anyone to know or be aware of on an individual component level. However, it is extremely important that all drivers be able to masterfully prove their ability to safely operate their vehicle under any conditions. With this in mind, while it may not be feasible to test a driver on the names, applications and design components of a singular ADS, what should be expected of all drivers is their unerring ability to translate what the ADS is communicating to them and contributing to the driving task by ensuring a sustained and controlled demonstration of safe driving behavior. This means intervening in the driving task to ensure adherence to all applicable safety laws, attentive oversight of the driving task, and demonstrated proficiency in controlling the vehicle. While AAMVA continues to explore the potential for endorsing ADS proficient drivers, it is nevertheless more important that FMCSA focus on how best to partner with states on the safe testing of CDL applicants who arrive in ADS equipped vehicles.

Under the assumption that ADS systems truly contribute to assisting the driver in avoidance of dangerous driving situations, ADS systems should be viewed *only* in terms of assistance. Drivers should still be required to demonstrate the safe operation of any vehicle they are in control of. With this in mind, the existence of an endorsement may only serve as relevant in the post-citation, post-crash environment. At this point, it may be too late for an endorsement to be considered a safety precaution, but the endorsement may serve a purpose in terms of liability, enforcement and predictive data on drivers. Certainly the driver licensing community has used restrictive endorsements in the past (such as the air brake endorsement), but in this instance, FMCSA is requesting comment on use of the endorsement to ensure the driver understands the capabilities and limitations of the advanced technologies. AAMVA offers that there are certain to be numerous technologies the states and other oversight agencies are not even aware of as part of the vehicle. Because the ADS system components perform a driving function, and may be less "mechanically visible" than previous restrictive endorsements, it may prove too difficult for

examiners and roadside enforcement agents to realize the presence of every driver-dependent ADS technology. Further, the states may be unable to classify and integrate every individual or layered ADS technology into a uniformly recognized telltale. In terms of demonstrated ADS proficiency, the application of an endorsement for every permutation of ADS technologies seems expansive. However, the ultimate goal of safely demonstrating the ability to operate a commercial motor vehicle commensurate with federal standards seems a more achievable, outcome-based, litmus test.

Secondarily, FMCSA requests comment on whether an endorsement should be considered to ensure human drivers know when it is appropriate to rely on automatic rather than manual operation. AAMVA suggests that all drivers need to know when it is appropriate to rely on automatic rather than manual operation. As stated earlier, AAMVA cites driver training and proficiency to handle any circumstance as the most reasonable failsafe for any commercial safety event. Ensuring drivers are able to maintain safe control of their vehicles, whether dependent on ADS technology or not should be the ultimate goal. Given that technologies have the potential to fail, it seems prudent to apply the same level of driver safety standards to any manned vehicle – including the ability to know when it is appropriate to rely on automatic versus manual operation. As AAMVA and FMCSA continue to explore the implications of ADS technologies on commercial vehicles, AAMVA recommends continued close collaboration between FMCSA and the states to ensure the appropriate application of endorsement to demonstrate proven proficiency.

Given AAMVA's response to the utility of using an endorsement in satisfying driver proficiency requirements, it may be premature to comment further on what types of tests (knowledge, skills or both) should be required to obtain such an endorsement. As AAMVA continues to engage its membership on the utilization of CDL endorsements for ADS technologies, AAMVA requests continued partnership with FMCSA on the issue of testing to ensure federal and state safety expectations are aligned.

Roadside and Annual Inspections

With respect to CMV ADS identification and technical thresholds for determining whether the level of noncompliance with the applicable safety regulations is severe enough to warrant placing the vehicle or driver out of service, AAMVA defers to its sister association, the Commercial Vehicle Safety Alliance (CVSA). FMCSA requests information on whether or not CMVs with ADS be visibly marked to indicate the level of automated operation they are designed to achieve. AAMVA recommends that ADS-equipped vehicles should be marked in a visible manner so that roadside enforcement and first responders can readily identify them. Further, it is important that the vehicle not only be visibly identifiable as an ADS-equipped vehicle, but that the vehicle somehow indicate or document the ADS functionality of the vehicle and be able to *communicate safety data* to first responders and roadside enforcement agents (whether manned or unmanned.) AAMVA recommends that ADS-equipped vehicles also be able to differentiate, record, and communicate when the dynamic driving task is being performed by the human operator versus the ADS. Without some kind of external indicator of this differentiation, law enforcement will be challenged to identify whether distracted driving, following too closely, and other rules of the road are applicable at any given moment.

Distracted Driving (Prohibition Against Texting and Using Handheld Wireless Phones) and Driver Monitoring

FMCSA requests comment on what changes, if any, should be made to the distracted driving regulations for human drivers of CMVs with ADS while in automated mode? This question, like others, will largely depend on the SAE-level designation of the vehicle, the operational capabilities of the vehicle, and the role of the driver. As the technologies progress, the role of the “driver” may change. If the role of the driver becomes one of monitoring without the expectation that they take direct control of the vehicle, then there may be latitude on safety expectations. For the time being, any human given the designation of “driver” should be responsible for safe oversight of the vehicle without engaging in any form of distracted driving.

FMCSA further requests comments on whether fatigue monitoring and alertness assistance be provided to human drivers. Where applicable, these features have the potential to increase safety. As mentioned above, if the expectation is that the “driver” is responsible for oversight of the driving task, and that task is routinely being performed by ADS systems which may need to hand off control of the vehicle at any point, then those types of monitors and alerts would provide a much needed additional layer of safety.

With respect to what types of systems, or what periods of inattentiveness should be allowed in a vehicle before entering minimal risk conditions – FMCSA is likely best positioned to negotiate those thresholds.

AAMVA thanks FMCSA for the opportunity to comment on its consideration of integrated ADS technologies in commercial motor vehicles. AAMVA understands the need for FMCSA to be agile in its approach to moving life-saving technologies to consumers and stands willing to work with the agency as we revisit what it means to be deemed federally compliant with a robust catalogue of commercial safety regulations.

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