



DEPARTMENT OF TRANSPORTATION

[4910-EX-P]

Federal Motor Carrier Safety Administration

**49 CFR Chapter III, Subchapter B
[Docket No. FMCSA-2018-0037]**

Request for Comments Concerning Federal Motor Carrier Safety Regulations (FMCSRs) Which May Be a Barrier to the Safe Testing and Deployment of Automated Driving Systems-Equipped Commercial Motor Vehicles on Public Roads

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Request for comments.

SUMMARY: FMCSA requests public comments on existing Federal Motor Carrier Safety Regulations (FMCSRs) that may need to be updated, modified, or eliminated to facilitate the safe introduction of automated driving systems (ADS) equipped commercial motor vehicles (CMVs) onto our Nation's roadways. To assist in this undertaking, FMCSA commissioned the U.S. Department of Transportation's John A. Volpe National Transportation Systems Center (Volpe) to conduct a preliminary review of the FMCSRs to identify regulations that may relate to the development and safe introduction of ADS. The Agency requests comments on this report, including whether any of FMCSA's current safety regulations may hinder the testing and safe integration of ADS-equipped CMVs. Further, FMCSA requests comment on certain specific regulatory requirements that are likely to be affected by an increased integration of ADS-equipped CMVs. However, the Agency is not seeking comments on its financial responsibility requirements because they are not directly related to CMV technologies and because future insurance requirements will depend in part on the evolution of State tort law with respect to liability for the operation of ADS-equipped vehicles. In addition, to support FMCSA's effort to understand future impacts on the FMCSR's, FMCSA requests information, including from companies engaged in the design, development, testing, and integration of ADS-equipped CMVs

into the fleet. Specifically, the Agency requests information about: The scenarios and environments where entities expect that ADS will soon be tested and integrated into CMVs operating on public roads or in interstate commerce; the operational design domains (ODD) in which these systems are being operated or would be tested and eventually deployed; and, measures they believe are required to ensure the protection of any proprietary or confidential business information they intend to share with the Agency.

DATES: *Public Comments:* Comments on this notice must be received on or before [INSERT DATE 45 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments identified by Docket Number FMCSA-2018-0037 using any of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- *Mail:* Docket Management Facility, U.S. Department of Transportation, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.
- *Hand Delivery or Courier:* West Building, Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m. E.T., Monday through Friday, except Federal holidays.
- Fax: 1-202-493-2251.

FOR FURTHER INFORMATION, CONTACT:

Mr. Michael Huntley, Division Chief, Vehicle and Roadside Operations Division, Office of Carrier, Driver, and Vehicle Safety, MC-PSV, (202) 366-9209, michael.huntley@dot.gov,

Federal Motor Carrier Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION:

Submitting Comments

If you submit a comment, please include the docket number for this notice (FMCSA-2018-0037), indicate the specific section of this document and the Volpe report to which each comment applies, provide a reason for each suggestion or recommendation, and identify the source of any data informing your comment. You may submit your comments and material online or by fax, mail, or hand delivery, but please use only one of these means. FMCSA recommends that you include your name and mailing address, an email address, or a phone number in the body of your document so that FMCSA can contact you if there are questions regarding your submission.

To submit your comment online, go to <http://www.regulations.gov>, put the docket number, FMCSA-2018-0037, in the keyword box, and click “Search.” When the new screen appears, click on the “Comment Now!” button and type your comment into the text box on the following screen. Choose whether you are submitting your comment as an individual or on behalf of a third party and then submit.

If you submit your comments by mail or hand delivery, submit them in an unbound format, no larger than 8½ by 11 inches, suitable for copying and electronic filing. If you submit comments by mail and would like to know that they reached the facility, please enclose a stamped, self-addressed postcard or envelope.

Viewing Comments and Documents

To view comments, as well as any documents mentioned in this preamble as being available in the docket, go to <http://www.regulations.gov>. Insert the docket number, FMCSA-2018-0037, in the keyword box, and click “Search.” Next, click the “Open Docket Folder” button and choose the document to review. If you do not have access to the Internet, you may view the docket by visiting the Docket Management Facility in Room W12-140 on the ground floor of the West Building, 1200 New Jersey Avenue SE., Washington DC 20590, between 9 a.m. and 5 p.m., E.T., Monday through Friday, except Federal holidays.

Privacy Act

The Department of Transportation (DOT) solicits comments from the public to better inform its decision-making processes. DOT posts these comments, without edit, including any personal information the commenter provides, to www.regulations.gov, as described in the system of records notice (DOT/ALL-14 FDMS), which can be reviewed at www.dot.gov/privacy.

I. Background

On September 12, 2017, the Department published the *Automated Driving Systems (ADS): A Vision for Safety 2.0*. (Publication No. DOT HS 812 442) (the Voluntary Guidance). The Voluntary Guidance offers a path forward for the safe integration of automated vehicles by:

- Encouraging new entrants and ideas that deliver safer vehicles;
- Making the Departmental regulatory processes more nimble to help match the pace of private sector innovation; and,
- Supporting industry innovation and encouraging open communication with the public and with stakeholders.

The Voluntary Guidance is rooted in the Department’s view that ADS-equipped vehicles hold enormous potential benefits for safety, mobility, and the efficiency of our transportation

system. The primary focus of the Voluntary Guidance is on levels of ADS that can take full control of the driving tasks in at least some circumstances. Portions of the Voluntary Guidance also apply to lower levels of automation, including some of the driver assistance systems already being deployed by automakers today. The full document can be found at:

https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf.

The Voluntary Guidance adopts the SAE International (SAE) J3016 standard's definitions for levels of automation. The SAE definitions divide vehicles into levels based on "who does what, when." Generally:

- *SAE Level 0, No Driving Automation*; the driver performs all driving tasks.
- *SAE Level 1, Driver Assistance*; the vehicle is controlled by the driver, but some driving assist features may be included in the vehicle design.
- *SAE Level 2, Partial Driving Automation*; the vehicle has combined automated functions, like acceleration and steering, but the driver must remain engaged with the driving task and monitor the environment at all times.
- *SAE Level 3, Conditional Driving Automation*; the driver is a necessity, but is not required to monitor the environment. The driver must be ready to take control of the vehicle at all times with notice.
- *SAE Level 4, High Driving Automation*; the vehicle is capable of performing all driving functions under certain conditions. The driver may have the option to control the vehicle.
- *SAE Level 5, Full Driving Automation*: the vehicle is capable of performing all driving functions under all conditions.

Using the SAE levels described above, the Department draws a distinction between Levels 0-2 and 3-5 based on whether the human driver or the automated system is primarily

responsible for monitoring the driving environment. For the purposes of this Federal Register notice, the Agency's primary focus is SAE Levels 3-5 ADS.

FMCSA encourages the development of these advanced safety technologies for use on CMVs, and at the same time, recognizes the need to work with the States to ensure that, from an operations standpoint, all testing and use of these advanced safety systems is conducted in a manner that ensures the safe operation of ADS-equipped commercial vehicles.

FMCSA is responsible for the safety oversight of motor carriers operating CMVs in interstate commerce, the drivers of CMVs, and the vehicles. The Agency works with its State partners to deliver programs intended to prevent CMV crashes, and the associated injuries and fatalities.

The FMCSRs provide rules to ensure the safe operation of CMVs, as defined in 49 CFR 390.5, which includes vehicles with a gross vehicle weight/gross combination weight or gross vehicle weight rating/gross combination weight rating, whichever is greater, of 10,001 pounds or more; passenger-carrying vehicles designed or used to transport 9 to 15 passengers for direct compensation; passenger-carrying vehicles designed or used to transport 16 or more passengers; and any size vehicle transporting hazardous materials in a quantity requiring placards.

On April 24, 2017, FMCSA held a public listening session to solicit information on issues relating to the design, development, testing, and integration of ADS-equipped commercial motor vehicles (82 FR 18096, April 17, 2017). The listening session provided interested parties an opportunity to share their views and any data or analysis on this topic with Agency representatives. The Agency also invited interested parties to submit written comments by July 17, 2017. A full transcript of the listening session and all written comments is available in public docket, FMCSA-2017-0114, at www.regulations.gov.

II. Request for Public Comments: The Applications of the FMCSRs to ADS-Equipped CMVs

In addition to the public listening session discussed above, FMCSA commissioned Volpe to conduct a preliminary review of the FMCSRs to identify regulations that relate to the development and safe introduction of automated driving systems. FMCSA subsequently received from Volpe its final report, “Review of the Federal Motor Carrier Safety Regulations for Automated Commercial Vehicles: Preliminary Assessment of Interpretation and Enforcement Challenges, Questions, and Gaps,” report number MCSA-RRT-17-013, August 2017. A copy of the report is included in the docket referenced at the beginning of this notice.

Volpe found several provisions in the FMCSRs that might present challenges for automated CMVs that continue to require a human driver. Additionally, Volpe indicated that automated CMVs either requiring an onboard (non-driving) human technician or not requiring an onboard human at all may face compliance challenges. Volpe noted, however, that the nature and extent of these challenges will depend on how key terms and applicability statements are interpreted.

Notwithstanding the findings of the Volpe analysis, the Policy released on September 12, 2017, indicated (see page 2 of the publication) that FMCSA believes its regulations require that “a trained commercial driver must be behind the wheel at all times, regardless of any automated driving technologies available on the CMV, unless a petition for a waiver or exemption has been granted.” In light of the comments the Agency received in response to its April 17, 2017, request for public comments and the remarks of those in attendance at the April 24, 2017, public listening session, the Agency is reconsidering its views on this matter. The absence of specific

regulatory text requiring a driver be behind the wheel may afford the Agency the flexibility to allow, under existing regulations, ADS to perform the driver's functions in the operational design domain in which the system would be relied upon, without the presence of a trained commercial driver in the driver's seat.

FMCSA notes that in the event regulatory relief is necessary to allow the operation of a commercial motor vehicle without a person in the driver's seat, the Agency has authority to grant waivers for up to three months, grant exemptions for up to five years (with the possibility of renewals of the exemptions), or allow pilot programs for up to three years, provided certain conditions are satisfied [see 49 CFR part 381].

To that end, the Agency seeks information concerning the extent to which the public, including industry, safety advocates, the motoring public, and those engaged in the design, development, testing, and integration of ADS for CMVs believe any of FMCSA's current safety regulations may hinder the testing and safe deployment of ADS-equipped CMVs, including, but not limited to, the regulations preliminarily identified by Volpe. In particular, the agency is interested in comments concerning how different interpretations of the applicability of FMCSRs to ADS-equipped CMVs could represent a barrier, e.g., whether the FMCSRs, under certain conditions, could be read to require, or not require, the presence of a trained commercial driver in the driver's seat. To the extent commenters do identify unnecessary barriers, how could FMCSA use its available regulatory relief mechanism to appropriately remove or reduce those barriers?

In addition to the issues in the Volpe Report, the agency also requests comment on how ADS-equipped CMVs could interact with certain specific regulations.

Inspection, repair, and maintenance

The FMCSRs require all CMVs to be systematically inspected, repaired, and maintained. All parts must be in safe and proper operating condition at all times. With limited exceptions, motor carriers are prohibited from operating a CMV unless there is proof that it has passed an annual inspection.

How should motor carriers ensure the proper functioning of ADS prior to operating in an automated mode?

Should the Agency consider minimum requirements for motor carrier personnel responsible for maintaining the equipment used to achieve certain levels of automated operations (for example, a requirement that technicians be trained by the ADS developers, etc.)?

What Information Technology (IT) security/safety assurances can be provided by maintenance personnel and CMV drivers/operators that the ADS systems are functioning properly?

For State representatives with experience inspecting traditional CMVs, what types of malfunctions or damage on an ADS-equipped CMV should be considered an imminent hazard? Do you have any additional comments regarding inspection, repair, and maintenance?

Roadside and Annual inspections

FMCSA and its State partners conduct roadside inspections of CMVs to identify and remove from service unsafe drivers and vehicles. The inspection criteria represent enforcement tolerances, which are 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.

How could an enforcement official identify CMVs capable of various levels of automated operation? For example, should CMVs with ADS be visibly marked to indicate the level of automated operation they are designed to achieve, or would making these vehicles so easily identifiable cause other road users to interact unfavorably with CMVs with ADS?

Do you have any additional comments regarding roadside and annual inspections?

Distracted driving (Prohibition against texting and using handheld wireless phones) and Driver monitoring

This section applies to situations involving a Level 3 human-monitored ADS. Current regulations prohibit individuals from texting and using hand-held wireless phones while driving CMVs in interstate commerce.

What changes, if any, should be made to the distracted driving regulations for human drivers of CMVs with ADS while in automated mode? For example, should a human driver in a CMV with ADS be allowed to use a hand-held wireless phone while the ADS is in complete control of the vehicle?

Should driver fatigue monitoring be required, and if so, what method(s) should be used to conduct such monitoring? For example, the Trucking Fatigue Meter [*See <https://pulsarinformatics.com/products/trucking>*] samples data throughout the day and alerts fleet managers once a human driver exceeds a company-determined fatigue threshold.

Additionally, should these systems be required to provide “alertness assistance” to human drivers? For example, should these systems be required to periodically request input from human drivers, or should they be required to request input from human drivers only when the driver appears to be losing focus or when the ADS in control of the vehicle is confronted with situations outside its parameters?

What level of human driver inattentiveness (or how long a period of inattentiveness) should be allowed in a vehicle controlled by an ADS before the vehicle is required to enter its minimal risk condition? How long after entering the minimal risk condition must a human driver wait to re-engage an ADS (e.g., a minimum 30-minute break may provide the driver an opportunity to rest)? What should the requirements be for re-engaging the CMV with ADS in an automated mode in this scenario?

Medical qualifications

FMCSA's regulations include physical qualification standards for humans driving CMVs to ensure that they are medically qualified to do so. As technology advances, humans may be required only to monitor the operation of CMVs with ADS on public roadways, or they may not be required at all. Thus, as technology develops, changes to the physical qualification rules will be required, and some medical conditions may become inapplicable.

What medical conditions currently precluding issuance of a medical card could become inapplicable as ADS technology develops?

What medical conditions currently precluding issuance of a medical card should NOT be considered disqualifying for a human driver who is simply monitoring a CMV with ADS?

Hours of Service for Drivers

FMCSA's regulations include requirements intended to reduce the risk of driver fatigue and fatigue-related crashes. Generally, the rules for truck drivers allow up to 11 hours driving time in the work day, following 10 consecutive hours off-duty. And all driving must be completed within 14 hours of the beginning of the work day. The rules prohibit driving after a driver has accumulated a certain amount of on-duty time (which includes the time spent driving and time spent performing other work) during the work week. Current regulations require that

all time spent at the operating controls of the CMV be recorded as on-duty, driving time. Given the SAE levels of automation discussed above, FMCSA seeks public comments on how drivers' hours of service should be recorded if the ADS is relied upon to perform some or all of the driving tasks.

Commercial Driver's License (CDL) endorsements

FMCSA requires all drivers of CMVs to have the knowledge and skills necessary to operate a CMV safely. States are required to include specific items in the knowledge and skills tests administered to CDL applicants. CDL applicants wishing to obtain specific endorsements must satisfy additional knowledge and skill test requirements. Existing endorsements include: double/triple trailers, passenger, tank vehicle, hazardous materials, and school bus.

Due to potential variations in ADS technology across various providers, FMCSA seeks to ensure that human drivers and operators of CMVs with ADS receive training for the specific technologies present in the vehicles they operate.

Should 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? If so, what types of tests – knowledge, skills, or both – should be required to obtain such an endorsement; and should there be separate endorsements for different types of ADS?

If an ADS-equipped CMV is to be deployed without a human driver onboard, should the computer system be required to demonstrate autonomous capabilities for the same maneuvers included on the CDL skills test?

III. Request for Information: Current Testing and Operation of CMVs with ADS

Data sharing

FMCSA would like to ensure that the Agency is able to receive and review data and information from the private sector to understand a driver's experience with ADS technologies in real-world settings.

If you are a developer or tester of ADS technologies, what types of data and/or safety measures are you currently collecting – or do you plan to collect – during testing? How often is this data collected?

How can FMCSA ensure that data and/or safety measures collected are presented in a comparable format?

How can FMCSA assess whether a CMV equipped with an ADS is being operated as safely as a traditional CMV operating on a public roadway?

What pieces of information are entities using to evaluate how a driver is using an ADS-equipped commercial vehicle?

Testing and interstate operations of CMVs with ADS on public roadways

What type of ADS-equipped CMVs are currently being tested? Are they Level 4 ADS-equipped vehicles that can only operate on certain roadways, Level 4 vehicles with more extensive ODDs, or full Level 5 vehicles?

Do vehicles currently being tested have operational limitations to ensure safe operations? Examples of operational limitations might include time of day, weather conditions, types of roads, specific routes within an ODD, maximum allowable operational speed, markings showing that the vehicle is capable of highly automated operations, etc.

In moving forward what actions, if any, should FMCSA consider to ensure the safe operation of ADS-equipped CMV's in various ODDs?

How can FMCSA assess whether a CMV with ADS operating within its ODD can perform on certain maneuvers, such as emergency brake performance, crash avoidance maneuvers, etc.?

Should FMCSA consider approaching CMVs that carry persons or hazardous materials differently than other CMVs?

For State representatives, would you consider changing certain requirements (for example, higher versus lower levels of insurance) for an ADS-equipped CMV? If yes, based on what factors; and how would you implement such requirements?

Beyond Compliance Program

On April 23, 2015, FMCSA issued an initial Federal Register notice seeking comment on the impacts of a possible "Beyond Compliance Program" to consider a company's voluntary implementation of state-of-the-art best practices and technologies when evaluating a carrier's safety (80 FR 22770).

The Fixing America's Surface Transportation (FAST) Act mandated that the Agency provide recognition to motor carriers for voluntary use of advanced technologies or safety programs (Pub. L. 114-94, 129 Stat. 1312, Dec. 4, 2012). Per section 5222, FMCSA may authorize qualified entities to monitor motor carriers that receive "Beyond Compliance" recognition (129 Stat. 1540).

To what extent, if any, should the various levels of automation be considered as part of the Beyond Compliance Program?

Regulation of Manufacturing Versus Operation

The regulation of CMVs is a function shared by the National Highway Traffic Safety Administration (NHTSA) and FMCSA, with manufacturing regulated by NHTSA and operation regulated by FMCSA (and its State partners). Does this separation of functions create unique problems, or perhaps offer unique solutions, for operators of ADS-equipped CMVs?

Confidentiality of Shared Information

FMCSA acknowledges that companies may be reluctant to share certain proprietary data or information with the Agency, either as part of the waiver, exemption, or pilot program application process, or during the pendency of a regulatory relief period. The Agency notes that 49 CFR 389.3 provides protection for “confidential business information” which includes trade secrets or commercial or financial information that is privileged or confidential, as described in 5 U.S.C. 552(b)(4). Commercial or financial information is considered confidential if it is voluntarily submitted to the Agency and constitutes the type of information not customarily released to the general public. FMCSA has established standards and procedures by which the Agency will solicit, receive, and protect confidential information from public disclosure. The Agency is seeking information from interested parties on how it might further protect non-public information necessary to assess whether ADS-equipped CMVs meet performance standards and accurately document safety-related events during a waiver, temporary exemption, or pilot program.

What measures would original equipment manufacturers and developers expect of FMCSA before sharing confidential business information?

How might the Agency obtain information sufficient to assess the safety performance of CMVs with ADS without collecting confidential business information?

Do you have any additional comments regarding the confidentiality of shared information?

Issued under authority delegated in 49 CFR 1.87 on: March 16, 2018.

Raymond P. Martinez,
Administrator.

[FR Doc. 2018-05788 Filed: 3/23/2018 8:45 am; Publication Date: 3/26/2018]