Texas Department of Transportation

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July 29, 2019

The Honorable Raymond P. Martinez
Administrator
Federal Motor Carrier Safety Administration
1200 New Jersey Avenue S.E.
Washington, DC 20590

RE: Docket Number FMCSA– 2018–0037

Dear Administrator Martinez:

The Texas Department of Transportation (TxDOT) welcomes the opportunity to provide comments on the Federal Motor Carrier Safety Administration's Advance Notice of Proposed Rulemaking on the Safe Integration of Automated Driving Systems-Equipped Commercial Motor Vehicles.

Attached you will find TxDOT's responses to the questions posted in Docket Number FMCSA-2018-0037.

If you have any questions regarding this submission, please feel free to contact me at (512) 305-9508 or Darran.Anderson@txdot.gov.

Sincerely,

Darran Anderson
Director, Strategy and Innovation

Attachment

cc: James M. Bass, Executive Director
Marc D. Williams, P.E., Deputy Executive Director
Jerry Haddican, Director, Government Affairs

1. Do the FMCSRs Require a Human Driver?

1.1 Should FMCSA establish a rule that would prohibit an ADS-equipped CMV from operating outside its designated ODD?

Such a rule is not needed if a human driver is present and able to assume control of the CMV. If the CMV is Level 4 or Level 5 and operating on its own, without a remote operator, a temporary rule should be considered based on FMCSA's confidence in the technology's ability to operate outside of the ODD.

1.3 Should FMCSA consider amending or augmenting the definition of "driver" and/or "operator" provided in 49 C.F.R. § 390.5 or define a term such as "ADS driver" to reduce the potential for misinterpretation of the requirements?

Yes, FMCSA should consider amending or augmenting the definition driver or operator to reflect the appropriate categorization of driver, such as "ADS driver", "remote operator" or simply "ADS" when the system is the operator, to assist in clearly defining the requirements of the driver/operator.

2. Commercial Driver's License (CDL) Endorsements

2.1. Should a CDL endorsement be required of individuals operating an ADS-equipped CMV?

Yes, in the event a driver is operating a level 0-3 ADS-equipped CMV and experiences an issue, the driver should be fully prepared and trained to take over the CMV and required to have a CDL endorsement. When it comes to higher levels of automation (Level 4-5), it is less clear what the appropriate solution is. FMCSA should consider creating a new endorsement for operators who are not expected to control the vehicle except under unusual circumstances, or none if the ODD has no expectation of a human driver operating the system.

2.2. If so, what should be covered in the knowledge and/or skills test associated with an ADS endorsement?

All information covered in the traditional CDL testing should be covered in a skills test associated with ADS.

2.3. What would be the impacts on SDLAs?

SDLA's would need to restructure the skills test to ensure coverage of both standard CDL endorsements and ADS-equipped CMV CDL endorsements. This will result in additional training of SDLA's staff and possible need for additional staff.

2.4. Should a driver be required to have specialized training for ADS-equipped CMVs?

In addition to CDL training, a specialized training should be required for operators of ADS-equipped CMVs.

2.5. In an operational model that has an individual remotely monitoring multiple CMVs, should the Agency impose limitations on the number of vehicles a remote driver monitors?

Yes, the agency should impose limitations on the number of vehicles a remote driver can monitor concurrently. Safety is a top priority for TxDOT and imposing these limitations will assist in making the Texas and national roadway networks safer for all drivers.

2.6. Should a dedicated or stand-by remote operator be subject to existing driver qualifications?

Yes, it is important that the stand-by or dedicated remote operator be knowledgeable of the existing driver qualifications.

3. Drivers' Hours of Service (HOS) Rules

3.1. Should HOS rule changes be considered if ADS technology performs all the driving tasks while a human is off-duty or in the sleeper berth, or physically remote from the CMV?

Yes, the HOS rule changes should be explored if ADS technology performs all the driving tasks while a human is off-duty or in the sleeper berth.

3.2. Should the HOS requirements apply to both onboard and remote operators?

Yes. However, it must be considered that remote operators may have different HOS restrictions than onboard operators as the demands of the job are not the same.

3.3. If so, how should HOS be recorded when an individual is not physically in control of the vehicle?

When an individual is not in physical control of the vehicle then HOS should be recorded using technology linked to the vehicle.

5. Distracted Driving and Monitoring

5.1. How should the prohibition against distracted driving apply to onboard operators responsible for taking control of the CMV under certain situations, and to remote operators with similar responsibilities?

The rules and restrictions against distracted driving should apply to all onboard operators responsible for taking control of the CMV as well as those remote operators with similar responsibilities. To ensure the safety of the traveling public and CMV operators it is imperative that all restrictions of distracted driving be applied.

6. Safe Driving

6.1. Should FMCSA consider revising its rules to ensure that:

1) any human exercising control of an ADS-equipped vehicle must continue to comply with all the rules under Part 392?

Yes. A human exercising control of an ADS-equipped vehicle should comply with all rules under Part 392.

2) a CMV under the control of a Level 4 or Level 5 ADS must satisfy the operational rules?

Yes. CMVs under the control of Level 4 or Level 5 ADS should still satisfy operational rules. If the surface transportation system is fully connected and cooperative, some operational rules may not be necessary. For example, C.F.R. §392.10 requires that buses transporting passengers should not cross a railroad track or tracks at grade unless the driver of the bus first stops the bus within 50 feet of, and not closer than 15 feet to, the tracks; thereafter listens and looks in each direction along the tracks for an approaching train; and ascertains that no train is approaching. When it is safe to do so, the driver may drive the bus across the tracks in a gear that permits the bus to complete the crossing without a change of gears. The

driver must not shift gears while crossing the tracks. However, in a fully connected and cooperative transportation system, the ADS-equipped bus would know if it is safe to cross without stopping via V2X communications (e.g., bus-to-train, bus-to-vehicle, bus-to-infrastructure).

6.2. For example, should FMCSA require that the ADS be capable of identifying highway-rail grade crossings and stopping the CMV prior to crossing railroad tracks to avoid collisions with trains, or going onto a highway-rail grade crossing without having enough space to travel completely through the crossing without stopping?

Yes. CMVs with ADS should be capable of identifying highway-rail grade crossings and stopping the CMV prior to crossing railroad tracks. However, in a fully connected and cooperative transportation system, the ADS-equipped bus would be able to know if it is safe to cross without stopping V2X communications (e.g., vehicle-to-vehicle, vehicle-to-train, and vehicle-to-infrastructure).

6.3. For scenarios in which the control of the ADS-equipped CMV alternates, or may alternate, between a human and the technology, should FMCSA require that both the human operator and ADS comply with the applicable operational rules?

Yes, both the human operator and ADS should comply with the applicable rules for operating CMVs.

8. Roadside Inspections

8.1. Should motor carriers be required to notify FMCSA that they are operating Level 4 or 5 ADS-equipped CMVs?

Yes, all motor carriers should be required to notify FMCSA that they are operating a Level 4 or Level 5 ADS-equipped CMV.

8.2. If so, how should the carrier notify FMCSA?

Prior to operating a Level 4 or Level 5 ADS-equipped CMV, a motor carrier should notify FMCSA via some type of online registration system or application. This will streamline the process for motor carriers as well as provide FMCSA with a database of ADS-equipped vehicles. This could also provide FMCSA the capability to track the safety of these vehicles.

8.3. Should FMCSA require markings identifying the ADS Level of a vehicle?

Yes.

8.4. Should the Agency require motor carriers to utilize ADS-equipped CMVs that have a malfunction indicator?

Yes, ADS-equipped CMVs should be required to provide status information on demand. While malfunctions will continue to be normal for low levels of automation, it will be important to know if a malfunction incited an accident.

8.5. Should the Agency require that motor carriers deploying ADS-equipped CMVs ensure the vehicle can pull over in response to Federal and State officials or move out of the way of first-responders?

Yes, just as a manually operated vehicle pulls over or moves out of the way for first responders.

9. Cybersecurity

9.1. What types of safety and cargo security risks may be introduced with the integration of ADS-equipped CMVs?

Cybersecurity threats against ADS can take different forms such as network spoofing and denial of service attacks, tampering, impersonation, and system modification. When the network is clogged with spurious requests, ADS-equipped CMVs may have potential safety issues due to lack of timely information about real-time road conditions (e.g., construction lane closures, incidents).

9.2. What types of rules should FMCSA consider to ensure that motor carriers safety management practices adequately address cybersecurity?

Malicious use of ADS-equipped CMVs should be monitored and prevented. Besides strong cybersecurity rules and best practices, Geofencing may be used to prevent ADS-equipped CMVs carrying hazardous materials from entering areas with high population density. Motor carriers should be capable of remotely monitoring and detecting illegal driving behaviors (e.g. speeding, running red lights) of ADS-equipped CMVs, and mitigating safety risks immediately.