May 10, 2018

Federal Motor Carrier Safety Administration
United States Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

**Re**: Comments In Response to Federal Motor Carrier Safety Regulations Which May Be a Barrier to the Safe Testing and Deployment of Automated Driving Systems-Equipped Commercial Motor Vehicles on Public Roads, 83 Fed. Reg. 12933 (March 26, 2018); Docket No. FMCSA-2018-0037

To Whom It May Concern:

Tesla is pleased to submit written comments to the Federal Motor Carrier Safety Administration in response to the Agency's March 26, 2018, request for comments, titled "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" (the "RFC").[1] We commend the FMCSA for its efforts to identify unnecessary regulatory barriers that do not advance the deployment of self driving trucks and for providing this opportunity to submit comments.

## I. Background

Tesla is the world's leading manufacturer of EVs. The Company maintains primary research, development, and manufacturing facilities in Palo Alto and Fremont, California, and Sparks, Nevada. We were instrumental in reviving consumers' interest in EVs with the introduction of the Roadster in 2008, the Model S in 2012, the Model X in 2015, and the Model 3 in 2017. With each model, we proved that modern EVs can deliver performance, range, technology, safety and style, all in a completely emissions-free package.

In November 2017, we introduced the first prototypes of our Tesla Semi program. The Tesla Semi, an all-electric truck, will provide lower operational costs than diesel trucks. With sufficient range for most on-road applications and unmatched performance, the Tesla Semi will bring a number of mass-production firsts to market. A unique center-driving position will provide maximum visibility and control, while a very low center of gravity will reduce rollover potential.

[1] Federal Motor Carrier Safety Administration, Request for Comment, "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," 83 Fed. Reg. 12933 (March 26, 2018).

Customer safety is our highest priority. We design all of our vehicles to ensure that an all-electric architecture and powertrain design will enhance occupant safety in the event of a crash. Additionally, we design our vehicles to allow for continual improvements to the vehicle fleet via remote, over-the-air software updates, which provide customers with safety and convenience features as quickly as we develop and validate them. Many of these features serve as the basis for Tesla Autopilot, a suite of advanced driver-assistance safety features, which are an example of SAE Level 2 automation. In October 2016, we began selling all of our vehicles with the sensing and computational hardware necessary for full self-driving capability. As soon as we validate the accompanying features and receive any required regulatory approvals, we will deploy them to our vehicle fleet using over-the-air updates. Tesla Semi will be built with the same hardware and will gradually adopt the same Tesla Autopilot features as the rest of our vehicle fleet.

## II. Comments

Tesla supports the FMCSA's decision to reconsider the prior position that a trained commercial driver must be behind the steering wheel at all times, regardless of any self-driving system. We also support the FMCSA's belief that the regulations can be interpreted to pose few challenges for a self-driving truck, even where no human driver is in the driver's seat. Building on this view, we offer the following comments in response.

### 1. FMCSA should interpret the motor carrier to be the "driver" of a self-driving truck, because the motor carrier will ultimately assume most or all responsibilities to operate.

FMCSA may interpret the "driver" as a motor carrier in a self-driving truck. The automated driving system will eventually be capable of controlling the truck on the road; however, the motor carrier will oversee the self-driving truck and cause it to operate. Under the FMCSRs, a driver means "any person who *operates* any commercial motor vehicle"[2] (emphasis added). A motor carrier can be that person and act to operate the truck. This interpretation does not require an overhaul of the regulations, because there is no requirement for the "driver" to be human.

Moreover, this interpretation logically aligns with safety governance in other regulatory areas. For instance, the Occupational Health and Safety Administration does not find equipment in violation of a workplace safety standard, but rather, finds the business in violation for potential injures that could relate to the operation of faulty equipment.

National Highway Traffic Safety Administration's ("NHTSA's") interpretation that the self-driving system is the "driver" comes in a very different context. NHTSA defines the "driver" more narrowly as

[2] 49 C.F.R. § 390.5.

"the occupant of a motor vehicle seated immediately behind the steering control system",[3] but it uses the definition primarily for the purpose of measuring vehicle and occupant safety performance. In contrast, FMCSA defines "driver" primarily for the purpose of assigning responsibilities for the safe operation of the truck, including obtaining a commercial driver license, meeting hours of service requirements, alcohol and drug testing, physical qualifications, seat belt usage, and a variety of onboard inspections. While the term "driver" is the same, the definitions and use are substantially different.

Additionally, no Agency regulation requires a driver to be a human or natural person. A wealth of federal and state legal precedent supports that the term *person* includes non-natural persons, such as corporations, unless specifically limited.

Of the many requirements that a driver performs to operate a truck, only seat belt usage and vehicle inspections assume a driver's physical presence inside the truck. However, a driver is only required to be restrained by a seat belt when a seat belt assembly is installed at the driver's seat (Part 392.16).[4] This requirement would not apply to an agent of the motor carrier who engaged the self-driving system from a remote location. Additionally, of the many inspections required of the driver, including equipment inspections (Part 392.7), equipment reporting (Parts 396.11 and 396.13), and cargo inspections and securement (Part 392.9), no mandate requires the driver to be physically present to perform them. We believe that most or all of these inspections and reports can eventually be performed by the use of cameras and electronic self-checks on the truck. Even the requirement for "thorough visual inspection" of service brake components does not require the driver to be present and can be met with cameras.[5]

**2. In the alternative, the FMCSA may continue to interpret the "driver" as a human or self-driving system until the Agency has the opportunity for a rigorous re-write in view of self-driving.**

While less appropriate, in the alternative, the Agency could interpret the "driver" as a human where the human performs an operation, but interpret the self-driving system as the driver where it performs an operation. Because there is no express obligation for the human to be behind the steering wheel, or even in the truck, this interpretation offers flexibility. The definition of a driver does not prevent this interpretation, and it could provide near-term resolution until the Agency has time to thoroughly update regulations in light of self-driving.

[3] 49 C.F.R. § 571.3(b).
[4] *See* 49 C.F.R. § 392.16(a).
[5] 49 C.F.R. § 392.7(b).

Whether the Agency interprets the driver as a motor carrier or as a human or self-driving system, we recommend more formal long-term rulemaking to make clear that requirements such as hours of service, substance screening, physical fitness testing, and knowledge and skills testing, only apply to a human driver who continues to manually operate the truck. This approach will encourage manufacturers to bring life-saving technology to market faster and invest boldly.

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Tesla appreciates this opportunity to share our comments in response to the request for comments. If the Agency has any questions or comments regarding this submission, please feel free to me at aprescott@tesla.com.

Sincerely,

Al Prescott
Associate General Counsel, Regulatory