

California Department of Motor Vehicles
Summary of Draft Autonomous Vehicles Deployment Regulations
December 16, 2015

Background

Senate Bill 1298 (Chapter 570; Statutes of 2012) enacted Vehicle Code Section 38750 which requires the Department of Motor Vehicles (DMV) to adopt regulations establishing certain vehicle equipment requirements, equipment performance standards, safety certifications, and any other matters the department concludes is necessary to ensure the safe operation of autonomous vehicles on public roads, with or without the presence of a driver inside the vehicle.

DMV divided the development of the autonomous vehicles regulations into two phases – testing and deployment. The testing regulations were approved in May 2014, and became effective in September 2014. These regulations identify the requirements that manufacturers must meet in order to test autonomous vehicles on California public roads. Eleven manufacturers currently hold a permit to test autonomous vehicles in California.

The second phase, the deployment regulations, will establish the requirements that manufacturers must meet in order to allow the general public to operate their autonomous vehicles. Given the emerging nature of autonomous technology, DMV's development of the draft deployment regulations raised complex questions related to vehicle safety, certification approaches, operator responsibilities, licensing and registration requirements, privacy, and cyber-security. At public workshops conducted in April 2013, March 2014, and January 2015, DMV sought input from manufacturers, research and academic entities, public advocacy groups, and other stakeholders. A Request for Information released in July 2014, collected information regarding entities interested in conducting third-party functional safety reviews and certifications of autonomous vehicles. DMV also consulted with other state agencies, the National Highway Traffic Safety Administration, and California Partners for Advanced Transportation Technology (PATH) at the University of California, Berkeley.

Summary of Regulations

In developing the draft regulations, the department's primary focus was on the safety of autonomous vehicles and the public who will share the road with these vehicles. These regulations create a framework that allows manufacturers to transition from testing to deployment, promotes the continued development of autonomous vehicle technology, and ensures that autonomous vehicle technology is deployed in a safe and responsible manner on California public roads.

Following are some key aspects to DMV's proposed regulatory approach:

1. Manufacturer Safety Certifications and Third-Party Vehicle Demonstration Test

Safety certifications from both the manufacturer and a third-party testing organization will validate the readiness of the autonomous vehicle for deployment. Manufacturer will certify to their compliance with specific vehicle safety and performance requirements, including functional safety and behavioral competency requirements. A vehicle demonstration test conducted by a third-party testing organization will provide an independent verification of the autonomous vehicle's ability to perform key driving maneuvers that are typically encountered in real-world driving conditions.

2. Licensed Driver Required in the Vehicle

Autonomous vehicle operators must be a licensed driver who possesses an autonomous vehicle operator certificate issued by the DMV. The operator will be responsible for monitoring the safe operation of the vehicle at all times, and must be capable of taking over immediate control in the event of an autonomous technology failure or other emergency. In addition, operators will be responsible for all traffic violations that occur while operating the autonomous vehicle. These operator requirements create the safeguard of a driver who is capable of taking control of the vehicle when needed.

A consumer education plan and behind the wheel training program developed by the manufacturer will provide operators with an understanding of how the autonomous vehicle technology is to be engaged, used, monitored, and disengaged.

The draft regulations exclude autonomous vehicles that are capable of operating without the presence of a driver. Given the potential risks associated with deployment of such a new technology, DMV believes that manufacturers need to obtain more experience in testing driverless vehicles on public roads prior to making this technology available to the general public. The department will address the unique safety, performance, and equipment requirements associated with fully autonomous vehicles without the presence of a driver in subsequent regulatory packages.

3. Provisional Deployment Permit with Ongoing Reporting Requirements

Manufacturers approved for deployment will initially be issued a three-year deployment permit. As a condition of this provisional permit, autonomous vehicles can only be operated by the manufacturer or made available to the public on no more than a leased basis.

Throughout the term of the permit, manufacturers will submit monthly reports regarding the performance, safety, and usage of their autonomous vehicles. Manufacturers will also be required to report accidents that occurred while the vehicle was in autonomous mode and any safety-related defects in their autonomous technology.

This provisional permit is a critical first step towards the full deployment of autonomous vehicles in California. Data collected throughout the permit term will provide an opportunity to evaluate the safety and real-world performance of autonomous vehicles and inform subsequent regulatory actions by the department.

4. Privacy and Cyber-Security Requirements

Manufacturers will provide a written disclosure to autonomous vehicle operators of any information collected by the autonomous technology that is not necessary for the safe operation of the vehicle, and will be required to obtain written approval to collect this information.

Autonomous vehicles will be equipped with self-diagnostic capabilities that meet industry best practices and are capable of detecting, responding, and alerting the operator to cyber-attacks or other unauthorized intrusions. In the event of such an alert, the autonomous vehicle operator will have the capability to override the autonomous technology.

In addition to the above elements, the draft regulations establish financial responsibility, vehicle performance, vehicle equipment, and vehicle registration requirements. Consistent with the testing regulations, commercial vehicles are excluded from deployment. Due to the size of these vehicles, DMV believes that public safety is best served by initially limiting deployment to passenger vehicles. Please refer to the attached regulations for the complete set of regulatory requirements.

Objective of Upcoming Public Workshops

DMV invites the public to participate in two upcoming workshops to discuss the draft regulations:

Northern California

10:00 a.m.

Thursday, January 28, 2016

Harper Alumni Center

California State University, Sacramento

6000 J Street, Sacramento, CA 95819

Southern California

10:00 a.m.

Tuesday, February 2, 2016

Junipero Serra Building, Carmel Room

320 West 4th Street, Los Angeles, CA 90013

The objective of these workshops is to receive substantive input from the public, industry, consumer and public interest groups, and academic and research institutions on the draft regulations. In particular, individuals with technical and subject matter expertise in the design, development, and verification of autonomous vehicle technology are encouraged to attend. Participation in the upcoming workshops will be in addition to, and not in substitution for, any participation in any subsequent rulemaking process initiated by the department.

In conjunction with the public workshops, the DMV has asked California PATH to conduct a peer review of the behavioral competencies included in the draft regulations. These proposed behavioral competencies identify the typical driving maneuvers that an autonomous vehicle will be expected to perform. The goal of the peer review is to engage experts within industry, the research community, and other relevant stakeholder organizations in more in-depth technical discussions of the behavioral competencies.