

Date of Hearing: May 10, 2017

ASSEMBLY COMMITTEE ON COMMUNICATIONS AND CONVEYANCE

Miguel Santiago, Chair

AB 1160 (Bonta) – As Amended April 17, 2017

**SUBJECT:** Autonomous vehicles

**SUMMARY:** Defines “autonomous vehicle” (AV) to include a vehicle that is equipped with technology that makes it capable of operation that meets the definitions of Levels 3, 4, or 5 of the Society of Automotive Engineers’ (SAE) “Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems, Standard J3016.”

**EXISTING LAW:**

- 1) Authorizes the Department of Motor Vehicles (DMV) to suspend, cancel, or revoke the registration of a vehicle or a certificate of ownership, registration card, license plate, or permit under specified circumstances, including when DMV determines that a registered vehicle is mechanically unfit or unsafe to be operated or moved upon the highways. (Vehicle Code (VEH) Section 8800)
- 2) Defines “autonomous vehicle” to mean any vehicle equipped with autonomous technology that has been integrated into that vehicle. Specifies that a AV does not include a vehicle that is equipped with one or more collision avoidance systems, including, but not limited to, electronic blind spot assistance, automated emergency braking systems, park assist, adaptive cruise control, lane keep assist, lane departure warning, traffic jam and queuing assist, or other similar systems that enhance safety or provide driver assistance, but are not capable, collectively or singularly, of driving the vehicle without the active control or monitoring of a human operator. (VEH Section 38750)
- 3) Authorizes an AV to operate on public roads for testing purposes by a driver who possesses the proper class of license for the type of vehicle being operated if specified requirements are met. (VEH Section 38750)
- 4) Prohibits an AV from operating on public roads until the manufacturer submits an application to DMV, and that application is approved by DMV pursuant to the specified regulations adopted by the DMV. (VEH Section 38750)
- 5) Requires DMV, as soon as practicable, but no later than January 1, 2015, to adopt regulations setting forth requirements for the specified submission of evidence of insurance, surety bond, or self-insurance, and the submission and approval of an application to operate an specified AV. (VEH Section 38750)
- 6) Requires DMV’s AV regulations to include any testing, equipment, and performance standards, in addition to those established, as specified, that DMV concludes are necessary to ensure the safe operation of AVs on public roads, with or without the presence of a driver inside the vehicle. (VEH Section 38750)

**FISCAL EFFECT:** Unknown. This bill is keyed non-fiscal by the Legislative Counsel.

**COMMENTS:**

- 1) **Authors Statement:** According to the author, “This bill is intended to provide guidance and clarity among stakeholders in the [AV] space by codifying a practical definition of AVs that was recently developed through the ongoing DMV regulatory process on AVs.”
- 2) **Background:** California law regulates different modes of passenger transportation for compensation. The California Public Utilities Commission is responsible for the permitting and regulation of passenger carriers, such as shuttles and tour buses, as well as limousines and household goods carriers. The DMV is responsible for the registration of motor vehicles and the California Highway Patrol (CHP) is responsible for certain vehicle inspections and patrol over California highways.

Over the past few years, California has seen the rapid development of automotive technology. This means that within the next decade, partially and fully automated vehicles are nearing a point in which widespread deployment becomes a reality. Deployment of AVs has the potential to transform personal mobility and safety. In 2015, over 35,000 people died on US roadways, of those, 94% of crashes can be tied to human error. Automated driving has the potential to decrease the number of crashes tied to human choices and behavior. In addition, AVs opens new doors and opportunities for a new class of people and communities, such as people with disabilities, the elderly, or low-income. AVs have the potential to transform how cities, and the state, think about urban planning and public transit, as well as energy use and pollution.

Although, the rise of new technology is inevitable, in order for the state to keep pace, society must find a balance between the development of emerging technology and the unknown socioeconomic impacts and safety concerns. Essential to safe deployment and reassuring the public about the impact of AVs is rigorous testing conducted in collaboration between the public and private sector to ensure that sufficient data is available to determine safe performance in order for policymakers to make informed decisions over the speed of which AVs are deployed on our public roads.

- 3) **DMV Autonomous Vehicle Regulations:** In 2012, the Legislature passed SB 1298 (Padilla) Chapter 570, Statutes of 2012, which established conditions for the operation of AVs upon public roadways. SB 1298 required DMV to adopt regulations for the operation of AVs by January 1, 2015. The DMV rolled out its regulation in two stages. In the first stage, DMV established regulations for insurance requirements for the purposes of testing AVs , while stage two established regulations for the full deployment of AVs for non-testing purposes. Although, DMV adopted testing regulations by May 2014, it is still finalizing regulations for non-testing purposes. The DMV has submitted proposed regulations for non-testing purposes in March 2017 for public comment. The DMV anticipates adopting finalized regulations before the end of 2017. The final regulations will not take effect for 120 days after they have been adopted.
- 4) **SAE Levels of Automation:** SAE International is a global association of over 148,000 engineers and related technical experts in the aerospace, automotive and commercial-vehicle industries. In 2014, SAE released its “Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems, Standard J3016,” which provides a

taxonomy describing the full range of levels of automation in on-road motor vehicles and provides a foundation for further standard development activities and a common language for discussion within the broader AV community. The definitions established six level of driving automation spanning from level 0 - no automation, to level 5 - full automation, with a key distinction between level 2, where the human driver performs part of the dynamic driving task, and level 3, where the automated driving system performs the entire dynamic driving task. The SAE six levels of driving automation are as follows:

- Level 0 – No Automation: The full-time performance by the human driver of all aspects of the dynamic driving task, even when enhanced by warning or interventions systems.
- Level 1 – Driver Assistance: The driving mode-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task.
- Level 2 – Partial Automation: The driving mode-specific execution by one or more driver assistance systems of both steering and acceleration/deceleration using information about the driving environment and with the expectation that the human driver performs all remaining aspects of the dynamic driving task.
- Level 3 – Conditional Automation: The driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task with the expectation that the human driver will respond appropriately to a request to intervene.
- Level 4 – High Automation: The driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task, even if a human driver does not respond appropriately to a request to intervene.
- Level 5 – Full Automation: The full-time performance by an automated driving system of all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver.

The National Highway Traffic Safety Administration (NHTSA) has adopted the SAE definitions as part of its Federal Automated Vehicles Policy and DMV is using the definition in its proposed regulations to denote what DMV considers to be an AV, with Levels 3-5 being vehicles that are considered “highly automated.”

- 5) **Arguments in Support:** According to the Consumers for Auto Reliability and Safety (CARS), “CARS has been actively participating in developing public policy regarding [AVs], including providing testimony at forums convened by [DMV] and [NHTSA]. CARS is pleased to support [AB 1160], which would clarify California’s definition of “autonomous” vehicle to conform with the federal designations of SAE levels 3-5 regarding degrees of automation, for purposes of testing with professional drivers, under controlled circumstances as proscribed by the DMV.”

- 6) **Related Legislation:** AB 87 (Ting) of 2017 requires DMV to revoke the registration for the vehicle if it determines that an AV is being operated in violation of specified requirements. *Status: Pending in the Assembly Committee on Transportation.*

AB 399 (Grayson) of 2017 authorizes CCTA to conduct a pilot project for the testing of AVs that do not have a driver seated in the driver's seat and are not equipped with a steering wheel, a brake pedal, or an accelerator if the testing is conducted only at specified locations and the AV operates at speeds of less than 35 miles per hour, for an additional 12 months. *Status: Pending in the Assembly Committee on Transportation.*

AB 623 (Rodriguez) of 2017 requires the operator of an AV to follow existing motor vehicle accident reporting requirements, and requires CHP or any other peace officer to specify an AV was involved in the traffic collision in any manner. *Status: Pending in the Assembly Committee on Appropriations.*

AB 1141 (Berman) of 2017 require DMV, to adopt regulations, in consultation with the Department of Transportation and CHP, setting forth standards for the testing of AVs used to transport freight by September 30, 2018. *Status: Pending in the Assembly Committee on Communications and Conveyance.*

AB 1444 (Baker) of 2017 authorizes the Livermore Amador Valley Transit Authority to conduct a demonstration project for the testing of AVs without a driver seated in the driver's seat under specified conditions. *Status: Pending in the Assembly Committee on Appropriations.*

SB 251 (Cannella) of 2017 authorizes the County of Merced to conduct a pilot project for the testing of AVs without a driver in the driver's seat under specified conditions. *Status: Pending in the Senate Committee on Transportation and Housing.*

- 7) **Prior Legislation:** AB 1298 (Padilla) of 2012 establishes conditions for the operation of AVs upon public roadways. *Status: Chaptered by the Secretary of State, Chapter 570, Statutes of 2012.*
- 8) **Double-referral:** This bill is double referred, having been previously heard by the Assembly Committee on Transportation on April 17, 2017 and approved on a 13-0 vote.

## REGISTERED SUPPORT / OPPOSITION:

### Support

Consumers for Auto Reliability and Safety

### Opposition

None on file.

**Analysis Prepared by:** Edmond Cheung / C. & C. / (916) 319-2637