
SENATE COMMITTEE ON TRANSPORTATION
Senator Dave Cortese, Chair
2025 - 2026 Regular

Bill No:	SB 511	Hearing Date:	4/22/2025
Author:	Pérez		
Version:	4/8/2025	Amended	
Urgency:	No	Fiscal:	Yes
Consultant:	Manny Leon		

SUBJECT: Autonomous vehicles

DIGEST: This bill makes various changes to autonomous vehicle (AV) requirements, definitions, and imposes various penalties for certain violations of AV rules and regulations, as specified.

ANALYSIS:

Existing law:

- 1) Defines “autonomous vehicle” to mean vehicle equipped with technology that makes it capable of operation that meets the definition of Levels 3, 4, or 5 of the Society of Automotive Engineers (SAE) International's Taxonomy and Testing of Autonomous Vehicles Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles, standard J3016 (APR 2021).
- 2) Authorizes the operation of an AV on public roads for testing purposes by a driver who possesses the proper class of license for the type of vehicle operated if specified requirements are satisfied.
- 3) Prohibits the operation of an AV on public roads until the manufacturer submits an application to the Department of Motor Vehicles (DMV) and is approved, as specified.
- 4) Requires DMV to adopt regulations setting forth requirements for the submission and approval of an application, including, among other things, any testing, equipment, and performance standards DMV concludes are necessary to ensure the safe operation of autonomous vehicles on public roads, as specified.
- 5) Commencing January 1, 2030, and to the extent authorized by federal law, requires that an AV with a model year (MY) of 2031 or later, as specified, only

be operated pursuant to a deployment permit if it is a zero-emission vehicle (ZEV).

- 6) At the federal level, establishes the Federal Vehicle Safety Standards (FVSS) administered by the National Highway Traffic Safety Administration (NHTSA) to set vehicle safety standards in areas such as vehicle design, construction, performance, and durability, as specified. NHTSA further provides regulatory guidance for AVs, including, but not limited to, levels of automation, as specified. Lastly, requires AVs or vehicles with level 2 ADAS to report crashes within five calendar days, as specified.

This bill:

- 1) Revises the definition of AVs to include a vehicle equipped with “level 2” technology, as specified and further restricts this new definition to the abovementioned SAE J3016 (April 2021) standard.
- 2) Adds to the revised definition that a level 2 vehicle having the ability to intentionally depart from a lane of travel, as specified, while under the control of a driving automation system is considered an AV.
- 3) Removes AV exceptions pertaining to active control or monitoring from a human operator and instead, exclude systems that enhance safety or provide driver assistance that are not capable of sustained automated steering of the vehicle.
- 4) Provides that if DMV adopts a special driver’s license (DL) designation for an AV operator, requires the operator to obtain the DL designation prior to operating the AV, as specified.
- 5) Requires DMV to adopt additional regulations for:
 - a) Establishing fees for relevant AV training, testing, and applications to recover department costs associated with administering AV regulations, as specified;
 - b) Administrative fines and penalties for violations established under this measure; and,
 - c) Any additional safety regulations necessary for the operation of AVs on public roads with or without an operator inside the vehicle, as specified.
- 6) Accelerates the abovementioned AV ZEV requirement from 2030 to January 1, 2028, as specified.

- 7) Establishes the Autonomous Vehicle Regulatory Fund, as specified.
- 8) Makes it a crime to modify a vehicle with before-market or aftermarket additions of software that would provide the vehicle with AV functionality.
- 9) Makes it a crime to sell, lease, or transfer title of a vehicle that has been modified to make it an AV.
- 10) Makes it a violation to carry out the abovementioned modifications and / or transactions punishable by a fine and / or imprisonment, as specified.
- 11) Requires an AV manufactured and owned / operated on or after January 1, 2028 to be equipped with an electronic sensing device that can detect the presence of an unattended child under age six or pet inside the vehicle, and also possess the ability to notify the vehicle's owner or first responders of the unattended, as specified.

COMMENTS:

- 1) *Purpose of the bill.* According to the author, “Autonomous vehicles are becoming a part on roadways. As the technology evolves, it is important that California ensure everyone using the roadways are safe while these vehicles also are present. California’s current law lacks sufficient safety and oversight of vehicles with full self-driving capabilities, allowing those with full self-driving capabilities to incorrectly be registered by the California Department of Motor Vehicles (DMV). Under regulation of these vehicles not only places drivers in peril, but pedestrians. Unfortunately, this gap in regulation has resulted in more than 900 crashes and 29 fatalities on California’s roadways involving these incorrectly registered vehicles. This bill is necessary to ensure these vehicles are properly regulated.”
- 2) *NHTSA.* Currently, NHTSA provides a variety of regulations and policy guidance pertaining to AVs. First, FVSS applies to all manufacturers and vehicles to provide across the board consistency and direction on vehicle specifications and safety standards. Additionally, NHTSA provides / offers guidance for AVs and AV manufacturers including, but not limited to, standardized levels of automation, an automated vehicle safety framework, and the ADS-equipped Vehicle Safety, Transparency, and Evaluation (AV STEP) Program. With respects to level of vehicle autonomy, NHTSA and DMV utilize the same SAE standards (i.e. Level 0-Level 5) with California statutes and regulations considering an AV levels 3 through 5.

- 3) *ADAS and ADS.* Under SAE AV definitions, there are key differences between each level of vehicular autonomy. Levels 1 and 2 provide ADAS features that offer assistance to a human driver such as lane-keeping assistance, adaptive cruise control, and automatic emergency braking. Ultimately, under levels 0-2, these technologies are intended to assist the human driver, require human supervision, and the driver remains responsible for vehicle operation. Under existing law and regulations, levels 0-2 vehicles are not considered AVs. On the other hand, automated driving systems (ADS) are technologies designed to perform the entire dynamic driving task without a human driver. ADS equipped vehicles can operate autonomously under a variety of conditions and are considered vehicles in levels 3 through level 5. Under levels 3 through 5 (primarily levels 4 and 5), the ADS system takes full control of the vehicle and the human(s) in the vehicle is / are not responsible for the operation of the vehicle.
- 4) *Collisions and recalls.* The author and sponsors of this bill assert additional safety measures are needed for vehicles with certain level 2 ADAS features. This assertion primarily stems from a major recall from the automaker Tesla in late 2023 following concerns raised by NHTSA in regards to a significant number of collisions (including several fatalities) tied to Tesla's "Autopilot" ADAS features. Specifically, Tesla's Autopilot ADAS features include "traffic-aware cruise control" which adjusts the vehicle's speed based on surrounding traffic, and "autosteer" which assists the driver with keeping the vehicle centered in its lane. Tesla also offers a full self-driving feature which adds assistance such as "navigate on autopilot," "auto lane change," and "autopark," which allow the vehicle to handle more complex driving scenarios. However, human driver supervision is still required when any of these features are activated and in use. In response to NHTSA's efforts, Tesla carried out a number of actions in attempt to remedy the safety issues raised. The author of this bill and sponsors argue more needs to be done to ensure the public's safety is upheld.
- 5) *NHTSA General Order 2021-01.* While level 2 ADAS vehicles are not directly regulated at the state and federal level for their driver assistance capabilities, NHTSA's General Order 2021-01 (Order herein through) establishes mandatory accident (vehicular crashes) reporting requirements for vehicles equipped with ADS or level 2 ADAS technologies. Specifically, the Order requires manufacturers and operators to report vehicular accidents involving ADS or level 2 ADAS technologies to NHTSA. For example, for ADS-equipped vehicles involved in an accident, the manufacturer / operator is required to be reported if ADS was active within 30 seconds of the incident and

resulted in property damage or injury. For level 2 ADAS, manufacturers / operators must report vehicles involved in accidents if ADAS was active within 30 seconds and involved a vulnerable user, a fatality occurred, a passenger was hospitalized, the vehicle was towed off, or an airbag was deployed. Collecting this vehicular collision data will better equip NHTSA moving forward in developing regulations and guidance documents for both ADS and level 2 ADAS technologies.

- 6) *Expanding the AV definition.* While the provisions specified in this bill attempt to enhance overall safety for specific level 2 ADAS technologies is well intended, the bill, in its current form, leaves a number of policy questions unanswered. For example, as noted above, extensive research and debate has resulted in both NHTSA and DMV adopting the SAE's "level of automation" scale to properly categorize vehicles with varying degrees of ADAS and ADS technologies. As part of this standard, vehicles with level 0 through 2 driver assist features require the human driver to ultimately be responsible for the operation of the vehicle, regardless of the technology. Whereas, manufacturers are ultimately responsible for the operation of vehicles with level 3 through 5 ADS technologies. This bill, as proposed, would now consider certain level 2 ADAS vehicles AVs and as a result, remains unclear who (human driver vs. manufacturer) would be ultimately responsible for the operation of the vehicle.
- 7) *DL designation.* The sponsors of this bill further assert that this bill authorizes DMV to establish a special DL for AV operation. This bill, as written, does not authorize DMV to establish a new specialized DL for AV operation, rather, the bill states *if* DMV adopts a special DL designation for AV operation, then a person will be *required* to have passed a DMV-created test *prior* to operating an AV. As written, it is unclear if DMV would be required to develop separate tests for each level of autonomy (i.e. level 2 ADAS, level 3, level 4, and level 5) and moreover, if this bill were to go into effect, it is unclear how DMV would manage existing drivers of level 2 ADAS vehicles in obtaining the new AV designation.
- 8) *ZEV mandate.* This bill, as written, proposes to move up the statutory deadline, currently 2030, for the requirement that an AV needs to be a ZEV, to January 1, 2028. By this bill now including level 2 ADAS vehicles in the definition of AVs, this ultimately imposes a ZEV mandate on certain level 2 ADAS vehicles that currently are not subject to the AV ZEV requirement in statute. While many existing vehicles with level 2 ADAS technologies are in fact zero-emission, it's unclear how the accelerated timeline will impact manufacturers in developing other types of vehicles with level 2 ADAS technologies.

9) *Sensing device.* This bill, as written, requires an AV owned or operated in California to have a sensor / sensing device that can detect a child under six years of age or a pet left inside the vehicle and also have the capabilities to notify the vehicle's owner or first responders of the unattended child or pet left inside the vehicle. This bill further specifies these provisions apply to manufactured AVs on or after January 1, 2028. While the author points out several technologies that offer "child presence detection" in vehicles, it's unclear if the current technologies possess the ability to accurately identify a child under age six, determine the appropriate time a child may remain present in a vehicle, or contact the vehicle's owner or first responder. Additionally, while these child detection sensors may be currently used voluntarily by vehicle owners, this bill mandates AVs manufactured starting January 1, 2028 to include an active child detection sensor, however remains silent on privacy matters such as what type of data is collected, how the data is stored, and who is authorized to monitor the collected data. Lastly, it's unclear how federal law preempts this child detection sensor mandate for AVs that would operate in California after January 1, 2028.

10) *Double Referral.* This bill is also referred to the Senate Public Safety Committee and will be heard in that committee should it pass out of this committee.

RELATED/PREVIOUS LEGISLATION:

SB 572 (Gonzalez, 2025) -- Would authorize DMV to collect certain accident data from manufacturers of vehicles with specific types of advanced driver assistance system (ADAS) capabilities, as specified.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: Yes

POSITIONS: **(Communicated to the committee before noon on Wednesday, April 16, 2025.)**

SUPPORT:

California Coalition for Children's Safety and Health (Sponsor)
California Teamsters Public Affairs Council
Center for Auto Safety
The Dawn Project LLC

OPPOSITION:

Autonomous Vehicle Industry Association
Tesla INC.

ARGUMENTS IN SUPPORT: The sponsors of this bill write, “The California Coalition for Children’s Safety and Health (CCCSH) supports and is proud to co-sponsor SB 511 by Senator Perez bringing long overdue safety oversight to autonomous vehicles with full self-driving capabilities. Autonomous vehicles with full self-driving capabilities are already being dangerously used in California, with several other similar vehicles coming soon to California’s roadways. Tesla models with full self-driving feature are the passenger vehicle most folks talk about, but it will not be the only individually owned vehicle with full self-driving capability as other auto manufacturers are close on Tesla’s heels. SB 511 makes the important safety updates to how California provides safety oversight for these vehicles currently on the roadway but does so to provide the framework of safety that will be even more necessary as other auto manufacturers roll out their similar vehicles.

ARGUMENTS IN OPPOSITION: Writing in opposition, “The Autonomous Vehicle Industry Association (“AVIA”) writes to express opposition to SB 511. The unworkable requirements imposed by this bill would effectively cut off the nascent autonomous vehicle (“AV”) industry in the state that has been a longstanding leader in AV technology development. To the extent that this bill is designed to impose heightened requirements on Level 2 vehicles—which are fundamentally different from autonomous vehicles—as currently drafted, this bill would inadvertently impact the AV industry. In particular, by making it unlawful to modify a vehicle with aftermarket additions to give a vehicle the functionality of an AV, SB 511 would affect the overwhelming majority of AV developers that currently retrofit traditional vehicles with automated driving systems.”

-- END --