

Date of Hearing: April 1, 2019

ASSEMBLY COMMITTEE ON TRANSPORTATION

Jim Frazier, Chair

AB 1671 (Berman) – As Introduced February 22, 2019

**SUBJECT:** Department of Transportation: motor vehicle technology testing

**SUMMARY:** Extends the existing authorization for the California Department of Transportation (Caltrans), in coordination with the California Highway Patrol (CHP), to conduct testing of technologies that enable drivers to safely operate motor vehicles with less than 100 feet between each vehicle or combination of vehicles until January 1, 2024, and requires Caltrans to submit an updated report on the testing to the Legislature on or before July 1, 2023.

**EXISTING LAW:**

- 1) Requires motor vehicles being driven outside a business or residence district in a caravan or motorcade to be operated as to allow sufficient space of at least 100 feet between each vehicle or combination of vehicles so as to enable any other vehicle to overtake or pass.
- 2) Authorizes Caltrans, in coordination with CHP, to conduct testing of technologies that enable drivers to safely operate motor vehicles with less than 100 feet between each vehicle or combination of vehicles until January 1, 2020.
- 3) Provides that Caltrans may only use motor vehicles and streets and highways that CHP authorizes for the technology testing.
- 4) Requires Caltrans to report its findings from the testing to the Legislature by July 1, 2019.

**FISCAL EFFECT:** Unknown.

**COMMENTS:** The rapid development of new technologies under the broad category known as “Intelligent Transportation Systems” (ITS) has brought opportunities to enhance the performance of California’s transportation network. ITS technologies include sensors that can detect the locations and motions of vehicles and other road users, wireless communication systems that enable the exchange of data among vehicles and between vehicles and the roadway infrastructure, computer systems and software that can analyze the data, and actuators that can automatically control vehicle motions (steering, acceleration, and braking).

One important class of ITS system that is already available for use on many passenger cars and commercial vehicles is adaptive cruise control (ACC), which automatically controls the acceleration and braking of a vehicle so that it maintains a set following distance behind the preceding vehicle in its lane. ACC systems use forward-looking sensors to measure the distance to the preceding vehicle and the difference in speed between vehicles. This information is used by the ACC system software to determine the acceleration or braking commands that should be implemented to maintain the desired spacing.

Existing ACC systems have some limitations that can be overcome with the addition of vehicle-to-vehicle (V2V) wireless communications of key vehicle data. Existing ACC systems only detect changes in the motion of the vehicle immediately in front of them, not the actions of

vehicles further ahead. They are relatively slow to respond to changes in the motion of vehicles ahead, and their minimum gap settings are large enough that drivers of other vehicles freely change lanes into those gaps in dense urban traffic.

With the addition of V2V communication of data, these systems become cooperative ACC (CACC), which provides several performance improvements, including receiving information from vehicles further ahead than their sensors can detect, responding more quickly and predictably to braking actions by preceding vehicles, and smoothing out traffic flow (damping out “stop and go” behavior).

In 2015, The Legislature passed and Governor Brown signed into law SB 719 (Hernández), Chapter 163, Statutes of 2015, enabling Caltrans to research and conduct demonstrations on partially automated trucks using CACC in closely spaced operations, also known as “truck platooning.” After passage of SB 719, Caltrans worked with the CHP to establish a process where Caltrans submitted a testing or demonstration plan to CHP for review.

CACC systems can increase safety by reducing reaction time. The CACC system in the middle and trailing truck in a three-truck platoon will begin responding within two-tenths of a second when the lead truck brakes or accelerates. Human reaction time is more complex, highly variable, and can range from a few tenths of a second for an attentive experienced younger driver to more than a couple seconds for the average driver, a driver that is fatigued, or not focused on the driving task.

In 2017, Caltrans concluded that operation of heavy trucks at gaps shorter than the statutory 100 feet minimum confer many benefits when under close coordination. These closely coordinated vehicles have been demonstrated to:

- 1) Reduce fuel consumption. In the case of heavy trucks, these savings can be in the range of 10 to 15% depending on a variety of factors;
- 2) Enhance safety through coordinated braking with minimal delay;
- 3) Improve traffic flow stability, reducing stop-and-go effects;
- 4) Increase the effective capacity of highway lanes, reducing the adverse effects of congestion; and
- 5) Permit the free movement of other vehicles.

The closely coordinated CACC heavy trucks showed that they were able to interact safely and smoothly with drivers of other vehicles. During the course of the project testing and demonstrations, other drivers did not hesitate to change lanes into the gaps between trucks that were driving under CACC coordination. This persistence of lane changing demonstrated that close-spaced CACC trucks did not create an impediment to traffic movement and lane choice.

Based on the testing done pursuant to SB 719, Caltrans requested and the Legislature approved an extension until 2020 to Caltrans’ authority to study truck platooning with AB 669 (Berman), Chapter 472, Statutes of 2017. The result of this research is not yet available, but is expected to be similarly positive.

This bill seeks to extend Caltrans’ authority to study truck platooning until 2024.

According to the author, “AB 1671 would allow Caltrans, CHP, and stakeholder partners to continue on-road testing of CACC technologies by extending the current sunset to January 1, 2024. Doing so will provide additional years in which Caltrans can continue to build upon the body of knowledge it has obtained to date under SB 719 and AB 669 which, in turn, will provide state policymakers with additional important information about CACC’s promising potential to provide California with important transportation safety, fuel savings, and air emissions benefits. AB 1671 continues California’s tradition of leading in innovative technologies that focus on human benefits like driver safety and reducing emissions.”

*Previous legislation.* AB 669 (Berman), Chapter 472, Statutes of 2017, extended Caltrans’ authority to test technologies that enable drivers to safely operate motor vehicles with less than 100 feet between each vehicle until January 1, 2020.

SB 719 (Hernández), Chapter 163, Statutes of 2015, authorized Caltrans to test technologies that involve motor vehicles being operated within less than 100 feet between each vehicle until January 1, 2018.

**REGISTERED SUPPORT / OPPOSITION:****Support**

Peleton Technology Inc

**Opposition**

None on file.

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