House of Representatives

General Assembly

File No. 433

January Session, 2021

Substitute House Bill No. 6486

House of Representatives, April 14, 2021

The Committee on Transportation reported through REP. LEMAR of the 96th Dist., Chairperson of the Committee on the part of the House, that the substitute bill ought to pass.

AN ACT CONCERNING AUTOMATED DRIVING SYSTEM EQUIPPED VEHICLES.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. Section 13a-260 of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2021*):

(a) For the purposes of this section:

(1) **[**"Fully autonomous vehicle"**]** "ADS-equipped vehicle" means a motor vehicle that is equipped with an automated driving system; **[**, designed to function without an operator and classified as level four or level five by SAE J3016;**]**

(2) "Automated driving system" or "ADS" means the hardware and software that are collectively capable of performing the entire dynamic driving task on a sustained basis, regardless of whether the automated driving system is limited to a specific operational design domain;

(3) "Driver" means a user who performs in real-time part or all of the

dynamic driving tasks or dynamic driving task fallback for a vehicle;

(4) "Driving automation system" means the hardware and software that are collectively capable of performing part or all of the dynamic driving tasks on a sustained basis;

[(3)**]** (5) "Dynamic driving task" means the real-time operational and tactical functions required to operate a motor vehicle on highways, excluding the strategic functions such as trip scheduling and selection of destinations and waypoints;

(6) "Dynamic driving task fallback" means the response by the user to either perform the dynamic driving task or achieve a minimal risk condition after occurrence of a dynamic driving task performance-relevant system failure or upon operational design domain exit, or the response by an automated driving system to achieve minimal risk condition;

(7) "Fallback-ready user" means the user of a vehicle equipped with an engaged level three or conditional driving automation system who is able to (A) operate the vehicle and is receptive to automated driving system-issued requests to intervene, and (B) identify dynamic driving task performance-relevant system failures in the vehicle compelling the user to perform the dynamic driving task fallback;

(8) "Level three or conditional driving automation" means the sustained and operational design domain-specific performance by an automated driving system of the entire dynamic driving task with the expectation that the dynamic driving task fallback-ready user is receptive to automated driving system-issued requests to intervene and to dynamic driving task performance-relevant system failures in other vehicle systems and will respond appropriately;

(9) "Minimal risk condition" means a condition to which a user or an automated driving system may bring a vehicle after performing the dynamic driving task fallback to reduce the risk of a crash when a given trip cannot or should not be completed;

(10) "Operate" means the activities performed by an operator or by an automated driving system to perform the entire dynamic driving task for a vehicle during a trip;

[(4)**]** (11) "Operational design domain" means **[**a description of the operating domains in which an automated driving system is**]** the operating conditions under which a driving automation system, or feature of such system, is specifically designed to function, including, but not limited to, **[**geographic, roadway,**]** environmental, **[**and speed limitations**]** geographical and time-of-day restrictions and the requisite presence or absence of certain traffic or roadway conditions;

[(5) "SAE J3016" means the "Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles" published by SAE International in September 2016;**]**

[(6)**]** (12) "Operator" means **[**the person who causes the automated driving system to engage while physically inside the fully autonomous vehicle**]** a driver or automated driving system that operates a motor vehicle;

[(7) "Autonomous vehicle tester" means an autonomous vehicle manufacturer, institution of higher education, fleet service provider or automotive equipment or technology provider;

(8) "Fleet service provider" means a person or entity that owns or leases a fully autonomous vehicle and operates such fully autonomous vehicle for commercial or public use;

(9) "Autonomous vehicle manufacturer" means: (A) A person or entity that builds or sells fully autonomous vehicles; (B) a person or entity that installs automated driving systems in motor vehicles that are not originally built as fully autonomous vehicles; or (C) a person or entity that develops automated driving systems in fully autonomous vehicles or motor vehicles that are not originally built as fully autonomous vehicles;

(10) "Secretary" means the Secretary of the Office of Policy and

Management; and**]**

(13) "Request to intervene" means notification by an automated driving system to a fallback-ready user indicating that the fallback-ready user should promptly perform the dynamic driving task fallback, which may entail resuming manual operation of the vehicle or achieving a minimal risk condition;

(14) "System failure" means a malfunction in an automated driving system or other vehicle system that prevents the automated driving system from reliably performing the portion of the dynamic driving task on a sustained basis, including the complete dynamic driving task, that it would otherwise perform;

(15) "Testing" means operating a motor vehicle equipped with an automated driving system for the purpose of demonstrating or evaluating the automated driving system on highways;

(16) "Trip" means the traversal of an entire travel pathway by a vehicle from the point of origin to a destination;

(17) "User" means a person who performs the human role in driving automation; and

[(11)**]** (18) "Highway", **[**"limited access highway", and**]** "motor vehicle", "operator's license" and "owner" have the same meanings as defined in section 14-1.

[(b) The Office of Policy and Management, in consultation with the Departments of Motor Vehicles, Transportation and Emergency Services and Public Protection, shall establish a pilot program for not more than four municipalities to allow autonomous vehicle testers to test fully autonomous vehicles on the highways of such municipalities. Municipalities shall apply to the Secretary of the Office of Policy Management in the manner and form directed by the secretary for inclusion in the pilot program. The secretary shall select at least one municipality with a population of at least one hundred twenty thousand, but not more than one hundred twenty-four thousand, and

one municipality with a population of at least one hundred thousand, as enumerated in the 2010 federal decennial census.

(c) The chief elected official or chief executive officer of a municipality selected by the secretary shall select and enter into a written agreement with an autonomous vehicle tester or autonomous vehicle testers to test fully autonomous vehicles on the highways of the municipality. Such agreement shall, at a minimum: (1) Specify the locations and routes where such fully autonomous vehicles may operate; (2) prohibit the operation of such fully autonomous vehicles outside such locations and routes except in the case of an emergency; (3) identify each fully autonomous vehicle to be tested by vehicle identification number, make, year and model; and (4) specify the hours of operation of such fully autonomous vehicles.

(d) An autonomous vehicle tester shall not test a fully autonomous vehicle in a municipality unless:

(1) The operator is: (A) Physically inside the fully autonomous vehicle; (B) monitoring the operation of such fully autonomous vehicle; (C) capable of taking immediate manual control of such fully autonomous vehicle; (D) an employee, independent contractor or other person designated and trained by the autonomous vehicle tester concerning the capabilities and limitations of such fully autonomous vehicle; and (E) a holder of an operator's license;

(2) The autonomous vehicle tester: (A) Registers each fully autonomous vehicle to be tested with the Commissioner of Motor Vehicles pursuant to section 14-12; and (B) submits to the commissioner, in a manner and form directed by the commissioner, proof of liability insurance, self-insurance or a surety bond of at least five million dollars for damages by reason of bodily injury, death or property damage caused by a fully autonomous vehicle; and

(3) The operator and autonomous vehicle tester: (A) Comply with any provision of the general statutes or any ordinance of a municipality concerning the operation of motor vehicles; (B) comply with standards

established by the National Highway Traffic Safety Administration regarding fully autonomous vehicles; and (C) satisfy any other requirement as determined by the secretary, in consultation with the Commissioners of Motor Vehicles, Transportation and Emergency Services and Public Protection, as necessary to ensure the safe operation of such fully autonomous vehicle.

(e) No autonomous vehicle tester shall test a fully autonomous vehicle on any limited access highway.

(f) The secretary may immediately prohibit an operator or autonomous vehicle tester from testing a fully autonomous vehicle if the secretary, in consultation with the Commissioners of Motor Vehicles, Transportation and Emergency Services and Public Protection, determines that such testing poses a risk to public safety or that such operator or autonomous vehicle tester fails to comply with the provisions of this section or with the requirements of the pilot program.

(g) An autonomous vehicle tester that participates in the pilot program shall provide information to the secretary and the task force established pursuant to section 2 of public act 17-69* that the secretary and task force deem to be appropriate for measuring the performance of the pilot program. The autonomous vehicle tester may withhold any commercially valuable, confidential or proprietary information.

(h) Not later than July 1, 2020, and annually thereafter, the secretary shall submit a report to the joint standing committee of the General Assembly having cognizance of matters relating to transportation, in accordance with section 11-4a, concerning the implementation and progress of the pilot program.**]**

(b) Not later than January 1, 2023, the Commissioner of Transportation, in consultation with the Secretary of the Office of Policy and Management and the Commissioners of Motor Vehicles, Insurance and Emergency Services and Public Protection, shall establish a program to test and operate ADS-equipped vehicles on highways in the state. The commissioners and secretary shall (1) consider

recommendations from municipalities and other interested stakeholders in establishing such program, (2) require an owner of an ADS-equipped vehicle to submit an application with a safety plan, and (3) approve an application prior to permitting an owner or driver to test and operate an ADS-equipped vehicle.

(c) The commissioners and secretary shall jointly adopt regulations, in accordance with the provisions of chapter 54, establishing the requirements of such program. Such regulations shall, at a minimum, (1) incorporate any provision of any statute or regulation of this state or the federal government and national best practices regarding testing and operating ADS-equipped vehicles on highways, (2) establish procedures for an application to be submitted by the owner of an ADS-equipped vehicle, (3) require such application to include a safety plan to manage the risks associated with crashes and driver inattentiveness and list countermeasures to be undertaken by the owner or the driver of the ADS-equipped vehicle to manage such risks, and (4) criteria for the approval or denial of any such application.

(d) Before an ADS-equipped vehicle is tested or operated on a highway, the owner or the driver of the ADS-equipped vehicle shall:

(1) When required by federal law or regulation, (A) receive certification that the ADS-equipped vehicle is in compliance with all applicable federal motor vehicle safety standards and regulations, and (B) place any required certification label, including any reference to an exception granted under federal law or regulation, on the ADS-equipped vehicle;

(2) Register the ADS-equipped vehicle with the Commissioner of Motor Vehicles pursuant to section 14-12 or validly register the ADS-equipped vehicle in another state; and

(3) Maintain automobile liability insurance coverage or a surety bond of at least five million dollars for damages by reason of bodily injury, death or property damage caused by an ADS-equipped vehicle.

(e) An ADS-equipped vehicle shall comply with any provision of the general statutes or any ordinance of a municipality concerning the operation of a motor vehicle.

(f) When an ADS-equipped vehicle is testing or operating on the highways of the state and the automated driving system is engaged:

(1) The automated driving system is the operator and shall perform the entire dynamic driving task of the vehicle;

(2) The automated driving system is not required to obtain or possess an operator's license;

(3) The owner of the ADS-equipped vehicle is responsible for ensuring the compliant operation of the vehicle;

(4) The ADS-equipped vehicle shall operate within the operational design domain designated by the manufacturer, unless the ADS-equipped vehicle is granted an exemption under federal law or regulation; and

(5) The automated driving system shall achieve a minimal risk condition or make a request to intervene if an operational design domain exit occurs or a system failure occurs that renders the ADS-equipped vehicle unable to perform the entire dynamic driving task relevant to the intended operational design domain.

(g) If an ADS-equipped vehicle is involved in a crash, the ADS-equipped vehicle shall achieve a minimal risk condition and remain at the scene of the crash. The owner of the ADS-equipped vehicle, or a person on behalf of such owner, shall (1) immediately report the crash to a law enforcement officer and remain at the scene of the crash until the arrival of a law enforcement officer, and (2) provide the following information upon request to the law enforcement officer: (A) Proof of registration and insurance, (B) the driver's operator's license, (C) specific details of the crash, including the possible cause of the crash, (D) whether the automated driving system was engaged prior to and at the time of the crash, and (E) any other information as requested by the law

enforcement officer.

This act shall take effect as follows and shall amend the following sections:		
Section 1	*July 1, 2021*	13a-260

Statement of Legislative Commissioners:
In Subsec. (a), the term "driving automation" was deleted to remove redundant language and the subdivisions were renumbered accordingly, in Subsec. (a)(7), "evident" was changed to "identify" for clarity, in Subsec. (a)(14), "driving automation" was changed to "automated driving" for accuracy, in Subsec. (b)(3), "from testing and operating" was changed to "to test and operate" for clarity and in Subsec. (c), "jointly" was added and "such applications" was changed to "any such application" for clarity.

TRA *Joint Favorable Subst.*

The following Fiscal Impact Statement and Bill Analysis are prepared for the benefit of the members of the General Assembly, solely for purposes of information, summarization and explanation and do not represent the intent of the General Assembly or either chamber thereof for any purpose. In general, fiscal impacts are based upon a variety of informational sources, including the analyst's professional knowledge. Whenever applicable, agency data is consulted as part of the analysis, however final products do not necessarily reflect an assessment from any specific department.

OFA Fiscal Note

State Impact: None

Municipal Impact: None

Explanation

The bill requires the Department of Transportation (DOT), in collaboration with other agencies, to 1) establish a program to test and operate automated driving system (ADS) equipped vehicles and 2) adopt regulations establishing program requirements, including a new application and permit process for joining the program. The bill is not expected to result in a fiscal impact because DOT has the expertise to adopt the relevant regulations and to review applications that are received as part of the program.

The Out Years

State Impact: None

Municipal Impact: None

OLR Bill Analysis

sHB 6486

AN ACT CONCERNING AUTOMATED DRIVING SYSTEM EQUIPPED VEHICLES.

SUMMARY

This bill (1) requires the Department of Transportation (DOT), in collaboration with other agencies, to develop a program to test and operate vehicles equipped with automated driving systems (ADS) (i.e., "ADS-equipped vehicles") and (2) eliminates the autonomous vehicle (AV) testing pilot program, which never started.

In establishing the program, the bill requires DOT to adopt regulations that (1) incorporate state and federal laws and national best practices on testing and (2) set application requirements for ADS-equipped vehicle owners seeking approval to test or operate their vehicles on state roads. The bill also establishes requirements for testing and operating ADS-equipped vehicles, including that the vehicles must comply with federal safety standards, be registered, and be insured.

The bill also adds and modifies definitions related to ADS-equipped vehicles and eliminates definitions related to the AV testing pilot program.

EFFECTIVE DATE: July 1, 2021

DEFINITIONS

The bill adds new definitions and modifies existing ones related to ADS-equipped vehicles. By law, (1) "ADS" is the hardware and software that are collectively capable of performing the entire dynamic driving task on a sustained basis, regardless of whether the ADS is limited to a specific operational design domain, and (2) "dynamic driving task" means the real-time operational and tactical functions

required to operate a motor vehicle on highways, excluding the strategic functions such as trip scheduling and selecting destinations and waypoints.

The bill eliminates the definition of fully autonomous vehicle and references to levels of automation, instead using the term "ADS-equipped vehicles" to refer to automated vehicles. The bill also eliminates the following definitions for terms used in the pilot program the bill eliminates: AV tester, fleet service provider, AV manufacturer.

Technology-Related Definitions

The bill adds numerous industry standard definitions related to automated vehicle technology and modifies existing state definitions to conform with industry standards. These definitions and standards were developed by SAE International and published in SAE J3016. (However, the bill eliminates the specific reference to this publication.) SAE International is an engineering professional organization that develops standards for the aviation, automotive, and commercial vehicle industries.

Operational Design Domain. The bill redefines "operational design domain" as the operating conditions under which a driving automation system, or feature of it, is specifically designed to function, including, environmental, geographical, and time-of-day restrictions, and the requisite presence or absence of certain traffic or roadway conditions.

Minimal Risk Condition. Under the bill "minimal risk condition" means a condition that a user or an ADS may bring a vehicle to after performing the dynamic driving task fallback to reduce the risk of a crash when a given trip cannot or should not be completed.

Other Terms. Other defined terms added include: driving automation, dynamic driving task fallback, fallback-ready user, level three or conditional driving automation, operate, request to intervene, system failure, and trip.

Driver, User, and Operator

The bill defines "driver" as a "user" who performs in real-time part or all of the dynamic driving task. A "user" is a person who performs the human role in driving automation.

The bill also re-defines operator as the driver or the automated driving system that operates a vehicle. Under current law, an "operator" is the person who causes the ADS to engage while physically inside the vehicle.

As with the technology-related terms, these terms conform to SAE standards.

ADS-EQUIPPED VEHICLE TESTING

By January 1, 2023, the bill requires the DOT commissioner to establish a program to test and operate ADS-equipped vehicles on state roads. In doing so, he must consult with the Office of Policy and Management (OPM) secretary and the commissioners of the Department of Motor Vehicles (DMV), Department of Emergency Services and Public Protection (DESPP), and Insurance Department.

The bill requires the commissioners and secretary to consider recommendations from municipalities and other interested stakeholders. As part of the program, they must (1) require ADS-equipped vehicle owners to submit applications with safety plans and (2) approve applications before allowing owners or drivers to test and operate ADS-equipped vehicles.

The commissioners and secretary must jointly adopt regulations establishing program requirements, which must, at a minimum:

1. incorporate state and federal laws and national best practices regarding testing and operating ADS-equipped vehicles on highways;

2. establish application procedures, including requiring each application to include a safety plan to manage the risks associated with crashes and driver inattentiveness and list

countermeasures the owner or driver will take to manage the risks; and

3. include criteria for approving or denying an application.

Testing Requirements and Conditions

The bill sets a number of requirements and conditions that must be met to test or operate ADS-equipped vehicles on roads.

Federal Motor Vehicle Safety Standards. When required by federal law or regulations, the owner or driver of the ADS-equipped vehicle must, before an ADS-equipped vehicle is tested or operated on state roads, (1) receive certification that the vehicle complies with all federal motor vehicle safety standards and regulations and (2) place on the vehicle any required certification label, including any reference to exceptions granted under federal law or regulation.

Registration. The owner or driver of an ADS-equipped vehicle must register it with DMV or validly register it in another state before operating or testing it on state roads.

Insurance. Before testing or operating ADS-equipped vehicles on state roads, vehicle owners or drivers must maintain auto liability insurance coverage or a surety bond of at least $5 million for damages because of bodily injury, death, or property damage caused by the vehicle.

Compliance with Laws. ADS-equipped vehicles must comply with state law and municipal ordinances related to motor vehicle operation.

Requirements During Testing or Operation. When an ADS-equipped vehicle is testing or operating on state roads and the ADS is engaged, the following requirements and conditions apply:

1. the ADS is the operator and must perform the entire dynamic driving task;

2. the ADS is not required to get or hold a driver's license;

3. the ADS-equipped vehicle owner is responsible for ensuring the vehicle's compliant operation;

4. the ADS-equipped vehicle must operate within the operational design domain designated by the manufacturer, unless the vehicle is granted an exception under federal law or regulation; and

5. the ADS must achieve a minimal risk condition or make a request to intervene if an operational design domain exit or a system failure occurs that renders the vehicle unable to perform the entire dynamic driving task relevant to the intended operational design domain.

Requirements in Event of a Crash. If an ADS-equipped vehicle is involved in a crash, the vehicle must achieve a minimal risk condition and remain at the crash scene. The vehicle owner, or a person on the owner's behalf, must immediately report the crash to law enforcement and remain at the scene until an officer arrives. Upon the officer's request, the owner or person must provide the following information:

1. proof of registration and insurance;

2. the driver's license of the driver;

3. specific details about the crash, including its possible cause;

4. whether the ADS was engaged prior to and at the time of the crash; and

5. any other information the officer requests.

TESTING PILOT PROGRAM (PA 17-69)

The bill repeals the current AV testing pilot program, which was never fully operational. The pilot program was to be administered by OPM, in consultation with DMV, DOT, and DESPP, and allow AV testers to test AVs in up to four municipalities. OPM had to select at least (1) one municipality with a population of between 120,000 and 124,000,

as listed in the 2010 census (i.e., Stamford), and (2) a different municipality with a population of at least 100,000, as listed in the 2010 census.

COMMITTEE ACTION

Transportation Committee

Joint Favorable Substitute
Yea 34 Nay 1 (03/26/2021)