AAMVA's 2016 Workshop & Law Institute
Legal Implications of Increased Automation
Laws and regulations concerning automated vehicles should:

- Be consistent nationally (avoid *patchwork*)
- Provide clear and discernable requirements
- Not stifle innovation
- Account for various levels of automation (avoid a “one size fits all” approach)
Support a Consistent National Approach

Autonomous Vehicle Legislation

- **Enacted**
- **Executive Order**
- **Pending re: AV Operation**
- **Pending Re: AV Testing**

Map showing states with autonomous vehicle legislation status.
Support a Consistent National Approach

Automakers require consistency with respect to:

- *Design of the motor vehicle*
- *Certification of the motor vehicle*
Support a Consistent National Approach

State standards have inconsistent design requirements

(c) Except as provided in subdivision (b), an autonomous vehicle shall not be operated on public roads until the manufacturer submits an application to the department, and that application is approved by the department pursuant to the regulations adopted pursuant to subdivision (d). The application shall contain, at a minimum, all of the following certifications:

1. A certification by the manufacturer that the autonomous technology satisfies all of the following requirements:

   A. The autonomous vehicle has a mechanism to engage and disengage the autonomous technology that is easily accessible to the operator.
   B. The autonomous vehicle has a visual indicator inside the cabin to indicate when the autonomous technology is engaged.
   C. The autonomous vehicle has a system to safely alert the operator if an autonomous technology failure is detected while the autonomous technology is engaged, and when an alert is given, the system shall do either of the following:
      i. Require the operator to take control of the autonomous vehicle.
      ii. If the operator does not or is unable to take control of the autonomous vehicle, the autonomous vehicle shall be capable of coming to a complete stop.

California Vehicle Code § 38750
Support a Consistent National Approach

State standards have inconsistent design requirements

Nev. Rev. Stat. § 482A.080

2. An autonomous vehicle shall not be tested or operated on a highway within this State unless the autonomous vehicle is:
   (a) Equipped with a means to engage and disengage the autonomous technology which is easily accessible to the human operator of the autonomous vehicle;
   (b) Equipped with a visual indicator located inside the autonomous vehicle which indicates when autonomous technology is operating the autonomous vehicle;
   (c) Equipped with a means to alert the human operator to take manual control of the autonomous vehicle if a failure of the autonomous technology has been detected and such failure affects the ability of the autonomous technology to operate safely the autonomous vehicle; and
   (d) Capable of being operated in compliance with the applicable motor vehicle laws and traffic laws of this State.

No requirement that the vehicle be capable of coming to a complete stop.
Support a Consistent National Approach

State standards have inconsistent design requirements

Fla. Stat. § 319.145

Autonomous vehicles.—

(1) An autonomous vehicle registered in this state must continue to meet federal standards and regulations for a motor vehicle. The vehicle shall:

(a) Have a means to engage and disengage the autonomous technology which is easily accessible to the operator.

(b) Have a means, inside the vehicle, to visually indicate when the vehicle is operating in autonomous mode.

(c) Have a means to alert the operator of the vehicle if a technology failure affecting the ability of the vehicle to safely operate autonomously is detected while the vehicle is operating autonomously in order to indicate to the operator to take control of the vehicle.

Also no requirement that the vehicle be capable of coming to a complete stop.
Support a Consistent National Approach

States should not require state-by-state certification

Section 2. (a) An autonomous vehicle may be operated in autonomous mode in this state only if ALEA has issued a certificate of compliance for the make and model of the vehicle. For the purpose of enforcing the traffic laws and other laws applicable to drivers and motor vehicles operated in this state, the person operating the autonomous vehicle in autonomous mode shall be deemed the driver of the autonomous vehicle regardless of whether the person is physically present in the autonomous vehicle while it is engaged.

Alabama Senate Bill 178
Support a Consistent National Approach

*State action may be preempted by NHTSA FMVSS*

“When a motor vehicle safety standard is in effect under this chapter, a State or a political subdivision of a State may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this chapter.”

Support a Consistent National Approach

EDR regulations may be preempted

(k) “Event data recorder” is a mechanism or device installed in an autonomous vehicle to record technical information about the status and operation of the vehicle’s autonomous technology sensors for 30 seconds prior to a collision in addition to specifications for those devices under Title 49 Code of Federal Regulations, Part 563.

(6) The manufacturer shall certify in the application that the subject autonomous vehicles are equipped with an event data recorder that captures and stores autonomous technology sensor data for all vehicle functions that are controlled by the autonomous technology at least 30 seconds before a collision with another vehicle, person, or other object while the vehicle is operating in autonomous mode.

Draft California DMV Regulations
Support a Consistent National Approach

EDR regulations may be preempted

“Thus, to the extent that aspects of EDR performance would be addressed by a safety standard, States would be expressly preempted by section 30103(b)(1) from adopting or maintaining any non-identical statute or regulation addressing those aspects of performance. With respect to this proposal, such aspects would include State EDR technical requirements requiring that EDRs record specific data elements, and/or requiring EDRs to meet specific technical performance or survivability requirements.”

Need for Clear Regulatory Requirements

(1) “Autonomous technology” means technology that has the capability to drive a vehicle without the active physical control or monitoring by a human operator.

(2) (A) “Autonomous vehicle” means any vehicle equipped with autonomous technology that has been integrated into that vehicle.

(B) An autonomous vehicle 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.

This definition could be read broadly to include cars on the road today.

California Vehicle § 38750
Need for Clear Regulatory Requirements

Section 1. Chapter 482A of NRS is hereby amended by adding thereto the provisions set forth as sections 2 to 5, inclusive, of this act.

Sec. 2. “Autonomous technology” means technology which is installed on a motor vehicle and which has the capability to drive the motor vehicle without the active control or monitoring of a human operator. The term does not include an active safety system or a system for driver assistance, including, without limitation, a system to provide electronic blind spot detection, crash avoidance, emergency braking, parking assistance, adaptive cruise control, lane keeping assistance, lane departure warning, or traffic jam and queuing assistance, unless any such system, alone or in combination with any other system, enables the vehicle on which the system is installed to be driven without the active control or monitoring of a human operator.

This definition also could be read to include cars on the road today.

Nev. Rev. Stat. § 482A.025
Need for Clear Regulatory Requirements

New Jersey Assembly Bill 851

4 BE IT ENACTED by the Senate and General Assembly of the State of New Jersey

6 1. For the purposes of this act:
8 "Artificial intelligence" means the use of computers and related equipment to enable a machine to duplicate or mimic the behavior of human beings.
10 "Autonomous mode" means the operation of the autonomous vehicle without the active control of a human being.
13 "Autonomous vehicle" means a motor vehicle that uses artificial intelligence, sensors, global positioning system coordinates, or any other technology to carry out the mechanical operations of driving without the active control and continuous monitoring of a human operator.
18 "Sensors" include, without limitation, cameras, lasers, and radar.

The use of the conjunctive "and" is more limiting.

New Jersey Assembly Bill 851
Need to Account for Various Levels of Automation

California’s statute adopts a “one size fits all” approach

California Vehicle § 38750
Need to Account for Various Levels of Automation

An earlier Virginia draft statute accounts for different levels of automation.

"Autonomous vehicle" means a vehicle, as defined by Levels 4 and 5 of SAE J3016, that utilizes an automated driving system that handles all aspects of the dynamic driving task, and does not require the involvement of a driver at any time for its safe operation.

"Piloted vehicle" means a vehicle as defined by Levels 1 through 3 of SAE J3016, that has the ability to perform one or more driving mode specific tasks, but requires the driver to respond appropriately to vehicle requests to intervene and resume control.

Virginia House Bill 1372
### Need to Account for Various Levels of Automation

Different levels of automation may impact the required “behavioral competency.”

<table>
<thead>
<tr>
<th>Level</th>
<th>Name</th>
<th>Narrative definition</th>
<th>Execution of steering and acceleration/deceleration</th>
<th>Monitoring of driving environment</th>
<th>Fallback performance of dynamic driving task</th>
<th>System capability (driving modes)</th>
<th>SAEJ level</th>
<th>NHTSA level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No Automation</td>
<td>the full-time performance by the human driver of all aspects of the dynamic driving task, even when enhanced by warning or intervention systems</td>
<td>Human driver</td>
<td>Human driver</td>
<td>Human driver</td>
<td>n/a</td>
<td>Driver</td>
<td>0</td>
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<td>1</td>
<td>Driver Assistance</td>
<td>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</td>
<td>Human driver and system</td>
<td>Human driver</td>
<td>Human driver</td>
<td>Some driving modes</td>
<td>Assisted</td>
<td>1</td>
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<tr>
<td>2</td>
<td>Partial Automation</td>
<td>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 perform all remaining aspects of the dynamic driving task</td>
<td>System</td>
<td>Human driver</td>
<td>Human driver</td>
<td>Some driving modes</td>
<td>Partially automated</td>
<td>2</td>
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<tr>
<td>3</td>
<td>Conditional Automation</td>
<td>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</td>
<td>System</td>
<td>System</td>
<td>Human driver</td>
<td>Some driving modes</td>
<td>Highly automated</td>
<td>3</td>
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<tr>
<td>4</td>
<td>High Automation</td>
<td>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</td>
<td>System</td>
<td>System</td>
<td>System</td>
<td>Some driving modes</td>
<td>Fully automated</td>
<td>3/4</td>
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<td>5</td>
<td>Full Automation</td>
<td>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</td>
<td>System</td>
<td>System</td>
<td>System</td>
<td>All driving modes</td>
<td>-</td>
<td></td>
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</table>

SAE J 3016
THANK YOU!