Today

• **Background**
  - What’s an autonomous vehicle (AV)?
  - What’s on the road now?
  - What’s coming and when?
  - What does the public think about AVs?
  - What are current state laws on AVs?

• **Priorities for states**
  - AV testing
  - AV operations

• **What can states do now (and what shouldn’t they do)?**
• **What can national organizations do to help states?**
• **Questions**
What’s an AV?

- **Level 0**: no automation, driver in complete control
- **Level 1**: driver assistance
  - Cruise control or lane position, driver monitors at all times
- **Level 2**: occasional self-driving
  - Control both speed and lane position in limited situations, like Interstates; driver monitors at all times

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- **Level 3**: limited self-driving in some situations (like Interstates)
  - Vehicle in full control, informs when driver must take control
- **Level 4**: full self-driving under certain conditions
  - Vehicle in full control for entire trip, such as urban ride-sharing
- **Level 5**: full self-driving at all times
  - Cruise control or lane position
What’s an AV?

Five Levels of Vehicle Autonomy

**Level 0**
No automation: the driver is in complete control of the vehicle at all times.

**Level 1**
Driver assistance: the vehicle can assist the driver or take control of either the vehicle’s speed, through cruise control, or its lane position, through lane guidance.

**Level 2**
Occasional self-driving: the vehicle can take control of both the vehicle’s speed and lane position in some situations, for example on limited-access freeways.

**Level 3**
Limited self-driving: the vehicle is in full control in some situations, monitors the road and traffic, and will inform the driver when he or she must take control.

**Level 4**
Full self-driving under certain conditions: the vehicle is in full control for the entire trip in these conditions, such as urban ride-sharing.

**Level 5**
Full self-driving under all conditions: the vehicle can operate without a human driver or occupants.

Source: SAE & NHTSA
What’s on the road now?

- **Level 1 available for many years**
  - Cruise control, electronic stability control, lane-keeping assistance

- **Level 2 available now**
  - Tesla Autopilot

- **Level 3-5 being tested extensively**
  - Google test fleet: 2 million miles
  - Uber in Pittsburgh
  - 33 companies worldwide working on some aspect of AVs
What’s coming and when?

- **Level 3-5 vehicles available commercially in 3-5 years**
  - Tesla – current Autopilot has Level 5 software
  - Volkswagen – predicts 2019
  - GM, Toyota – predict 2020
  - Ford – predicts 2021
What’s coming and when?

**Autonomous Vehicle Fleet Projections**
(as a percentage of all vehicles on the road)

- **2020’s**: Large Price Premiums (01%-02%)
- **2030’s**: Moderate Price Premiums (10%-20%)
- **2040’s**: Minimal Price Premiums (20%-40%)
- **2050’s**: Standard on Most New Vehicles (40%-60%)

Source: GHSA
What does the public think about AVs?

• **Skeptical**
  ▪ Prospect of wide use? 34% excited, 57% worried
  ▪ Will AVs reduce crashes? 35% yes, 46% no
  ▪ Would you ride in an AV today? 17% yes, 75% no
  ▪ Would you buy an AV when available? ≈ 20% yes, ≈ 50% no

• **Prefer AVs that allow drivers to take control**
  ▪ Over 80% in two surveys

5 surveys (4 in 2016 and 1 in 2015), 4 in US and 1 in Canada
What are current state laws?

- AVs probably can operate in most states without law changes
- AV laws in place in 9 states and DC
  - CA, DC, FL, NV: testing and operations
  - MI, UT: testing
  - LA: defines AV, ND authorizes a study, TN establishes certification, VA allows viewing a visual display in autonomous mode
- AV executive orders in 2 states
  - AZ executive order: testing and operations
  - MA executive order: testing
State AV priorities - testing

Encourage AV testing while protecting public safety

• Some considerations
  ▪ How and where testing will be conducted
  ▪ Test driver selection and training
  ▪ Test vehicle identification
  ▪ Reporting: overall, incidents, crashes
State AV priorities - operations

Encourage AV operations while protecting public safety

- AV certification
- AV registration and titling
- AV drivers
- Laws on AV operations
- Law enforcement
- Crashes: emergency response, crash investigation
- Data systems: how to identify AVs
- Liability and insurance
- Vehicle inspection
- Coordination across states
Webinar: Law Enforcement Issues

February Law Enforcement Liaison Webinar

Highly Autonomous Vehicles and the Issues Facing Law Enforcement

Wednesday, February 15

3:00-4:00 p.m. EST

For more information:

What can states do?

• Be informed; stay informed
• Be a player
  ▪ Join or start a state AV task force
  ▪ Work with other states to develop consistent laws, policies, procedures
• Understand state roles
  ▪ Federal role: regulate vehicles
  ▪ State roles: license vehicles and drivers, establish and enforce traffic laws, vehicle insurance and liability
• Don’t rush to establish AV laws or regulations
  ▪ Aim for consistency across states
• Be flexible
  ▪ AVs are disruptive technology, developing very quickly
What can national organizations do?

- Develop model AV laws and regulations
- Document the traffic safety issues of AVs
- Develop model public education materials
- Establish an AV information clearinghouse
- Issue vehicle regulations and guidance promptly
- Establish regulations or guidelines to identify AVs easily
- Involve law enforcement, SHSOs, and DMVs in AV discussions
Questions

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Download the report: www.GHSA.org