The Road to Successful Governance of Automated Vehicles

POLICY BRIEF
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AV Regulatory Uncertainy Creates Challenges[1]

Federal governance of AVs has been limited. To date, the U.S. Department of Transportation (USDOT) has issued only voluntary guidelines on AV development and deployment. The most recent guidance, AV 3.0, continues to stress safety as a top priority and seeks to expand guidance to commercial trucks and public transportation. Despite calls for improved safety and AVs as part of multi-modal streets, federal AV guidance still lacks concrete policies that clarify agency responsibilities and commit to safe and effective AV operation.

More comprehensive policy development and implementation has been led by states and local governments. So far, twenty-nine states and the District of Columbia have enacted AV-related legislation, while cities like Boston and Portland have adopted AV policy frameworks. State and local polices involve a variety of approaches from requiring testing permits to encouraging electric and shared AVs. This illustrates that there is no "one-size-fits-all" way to govern AVs.

The SELF-DRIVE Act and AV START Act pending before Congress have untested language that would preempt certain state and local policies regulating AVs. Whether these bills become law remains unclear, leaving AV stakeholders questioning whether they should move forward under existing state and local policies or wait indefinitely until national legislation passes.

Current Federal Motor Vehicle Safety Standards (FMVSS) create further obstacles for AV development and deployment. Some components mandated by the FMVSS, such as steering wheels and brakes,

will be unnecessary in high automated (level 4) or fully automated (level 5) vehicles. On the other hand, AVs will likely require new lighting and signaling configurations that enable communication with other road users and surrounding infrastructure. FMVSS need to be updated to include AV-specific requirements.

There remain unanswered questions on how to apply existing liability and insurance frameworks that follow the "driver negligence" standard to AVs without a human driver.[2] Data from AV cameras and sensors can help appropriately assign liability in the event of a crash. Using data to assign clear liability will provide necessary direction for insurance coverage.

Furthermore, data collection and availability on AV operations and performance are essential to inform development of current and future regulations. Data shortages will make it more difficult to improve safety, bolster AV acceptance and adoption, and engage in effective long-term transportation planning. Thus government, the private sector, subject-matter experts, and consumer advocates must collaborate early and often to establish processes for responsible AV data collection, sharing, and use.

States and local governments have many goals for their transportation systems, including reducing congestion, improving equity, and reducing pollution. AVs will be a powerful tool to achieve these goals, but only if good governance structures empower these governments to set good policy.

Principles and Policy Options for AV Governance

In order to address AV challenges related to vehicle

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1 This brief focuses on governance issues related to AV safety and operation. It should be recognized that other governance issues, such as those related to workforce and environmental impacts of AVs, are equally pressing.

2 For further discussion, see the four-part series on AV liability and insurance produced by the UC Davis Policy Institute for Energy, Environment, and the Economy.

design and performance, insurance and liability, and data collection and sharing, stakeholders need to agree on a set of governance policy principles. This section provides a set of principles with specific policy options at the federal (F), state (S), and local (L) levels to help guide AV governance.

Empower local and state governments to regulate AVs while minimizing regulatory patchworks and treading lightly around use of preemption.

- Establish clear divisions between federal and state authority on safety, building on current guidance (F,S).
- Include AVs in planning processes (S,L).
- Establish clear, appropriate AV insurance and liability frameworks (S).
- Provide priority funding for AV research and pilot projects that yield data for evaluation (F,S).
- Data from pilot and testing projects should guide regulation and the use of preemption. Preemption language should be developed with stakeholder input (F,S).
- Form AV working groups and advisory boards with a diverse stakeholder base to support AV policy processes (F,S,L).

Maintaining consistent AV policies across jurisdictional boundaries will reduce uncertainty, facilitate enforcement, and support a thriving, globally competitive AV sector. But state and local governments also need flexibility to tailor policies to their unique needs.

Prioritize continuous improvement in AV safety.

- Update the FMVSS to incorporate highly automated vehicles with performance-based standards (F).
- Establish protocols for AV software recalls (F).
- Create penalties that scale with the avoidability of the AV incident in question (F,S).
- Require permits for AV testing on public roads (F,S).
- Encourage collaboration on safety efforts (F).

Ensuring the safety of today's technology is necessary but current frameworks are insufficient. Standards must be periodically re-evaluated and updated, and policies should ensure that AVs become even safer in the long term.

Encourage AV data collection and sharing while protecting privacy.

- Establish processes to regularly evaluate data needs, collection, sharing, and use (F,S,L).
- Require AVs to be equipped with cameras and sensors that capture data before and after a collision (F).
- Require automakers to disclose what data is collected, how it is used, and how privacy is protected (F,S).
- Create long-term repositories for AVs that support interoperability while protecting intellectual property and consumer privacy (F,S).

Responsible data sharing allows for improvements in AV technology, guides policies, and can help build public understanding of and confidence in AV technology. Government, the private sector, subject-matter experts, and consumer advocates must collaborate early and often to establish mutually acceptable data-sharing strategies.

AVs hold considerable promise to bring the possibility for direct and expansive societal benefits. The current policy environment, however, is ill-prepared for these emerging technologies. Improved AV governance across all levels of government is needed to encourage innovative development, ensure safe deployment, and clarify questions around regulatory authority, insurance, and liability. The result will be an advanced transportation system that improves mobility for all.

This policy brief summarizes the 3 Revolutions Policy Initiative issue paper "Federal, State, and Local Governance of Automated Vehicles" by Austin Brown, Greg Rodriguez, and Tiffany Hoang.

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Contact: Mollie D'Agostino (mdagostino@ucdavis.edu) with additional questions.