A US Legal Perspective on Automated Driving

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Have the relevant technologies reached a demonstrated level of socially acceptable risk?

- How safe is safe enough?
- How is this safety demonstrated?
- How confident is confident enough?
- Who decides?
Legal Dimensions

- Legality
- Regulation
- Promotion
- Civil liability
  - Insurance
  - Product liability
- Data protection
- ....

- International law
- Federal law
- State law
- Local law
Laws As Rules And As Tools

But so does the broader social context!

Details matter.
International Law

• US is a party to the 1949 Geneva Convention* but not to the 1968 Vienna Convention
  *And so is France!

• Geneva Convention is arguably consistent with automated driving

• This treaty is not politically relevant in the US
Federal Law

- US Department of Transportation (USDOT) is taking an eyes-on, hands-off approach

- USDOT’s 2013 policy statement does not necessarily reflect current agency views

- Congressional dysfunction limits USDOT’s ability to effectively fund long-term projects
## AV Policy Research Roadmap

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<tr>
<th>Regulatory Environment</th>
<th>Near Term</th>
<th>Long Term</th>
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<td>Implications of AV on Federal Standards and Regulations</td>
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<td>Evaluating Safety Standards and Certification Processes for AV</td>
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<td>ITS and AV State Legislative Scan and Analysis</td>
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<td>Analyzing Impacts of AV on FMCSA Regulations and Enforcement</td>
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<td>Data Privacy and Management</td>
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<td>Impacts of AV on Transportation Data Collection and Management</td>
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<td>Assessing Liability and Insurance Models for AV</td>
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<td>Consumer/Societal Issues</td>
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<td>Understanding AV Consumer Acceptance and Education Challenges</td>
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<td>Identifying Societal/Market Impacts and Policies for AV</td>
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<td>Infrastructure and Planning</td>
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<td>Implications of AV on Infrastructure Planning and Investment</td>
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<td>Impacts of AV on the Long Range Transportation Planning Process</td>
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<td>Impacts of AV on Land Use and its Policies</td>
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**Stakeholder Outreach**

*This slide is courtesy of U.S. Department of Transportation ITS Joint Program Office*
Policy and Planning Example: Review of Federal Motor Vehicle Safety Standards

How could highly automated vehicles impact or change the nature of existing Federal Motor Vehicle Safety Standards (FMVSS)?

- Identifying where current FMVSS pose challenges to introduction of AVs – particularly as they move into concepts of ‘human out of the loop’ or ‘driverless’

- Ensuring that existing Federal regulations do not stifle innovation and that AVs are performing their functions safely

- NHTSA and ITS JPO coordinated research

State Law: Legality

- What is not prohibited is permitted

- In general, few if any legal provisions clearly bar automated driving
  - But: New York State requires a hand on the wheel

- In practice, legal situation depends on enforcement discretion

- But: California and Michigan have affirmatively limited automated driving
State Law: Regulation

- First: Broad and superficial legislation
- Then: Resistance from system developers
- Next: Targeted executive and legislative action (e.g., platooning)
State Law: California’s Experience

• 2012 state law directed Department of Motor Vehicles to regulate testing and deployment

• R&D testing rules finalized in 2014
  – Require in-vehicle driver
  – Prohibit heavy-vehicle testing

• Deployment rules are long overdue
  – January 2015 deadline for final rules
  – Proposed rules still have not been issued
Have the relevant technologies reached a demonstrated level of socially acceptable risk?

• How safe is safe enough?
• How is this safety demonstrated?
• How confident is confident enough?
• Who decides?
State Law: Promotion

- Inventory existing law
- Maintain infrastructure
- Identify a chain of public and private support
- Provide flexibility to developers and insurers
- Internalize the costs of driving
- Expect more from human drivers
How Governments Can Promote Automated Driving

Bryant Walker Smith, University of South Carolina School of Law | newlypossible.org | law.sc.edu/faculty/smith | cyberlaw.stanford.edu/bws

Public officials frequently ask what their governments can do to promote and attract automated vehicles. This poster presents potential state and local strategies, some of which may also have national relevance. As the color coding below indicates, the different technologies and applications that constitute automated driving may demand different strategies:

**Paths to fully automated driving**

<table>
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<tr>
<th>“Something Everywhere”</th>
<th>“Everything Somewhere”</th>
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<tbody>
<tr>
<td>1) Increasing capability of advanced emergency intervention systems (AEIS)</td>
<td>3) Increasing capability of driverless systems</td>
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<td>2) Increasing capability of advanced driver assistance systems (ADAS)</td>
<td>Primarily promotes AEIS/ADAS</td>
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<tr>
<td>Primarily promotes ADAS</td>
<td>Primarily promotes all three pathways</td>
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For further discussion of each of the strategies below, please see Bryant Walker Smith, How Governments Can Promote Automated Driving, forthcoming at newlypossible.org.

**Prepare government**
- Identify a single point of contact
- Learn from credible sources
- Account for automation in planning processes
- Allocate resources commensurate with expectations

**Prepare physical and digital infrastructure**
- Maintain roadways
- Review design, operation, and maintenance policies
- Ensure these policies are followed
- Strengthen and standardize data management
- Update vehicle registration databases
- Coordinate with USDOT on DSRC

**Prepare society**
- Educate the public on the dangers of driving today
- Develop a break-the-glass plan for automation incidents
- Recognize broader technological and social changes
- Develop strategies for structural, un- and underemployment
- Say what you are doing!

Who will respond publicly to a crash, and how? What relationships will be essential to effective coordination? What evidence and information will need to be preserved, and how? Especially if officials have publicly embraced the potential of these new technologies, how will they address any fear or outrage that results from a high-profile crash, regardless of where it occurs? A government that addresses these issues proactively and ultimately positively signals its credibility as a potential technological partner.

Developing a project proposal grounded in the particular conditions of the particular community can help attract and focus local attention. At some point, the proposal could become the basis for an FTA grant application or a pitch to a private developer of automated systems.

**Prepare legal infrastructure**
- Do not just pass a new law
- Audit existing law
- Inventory existing legal tools
- Ask developers what they need
- Seek uniformity of underlying law
- Embrace regulatory reciprocity
- Incorporate technical work into law
- Employ generic legal language selectively
- Clarify the legal status of novel vehicles and services
- Tailor bans on the use of electronic devices
- Enforce laws on speeding, texting, and drunk driving
- Strengthen laws on seatbelt use
- Embrace regulatory flexibility
- Clarify enforcement discretion

Many agencies already have relevant authority. For example, DMVs are generally authorized to deny or revoke the registration of unsafe vehicles. But these agencies do need resources and flexibility. Crucially, agencies should have the authority to achieve equivalent ends through different means and to grant exceptions to statutory regulations. At the same time, agencies should ensure that local enforcement discretion is exercised consistently with these policy decisions.

**Internalize the costs of driving**
- Raise fuel taxes
- Raise mandatory insurance minimums
- Raise or impose parking prices
- Rationalize insurance
- Facilitate access to data
- Provide flexibility to insurers and customers
- Embrace pay-as-you-drive models

**Deploy public resources strategically**
- Preference safety systems in fleet procurement, service contracts, and concessions
- Reduce subsidies for private vehicle ownership
- Seek the creative use of HOV/HOT lanes, sidewalks, linear traffic, signals, traffic, streets, etc.

For more information, please see the materials at newlypossible.org.

**For additional details,**
- [How Governments Can Promote Automated Driving (forthcoming article)]
- [Regulation and the Risk of Inaction; Automated and Autonomous Driving: Regulation under Uncertainty (2015 OECD report with Joakim Svensson)]
- [Automated Vehicles Are Probably Legal in the United States (2012 article)]
- [A Legal Perspective on Three Misconceptions in Vehicle Automation (2015 book chapter)]
- [Lawyers and Engineers Should Speak the Same Language (2015 book chapter)]
- [Proximity-Driven Liability (2014 article)]
State Law: Product Liability

Manufacturers will bear a greater *share* of total crash costs
State Law: Product Liability

Implications of automation

• Decisions shift from driver to designer
• Consumer expectations increase
• Economics of litigation change
• Companies get closer to their systems
• Data management becomes more complex

• Upshot: Uncertainty!
State Law: Product Liability

(Why) should policymakers care?

• Concerns:
  – Uncertainty might slow introduction (time)
  – Uncertainty might slow adoption (money)

• However:
  – Significant R&D is already occurring
  – Active safety technologies have been introduced
  – More advanced technologies are not yet “ready”
Have the relevant technologies reached a demonstrated level of socially acceptable risk?

• How safe is safe enough?
• How is this safety demonstrated?
• How confident is confident enough?
• Who decides?
Managing Uncertainty

- Begin with the engineering
- Develop a public safety case
- Manage public expectations
- Invest in legal R&D
- Embrace service models
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