



**The Journal of Robotics,
Artificial Intelligence & Law**

Editor's Note: Disruptive Technology
Victoria Prussen Spears

Autonomous Vessels: Legal, Regulatory, and Insurance Issues
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DOT Introduces Fourth Round of Automated Vehicles Guidance
Jake Levine and Rebecca Yergin

What Technology Businesses and Investors Should Know About the New CFIUS Rules
Joshua F. Gruenspecht, Stephen R. Heifetz, and Melissa B. Mannino

The *Katz* Supervision of Artificial Intelligence Policing: A Prospective Analysis on
Controlling AI Privacy Invasions
Jiabo Liu

The Rise of AI and WIPO Consultation on Intellectual Property Issues
Mark A. Prinsley, Oliver Yaros, Ulrich Worm, and Christoph J. Crützen

Everything Is Not *Terminator*: The White House Memo on Regulating AI Addresses
Values but Not the Playing Field
John Frank Weaver

- 159 Editor’s Note: Disruptive Technology**
Victoria Prussen Spears
- 163 Autonomous Vessels: Legal, Regulatory, and Insurance Issues**
Alan M. Weigel and Thomas H. Belknap, Jr.
- 171 DOT Introduces Fourth Round of Automated Vehicles Guidance**
Jake Levine and Rebecca Yergin
- 175 What Technology Businesses and Investors Should Know
About the New CFIUS Rules**
Joshua F. Gruenspecht, Stephen R. Heifetz, and
Melissa B. Mannino
- 187 The *Katz* Supervision of Artificial Intelligence Policing:
A Prospective Analysis on Controlling AI Privacy Invasions**
Jiabo Liu
- 213 The Rise of AI and WIPO Consultation on Intellectual Property
Issues**
Mark A. Prinsley, Oliver Yaros, Ulrich Worm, and
Christoph J. Crützen
- 217 Everything Is Not *Terminator*: The White House Memo on
Regulating AI Addresses Values but Not the Playing Field**
John Frank Weaver

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DOT Introduces Fourth Round of Automated Vehicles Guidance

Jake Levine and Rebecca Yergin*

The U.S. Department of Transportation recently unveiled a long-anticipated fourth round of automated vehicles guidance, “AV 4.0.” Formally titled, “Ensuring American Leadership in Automated Vehicle Technologies,” AV 4.0 is less regulatory guidance and more regulatory aggregator. The authors of this article explain the guidance, which lists the various Administration efforts geared toward promoting, supporting, and providing accountability for users and communities with respect to autonomous mobility.

Situated among foldable tablet computers and flying taxis, the U.S. Secretary for Transportation, Elaine Chao, recently unveiled at the Consumer Electronics Show (“CES”) the U.S. Department of Transportation’s (“DOT”) long-anticipated fourth round of automated vehicles guidance, “AV 4.0.” Formally entitled, “Ensuring American Leadership in Automated Vehicle Technologies,”¹ AV 4.0 is less regulatory guidance and more regulatory aggregator. The document lists in great detail the various Administration efforts—across 38 federal departments and agencies—geared toward promoting, supporting, and providing accountability for users and communities with respect to autonomous mobility.

Federal Efforts to Drive Autonomous Mobility

AV 4.0 arrived in a broader Washington context for autonomous mobility: the states remain the leading jurisdictions for action on autonomous vehicle regulation. As Congress continues to slowly consider bipartisan, bicameral autonomous vehicles legislation, the states have added to their codes and regulations. California, for example, recently incorporated² autonomous *delivery* vehicles into its autonomous vehicle permitting regime at the state’s Department of Motor Vehicles. And other states, notably Arizona, Florida, and Nevada, continue to make efforts to facilitate private sector innovation and operations within their jurisdictions by creating

relatively lightweight permitting and testing regimes, which shift the onus for ensuring safety toward companies and the insurance markets, rather than state regulators.

AV 4.0, therefore, was anticipated perhaps to include slightly more formal regulatory guidance than its predecessor, AV 3.0, which sought to define the federal government's role as one to facilitate rather than regulate. But AV 4.0 maintained the DOT's hands-off approach to autonomous vehicles.

AV 4.0's Promises and Principles

AV 4.0 reiterates AV 3.0's promise to "modernize or eliminate outdated regulations that unnecessarily impede the development of AVs—or that do not address critical safety, mobility, and accessibility needs—to encourage a consistent regulatory and operational environment." And it continues to promote "consistency" among sub-national jurisdictions, and international law to encourage a "seamless" national and international industry. For example, AV 4.0 discusses the United States' participation in seeking "voluntary consensus standards" that can help to harmonize technical standards and regulatory policies with "international partners." However, AV 4.0 does not specify how the standards should be developed, or what they might say.

Similarly, the document lays out a set of principles to represent the U.S. government's "core interests" and provide a "unifying posture" to guide efforts. Those principles seek to prioritize safety, emphasize cybersecurity, ensure privacy and data security, enhance access to mobility, and promote efficient markets by remaining technology neutral and modernizing regulations.

In connection with these principles, AV 4.0 offers examples of agency efforts underway, as well as ways in which the principles align with agency missions. For instance, the DOT agencies (*e.g.*, National Highway Traffic Safety Administration, Federal Motor Carrier Safety Administration, Federal Transit Administration, and Federal Highway Administration), which are tasked with stewardship of U.S. roadways, have been actively engaged in research activities and the development of industry safety guidance. Furthermore, DOT, the U.S. Department of Health and Human Services, the U.S. Department of the Interior, and the U.S. Department of Justice all have mandates concerning accessibility, and AV 4.0 emphasizes

the promise of these departments to promote mobility through the deployment of autonomous vehicles.

Recently, DOT issued a Request for Information³ regarding its Inclusive Design Challenge in order to solicit design solutions addressing obstacles faced by individuals with disabilities. Responses were due January 31, 2020. Other examples of federal regulators that AV 4.0 represents as well positioned to drive developments in autonomous vehicles include the U.S. Department of Energy (“DOE”), the Federal Communications Commissions, the U.S. Department of Homeland Security, and the National Institute of Standards and Technology, among others, which all play critical roles in the facilitation of infrastructure, access to spectrum and connectivity, and security and cybersecurity standards.

Although AV 4.0 provides an informative overview of the landscape DOT seeks to shape with its list of unifying principles, the document does not go into great detail as to how each principle will be accomplished.

Convergences with the Transportation Sector’s Energy Footprint

Notably, AV 4.0 does detail the many convergences between autonomous mobility and the transportation sector’s energy footprint. As the document notes, transportation accounts for nearly one-third of the energy used in the United States, and autonomous vehicles hold the promise to “reduce energy use associated with driving.” AV 4.0 highlights a number of government efforts aimed at addressing transportation efficiency alongside autonomous technology development. For example, the DOE, through its Advanced Research Projects Agency (“ARPA-E”), has initiated the *NEXTCAR* (Next-Generation Energy Technologies for Connected and Automated On-Road Vehicles) Program aimed at using connected and AV technologies to “improve vehicle-level fuel efficiency.” The report similarly describes DOE funding to support Class 8 Truck Platooning as a means to achieve heavy-duty truck energy savings. The agency is modeling land use changes and aggregating various data sets to create a more holistic view into charging infrastructure demand (and therefore power grid needs and constraints). And the Sandia National Laboratory is working alongside federal national security agencies to conduct a threat assessment related to the

cybersecurity risks associated with vehicle-to-grid charging and connectivity applications.

Conclusion

Because of their roles in safety and overseeing U.S. roadways, the DOT agencies may remain best positioned at the federal level to continue their efforts to seek public input and participation as such principles are fleshed out through regulations over time. These are not the only agencies, however, that have the ability to steer the course of autonomous vehicles deployment and development, as AV 4.0 makes clear.

Notes

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1. <https://www.transportation.gov/sites/dot.gov/files/docs/policy-initiatives/automated-vehicles/360956/ensuringamericanleadershipav4.pdf>.

2. https://www.dmv.ca.gov/portal/dmv/detail/pubs/newsrel/2019/2019_65.

3. <https://www.transportation.gov/briefing-room/us-department-transportation-releases-%E2%80%9Cinclusive-design-challenge%E2%80%9D-request-information>.