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# Department of Transportation Releases New Voluntary Guidance for Autonomous Vehicles

On September 12, 2017, the Department of Transportation (DOT) released new Voluntary Guidance for Automated Driving Systems (ADS) in a document titled "A Vision for Safety 2.0" (the "Guidance"). The document, which comes as Congress considers establishing a formal framework for DOT to pursue introduction of ADSs onto our nation's roads, was released through the DOT's National Highway Traffic Safety Administration (NHTSA). The Guidance replaces the Obama administration's 2016 Federal Automated Vehicle Policy and aims to promote improvements in safety, mobility and efficiency through ADSs. In an introductory message released with the Guidance, Secretary of Transportation Elaine Chao stated that the Guidance provides a path forward for the safe deployment of automated vehicles by:

- encouraging new entrants and ideas that deliver safer vehicles

- making DOJ regulatory processes more nimble to help match the pace of private-sector innovation

- supporting industry innovation and encouraging open communication with the public and with stakeholders.

The Guidance is divided into two sections. The first section enumerates 12 priority safety design elements in an effort to provide guidance to the automotive industry, the states and other key stakeholders as they consider and design best practices for the testing and deployment of automated vehicle technologies. The second section offers best practices for State legislatures and state highway safety officials for the safe operation of ADSs. The NHTSA has stated that the Guidance is intended to be a living document that it will regularly update based on stakeholder input and evolving technology.

This alert summarizes the Guidance and discusses its implications for businesses in the ADS sector, as well as those doing business with such companies.

## Section 1: Voluntary Guidance for ADSs

The Guidance encourages entities to consider the following 12 priority safety design elements when designing, testing and validating their systems:

- **System Safety** – Companies are encouraged to establish robust design, testing and validation processes, and should closely document these processes. Additionally, companies should incorporate industry standards and best practices from other industries with regard to safety standards. Software development should be well-documented and implemented through structured and documented procedures that are included with each software version release.

- **Operational Design Domain** – This safety element, known as "ODD," is defined as the specific conditions under which a given ADS or feature is intended to function, including roadway types, geographic areas, speed range, environmental conditions or any other domain constraints. The ADS should be able to operate safely within its defined ODD; in situations where the ADS is outside its defined ODD, it must be capable of falling back to a minimal risk condition as discussed further in Safety Element 4.

- **Object and Event Detection and Response** – The Guidance defines this element as the detection by the driver or ADS of any circumstance that is relevant to the immediate driving task, as well as the implementation of the appropriate driver or system response to such circumstance. At minimum, the ADS must be able to detect and respond to other vehicles, pedestrians, bicyclist, animals and objects that could affect the safe operation of the vehicle. Entities are also encouraged to have processes in place to analyze and test for various crash avoidance scenarios, such as control loss, lane change, head-on travel and rear-end collisions.

- **Fallback (Minimal Risk Condition)** – When a problem is encountered, entities should ensure that the ADS is capable of implementing fallback strategies to transition to a minimal risk condition and also be capable of notifying a human driver (if present) of such events to enable the driver to regain control.

- **Validation Methods** – Entities are encouraged to develop validation methods to mitigate safety risks associated with their ADS approach. Such validation methods may include a combination of simulation, test track and on-road testing. Entities also should continue to work with the NHTSA and other industry standards organizations to develop and test ADSs.

- **Human Machine Interface** – Human Machine Interface (HMI) refers to the interaction between the driver and vehicle. ADSs introduce new complexities – for example, in a Level 3 vehicle, the driver must be attentive and always ready to regain control of driving responsibilities. Therefore, entities are encouraged to conduct testing and validation of the vehicle's HMI design. Particularly, entities are encouraged to consider whether, or how, to monitor drivers in certain situations, and also to accommodate for drivers with disabilities.

- **Vehicle Cybersecurity** – The NHTSA encourages entities to follow a robust development process to minimize cybersecurity threats and to document how they incorporate vehicle cybersecurity considerations into their ADSs. Entities are also encouraged to report cybersecurity incidents to the Automotive Information Sharing and Analysis Center and develop robust incident response plans.

- **Crashworthiness** – Regardless of whether the vehicle is operated by a human or by the ADS, the vehicle's occupant protection system should maintain its intended performance level in a crash. To that end, entities should consider using advanced sensing technologies and evaluate various seating configurations.

- **Postcrash ADS Behavior** – In the event of a crash, entities should test how the ADSs return to a safe state, provide relevant data regarding the collision and communicate with a collision notification center.

- **Data Recording** – Because safety can be improved through crash reconstruction, entities are encouraged to establish a documented process for testing, validating and collecting necessary data related to the occurrence of malfunctions, degradations or failures that can be used to establish the cause of collisions.

- **Consumer Education and Training** – Educating entity employees, distributors and consumers is imperative for increased safety during the deployment of ADSs. Training programs should address the differences in the use and operation of ADSs from conventional vehicles, and should potentially involve on-road or on-track experiences at the ADS dealer or distributor level.

- **Federal, State and Local Law** – Entities are encouraged to document how they intend to account for all applicable federal, state and local laws in the design of their ADSs. Because of the evolving nature of the laws, entities should continue to update and adapt their ADSs to address new legal requirements.

## Voluntary Safety Self-Assessment

Entities can demonstrate to the public that they are implementing the safety design elements outlined above by publishing a Voluntary Safety Self-Assessment. The Self-Assessment serves as a way to ease the public's concerns regarding the testing and deployment of ADSs by describing what safety measures are incorporated into ADSs. It is suggested that the Self-Assessment indicate one of the following for each of the 12 safety design elements:

- This safety element was considered during product development efforts for the subject feature or

- This safety element is not applicable to the subject product development effort.

Although entities are encouraged to submit a Self-Assessment, this practice is not required, nor is it compelled by any agency.

## Section 2: Technical Assistance to States and Best Practices for Legislatures Regarding ADSs

Section 2 clarifies and delineates the federal and state roles in the regulation of ADSs and provides the best practices that states can use to write their laws and regulations surrounding ADSs. This section, however, makes clear that the NHTSA does not intend for states to codify the Voluntary Guidance as legal requirements.

The NHTSA draws a line between which areas of responsibility are the state's responsibility versus the federal government's responsibility. States are responsible for human drivers and other aspects of motor vehicle operations, such as traffic laws, vehicle safety inspections, and motor vehicle insurance and liability. Federal laws should regulate the safety design and performance of ADSs. The NHTSA

recommends that states include the following components in legislation to ensure consistency across laws and regulations nationwide:

- provide a "technology-neutral" environment – an environment that does not place unnecessary burdens on competition and innovation

- provide licensing and vehicle registration procedures

- provide reporting and communications methods for public safety officials' methods to report crashes and other roadway incidents involving ADSs

- review traffic law and regulations that may serve as barriers to the operation of ADSs.

The NHTSA goes further to provide a detailed framework for states to consider when developing procedures and conditions for introducing ADSs onto public roadways. The framework includes a suggestion that states form or identify a lead agency to provide oversight for ADS activities. The NHTSA also outlines additional items to include in testing applications and provides additional criteria to use when granting test applications. In addition, the framework suggests that states address the questions of who is liable for an ADS crash; who must carry motor vehicle insurance (e.g., the owner, operator, passenger, manufacturer, other entity); and how to allocate tort liability.

## Policy Implications, Takeaways and Next Steps Regarding the Updated Guidelines

The Guidance builds on the guidance from 2016 when President Obama was in office, but stresses a more deregulatory framework. Transportation Secretary Elaine Chao has said that safety is a priority, but that President Trump's administration wants to promote innovation. Unlike the 2016 guidance, the Guidance explicitly states that the DOT sees its role more through the lens of enforcement (i.e., defects, recalls and after-the-fact enforcement) as opposed to *ex ante* rulemaking. As such, this framework will raise important questions concerning liability for entities developing technologies in this space.

The updated Guidance, like the 2016 guidance, is effective upon release; however, Congress is considering and has put forward (and adopted on a bipartisan basis in the House) a framework that, if enacted, would direct DOT to engage in a formal structure (through safety assessments by original equipment manufacturers and others and advisory councils) and, a rigorous process to develop standards, best practices and rules that would guide the future of ADSs. Should Congress provide clear guidance to the regulatory agency charged with promoting safety on our nation's roads, it could help establish a more certain path to the introduction and advancement of ADSs. In addition, there are a number of funding opportunities that Congress will consider in the coming months as it relates to infrastructure, including funding for vehicle-to-vehicle and vehicle-to-infrastructure technologies. Activities on ADSs are fluid and will remain so for some time as the focus shifts from legislative and regulatory action to more detailed legal issues relating to liability, contracts, IP, and other areas of interest.

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