

Securing American Leadership in Autonomous Vehicles

Advancing the Framework for
Automated Driving System Safety

2025





The **Autonomous Vehicle Industry Association's (AVIA)** mission is to advocate for the safe and timely deployment of autonomous driving technology. AVIA is the unified voice of the diverse companies working toward a world where safe and trusted AVs increase road safety, boost supply chains, and improve mobility opportunities for all.



Volvo Autonomous Solutions





The Autonomous Vehicle Industry Association (AVIA) is excited to release ***Securing American Leadership in Autonomous Vehicles***. These federal policy recommendations build on the Department of Transportation's *Advancing the Framework for Automated Driving System Safety*, first introduced in 2020.

Autonomous vehicles (AVs) are no longer a vision of the future—they are here now, revolutionizing the way people and goods move in our country. Autonomous technology is being deployed in passenger cars, trucks, shuttles, and zero-occupancy delivery vehicles. AVs are active across the U.S., including in Arizona, Arkansas, California, Florida, Michigan, and Texas.

The promise of AVs is profound. At the heart of their impact is the potential to make our roads significantly safer. The U.S. Department of Transportation has confirmed that human behavior - such as impaired or distracted driving - is the overwhelming cause of motor vehicle crashes. AVs, by contrast, do not drive impaired or distracted, offering a safer alternative.

Beyond safety, AVs bring additional transformative benefits, including creating American jobs, creating new mobility options for seniors and persons with disabilities, increasing efficiency in moving goods, strengthening supply chains, and creating thousands of new American jobs.

To fully realize these benefits, the U.S. must adopt a forward-looking federal policy framework that prioritizes the deployment and commercialization of AV technology. Countries around the world are racing to lead in this sector, and the time for the U.S. to act is now.

Recognizing the urgency, AVIA has convened its members to develop a comprehensive set of policy solutions. The recommendations in ***Securing American Leadership in Autonomous Vehicles*** will accelerate the safe and timely deployment of autonomous technology and solidify the U.S. as the global leader in this transformational field.

AVIA is dedicated to working with policymakers to advance autonomous technology in the United States. Together, we can solidify American Leadership in the next wave of global technological innovation.

Jeff Farrah
Chief Executive Officer

Securing American Leadership in Autonomous Vehicles

Advancing the Framework for Automated Driving System Safety

The United States leads the world in developing and deploying autonomous vehicles. Today, however, the American autonomous vehicle (AV) industry is at an inflection point. AVs are deploying across the country and delivering safer roads, more resilient supply chains, and greater accessibility. These successes occur despite longstanding federal inconsistency and inaction on AVs. That is why AVIA is calling on policymakers to implement a national AV policy framework, which would advance and expand upon the Framework for Automated Driving System Safety, initiated in 2020.

The **U.S. Department of Transportation (USDOT)** must assert its responsibility over the design, construction, and performance of autonomous vehicles and increase its efforts in key areas. AVIA also encourages Congress to act in critical areas and conduct oversight over USDOT's efforts.

Federal inaction has created regulatory uncertainty for American AV leadership and accelerated two trends:

- **States have filled the void as the federal government has stalled.** In recent years, U.S. states have taken the lead on autonomous vehicle policy, with 25 U.S. states covering 56% of the population having enacted AV deployment statutes. These deployment authorizations are a welcome trend, but state regimes are not harmonized. Additionally, state governments legislate on different policy issues and only the federal government can uniformly regulate the design, construction, and performance of the vehicle. States also are seeking clear and consistent data reporting that would be best developed at the federal level.
- **Strategic competitor countries have redoubled efforts on AVs.** Autonomous vehicles were invented in the U.S., and it is the global leader. But strategic competitors - most notably the People's Republic of China - are determined to take the United States' lead position on AV technology. China has made significant advancements in AV technology in recent years, and their industry has benefited from the active support of the government. To ensure that the U.S. wins the global AV race, American policymakers must put in place a federal policy framework that enables national AV deployment.

Advancing the Framework for Automated Driving System Safety

A renewed Framework for Automated Driving System Safety should focus in the following key areas:

- AV Safety, Transparency, and Accountability
- Advancing American Leadership on AVs
- Supporting Supply Chain Resiliency Through AV Trucking
- Supporting Safety Regulators with Enhanced Resources
- Protecting National Security While Promoting AV Leadership



AV Safety, Transparency, and Accountability



ADS Driving Competency

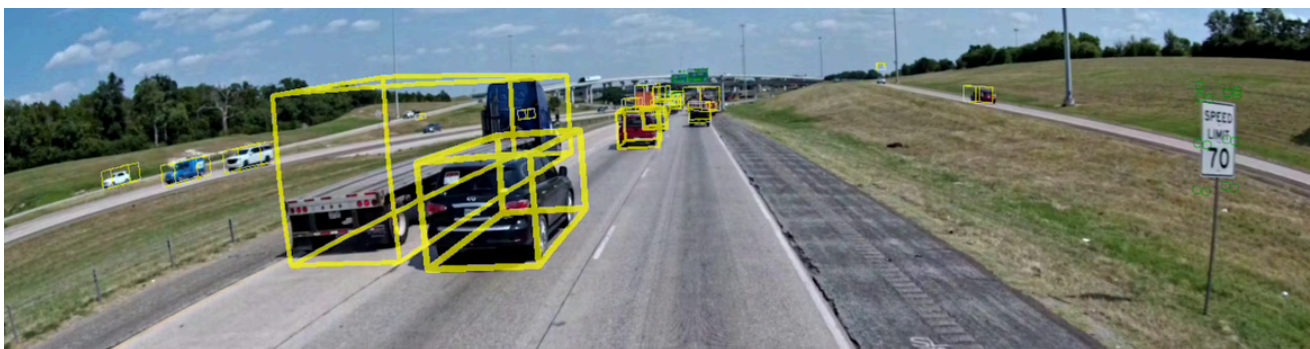
NHTSA should initiate a rulemaking on a Federal Motor Vehicle Safety Standard (FMVSS), informed by industry and the work of existing standards setting bodies, to require a core set of Autonomous Driving System (ADS) behavioral competency tests to which each ADS manufacturer would self-certify their ADS to demonstrate a basic level of ADS driving proficiency appropriate for its Operational Design Domain (ODD).



Such tests should include:

- Detection and response to relevant road users, including vulnerable road users, likely to be present and in proximity to the ADS in any ODD, including surface streets.
- A Level 3 system's transfer of control back to the human driver when necessary.
- A Level 4 system's ability to incorporate the SAE J3016 definition of achieving a minimal risk condition.
- The ADS's ability to detect the limits of its ODD and respond correctly (e.g., not drive outside of its ODD except in acceptable or reasonable circumstances).
- The ADS's ability to detect and appropriately respond to active emergency vehicles.

Congress should pass legislation requiring that NHTSA initiate a rulemaking as described above using its existing FMVSS authority in 49 USC 30111.



AV Safety, Transparency, and Accountability



ADS Safety Case

NHTSA should initiate a rulemaking on a Federal Motor Vehicle Safety Standard (FMVSS), informed by industry and the work of existing standards setting bodies, to require that commercially deployed ADS manufacturers develop, and provide upon request, a detailed record (often described as a “safety case”) of the basis for the manufacturer's conclusion that the design, construction, and performance of an ADS protects against an unreasonable risk to motor vehicle safety, as defined in section 30102(a)(9).



Elements of a safety case should include:

- Description of the ADS's hardware and software elements, capabilities of its sensor suite, and ADS's integration into the vehicle platform.
- Explanation of how the ADS performs all elements of the dynamic driving task.
- Engineering methodologies, including hazard analyses, used to design and assess the performance of the ADS and ensure the absence of unreasonable risk to motor vehicle safety.
- A description of the safety performance of the ADS, including behavioral competencies in normal driving and crash avoidance capabilities.
- Evidence supporting the manufacturer's claim that it has validated the ADS's performance competencies through extensive physical and/or virtual testing and describing operational safety processes in place to monitor performance post deployment.
- Explanation of how the ADS detects and responds to crashes.

Congress should pass legislation requiring that NHTSA initiate a rulemaking as described above.

AV Safety, Transparency, and Accountability



National AV Safety Data Repository

AVIA supports the establishment of a National AV Safety Data Repository by NHTSA. As part of this important initiative, NHTSA should:

- Include safety relevant data about AV incidents as part of the National AV Safety Data Repository.
- Make the National AV Safety Data Repository available to relevant state transportation regulatory agencies in a timely manner so state regulators can have visibility into incidents in their state. All information shared in the repository must be subject to strict confidential business information (CBI) protections, which both federal and state regulators must uphold.
- Expand current AV data reporting to include the state-level location of AVs to provide additional information to the public and regulators.
- Ensure material and relevant data is highlighted by specifying a meaningful minimum damage threshold for reportable crashes.
- Enhance state regulator and public understanding of incident reporting by removing the current one-day reporting deadline and instead require reporting within 120 hours (consistent with NHTSA's defect authority, 49 CFR 573.6) to ensure high-quality data is provided.
- Take meaningful steps to avoid duplication of data in publicly reported data to ensure the public properly understands any AV incidents.



Congress should pass legislation requiring establishment of the National AV Safety Data Repository by NHTSA and ensuring the Department of Transportation is sufficiently funded to properly implement and maintain the initiative.

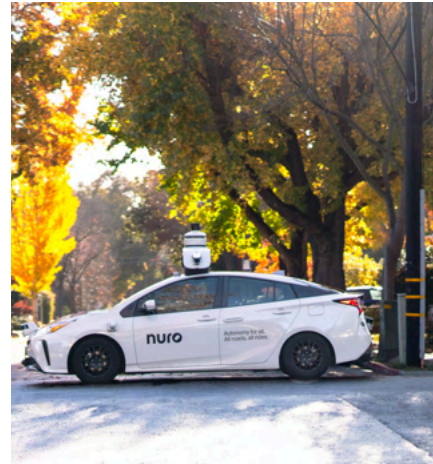
Advancing American Leadership on AVs



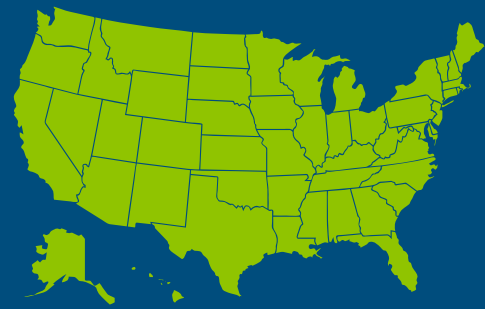
FMVSS Modernization

- Autonomous vehicles are an opportunity to re-imagine what motor vehicles look like and how they are designed, paving the way for greater accessibility, safety, and societal utility.
- To support AV innovation, AVIA recommends that NHTSA clarify, whether by interpretation and/or regulatory changes, that requirements for manually operated driving controls and certain indicators and telltales are not applicable to Level 4 or Level 5 ADS-dedicated vehicles because they are intended for an in-vehicle human driver. Such action will support AV innovation by avoiding the imposition of requirements that do not advance safety.

Congress should pass legislation clarifying that manual controls are not required for Level 4 or Level 5 ADS-dedicated vehicles if the vehicles meet relevant performance standards in their absence.



Advancing American Leadership on AVs



USDOT Demonstration Program

NHTSA should move forward with a AV demonstration program that is an enhanced pathway to the deployment of AVs whose designs require exemptions from current FMVSSs, but which achieve at least an equivalent level of safety. Such a program should not come at the expense of maintaining and improving existing exemption processes, self-certification, or rulemaking. The program must also be a voluntary one for AV developers, as articulated previously by NHTSA leadership.

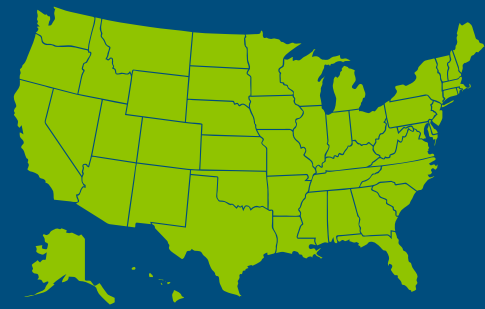
Testing and Evaluation

- Existing federal law prevents manufacturers, dealers, distributors, and repair businesses from disabling any safety-related device or design element required by an FMVSS in a vehicle for any purpose after its first sale.
- To ensure that innovative safety and technical developments can be adopted into vehicles in autonomous operation, **Congress should pass federal legislation** to clarify that making a vehicle's manual controls inaccessible or altering their functionality for safety reasons during autonomous operation does not run afoul of the make inoperative provision of the Motor Vehicle Safety Act (49 USC 30122).
- The FAST Act exception permits only qualifying original equipment manufacturers (OEM) to test and evaluate nonconforming vehicles. AV legislation should not restrict the use of the exception in ways that preclude AV developers from testing and evaluating all aspects of AV operation, including assessing commercial viability through public participation and goods movement.

Congress should pass federal legislation to expand eligibility for the testing and evaluation exception in the FAST Act to level the playing field among all stakeholders in the AV and ADS development ecosystem.



Advancing American Leadership on AVs



Cybersecurity Leadership

- **AVIA encourages Congress** to include in comprehensive AV legislation language requiring that AV manufacturers develop a cybersecurity plan. Such a plan should include a written cybersecurity policy with respect to the practices of the manufacturer for detecting and responding to cyber-attacks, unauthorized intrusions, and false and spurious messages or vehicle control commands.



Privacy Advancement

- **AVIA encourages Congress** to include in comprehensive AV legislation language requiring that AV manufacturers develop a privacy plan with respect to the collection, use, sharing, and storage of information about vehicle owners or occupants collected by a highly automated vehicle and a method for providing notice to vehicle owners or occupants about the privacy policy.

AV Accessibility

- Autonomous vehicles present an exciting development in accessibility in the United States. It is important that Congress support people with disabilities and move forward federal legislation to promote access to AVs.
- **Congress should pass the AV Accessibility Act**, which would:
 - Prohibit states from issuing motor vehicle operator's license in a manner that prevents a qualified individual with an Americans with Disabilities (ADA) disability or other individuals without a driver's license, including blindness, from riding as a passenger in an ADS-equipped vehicle.
 - Require the Secretary of Transportation, in collaboration with the National Academies of Science, to conduct an accessible infrastructure study to determine the best practices for public transportation to be modified to improve the ability of Americans with blindness and other disabilities to find, access, and use ride-hail autonomous vehicles, including during pickup and drop off.

Supporting Supply Chain Resiliency Through Autonomous Trucking



Supply chain constraints harm America's farmers, ranchers, retailers, and manufacturers. Federal government statistics show that the U.S. must move 50% more freight by 2050, but must do so against a backdrop of a significant truck driver shortage. Autonomous trucking stands to ease supply chain burdens while supporting truck driving jobs and increasing roadway safety



FMCSA should codify the 2018 interpretation that the FMCSRs do not require a human driver to operate or be present in a commercial motor vehicle (CMV) being operated by a Level 4 or Level 5 ADS, including updates to existing hours of service rules and inspection requirements that require action by a human driver.

FMCSA should support efforts to build on the existing consensus approach to autonomous truck inspection protocols, in partnership with state law enforcement officials and industry that is informed by real-world experience. For example, FMCSA should continue to support the Commercial Vehicle Safety Alliance on its Enhanced CMV Inspection Program for autonomous CMVs.

Supporting Supply Chain Resiliency Through Autonomous Trucking



Emergency Warning Devices

Under current regulations, if a CMV is stopped on the highway or shoulder for any reason other than a necessary traffic stop, then warning devices (e.g., warning triangles) must be utilized within 10 minutes in three locations on the roadway. Given the absence of a human driver in an autonomous CMV, transportation stakeholders and safety advocates have supported an industry exemption [petition](#) to support a new safety solution that meets the needs of autonomous trucks while ensuring the safety of all road users. The petition would allow for the use of cab-mounted beacons that have been shown to achieve a level of safety that is equivalent to, or greater than, the level of safety by the current requirements.



FMCSA should work expeditiously to authorize the use of cab-mounted warning beacons on CMVs. Congress should pass legislation directing FMCSA to modernize regulations to allow for the use of cab-mounted warning beacons for CMVs.

Supporting Safety Regulators with Enhanced Resources



It is important that Congress adequately funds the U.S. Department of Transportation to ensure the United States remains the global leader on autonomous vehicles.

To support American leadership on AVs, **Congress should increase funding levels** for the Department of Transportation. The fiscal year 2026 appropriations process is an opportunity to invest in NHTSA and FMCSA and ensure expert regulators have the tools and resources necessary to support American leadership and safety on AVs.

Investment in NHTSA and FMCSA operations will ensure the agency has adequate resources to regulate the AV industry as it grows and establish important programs to support AV deployment and American jobs.



Protecting National Security While Promoting AV Leadership



AVIA supports U.S. government efforts to examine the national security implications of connected vehicles from countries of concern. AVIA will continue to deeply engage in the Department of Commerce's rulemaking titled "Securing the Information and Communications Technology and Services Supply Chain: Connected Vehicles."

Efforts to protect American national security should not have the unintended consequence of harming emerging companies in the U.S. that are at the forefront of technology innovation.

Congress should pass legislation to bolster the development and American manufacturing of sensors used in autonomous vehicles. For example, Congress should work with industry and regulators to create a pilot program to incentivize the domestic production of sensors through a grant program or other mechanism. Congress should require the Department of Transportation to convene relevant stakeholders to build out domestic manufacturing of AV hardware.

Such congressionally directed activities should take learnings from the [Headwaters Tech Hub](#) in Montana, which is focused on photonics. Initiatives like the Headwaters Tech Hub will help develop domestic supply chains while providing valuable education and employment opportunities for communities across the country. The AV industry encourages Congress to create and fund additional opportunities to solidify U.S. leadership on AV supply chains.





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