

Autonomous Vehicles

ISSUE TYPE	Regulatory (Federal)	KEY DATES	Sept. 20, 2016 – USDOT issues automated vehicle policy
AGENCY	USDOT/NHTSA/ FHWA/ MARAD/ USCG		Sept. 12, 2017 – USDOT issues automated vehicle policy 2.0
STATUS	Active/Tracking		Oct. 4, 2018 – USDOT issues automated vehicle policy 3.0
DIVISION IMPACT	All		Feb. 6, 2020 – USDOT issues automated vehicle policy 4.0
INTERESTED PARTIES	AAR, ATA, OOIDA		Jan. 21, 2021 – USDOT automated vehicle policy 5.0
		MOST RECENT ACTION	

Summary

In response to “the cusp of a technological transformation,” the U.S. Department of Transportation (USDOT) and the National Highway Traffic Safety Administration (NHTSA) released the “Federal Automated Vehicles Policy: Accelerating the Next Revolution in Roadway Safety” in Sept. 2016. The policy was intended to create a path forward “for the safe testing and deployment of new auto technologies.” In 2017, USDOT and NHTSA released “A Vision for Safety 2.0” which calls on “industry, state and local governments, safety and mobility advocates and the public to lay the path for the deployment of automated vehicles and technologies.” The utilization of this guidance is entirely voluntary and is meant to encourage best practices while providing technical assistance to States.

“Vision for Safety 2.0” applies to all vehicles that use public roadways and intend to incorporate Automated Driving Systems (ADSs), including light-, medium-, and heavy-duty vehicles. It adopts the SAE International definitions of automation including:

- Level 0, a human does everything;
- Level 1, an automated system sometimes assists the human to complete parts of driving;
- Level 2, an automated system can conduct some driving tasks, which a human monitors;
- Level 3, an automated system can conduct some driving tasks and monitor them in some instances but a human can take back controls when the system requests;
- Level 4, an automated system conducts the driving task and monitors the environment but can only operate in certain environments and under certain conditions; and

- Level 5, an automated system can perform all tasks, under all conditions.

The 2017 guidance focused on SAE International levels of automation three through five.

In 2018, USDOT released its “Preparing for the Future of Transportation: Automated Vehicles 3.0” guidance document which incorporated all surface transportation operating administrations as well as the five SAE automation levels. It addressed automation in commercial motor vehicles (CMVs) and how it might be used to improve operations at intermodal port facilities. The guidance also indicated that USDOT will “adapt the definitions of ‘driver’ and ‘operator’ to recognize that such terms do not exclusively refer to a human.” Additionally, it announced a collaboration between USDOT, U.S. Department of Labor (USDOL), U.S. Department of Commerce, and the U.S. Department of Health and Human Services to study the workforce impacts of automated vehicles (AVs).

In 2020, USDOT published its fourth guidance, titled “Ensuring American Leadership in Automated Vehicle Technologies,” to catalog past and ongoing federal efforts in the research and development of automated vehicles. Building on 3.0, the 4.0 version adopted 10 new principles with three overall goals: to protect users and communities; foster efficient markets; and facilitate coordination among governmental agencies. Unlike previous versions, the report outlined ongoing initiatives within all 38 federal agencies involved in the various sectors of automated vehicles and technologies. The report contained several efforts by the Federal Highway Administration (FHWA) and the Federal Motor Carrier Safety Administration (FMCSA) toward AV integration in the freight industry, such as truck platooning and automated heavy-duty truck testing and research.

In Jan. 2021, USDOT published its “Automated Vehicles Comprehensive Plan” to provide an overview of emerging research, policies, and programs within federal agencies. The plan highlighted various collaborations and initiatives with private stakeholders, such as NHSTA’s AV Test Initiative launched in June 2020. It also focused on FMCSA’s and the Maritime Administration’s (MARAD) program to test AV applications in chassis movement, customs inspection point passage, gate passage, and short-haul drayage. As was the case with previous iterations, the standards set forth in this guidance were voluntary rather than official Federal Motor Vehicle Safety Standards (FMVSS).

In March 2020, NHTSA proposed amendments to certain FMVSS to clarify that occupant-less trucks are not subject to crashworthiness requirements for occupant protection, such as interior and side impact standards. This rulemaking was finalized in March 2022. FHWA also issued a request for information, seeking comments on any infrastructure requirements that may be necessary for the efficient operation of ADSs on U.S. roads. In Dec. 2020, NHTSA issued an Advance Notice of Proposed Rulemaking (ANPRM) soliciting comments on the development of a framework to define, assess, and manage the safety of ADSs. The proposal would expand upon FMVSS to directly address four functions of ADSs for all vehicle types (including CMVs), making it a significant departure from previous NHTSA notices.

Federal agencies are also assessing the possibilities for automated systems within the maritime transportation industry. In 2019, MARAD requested public comments on a range of issues related to the safety effects, opportunities, challenges and impacts of automated transportation in U.S. ports and supply chains. Similarly, in Aug. 2020, the U.S. Coast Guard solicited feedback to guide the development of automated technologies aboard commercial vessels.

The 2021 Infrastructure Investment and Jobs Act included several programs pertaining to ADSs. The law established the Strengthening Mobility and Revolutionizing Transportation (SMART) grant program, funded at \$1 billion over five years. Eligible projects include automated transportation and autonomous vehicles, connected vehicles, and innovative data and technological solutions supporting efficient goods movement.

Potential Impact to Intermodal Freight Transportation

Following are some potential impacts of autonomous vehicles on intermodal freight transportation:

Impact 1:

Increased use of technology could have positive impacts on safety as systems that mitigate human error are installed on more trucks.

Impact 2:

The use of truck platooning, when multiple trucks closely follow one another and use vehicle-to-vehicle technology to communicate and immediately react to each other’s actions, could divert freight traffic to roads from rail intermodal service.

Impact 3:

While it is still too early to tell, as the technology advances ADSs may become sophisticated enough to operate independently and to displace CMV drivers. Should this occur, it may impact the driver shortage. However, for the foreseeable future, experts agree that an operator will be needed in the cab as a failsafe. In such an instance, a CMV operator’s on-duty hours of service limits may increase in flexibility as autonomous technology could provide a driver with the opportunity to rest while still being in the cab.