



Thursday, April 1, 2021

The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Advance Notice of Proposed Rulemaking on Framework for Automated Driving Safety,
Docket No. NHTSA-2020-0106

Dear Secretary Buttigieg,

The Association for Unmanned Vehicle Systems International (AUVSI) appreciates the opportunity to submit comments to the National Highway Traffic Safety Administration (NHTSA) regarding the recent Advance Notice of Proposed Rulemaking on a future framework for automated driving system (ADS) safety.

As a leading industry voice on all things unmanned, AUVSI member companies are advancing highly automated technologies in the air, ground, and maritime domains across commercial and defense applications. The Association is the world's largest non-profit organization dedicated to the advancement of unmanned systems and robotics and represents corporations and professionals from more than 60 countries involved in industry, government, and academia.

Increasing safety is a cornerstone value of highly automated systems across domains. NHTSA itself has championed that message throughout the development of the technology, and AUVSI continually looks to amplify those safety benefits to the general public and legislators, alike¹. There are environmental, economic, and workforce benefits to be realized as a result of highly automated systems, and the Association looks forward to partnering with relevant government agencies to push those goals forward.

Four questions in the ANPRM are relevant to AUVSI members, and those are questions 10, 14, 15, and 16.

¹ Automated Vehicles For Safety: <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety#:~:text=What%20are%20the%20safety%20benefits,to%20human%20error%20or%20choices.>

In considering question 10, AUVSI encourages NHTSA to evaluate the safety of a highly automated vehicle equipped with ADS technologies at the vehicle usage level. In other words, safety metrics should be established in relation to the intended operation of the vehicle, whether it is being used for passenger transport, freight operations, or any other use case. Many of the ADS technologies used in highly automated vehicular systems have proven safety track records outside of the world of ADS, including LiDAR, radar, and cameras and those track records should indicate technology trustworthiness. Given that it is the combined operation and usage of many different ADS technologies that allow for the safe and successful operation of highly automated vehicles, NHTSA would be advised to evaluate the safety of the vehicle based on how it is used and operated as a whole.

In response to question 14 regarding additional research needed to support a safety framework for ADS, NHTSA would be well advised to pursue strategic public outreach similar to the Federal Aviation Administration's (FAA) investment in the Know Before You Fly campaign. Aimed at commercial and recreational UAS pilots, this safety initiative has brought together the FAA, industry, and advocacy groups to collectively promote the message of safe drone piloting through educational resources, networking opportunities, and outreach to state and local governments.

Studies abound regarding public mistrust in highly automated vehicles, yet they are on our roads already and will continue to become more prevalent. For their safety benefits to be fully realized, the American public must come to trust highly automated vehicles, and the responsibility for beginning that effort lies with NHTSA and the DOT. A partnership between industry, trade groups, and government should be formed with the sole goal of creating and executing an educational campaign around the safety of highly automated vehicles. DOT is to be commended for the educational events around the rollout of the AV TEST Initiative, however a mission this large and important must be ongoing, strategic, and collaborative among all ADS stakeholders.

In response to questions 15 and 16 regarding recommended administrative mechanisms to be leveraged in ascertaining a minimum level of vehicle safety, AUVSI strongly advises NHTSA to pursue technology-neutral and performance-based metrics. As was emphasized throughout the ANPRM, highly automated systems are in a constant state of innovation and thus any regulatory regimes must be flexible enough to allow for ongoing development and maturation.

For example, as cellular communication tools between vehicles, infrastructure, and people continue to evolve, industry should be allowed to pursue whichever solution can best deliver on transportation safety – not just for vehicle occupants, but for the entire transportation ecosystem, including pedestrians, bikers, roadside crews, and more. That may mean locating some ADS capabilities on the vehicle itself, or it may mean that others are located off-vehicle, such as sensors embedded in infrastructure or making use of personal wireless devices carried by most individuals. It may also mean that some safety functionality is conducted on the vehicle itself, while others function via high-speed wireless networks. This technology-neutral flexibility will be crucial in ensuring the proliferation of the best technology possible; technology that can keep consumers safe, enable access to safety features for all members of the transportation ecosystem and at all vehicle price points, and ensure that improvements and upgrades do not depend on vehicle fleet turnover, which currently takes on average 15 years in the United States. Automated driving systems can deliver on the promise of increasing safety for human occupants and bystanders, but

only if regulations remain technology neutral and allow innovators to pursue all safe technological possibilities.

AUVSI commends NHTSA's commitment to safety, as well as its effort to proactively seek industry input in this highly technical and constantly evolving ecosystem. The Association appreciates NHTSA's desire to advance highly automated vehicle technology, understanding the agency's interest in leveraging the widely demonstrated safety benefits of these systems for all Americans. The Association notes that rapid realization of the benefits of ADS technologies will be impeded by the regulatory regime built for manned vehicles. Industry leaders in this arena – OEMs, as well as hardware and software developers – will require clear rules and safety standards as they work to advance this growing industry.

To achieve both industry and government goals of creating a superior transportation ecosystem that places safety at the forefront, NHTSA would be well-served to employ a regulatory framework for ADS technology in vehicles that allows for technology-neutral solutions and uses specific performance thresholds as safety metrics, while pursuing a robust public outreach campaign.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Wynne", with a stylized, flowing script.

Brian Wynne
President & CEO, AUVSI