



April 1, 2021

VIA ELECTRONIC FILING

Mr. Steve Cliff
Acting Administrator
Department of Transportation
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE
W12-140
Washington, DC 20590

Re: *Framework for Automated Driving System Safety, Docket No. NHTSA-2020-0106, RIN 2127-AM15*

Dear Acting Administrator Cliff:

CTIA¹ submits these comments in response to the Advanced Notice of Proposed Rulemaking (“ANPRM”) issued by the Department of Transportation’s (“DOT”) National Highway Traffic Safety Administration (“NHTSA”) seeking comment on the design of a regulatory framework for assessing the safety of automated driving systems (“ADS”).² CTIA appreciates the opportunity to provide input on this important policy issue and

¹ CTIA – The Wireless Association® (“CTIA”) (www.ctia.org) represents the U.S. wireless communications industry and the companies throughout the mobile ecosystem that enable Americans to lead a 21st century connected life. The association’s members include wireless carriers, device manufacturers and suppliers, as well as apps and content companies. CTIA vigorously advocates at all levels of government for policies that foster continued wireless innovation and investment. The association also coordinates the industry’s voluntary best practices, hosts educational events that promote the wireless industry and co-produces the industry’s leading wireless tradeshow. CTIA was founded in 1984 and is based in Washington, DC.

² *Framework for Automated Driving System Safety*, Advanced Notice of Proposed Rulemaking, NHTSA-2020-0106, RIN 2127-AM15 (Dec. 3, 2020) (“ADS ANPRM”).



applauds the NHTSA for its effort to develop a flexible approach that facilitates innovation in the still evolving space of connected and automated vehicles.

The Speed, Reliability, and Capacity of Wireless Networks, Particularly 5G, Can Enhance ADS Operations

Wireless technology is critical for the future of American connected ecosystems. The wireless industry, including wireless carriers, device manufacturers and application developers, has helped create significant and widely beneficial changes in society, allowing for increased connectivity, productivity and the spread of information. Wireless technology continues to innovate and advance in such a way that it is becoming ever-present in American social, educational, government, and business life. Today's wireless technology offers higher speeds, increased capacity, and low latency connections.

Over the last decade, the wireless industry invested a total of \$261 billion in 4G technology to bring about the nationwide secure networks used by most Americans today.³ 4G networks continue to deliver high-speed connections, 31x faster than the prior decade, that provide improved experiences for consumers using increasingly data-intensive applications.⁴ The wireless industry has already embarked on the evolution to 5G to accompany 4G networks, with significant investments in spectrum acquisitions, small cell deployments, and the launch of 5G connections throughout parts of the country. 5G is expected to radically disrupt most vertical industry sectors by enabling wholly transformative forms of connected solutions. Wireless connectivity, of today and tomorrow, is the engine that can power the services needed for the United

³ See *The 4G Decade: Quantifying the Benefits* (July 29, 2020), available at <https://www.ctia.org/news/report-the-4g-decade-quantifying-the-benefits>.

⁴ See *id.* (noting that due to the increased speeds and capacity of 4G networks, in 2019, Americans consumed 37 trillion MBs of mobile data, 96 times more than what was used in 2010).



States to lead the global technology race including in the developing ADS-equipped vehicle arena.

5G wireless networks will pave the way for a host of vehicle/driving innovations. Wireless-enabled self-driving cars are predicted to save more than 21,000 lives and \$447 billion each year.⁵ Vehicle connectivity will be critical to various types of ADS vehicle designs and can support connected vehicle functions ranging from infotainment to key ADS safety critical functions. As NHTSA notes in the ANPRM, the ability to communicate with other vehicles, people on the road, and surrounding infrastructure is an important capability for the operational safety of ADS-equipped vehicles.⁶ Wireless connectivity is the tool that will enable the safety benefits expected from these types of vehicle and roadway innovations.

CTIA Supports NHTSA’s Proposed Measured Approach that Focuses on Developing an ADS Regulatory Framework Approach That Does Not Unintentionally Hinder Innovation and Deployment of Potentially Lifesaving Technologies

CTIA supports NHTSA’s expressed intent to take a measured, light touch approach as it considers a new regulatory framework for assessing the safety of automated driving systems, which are still in the research, development and testing phase.⁷ The wireless industry appreciates the gravity of NHTSA’s role as the agency responsible for setting standards to ensure the safety of vehicles and related equipment. Yet, the marketplace for today’s vehicle technology is vast and varied and continues to evolve as manufacturers and service providers try to design vehicles that will improve factors

⁵ See *Wireless Connectivity Fuels Industry Growth and Innovation in Energy, Health, Public Safety and Transportation*, Deloitte at 3 (Jan. 2017) (the “Deloitte 5G Report”), available at: https://www.ctia.org/docs/default-source/default-document-library/deloitte_20170119.pdf .

⁶ See ADS ANPRM at 23.

⁷ See *id.* at 45 (explaining that “NHTSA is taking care that its actions do not result in unforeseen problems in the development or deployment of ADS. Establishing FMVSS prior to technology readiness hampers safety-improving innovation.”).



like energy efficiency and overall passenger safety. As NHTSA notes, the marketplace for ADS-equipped vehicles is still in a somewhat nascent stage with different companies and technologies at various stages of development and deployment/readiness of on-road use. Therefore, adopting rigid rules prematurely could have unintended consequences both on consumer safety as well as vehicle technology development. Therefore, we agree with NHTSA's assessment that formal prescriptive rules are premature at this time. We recommend NHTSA pursue rules if situations necessitate them, and NHTSA has developed a full situational awareness of ADS technologies and how such technologies are likely be deployed.

ADS has the potential to save lives and support NHTSA's safety mission. Wireless technology, including 5G, will enhance ADS' lifesaving capabilities by enabling fast, low latency connectivity among vehicles, infrastructure and road users. However, to achieve this outcome, participants throughout the ADS ecosystem need clear rules that do not overly restrict the innovation and investment for these dynamic systems but instead focus on furthering the technology. CTIA encourages NHTSA to design the safety framework to allow for more industry-led and self-regulatory mechanisms in this still emerging state in the field. Currently, public, private, and academic institutions are working in concert to share best practices, technical information to develop standards, and research information to advance the technology.

Furthermore, NHTSA's proposal to develop additional guidance documents that provide information to industry and consumers including best practices is a reasoned, appropriate approach for the current state of the marketplace that would be consistent with its recent strategy. NHTSA has taken a number of steps to encourage this information sharing and awareness in the ADS field with its recent AV 4.0 guidance as well as its AV TEST Initiative, ADS test tracking platform. NHTSA should additionally consider efforts to enable expanded research and testing of ADS technologies through broader FMVSS exemption allowances for longer durations and higher vehicle totals. It is imperative that NHTSA continue to pursue a restrained style that permits it to learn and evaluate in order to assess where, how, and if, formal rules are needed to manage a particular safety component of ADS technologies.



NHTSA Should Ensure that Any ADS-Specific Regulatory Measures It Adopts Are Technology Neutral and Performance-Based

NHTSA’s history with federal motor vehicle safety standards has involved the use of baseline performance requirements to be applicable across vehicle models, brands, and operations. While this approach was sufficient for a number of decades, the recent advancements in vehicle technology have shifted the ability of those standards to be replicable or applicable in most vehicle models. To enable further innovation in the connected and automated vehicle ecosystem, it is imperative that any future ADS rules continue with the performance-based history.

NHTSA’s regulatory vision for ADS as set out in the ANPRM sets out on the right path and will certainly aid with innovation results.⁸ However, to allow ADS to reach its full potential, NHTSA’s framework must also be technology neutral. The DOT’s rules governing the development of regulations within the department call for regulations to be technologically neutral in addition to objective and performance-based.⁹ NHTSA should afford ADS vehicle and equipment developers the flexibility to determine which technologies will satisfy their objectives and any safety standards. Vehicle connectivity technologies, for example, can serve a multitude of uses including bolstering some core safety functionalities identified by NHTSA including those involving perception and planning activities.

NHTSA should not restrict the types of technologies that can perform core safety functions to only those localized to the vehicle as some ADS technology operations

⁸ See ADS ANPRM, 7-8 (“Rather than elaborating and prescribing by rule specific design characteristics or other technical requirements for ADS, NHTSA envisions that a framework approach to safety for ADS developers would use performance-oriented approaches and metrics that would accommodate the design flexibility needed to ensure that manufacturers can pursue safety innovations and novel designs in these new technologies.”).

⁹ See 49 C.F.R. § 5.5 (e).



that could support such requirements will occur outside the vehicle. ADS vehicles will both use and generate massive amounts of data and require quick processing of continuous varied data input sources. The wireless industry has advanced cellular vehicle-to-everything (“C-V2X”) technology standards that enable direct communication between vehicles, infrastructure, and other connected objects in the roadway system as well as vehicle communications using a mobile network.

Additionally, the wireless industry is developing mobile edge computing (“MEC”) platforms that can use 5G capabilities and other advanced networking features to augment ADS readiness and ability to perform time-critical life-saving functions effectively by having processing closer to the edge (minimizing lag in processing and response time). Wireless technologies like MEC, which can provide critical support to ADS operations, will not operate in the vehicle and NHTSA should not inhibit the promise they present by limiting core safety functions to on vehicle technologies. Therefore, NHTSA should design its regulatory framework in a technology-neutral manner that does not exclude or limit the use of connectivity technologies unnecessarily.

Conclusion

NHTSA has an important role in steering the direction of the safety-critical ADS industry and its vision for the regulatory framework sets the right tone at this stage. CTIA encourages the agency to consider any future rules with the same measured approach set out in the ANPRM and a focus on performance-based, technology neutral metrics as an anchor.

Respectfully submitted,
/s/ Avonne Bell

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