



September 11, 2023

The Honorable Gus Bilirakis
Chairman
Subcommittee on Innovation, Data, and Commerce
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Bilirakis,

I want to thank the Subcommittee for inviting me to appear before it on July 26, 2023, to testify at the hearing entitled “Self-Driving Vehicle Legislative Framework: Enhancing Safety, Improving Lives and Mobility, and Beating China.”

Pursuant to the Rules of the Committee on Energy and Commerce, I am attaching my answers to the additional questions for the record, in the required format.

Thank you, again, for your attention to this important topic and please let me know how I can support your work moving forward.

Sincerely,

A handwritten signature in black ink, appearing to read "John Bozzella". The signature is fluid and cursive, with a large initial "J" and "B".

John Bozzella
President & CEO
Alliance for Automotive Innovation

Attachment—Additional Questions for the Record

The Honorable Jeff Duncan

- 1. Mr. Bozzella, one of the most compelling opportunities for autonomous vehicles is in the shared use mobility platforms, including technology like autonomous shuttles. Multiple OEMs – including some of your members –are pursuing purpose-built autonomous shuttles, but today the National Highway Traffic Safety Administration (NHTSA) does not have regulations for purpose-built autonomous shuttles. What can Congress do to provide a pathway for autonomous shared use vehicles to provide mobility solutions to consumers in need?**

Congress has a tremendous opportunity to build on past bipartisan efforts and pass federal legislation which will enable companies to scale a wide range of autonomous vehicle technologies – including autonomous shared-use vehicles – providing significant benefits to the public and positioning the U.S. as a global leader in AV technology.

Current federal regulations remain a barrier to the deployment of these technologies at scale. A federal regulatory environment that provides a clear, predictable, and safe pathway to commercialization with appropriate oversight is urgently needed in order to realize many of the promises of this technology. Absent that, I fear we may witness the demise of the AV industry in the U.S.

There are three critical components for meaningful federal AV legislation.

First, as we are all aware, the pace of AV innovation is occurring faster than DOT can update the existing Federal Motor Vehicle Safety Standards (FMVSS). While the DOT has taken important steps to research and request comment on existing FMVSS barriers for AVs, much work is needed to account for the fact that manual driver controls, such as the steering wheel, brake pedal and gear shifter, may no longer be needed in certain types of automated vehicles. In the interim, FMVSS exemptions are necessary to act as a bridge for the safe deployment of AV technologies which will then help generate the real-world data that is needed to establish new safety standards for AVs – which, to be clear – we also support. The existing temporary exemption process at NHTSA has a current threshold of 2,500 vehicles per manufacturer per year, and is generally limited to just two years (5,000 vehicles in total). This annual 2,500 vehicle threshold should be substantially increased if we truly want to realize the safety, economic and social benefits of AVs. Reforming and expanding this process provides a critical tool for NHTSA to gather the data it needs for future regulations and for the companies developing unique vehicle designs to continue scaling their deployment here in the U.S.

This brings me to the second component of federal AV legislation – rulemaking. The exemptions process described above serves as a bridge until NHTSA updates the FMVSS to accommodate purpose-built AVs. The direction from Congress for NHTSA to complete these rulemakings within a determined amount of time would be helpful.

Finally, legislation must reinforce and clarify the roles of federal, state and local authorities for automated vehicle technologies. The current lack of clarity could result in an unworkable patchwork of laws and regulations developing across the country that will hinder the ability for automated vehicle technologies to be safely deployed, thereby delaying or negating the safety benefits (and the collection of real-world data) that would otherwise occur. States should continue to have jurisdiction and oversight of the operation of vehicles on public roads, driver licensing, including traffic laws, vehicle registration, insurance, licensing, and enforcement of such laws. However, it is not helpful to anyone if there are conflicting laws and regulations when it comes to a vehicle's design, construction, and performance. This Committee has a long history of understanding the importance of uniform vehicle standards, and we are committed to working with the Committee and state and local stakeholders to find the right balance on this important issue.

It is critical we get these key components correct – and soon. They are integral to both our near and long-term success in leading the development – and regulation - of this technology. For your reference, Auto Innovators released its [AV Roadmap](#) which outlines the industry's view on what is needed to pave the way for suitable AV deployment.

The Honorable Janice Schakowsky

Mr. Bozzella, you stated: "For example, they have the potential to provide life-changing opportunities for those who are not adequately served by existing mobility options, such as seniors, persons with disabilities, and others who require accessible transportation." "And they open the door to new possibilities for reducing congestion, improving the environment, and creating more efficient, worker-friendly supply chains."

- 1. Mr. Bozzella, What percentage of AVs are your member companies committed to ensuring will have “universal design” to be able to accommodate all people with disabilities including those who use wheelchairs and assistive devices?**

AVs offer incredible potential to increase access to mobility for those with disabilities and we expect that there will be more accessible AVs made available to consumers as this technology progresses and as companies are provided a pathway to scale.

In the meantime, there is additional work that the government and the private sector can be doing together to increase AV accessibility. This work includes the development of a best practices document, including technical specifications, that vehicle manufacturers can use when developing accessible AVs and finalizing work on cross-industry standards for wheelchair tiedown systems that can allow for independent use by a wheelchair user and provide for interoperability between and among wheelchair manufacturers and vehicle manufacturers.

The Honorable Russ Fulcher

- 1. Increasingly, cars and trucks for that matter are sophisticated computers on wheels. If a vehicle is going to take over key functions of driving, then what happens to the owner's liability in an accident with an AV?**

We recognize this is an important area. We do not seek to change anything relating to liability or the tort system as it operates today. Liability for a crash involving an ADS-equipped vehicle should be determined in accordance with the same applicable principles of law that are used today to govern liability for a crash involving non-ADS-equipped vehicles. These well understood, well tested principles are able to account for a variety of situations, for example, when the ADS system was not used as directed by the ADS developer or when a vehicle's ADS is not properly maintained by a vehicle owner.

- 2. We are moving from Level 3 autonomous vehicles, where the vehicle can perform key functions of the driver, but under certain conditions such as at certain speeds, to Level 5 vehicles where the human has no ability to drive. How should we think about liability when humans can engage versus the vehicle? What about cases where the vehicles is not sure when to engage? As we transition to a fully autonomous vehicle, what are areas around the issue of liability that we need to consider?**

We recognize this is an important area. We do not seek to change anything relating to liability or the tort system as it operates today. Liability for a crash involving an ADS-equipped vehicle should be determined in accordance with the same applicable principles of law that are used today to govern liability for a crash involving non-ADS-equipped vehicles. These well understood, well tested principles are able to account for a variety of situations, for example, when the ADS system was not used as directed by the ADS developer or when a vehicle's ADS is not properly maintained by a vehicle owner.

It is also important to remember that simply because a vehicle is equipped with Level 5 ADS technology that does not necessarily mean that a human will never be able to drive that vehicle. In fact, a conventionally driven vehicle can conceivably be equipped to operate in a Level 5 mode should the human driver choose to do so.

- 3. Can you speak to why regulating level 2 and levels 3-5 together creates consumer confusion about the capabilities of the technology? As you know, vehicles equipped with advanced driver assistance systems, or ADAS, are currently on the roads and, in fact NHTSA announced an NPRM which would require more of these features to be included in vehicles moving forward and continued advancements of these ADAS features. However, I have concerns that talking about ADAS with AVs can cause some confusion. Even Professor Koopman [Koopman], in his testimony indicates that Level2+ vehicles, which he cites separately is a made-up term, can perform almost all the driving, but goes on to say they are prone to abuse due to automation complacency. I think this is exactly why we need to talk about ADAS and AVs separately so we can squash this confusion around the actual safety benefits and capabilities of AVs, and prevent them from continuing to get blamed for being unsafe due to such misconceptions.**

We strongly support the passage of bipartisan legislation focused on highly automated vehicles – anything above a Level 3. The reason for this is the bright line between Level 2 and Level 3 and higher technologies – specifically the involvement of the driver. Level 2 and below technologies

are driver assistance technologies but the driver must remain engaged at all times. Level 3 and higher technologies permit the driver to disengage from the driving the task completely, even if under limited conditions. The conflation of these technologies in this legislation would only further consumer confusion about the distinctions between driver-assistance features and highly automated vehicles.

Auto Innovators and our members understand the importance of providing clarity to consumers about the capabilities and limitations of advanced safety technologies. We have been collaborating with various industry stakeholders in efforts spearheaded by SAE to establish consumer education materials, specifically to address consumer confusion (e.g., *Clearing the Confusion* document). We are also working with SAE to more clearly distinguish between Levels 2 and 3 in their taxonomy work, and we are working to develop a simplified taxonomy for better consumer understanding. This will be critical to establishing consumer confidence in both current generation driver assistance features, as well as higher levels of automation when they enter the market.

4. I would like to understand the need for manufacturers to develop a cybersecurity plan for the protection of data on vehicles. This is particularly true when it comes to counter hacking over various vehicle control functions. I analogize it to industrial controls on equipment. Can you discuss the role of each bill when it comes to this issue?

Cybersecurity remains a top priority for the automotive industry. Automakers understand the realities of a connected world, as well as customer concerns and expectations regarding vehicle security. That is why industry is working proactively to build in security and adopt practices designed to minimize the risk of cyber threats. In fact, the industry developed the first joint international standard between SAE International and ISO for vehicle cybersecurity, ISO 21434, covering the entire lifecycle of the vehicle.

That joint effort builds on what the industry has already done. For example, several years ago, the industry proactively created an Information Sharing and Analysis Center (ISAC) in partnership with DHS. The Auto-ISAC now includes more than 50 members and has developed comprehensive cybersecurity best practices. In addition, in 2014 the industry established FTC-enforceable Privacy Principles, including a specific reference to data security.

Even with a multi-layer defense against cyber threats, automakers must remain nimble and adaptive to keep pace with the rapid and dynamic evolution of cyber threats. Locking in what seems proactive now may not be so effective when the future demands another approach, which is why the processes, best practices, and standards being developed by automakers, standards bodies, and multi-sector industry partners are so important and reflect the dynamic nature of this emerging risk.

NHTSA also has oversight and enforcement authority over automakers when it comes to vehicle cybersecurity matters including those which may pose unreasonable risks to motor vehicle safety. The agency has also issued cybersecurity guidance which builds upon and compliments the ongoing and evolving industry efforts mentioned above.

All of these efforts both by industry and government reflect the dynamic nature of the cyber threat. As such, the approaches laid out in the legislation – in particular the inclusion of cybersecurity as part of the voluntary safety assessment - strike the right balance of providing assurances relative to cyber practices without being overly prescriptive.

- 5. With regards to industries like insurance, as automated features take on more of the driving tasks, it is increasingly important for insurers to be able to identify vehicles equipped with advanced technology systems and to be able to fully assess the risk profile of the vehicle to underwrite insurance policies. Liability here connects to underwriter risk. How do things like assessing risk come into play when it comes to these levels of autonomous vehicles? Any suggested areas to obtain more expertise in this issue as we move forward?**

AVs and advanced safety technologies offer tremendous potential to reduce the number of crashes and improve the overall safety of U.S. roadways. This could have the added benefit of reducing claims for both minor and serious crashes, especially as the technologies become more prevalent. Today, we have established collaborative relationships with insurers, and particularly the Insurance Institute for Highway Safety (IIHS), to evaluate the effectiveness of various safety technologies, including ADAS systems. It is anticipated that as ADS technology reaches the market and becomes more ubiquitous, the effectiveness of these technologies will also be studied. In addition to the proactive research on ADAS, NHTSA has since 2021 been collecting incident data through their Standing General Order (SGO) for both Level 2 ADAS as well as ADS. We are open to further conversations with the insurance industry and policymakers to better understand the concerns and expectations of insurance companies as safety technologies mature.

The Honorable Kelly Armstrong

- 1. Virtual testing is a critical technique used by industry to validate the safety of new vehicle technologies. By using simulation software, manufacturers are able to provide a deeper understanding of system performance and safety – this includes situations that are impossible or dangerous to test in the real world. Do you think the government’s safety assurance programs should use software tools with the same level of fidelity and sophistication as industry to rigorously test ADS software before widespread deployment on US roads?**

We support the government’s use of simulation-based testing of vehicle safety systems. However, there are many nuances to virtual testing that must be considered. At a high level, NHTSA’s role should primarily focus on validation of the results provided by manufacturers. For example, manufacturers of ADS technology might self-certify their systems using modeling and provide the outputs of those models to the government. The government may then take those outputs and validate a subset of them using physical models as appropriate. This approach aligns well with the established self-certification system that the US market is accustomed to.

The Honorable Earl L. “Buddy” Carter

- 1. AVs are being tested in 30 states; primarily in urban areas. Most of my district, Georgia's first, consists of rural areas that must be represented during AV testing to ensure we aren't cutting off transportation access to people who may need it. Why is it necessary for AV accessibility in rural areas, and how can we encourage testing AV systems in rural America?**

We see tremendous opportunity for AV technology to benefit rural communities, including providing a means to access broader public transit networks, as well as ways we haven't even contemplated, yet. A federal framework provides a pathway for companies to expand testing and deployment across the country, including in rural communities. This not only will open the doors to new potential opportunities for this technology to benefit rural communities in ways we haven't contemplated, but it will also provide more and better data for NHTSA to evaluate how the technology performs in different environments and uses cases. Absent that federal framework, however, it will be difficult for companies to deploy in rural areas as they seek to maximize the value proposition of the limited number of vehicles they are permitted to test, deploy, or operate.

- 2. When AVs are being tested in communities, what is the process for working with local leadership on integrating these vehicles?**

AV developers often engage extensively with state and local governments prior to deploying in individual communities. At present, these processes vary among developers and there is not necessarily a one-size-fits-all approach across the entire industry. The federal framework is critical to reaffirm NHTSA's authority for design, construction, and performance to avoid conflicting vehicle requirements across state lines. This is not, however, intended to undermine states' ability to set or enforce traffic laws, licensing, operational requirements or other rules of the road.

- 3. I have several ports in my district so I'm well aware of the need for truck drivers to transport goods. Given we currently see a shortage of truck drivers, how can autonomous vehicles improve supply chain efficiency?**

We are still discovering potential use cases and applications, and those may continue to evolve as the technology evolves and becomes more widespread. From Level 3 systems in consumer vehicles, to self-driving shared mobility providers, unmanned delivery services, and the movement of goods, we are only starting to scratch the potential opportunities and benefits of AV technology. While Auto Innovators does not represent commercial trucking interests, I envision examples of AV trucks not only complementing the existing commercial fleet but also improving working conditions for existing drivers. For example, over time, AVs can help mitigate labor shortages that contribute to supply chain backlogs and hamper the transport of goods. In addition, AV technology may enable operators of commercial vehicles to prioritize other strategic non-driving aspects of the job. This could include performing safety checks, planning routes, coordinating delivery logistics, or carrying out customer service functions.