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Secretary Elaine Chao
U.S. Department of Transportation
1200 New Jersey Ave. SE
Washington, DC 20590

Submitted electronically via www.regulations.gov

RE: Ensuring American Leadership in Automated Vehicle Technologies Automated Vehicles 4.0, Docket No. DOT-OST-2019-0179

Dear Secretary Chao:

Under the current national crisis facing the United States, which has led to the President declaring a state of National Emergency, The Center for Auto Safety (the Center) again raises the question the wisdom of your Department carrying on its relentless slog of enabling manufacturers in their quest to place unregulated autonomous vehicles on the road. The National Highway Traffic Safety Administration's (NHTSA) sole focus at this moment should be on steps it can take to immediately increase the safety of Americans, either through enforcement or regulations that ensure all vehicles will come equipped with the latest, proven, safety equipment.

However, as there has been no delay in the due date for comments on the document titled "Ensuring American Leadership in Automated Vehicle Technologies Automated Vehicles 4.0" (AV 4.0), our comments are below.

With almost 40,000 crash deaths involving motor vehicles and over 2.5 million serious injuries on our roads every year, there is no time to waste in moving forward towards deploying safe vehicle technology, be it autonomous or otherwise. The Center firmly believes AV technology can play a significant role in a safer transportation future and is committed to seeing its successful and safe integration into our transit ecosystem. Yet, permitting the deployment of self-described self-driving vehicles on public roads, based exclusively on the marketing assurances of the auto industry, ignores that industry's well-documented history of unsupported advertising claims clashing with reality.

We speak from experience. Since the Center's founding 50 years ago, our sole mission has been improving consumer protection when it comes to vehicle safety. On behalf of our members across the country, and drivers, passengers, and pedestrians everywhere we have always been proponents of advanced safety technology, often far earlier than member of the industry or the federal government.

While there have been many life-saving and performance-enhancing technological advancements in vehicles the last five decades many philosophical problems remain. None is perhaps more insidious than the idea that car companies, and their new friends in Silicon Valley, should be given the ability to sell unproven driverless car technology absent proof they are meeting mandatory safety and performance requirements. At its heart, AV 4.0[1] is an abdication of the federal government's responsibility to establish and enforce reasonable safety standards for AV development, thereby unnecessarily endangering the American public and wasting time and resources otherwise allocable to safe AV development.

AV 4.0 continues the administration's resistance to reasonable AV regulations and represents an abdication of leadership responsibilities by the DOT. The introductory letter in AV 4.0 from The United States Secretary of Transportation and the United States Chief Technology Officer states, "With the release of Automated Driving Systems 2.0: A Vision for Safety (ADS 2.0) in September 2017, the USDOT provided voluntary guidance to industry, as well as technical assistance and best practices to States, offering a path forward for the safe testing and integration of Automated Driving Systems."[2] Responsible parties agree that mandatory standards for AVs are desperately needed, yet instead of making the case for how DOT and NHTSA will take on this challenge, AV 4.0 provides a long listing of federal agencies and lauds a voluntary standard process.

AV 4.0 is misleading when it suggests that anyone has developed and promulgated meaningful AV development standards, when in fact none exist. Engineering specifications are built on a foundation of requirements. Absent government mandated standards, AV requirements are established by developers themselves. Conflicting self-generated requirements are inevitable, and differing interpretations of even such anodyne requirements as 'AVs must obey the traffic laws' when interpreted in algorithms and encoded in software implicitly impose the burden of legal interpretations of motor vehicle laws on engineers developing that software. This burden, intentionally or not, will inevitably lead to divergent software and hardware implementations. There can be no assurance that these implementations will ultimately be compatible with governmental requirements imposed after the fact, as would be the case if DOT relies exclusively on its power to retroactively sanction unsafe operations and impose recalls.

[1] Ensuring American Leadership in Automated Vehicle Technologies
Automated Vehicles 4.0, introduction, https://cms7.dot.gov/file/268996/download?token=am1hZ-a0

[2] See Automated Driving Systems 2.0, A Vision for Safety,
https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf

There were over 40 million vehicles recalled in 2019 alone. Those recalls result in repair rates far below 100% and only address an individual manufacturer's model instead of an industry wide standard. In other words, recalls are never a good replacement for industry wide performance standards. But, instead of requiring new AV technology to meet performance standards, NHTSA's preference appears to be removing requirements and addressing life-threatening problems after disaster strikes via recalls. Leaving aside NHTSA's current dismal record of pursuing defect violations, opening investigations, or levying civil penalties, "enforcement" is not regulation, and after-the-fact investigations will not revive the dead. In response to recalls, engineering changes are imposed on the subject vehicles. Retroactive engineering changes are the most difficult and costly to implement. DOT's reliance on industry to do the government's job will inevitably cost human lives, waste time, and increase the capital needed for AV development, and unnecessarily delay whatever attendant safety enhancement benefits the public would otherwise enjoy.

The Center agrees with (page 1), "... the value of industry leadership in the research, development, and integration of AV innovations" and that "[r]ealizing the full potential of AVs will require collaboration and information sharing among stakeholders from industry, State, local, tribal, and territorial governments, academia, not-for-profit organizations, standards development organizations (SDO), and the Federal Government." But there is little justification for the validity of the presumptive corollary (page 29), "The U.S. Government will promote voluntary consensus standards as a mechanism to encourage increased investment and bring cost-effective innovation to the market more quickly." Voluntary standards as developed by SDO have value in the context for which they are developed but are not a substitute for mandatory standards. Each SDO[3] has its own agenda, and the standards they develop diverge in scope, strategy, and tactics. It is the responsibility of government to consolidate inputs from stakeholders including SDOs into enforceable standards to assure public safety and promote the cost-effective development of life-saving technologies, including AVs. AV 4.0 fails to provide for the development of such standards, or even to provide a mechanism for implementing the full potential of the stakeholder inputs. Delays caused by willful ignorance or abdication of responsibility for driver assistance systems and AVs alike as per AV 4.0 mean additional needless deaths and injuries.

The Center agrees that (Page 2), "Advances in these technologies can reduce roadway crashes, fatalities, and injuries and assist the USDOT in 'managing safety risks along the path to the full commercial integration of AV technology.'" However, AV 4.0 is once again misleading by implying that DOT is making those life-saving technologies available as quickly as possible. DOT has not developed standards, requirements, or test protocols for those technologies, leading to questionable performance[4] and erratic

[3] Relevant and potentially conflicting AV standards are currently under development by at least the SAE, ISO, IEEE, EU, UN, UL, NIST, ANSI, ISA, IEC, and possibly ICAO.

[4] https://www.autosafety.org/wp-content/uploads/2019/03/Center-for-Auto-Safety-Nissan-Rogue-AEB-Defect-Petition-FINAL.pdf

implementation by developers, and unnecessary delays[5] in implementation by reliance on voluntary implementations rather than earliest practicable required implementation dates.

AV 4.0 goes on to state, "By eliminating the possibility of human error or poor human choices (e.g., impairment or distraction) while driving, ADS has enormous potential to save lives and reduce the economic burden associated with crashes." There is no evidence that AVs will eliminate human error or poor human choices. It is worth repeating: no evidence has been presented that validates this supposition. It is a goal. It is an aspiration. It is potential only.

It should go without saying that the software controlling AVs will be written by humans and therefore will be prone to including errors. Absent a standard for validating software and disclosing conformance to software safety standards, there is no way for either developers or the public to know how many errors are included. NHTSA refuses to consider those standards, which are as important to safe AV development as any of the existing FMVSS. Similarly, the existence of AV software does not exclude the possibility of poor human choices. Tesla's Model S advertises the availability of Ludicrous Mode and a top speed of 155 mph.[6] Tesla also advertises "Full Self-Driving Capability - Navigate on Autopilot: automatic driving from highway on-ramp to off-ramp including interchanges and overtaking slower cars."[7] These technical features, unlimited by current NHTSA regulation, enable poor human choices with lethal consequences. Humans are free to make bad choices in setting AV controls. Poor human choices have already led to numerous deaths in Tesla vehicles operating autonomously.[8] Combined with technology that fails to "detect" large, stopped vehicles in the middle of the road,[9] the reality that technology deployed without oversight can just as easily create dangers and increase economic burdens, is laid bare by Tesla.

Similarly, bad human choices led to the death of another human via a poorly designed AV.[10] Absent a government mandate that AV software conform to traffic laws, developers are free to provide operator latitude for unsafe and reckless driving, potentially even beyond the AV's performance limits. DOT's and NHTSA's vapid AV cheerleading through a regulatory vacuum should yield to its charter to affirmatively

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https://www.autosafety.org/wp-content/uploads/2019/09/PE19-010-Opening-Resume.pdf

[5] Manufacturers make progress on voluntary commitment to include automatic emergency braking on all new vehicles, https://www.nhtsa.gov/press-releases/nhtsa-iihs-announcement-aeb

[66] https://www.tesla.com/models/design#battery

[7] https://www.tesla.com/models/design#autopilot

[8] Tesla Deaths, https://www.tesladeaths.com/

[9] *See:* National Transportation Safety Board*, Collision Between Car Operating with Partial Driving Automation and Truck-Tractor Semitrailer*, Final Report published March 19, 2020, https://www.ntsb.gov/investigations/AccidentReports/Pages/HAB2001.aspx.

[10] National Transportation Safety Board, *Collision Between Vehicle Controlled by Development Automated Driving System and Pedestrian*, Tempe Arizona, March 18, 2018 NTSB/HAR-19/03, https://www.ntsb.gov/investigations/AccidentReports/Reports/HAR1903.pdf

protect the public. AV 4.0 is a testament to NHTSA's failure to focus on automotive safety when it comes to AV development.

In summary, AV 4.0 fails to achieve its objective "...to facilitate and guide future efforts in a safe and consistent way in order to embolden AV innovators and entrepreneurs and enable the public." By abdicating DOT and NHTSA's responsibilities for establishing standards for AV safety , AV 4.0 spectacularly fails to enable consistency amongst AV developers. By failing to mandate life-saving driver assistance technologies in AV, failing to require cybersecurity, and in general failing to establish rules for safe, expeditious, and accessible AV development, AV 4.0 does not embolden safety and further inhibits AV development. In fact, AV 4.0 is no more than a compendium of government stakeholders who might be involved in AV development, and serves as window dressing for voluntary industry guidance in the place of enforceable public safety standards. AV 4.0 attempts to create the illusion that a regulatory vacuum is equivalent to a consequential set of rules. American industry and the public deserve better from their government than abandonment of AV development safety by the agencies empowered to enforce it. AV 4.0 is an unfortunate and sad continuation of DOT's policy of safety and regulatory abandonment and neglect. Now, more than ever, Americans deserve a government focused on making their lives easier and safer. AV 4.0 fails that basic performance standard.

Sincerely,

Jason Levine
Executive Director