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Office of the Administrator
c/o Deputy Administrator Heidi King
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, D.C. 20590

PETITION FOR RULEMAKING

Pursuant to 49 C.F.R. 552, the Center for Auto Safety (Center), and the below 267 named members of the Center, hereby petition the National Highway Traffic Safety Administration (NHTSA) to initiate rulemaking requiring companies testing automated vehicle systems on public roads to provide information to NHTSA and the public regarding the safety of their systems.

The Center, founded in 1970, is a non-profit consumer advocacy organization dedicated to improving vehicle safety, quality, and fuel economy for all drivers, passengers, and pedestrians across the country. The Center is a membership organization headquartered in Washington, D.C.

The urgency of this petition is underscored by deaths, injuries, and crashes associated with "autonomous" and "semi-autonomous" vehicle system technology,[1] the public's diminishing support for the technology,[2] as well as NHTSA's continued deference to the automotive and technology industries with respect to regulating the safety of these vehicles.[3]

Since the passage of the FAST Act in 2015,[4] drivers, passengers, pedestrians, and bicyclists have served as human guinea pigs across the United States without even the minimal requirement that those testing autonomous and semi-autonomous vehicle technology make public information demonstrating the safety of their technology. This failure has taken place despite NHTSA's explicit recognition in "*Federal Automated Vehicles Policy: Accelerating the Next Revolution in Roadway Safety*"[5] that the agency has the authority to mandate the submission of reports regarding how manufacturers intend their product to be made ready for use on public roads.

Currently, Congress is debating how best to regulate the sale of self-driving vehicle technology, the liability associated with such technology, and the role of the sovereign states in regulating the operation of these vehicles, amongst other related issues.[6] In the meantime, on October 4, 2018 with the release of "*Automated Vehicles 3.0, Preparing for the Future of Transportation"*[7] NHTSA has for a third time,[8] essentially declared that it would wait for a body count before undertaking any action.[9]

While NHTSA and Congress have contemplated such reports, calling them alternatively "Safety Assessment Letters"[10] or "Safety Evaluation Reports,"[11] NHTSA has failed to mandate any reporting requirements relating to the safety of these vehicles. Accordingly, both NHTSA and the public remain completely in the dark when it comes to the performance of automated vehicle safety.

In the interim, a bare handful of manufacturers have chosen to fill the void by submitting purported safety reports[12] that amount to glossy advertising brochures and fall far short of even the minimal data contemplated by the Safety Assessment Letters described in HAV Policy 1.0.[13] The result of these manufacturer marketing submissions is that next to no useful safety data has been made public regarding the status and plans of any of the scores of entities conducting tests of driverless vehicle technology. There is no reason for such an oversight.

To be clear, a regulation in response to this petition (a regulation for which NHTSA has already contemplated and laid the groundwork) will not, by itself, assure the long-term success of self-driving technology or immediately make the roads safe. Instead, the intent of this petition is to mandate a mechanism that will help to provide the basic information needed to prevent unsafe technology from being tested on our streets and enable the critical task of writing safety standards for autonomous vehicle technology.

Scope

At a minimum, the proposed rulemaking should apply to all individuals and companies manufacturing, designing, testing, or deploying autonomous vehicle technology in the United States on public roads. Autonomous vehicle technology has alternatively been described as automated vehicle systems, autonomous vehicles (AV), fully autonomous vehicles, automated driving systems (ADS), driver assistance systems (DAS), advanced driver assistance systems (ADAS), highly automated vehicles (HAV), self-driving vehicles, self-driving cars, Autopilot, Super Cruise, and autonomous cars.

The scope of this rule is intended to include traditional vehicle manufacturers and other entities involved with manufacturing, designing, supplying, testing, operating, or deploying autonomous vehicle technology on public roads. These entities include, but are not limited to, equipment designers and suppliers, and entities that outfit any vehicle or equipment with automation capabilities for testing, or for use on public roadways. It would also encompass

transit companies, automated fleet operators, "driverless" taxi companies, and any other individual or entity that is testing or deploying services which currently utilizing, or plan to utilize, autonomous vehicle technology.

Parameters

As set forth in HAV Policy 1.0, the proposed regulation would require all individuals, manufacturers, or other relevant entities to submit to NHTSA documents, details, data, or otherwise demonstrate either in the form of a "Safety Assessment," or a different form as deemed appropriate by NHTSA, sufficiently detailed information relating to each listed category establishing their autonomous vehicle technology does not endanger the public.[14]

Further, for each of the areas listed below, the proposed regulation is intended to require, at a minimum, enough documentation, detail, or data to demonstrate the autonomous vehicle technology currently being tested, or planning to be tested, on public roads, is at least as safe as vehicles which currently meet all applicable FMVSS. For those categories for which no current FMVSS exists, those testing or wishing to test autonomous vehicle technology on public roads must provide enough documentation, detail, or data to demonstrate how the safety of the vehicle occupants and those sharing public roads with the vehicle will be safeguarded.

- Data Recording and Sharing
- Privacy
- System Safety
- Vehicle Cybersecurity
- Human Machine Interface
- Crashworthiness
- Consumer Education and Training
- Registration and Certification
- Post-Crash Behavior
- Federal, State and Local Laws
- Ethical Considerations
- Operational Design Domain
- Object and Event Detection and Response
- Fall Back (Minimal Risk Condition)
- Validation Methods

The areas listed above are not intended to be an exclusive list. More categories could be added either during the drafting of the rule or during the notice and comment period. Using agency expertise, NHTSA should evaluate if additional areas of specificity should be added that would help NHTSA and the public better assess the safety of autonomous vehicle technology.

Effective Date

While the Center for Auto Safety urges NHTSA to act quickly to grant this petition and move to rulemaking, the Center recognizes that many covered entities are currently testing autonomous vehicle technology on public roads. Accordingly, for in-scope systems already being tested on public roads, the Center recommends NHTSA set a date of no later than 90 days from the date of promulgation for covered entities who are currently testing or deploying autonomous vehicle technology to submit their Safety Assessment information. Another mechanism for accelerating the collection and dissemination of this information to the public would be using an interim final rule to initially apply only to the entities currently undertaking testing or deploying autonomous vehicle technology.

The Center also recommends a regulation requiring entities that have yet to begin testing to submit their Safety Assessment information 120 days prior to testing on public roads. All information, except that portion of the information subject to the agency's confidential business regulations, shall immediately be made public.

The Center recommends the regulation require a manufacturer or entity to submit a new Safety Assessment letter to the Agency when any significant update(s) to a vehicle or system is made. As noted in HAV Policy 1.0, a "significant update" is one that would result in a new safety evaluation for any of the fifteen safety assessment areas. The purpose of the updated letter would be to describe for the agency the nature of the update, its expected impact on performance, and other relevant information consistent with the intent of the safety assessment letter.

Because of the speed of the development of autonomous vehicle technology, to the extent a manufacturer, or other covered entity, has no "significant updates" during the course of a year, the regulation should require the submission of an update every 12 months by that manufacturer, or other covered entity. confirming its previous submission remains current and up-to-date.

Conclusion

Petitioners urge NHTSA to immediately initiate rulemaking requiring companies testing automated vehicle technology to provide information to NHTSA, and the public, regarding the safety of the systems being tested, or intending to be tested, on public roads.

Respectfully submitted,

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[1] 6 domestic US crashes https://www.digitaltrends.com/cool-tech/most-significant-self-driving-car-crashes/; Utah stopped fire truck crash https://abcnews.go.com/Technology/utah-driver-slammed-tesla-firetruck-sues-carmaker-autopilot/story?id=57643591; California stopped fire truck crash https://www.washingtonpost.com/news/morning-mix/wp/2018/08/27/i-think-i-had-autopilot-on-tesla-driver-arrested-after-crashing-into-parked-firetruck/?noredirect=on&utm_term=.1f020e370d7d ; Troy Griggs & Daisuke Wakabayashi, *How a Self-Driving Uber Killed a Pedestrian in Arizona*, NY Times, Mar. 21, 2018 available at: https://www.nytimes.com/interactive/2018/03/20/us/self-driving-uber-pedestrian-killed.html; California, 103 AV crashes https://www.dmv.ca.gov/portal/dmv/detail/vr/autonomous/autonomousveh_ol316+ Florida, two dead https://www.usatoday.com/story/tech/2018/05/09/tesla-crash-killed-2-teens-probed-investigators/596728002/; Greece crash death https://abc7news.com/automotive/millbrae-driver-says-tesla-model-3-was-in-autopilot-when-it-crashed-in-greece/3525746/ ; China crash death https://www.nytimes.com/2016/09/15/business/fatal-tesla-crash-in-china-involved-autopilot-government-tv-says.html, https://www.youtube.com/watch?v=1cfcumft5n8.

[2] See, e.g.: *Self-Driving Cars Hit A Speedbump, Interest In Autonomous Vehicle Technology Slows Down*, at: https://www.prnewswire.com/news-releases/self-driving-cars-hit-a-speedbump-interest-in-autonomous-vehicle-technology-slows-down-300714345.html; and *Public to U.S. Senate: Pump the Brakes on Driverless Car Bill*, at: http://saferoads.org/wp-content/uploads/2018/07/AV-Poll-Report-July-2018-FINAL.pdf, and: "The public has legitimate concerns about the safety, security, and privacy of automated technology." *Automated Vehicles 3.0, Preparing for the Future of Transportation"* (hereinafter: "AV Policy 3.0") pg ii, at: https://www.transportation.gov/sites/dot.gov/files/docs/policy-initiatives/automated-vehicles/320711/preparing-future-transportation-automated-vehicle-30.pdf.

[3] AV Policy 3.0, pg 26.

[4] Fixing America's Surface Transportation (FAST) Act, Section 24404 (Pub. L. No. 114-94)

[5] *Federal Automated Vehicles Policy: Accelerating the Next Revolution in Roadway Safety*, September 2016, https://www.transportation.gov/sites/dot.gov/files/docs/AV%20policy%20guidance%20PDF.pdf (hereinafter: "HAV Policy 1.0") at pg. 15.

[6] American Vision for Safer Transportation through Advancement of Revolutionary Technologies Act (AV START) S. 1885; Safely Ensuring Lives Future Deployment and Research In Vehicle Evolution Act (SELF DRIVE Act) H.R. 3388

[7] AV Policy 3.0

[8] HAV Policy 1.0 and "*Automated Driving Systems 2.0: A Vision for Safety* (hereinafter "ADS Policy 2.0") https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf

[9] Stephen Lawson, *AVs Don't Need to Be Regulated Yet, Car Safety Chief Says,* via: www.tu-auto.com available at: https://www.tu-auto.com/avs-dont-need-to-be-regulated-yet-car-safety-chief-says/, July 16, 2018. At the same time, NHTSA has begun work to look at how regulations would need to be rewritten to allow for driverless technology to be deployed without steering wheels or brake pedals before looking at regulations that will create accountability and assure safety. See: *Transportation institute awarded federal contract to study alternative vehicle designs and how they affect current safety standards*, Nov. 9, 2017, available at: https://vtnews.vt.edu/articles/2017/11/110917-vtti-FMVSS.html. The Center for Auto Safety is an invited and active participant "stakeholder" in this project.

[10] HAV Policy 1.0, page 15 and H.R. 3388, Section 4(a) (SELF DRIVE Act).

[11] S. 1885, Section 9. (AV START Act)

[12] Waymo Safety Report, https://waymo.com/safety/;
GM Safety Report: https://www.gm.com/content/dam/company/docs/us/en/gmcom/gmsafetyreport.pdf;
Ford Report: https://media.ford.com/content/dam/fordmedia/pdf/Ford_AV_LLC_FINAL_HR_2.pdf ;
Nuro Self Driving Car Safety Report: https://www.theverge.com/2018/9/13/17855136/nuro-self-driving-car-safety-report;
Tesla Vehicle Safety Report: https://www.tesla.com/blog/q3-2018-vehicle-safety-report

[13] https://www.nhtsa.gov/automated-driving-systems/voluntary-safety-self-assessment

[14] HAV Policy 1.0, pg 15