NISKANEN CENTER

Public Interest Comment

Comments submitted to the National Highway Traffic Safety Administration in the Matter of:

Automated Driving Systems: A Vision for Safety

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Executive Summary

The advent of autonomous vehicles holds the potential to help save lives on American roads. Expediting the deployment of this technology should be a priority for safety regulators, but onerous regulatory barriers could act as an impediment to a safer, more autonomous transportation future. The Niskanen Center is therefore pleased to see that the Department of Transportation has tailored its new guidance document for autonomous vehicles to reflect an awareness of those realities. We wish to offer our congratulations and support on the approach outlined by the guidance.

Although there are areas for improvement, we are wholly encouraged by the provisions contained in this guidance. Moving forward, we recommend that the Agency should: (1) continue to reiterate the value of voluntary, non-binding, industry-led standards for autonomous vehicle research, development, and testing; and (2) embrace the principles of The Framework for Global Electronic Commerce already reaffirmed by the Department of Commerce.

Introduction

The recent release of the National Highway Traffic Safety Administration's (NHTSA) guidance document on automated driving systems[1] comes at a critical juncture for autonomous vehicles. Congress is currently in the midst of considering multiple pieces of legislation that would govern the testing and deployment of autonomous vehicle technologies. Two such bills, the SELF DRIVE Act[2] and the AV START Act,[3] have been put forth—and in the case of the SELF DRIVE Act, passed[4]—by Congress in an effort to speed the roll-out of this life-saving technology.

The provisions of these bills mirror many of the elements contained in NHTSA's guidance on autonomous vehicles, which is one of the reasons the Niskanen Center is supportive of both these Congressional efforts as well as the guidance document discussed here. As noted in the request for comment:

> *The Department and NHTSA recognize that regulatory efforts in this arena must promote safety, remove any existing unnecessary barriers, remain technology neutral, and enable a pathway for innovation that has the potential to save lives. Any initiative in the regulatory realm will seek to remove regulatory barriers and burdens that could unnecessarily hinder the safe and efficient implementation of [automated driving systems].*[5]

We concur with this assessment. By contrast, the previous NHTSA guidance document, as we noted in comments last November,[6] was far more disposed towards proposing new regulatory authorities. We are pleased to see that this new version takes a much more reasonable perspective on regulatory action

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[1] Automated Driving Systems 2.0: *A Vision for Safety*, U.S. Department of Transportation, National Highway Traffic Safety Administration, September 2017, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/13069a-ads2.0_090617_v9a_tag.pdf.

[2] "Safely Ensuring Lives Future Deployment and Research In Vehicle Evolution Act," H.R. 3388, 115th Congress, introduced July 25, 2017, https://www.congress.gov/bill/115th-congress/house-bill/3388/text.

[3] "American Vision for Safer Transportation through Advancement of Revolutionary Technologies Act," S. 1885, introduced September 28, 2017, 115th Congress, https://www.commerce.senate.gov/public/_cache/files/1fb8fa36-331b-4f0b-907a-6dededda4d31/37F56742A509A877F54FDF7389DFDAA7.s.-1885-av-start-act.pdf.

[4] Ryan Beene, "House Passes Bill to Speed Introduction of Self-Driving Cars," *Bloomberg*, September 6, 2017, https://www.bloomberg.com/news/articles/2017-09-06/house-approves-bill-to-speed-introduction-of-self-driving-autos.

[5] "Automated Driving Systems: A Vision for Safety," *Notice of Public Availability and Request for Comments*, Department of Transportation, National Highway Traffic Safety Administration, Docket No. NHTSA-2017-0082 https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/ads2.0_frn_08312017.pdf.

[6] Ryan Hagemann, *Comments submitted to the National Highway Traffic Safety Administration in the Matter of: Federal Automated Vehicle Policy*, Niskanen Center, Docket No. NHTSA-2016-0090, submitted November 21, 2016, p. 10, https://niskanencenter.org/wp-content/uploads/2016/11/CommentsAutonomousVehicleStandardsNHTSA.pdf.

than its predecessor. Given the tens of thousands of deaths that occur on American roads every year,[7] any effort to safely and effectively speed us towards a future of autonomous driving systems is one that safety regulators should welcome.

Response to *A Vision for Safety 2.0*

The following comments will address those provisions of the guidance document which the Niskanen Center supports, as well as areas we believe leave room for improvement. The response to the guidance will then be followed by two general recommendations for NHTSA that will strengthen the case for voluntary standards and help continue paving the way to a future of autonomous vehicles.

Voluntary Guidance Safety Elements

We are wholly supportive of the language discussing the 12 safety design elements in Section 1 of the guidance. Indeed, by limiting the scope and authority of these elements to "recommendations and suggestions for industry's consideration and discussion,"[8] it helps set a positive, innovation-friendly tone for the remainder of the document. It is encouraging to see NHTSA wholeheartedly embrace such a perspective, while explicitly acknowledging that:

> *[t]his guidance is entirely voluntary, with no compliance requirement or enforcement mechanism. The sole purpose of this Guidance is to support the industry as it develops best practices in the design, development, testing, and deployment of automated vehicle technologies.*[9]

By supporting industry efforts in this respect, NHTSA is helping to accelerate the deployment and eventual adoption of autonomous vehicle technology in the market. In this way, the Agency is doing far more to achieve its mission of saving lives and preventing injuries than it could by simply dictating standards to industry through regulatory fiat.

We are also pleased to see that this guidance avoids any attempt to impose mandatory federal cybersecurity standards on autonomous vehicles. This is an appropriate approach, and one that harmonizes with the pending legislative efforts mentioned earlier. As the Niskanen Center noted in previous comments on the original autonomous vehicle guidance policy:

> *Running headlong into establishing federal cybersecurity standards runs the risk of incentivizing technological lock-in, resulting in a "race to the bottom"—that is, with a baseline mandate from NHTSA and the FTC, manufacturers will be less inclined to invest*

[7] *See generally*, Adam Thierer and Ryan Hagemann, "Removing Roadblocks to Intelligent Vehicles and Driverless Cars," Mercatus Working Paper, Mercatus Center, September 2014, https://www.mercatus.org/system/files/Thierer-Intelligent-Vehicles.pdf.
[8] *A Vision for Safety 2.0*, p. 2.
[9] Ibid.

> *in continual improvements to security. A better alternative would be to leave standards of "reasonable security" to engineers and automakers—or delegated to the National Institute of Standards and Technology—who in turn are more likely to effectively address real, proven harms to consumers.*[10]

There are powerful reputational incentives for companies to adopt strong cybersecurity standards for their vehicles.[11] Embracing an approach that allows for competing standards to vie for market share is key to preventing technological stagnation, while ensuring consumers are better protected in the long run.

Voluntary Safety Self-Assessment

As currently crafted, the "Voluntary Safety Self-Assessment" section, like the safety design elements portion of Section 1, is entirely unobjectionable. Indeed, we offer our full support for this portion of the guidance document, and particularly commend NHTSA for noting that "entities are not required to submit" such an assessment, "nor is there any mechanism to compel entities to do so."[12] It continues:

> *While these assessments are encouraged prior to testing and deployment, NHTSA does not require that entities provide disclosures nor are they required to delay testing or deployment. Assessments are not subject to Federal approval.*[13]

We wish to cite this passage in its entirety because it is deserving of particular praise. By clearly recognizing and reiterating the limits of its authority, NHTSA has expressed a degree of humility not often seen in regulatory agencies. As such, we commend NHTSA and its staff for explicitly recognizing the boundaries of the Agency's statutory authority in this matter.

Technical Assistance to States

Avoiding a patchwork of competing and potentially contradictory state laws and regulations for autonomous vehicles is key to ensuring this technology is deployed quickly and efficiently. The rapid pace of advancements in self-driving technologies means that any such laws or regulations would

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[10] Hagemann, *Federal Automated Vehicle Policy*, p. 10.
[11] Adam Thierer and Ryan Hagemann, "Removing Roadblocks to Intelligent Vehicles and Driverless Cars," pp. 40-41. ("Manufacturers have powerful reputational incentives at stake here, which will encourage them to continuously improve the security of their systems. Companies like Chrysler and Ford are already looking into improving their telematics systems to better compartmentalize the ability of hackers to gain access to a car's controller-area-network bus. Engineers are also working to solve security vulnerabilities by utilizing two-way data-verification schemes (the same systems at work when purchasing items online with a credit card), routing software installs and updates through remote servers to check and double-check for malware, adopting of routine security protocols like encrypting files with digital signatures, and other experimental treatments.")
[12] *A Vision for Safety 2.0*, p. 16.
[13] Ibid.

quickly be outdated, adding to further complications for nationwide deployment.[14] To that end, it is appropriate that this guidance:

> *strongly encourages States not to codify this Voluntary Guidance (that is, incorporate it into State statutes) as a legal requirement for any phases of development, testing, or deployment of [automated driving systems]. Allowing NHTSA alone to regulate the safety design and performance aspects of [automated driving systems] technology will help avoid conflicting Federal and State laws and regulations that could impede deployment.*[15]

This position is well-advised, and should continue guiding the Agency's thinking on this matter. Current legislative efforts propose to codify this federal preemption in law. If passed, those statutes would sync with the language of NHTSA's regulatory guidance, creating market and regulatory certainty in an environment currently lacking surety.

We realize that in these early stages of this technology's development there are a great many regulatory questions that still need answers. Thus, we are happy that NHTSA is proactively engaged in collaboration with states and automobile associations in examining existing laws that may "unintentionally create barriers to [automated driving system] operation[s]."[16] However, we would direct the Agency's attention to one area which received a shortage of attention in this guidance: the licensing of fully autonomous vehicle "operators."

While Section 2 makes mention of this coming reality, we believe it is lacking. The guidance details suggested considerations for states that aim to permit test vehicles with fully autonomous features, but notes only the following regarding licensure of such computer "operators":

> *Fully automated vehicles are driven entirely by the vehicle itself and require no licensed human driver (SAE levels 4 and 5), at least in certain environments or under certain conditions. The entire driving operation (under specified conditions) is performed by a motor vehicle automated system from origin to destination.*[17]

Aside from this note, there is no further mention of the licensing of autonomous vehicles, and no guidance is given to states as to how such licensure may work in the future. Given the technical and legal complexities at issue here, this is understandable, and we certainly do not recommend NHTSA attempt to dictate how states make such determinations. Nor would we presume that any number of the

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[14] James M. Anderson, Nidhi Kalra, Karlyn D. Stanley, Paul Sorensen, Constantine Samaras, Oluwatobi A. Oluwatola, "Autonomous Vehicle Technology: A Guide for Policymakers," RAND Corporation, 2014, p. 139, https://www.rand.org/pubs/research_reports/RR443-2.html. ("Given the lack of demonstrated problems with autonomous or self-driving vehicle use, we think state lawmakers would be wise to refrain from passing laws or developing regulations in this area. As NHTSA noted, evolution is occurring too rapidly and there are too many uncertainties for productive regulation at this time.")

[15] *A Vision for Safety 2.0*, p. 18.

[16] Ibid., p. 19.

[17] Ibid., p. 24.

collaborative efforts the Agency is currently engaged in do not touch on this topic. However, in aiming to address potential barriers to state-level adoption of autonomous vehicles, this is an issue that will undoubtedly require the attention of regulators sooner rather than later.

While licensure has historically remained outside NHTSA's authority, the advent of autonomous vehicles raises the question of how an "operator" of an autonomous vehicle might be defined in the future. This, in turn, casts the specter of renewed calls for pre-market approval regulatory authority over software systems and code, as originally was suggested in the previous draft of this guidance.[18]

NHTSA should make clear what its current thinking is on the matter of autonomous vehicle licensure, and ought to consider including such discussions in future iterations of this guidance.

Recommendations

Although we are supportive of the current guidance, we recognize that future drafts may look different. As a result, we offer the following recommendations for guiding the Agency's thinking on this matter moving forward.

1. *Continue to reiterate the value of voluntary, non-binding, industry-led standards for autonomous vehicle research, development, testing, and deployment.*

The repeated emphasis on "voluntary guidance" and "best practices" is a welcome shift in NHTSA's approach to governing autonomous vehicle research, testing, and deployment. The Agency should continue on this steady course and avoid the hue and cry to "do something more" that may be outside the purview of its statutory mandate, such as attempting to craft privacy rules. There will undoubtedly be such calls moving forward. NHTSA should resist those demands, and continue on its current course by extolling the benefits of voluntary, industry-led best practices and standards.

2. *Embrace the principles of* The Framework for Global Electronic Commerce *already reaffirmed by the Department of Commerce.*

Last January, the Department of Commerce (DOC) released a green paper in which it reaffirmed the principles of the *Framework for Global Electronic Commerce* (hereafter, *Framework*).[19] These principles hold, in part:

> *that the private sector should lead in digital technology advancement. Even where collective action is necessary, the U.S. Government has encouraged multistakeholder approaches and private sector coordination and leadership where possible. When*

[18] Hagemann, *Federal Automated Vehicle Policy*, pp. 3-4.
[19] "Fostering the Advancement of the Internet of Things," Department of Commerce, Internet Policy Task Force and Digital Economy Leadership Team, January 12, 2017, https://www.ntia.doc.gov/files/ntia/publications/iot_green_paper_01122017.pdf.

> *governmental involvement is needed, it should support and enforce a predictable, minimalist, consistent, and simple legal environment for commerce.*[20]

The Niskanen Center noted our support for this reaffirmation in response comments to the DOC, but went further and suggested the Department advocate other federal agencies embrace these principles as well.[21] Given this guidance document already embraces the general tenets of the *Framework*, we suggest NHTSA and the Department of Transportation follow the DOC's lead and explicitly affirm their commitment to these principles.[22]

An interagency affirmation of the *Framework* would help buttress support for not only this guidance, but future versions as well. By harmonizing the regulatory disposition of NHTSA and DOC, other agencies would surely follow suit, helping to expedite the development and deployment of not only autonomous vehicles, but numerous other emerging technologies as well. NHTSA should affirm its support for the *Framework* in order to help tether its current regulatory governance approach to the certainty provided by these tried-and-true principles. If these principles could help the Internet flourish, they can certainly do the same for autonomous vehicles—and potentially many other technologies.

Conclusion

In previous comments to NHTSA, we cited a 1991 Government Accounting Office (GAO)[23] report conducted at the behest of the Senate, which examined the likelihood of autonomous technology being deployed in the coming decades. The conclusion of that report bears repeating here once again:

> *The development of automatic headway and steering might be expected to follow on the heels of the other [automatic vehicle control systems] technologies, with the fully automatic road being the fullest expression of these technologies. These are not, however, expected to be deployed earlier than 40 years from now.*[24]

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[20] Ibid., p. 11.

[21] Ryan Hagemann, *Comments submitted to the National Telecommunications Administration in the Matter of: Green Paper: Fostering the Advancement of the Internet of Things*, Niskanen Center, NTIA Docket No. 170105023-7023-01, submitted February 8, 2017, p. 4, https://www.ntia.doc.gov/files/ntia/publications/niskanencenter_commentsiotgreenpaperntia.pdf. ("Using the Framework as an intellectual basis for considering regulatory approaches to emerging technologies can be beneficial not only to DOC and NTIA, but to other agencies as well.")

[22] For more details on the *Framework for Global Electronic Commerce*, and the principles it outlines, see: Ryan Hagemann, *Comments submitted to the National Telecommunications Information Administration in the Matter of: The Benefits, Challenges, and Potential Roles for the Government in Fostering the Advancement of the Internet of Things*, Niskanen Center, Docket No. 160331306-6306-01, May 23, 2016, pp. 10-11, https://niskanencenter.org/wp-content/uploads/2016/05/NiskanenCenter_NTIA_IoT_Comments.pdf.

[23] Now the Government Accountability Office.

[24] "Smart Highways: An Assessment of Their Potential to Improve Travel," Government Accounting Office, Report to the Chairman, Subcommittee on Transportation, Committee on Appropriations, U.S. Senate, May 1991, pg. 54, http://www.gao.gov/assets/160/150579.pdf.

And as we noted in our prior conclusion, despite that GAO prediction:

> *the advent of [autonomous vehicles] became apparent less than two decades 40 after that predicted timeline. Now here we are, less than 30 years later.*
>
> *Predicting the future is a challenge—perhaps insurmountably so. This is especially true when attempting to craft rules of the road for new and disruptive technologies that could look very different just a short time later. As such, a general disposition towards regulatory forbearance would be a more ideal alternative to any of the newly proposed authorities in these guidelines.*[25]

That "general disposition towards regulatory forbearance" is precisely what NHTSA has embraced with this updated guidance. Although there are ways to strengthen the document, we nonetheless wholeheartedly support the Agency's updated language and applaud the commitment to innovation and technological progress.

We thank you for the opportunity to comment on this guidance and look forward to a constructive and fruitful dialogue on this matter.

[25] Hagemann, *Federal Automated Vehicle Policy*, p. 11.