

**Before the
OFFICE OF THE SECRETARY OF TRANSPORTATION
Washington, D.C. 20590**

)	
In the Matter of)	Docket No. DOT-OST-2018-0210
)	
Request for Comments on V2X)	83 Fed. Reg. 66,338
Communications)	
)	

**COMMENTS OF
THE COMPETITIVE ENTERPRISE INSTITUTE**

January 25, 2019

Prepared by:

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Introduction

On behalf of the Competitive Enterprise Institute (“CEI”), I respectfully submit these comments in response to the Office of the Secretary of Transportation’s (“OST”) Request for Comments: V2X Communications (“RFC”).¹

CEI is a nonprofit, nonpartisan public interest organization that focuses on regulatory policy from a pro-market perspective.² CEI previously submitted comments to the National Highway Traffic Safety Administration in response to its advance notice of proposed rulemaking (Appendix A) and notice of proposed rulemaking (Appendix B) in which we opposed a contemplated vehicle-to-vehicle, dedicated short-range communications (“DSRC”) mandate.

This comment letter responds to questions posed in the RFC, where responses are numbered to correspond to the numbered questions of the RFC.

Responses to RFC Questions

Question 2.³

In keeping with OST’s publicly pledged commitment to technology neutrality, we urge the Department to take a technology-neutral approach to the 5.9 GHz (5.850–5.925 GHz) intelligent transportation systems (“ITS”) band.

One way to achieve this outcome would be to remain neutral on possible repurposing of the ITS band for non-ITS purposes by the Federal Communications Commission—namely, permitting U-NII-4 devices to share the band with ITS devices, both DSRC and 3GPP. Another would be to keep the band ITS-exclusive, but support allowing 3GPP, also known as cellular-vehicle-to-everything (“C-V2X”), to coexist in the band with DSRC.

On the latter approach, the ITS band could be repurposed along the lines of a European spectrum-sharing proposal from the 5G Automotive Association.⁴ Here spectrum would be allocated in such a way to more closely mirror real-world marketplace decisions by developers and consumers, as opposed to previous efforts by the Department to impose a particular communications technology by administrative fiat (see Appendices A and B).

1. V2X Communications, *Request for Comments*, DOT-OST-2018-0210, 83 Fed. Reg. 66,338 (Dec. 26, 2018) [hereinafter RFC].

2. See About CEI, <https://cei.org/about-cei> (last visited Jan. 19, 2019).

3. RFC, *supra* note 1, at 66,339.

4. *Coexistence of C-V2X and ITS-G5 at 5.9GHz*, 5G AUTOMOTIVE ASSOCIATION POSITION PAPER (Apr. 5, 2018), available at <http://5gaa.org/wp-content/uploads/2018/10/Position-Paper-ITG5.pdf>.

Specifically, 30 MHz of the band could be split by allocating a preferred 10 MHz channel to each DSRC and C-V2X, with a shared 10 MHz channel in between. Detect-and-vacate or a similar rule would apply across the channels. The remaining upper 45 MHz of the ITS band would be allocated at a future date as the V2X market matures based on an evaluation of the success and failures of the respective technologies in the marketplace.

Question 6.⁵

CEI has a strong interest in highway platooning technology.⁶ While several earlier pilots relied on IEEE 802.11p/DSRC for the vehicle-to-vehicle communications link, recent research suggests “C-V2X . . . allows for shorter inter-truck distances than IEEE 802.11p due to more reliable communications performance under increasing congestion on the wireless channel caused by surrounding vehicles.”⁷

This has major operational performance implications for automated vehicle platooning and supports our position on ITS band spectrum allocation as explained above in response to Question 2.

Question 8.⁸

Platooning is required to realize many of the most significant hypothesized private and social benefits of automated vehicle technology.⁹ These include greater lane utilization, reduced congestion, travel time savings, reduced emissions, improved energy efficiency, and infrastructure investment savings.

As noted above in response to Question 6, the V2X communications technologies at issue carry a variety of important implications for automated vehicle platooning.

5. RFC, *supra* note 1, at 66,339.

6. See, e.g., Marc Scribner, *Authorizing Automated Vehicle Platooning: A Guide for State Legislators*, 2018 Edition, COMPETITIVE ENTER. INST. ISSUE ANALYSIS 1 (Jul. 2018), available at https://cei.org/sites/default/files/Marc_Scribner_-_Authorizing_Automated_Vehicle_Platooning_2018%20%281%29.pdf.

7. Vladimir Vukadinovic et al., *3GPP C-V2X and IEEE 802.11p for Vehicle-to-Vehicle communications in highway platooning scenarios*, 74 AD HOC NETWORKS 17 (May 2018).

8. RFC, *supra* note 1, at 66,339–40.

9. See, e.g., Kara Kockelman, et al., *An Assessment of Autonomous Vehicles: Traffic Impacts and Infrastructure Needs—Final Report*, TEX. DEPT. OF TRANS. FINAL REPORT 0-6847-1 (Mar. 2017), available at <https://library.ctr.utexas.edu/ctr-publications/0-6847-1.pdf>.

Conclusion

We appreciate the opportunity to submit comments to OST on this matter and look forward to further participation.

Respectfully submitted,

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APPENDIX A

**Before the
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
Washington, D.C. 20590**

In the Matter of)
)
Federal Motor Vehicle Safety Standards:) Docket No. NHTSA-2014-0022
Vehicle-to-Vehicle (V2V))
Communications)

**COMMENTS OF
THE COMPETITIVE ENTERPRISE INSTITUTE**

October 20, 2014

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Introduction

On behalf of the Competitive Enterprise Institute (“CEI”), I respectfully submit these comments in response to the National Highway Traffic Safety Administration’s (“NHTSA”) advance notice of proposed rulemaking in the matter of Federal Motor Vehicle Safety Standards: Vehicle-to-Vehicle (“V2V”) Communications (“ANPRM”).¹ CEI is a nonprofit, nonpartisan public interest organization that focuses on regulatory policy from a market-oriented perspective.²

Our comments develop the following points:

1) It was inappropriate for NHTSA to issue its ANPRM prior to the Federal Communications Commission (“FCC”) resolving the issues related to the rules governing the operation of Unlicensed National Information Infrastructure (“U-NII”) devices in the 5.9 GHz band;

2) NHTSA should consider recent developments in competing V2V technology that could more rapidly achieve many of the theoretical safety benefits of V2V; and

3) NHTSA fails to adequately consider vehicle automation technology that may greatly reduce the potential benefits of a V2V mandate.

I. NHTSA Should Yield Until the FCC Resolves the Dispute over U-NII Device Use of the 5 GHz Band

In 1997, the Intelligent Transportation Society of America (“ITS America”) petitioned the FCC to allocate 75 MHz of spectrum at 5.850–5.925 GHz for use by dedicated short-range communications (“DSRC”) systems operating in the intelligent transportation systems (“ITS”) radio service.³ In 1998, Congress ordered the FCC and secretary of transportation to consider the “spectrum needs for the operation of intelligent transportation systems, including spectrum for the dedicated short range vehicle-to-wayside wireless standard.”⁴ A proceeding was opened shortly after the bill was signed into law.⁵ In 1999, the FCC ordered that 75 MHz of spectrum at 5.850–5.925 GHz be allocated for the purposes requested by ITS America in 1997.⁶

When ITS America petitioned the FCC in 1997, there were two active DSRC services: electronic payment and commercial vehicle electronic clearance. Today, very

¹ Federal Motor Vehicle Safety Standards: Vehicle-to-Vehicle (V2V) Communications, *Advance Notice of Proposed Rulemaking*, NHTSA-2014-0022, 79 Fed. Reg. 49270 (Aug. 20, 2014) [hereinafter ANPRM].

² See About CEI, <http://cei.org/about-cei> (last visited Oct. 16, 2014).

³ Public Notice, DA 97-1106, RM 9096 (rel. May 28, 1997)

⁴ Transportation Equity Act for the 21st Century, Pub. L. 105–178, 112 Stat. 457 § 5206(f) (Jun. 9, 1998).

⁵ Dedicated Short Range Communications of Intelligent Transportation Services, *Notice of Proposed Rulemaking*, ET Docket No. 98–95, FCC 98–119, 63 Fed. Reg. 35558 (Jun. 30, 1998).

⁶ Dedicated Short Range Communications of Intelligent Transportation Services, *Final Rule*, ET Docket No. 98–95, FCC 98–119, 64 Fed. Reg. 66405 (Nov. 26, 1999).

little has changed, although proponents are again claiming (as they have claimed for nearly two decades) that more sophisticated services, such as alerting drivers to imminent hazards, are nearing consumer availability.

In May 2014, the FCC issued its final rule which, among other changes, added 25 MHz of spectrum to the U-NII-3 band, extending its upper edge from 5.825 GHz to 5.85 GHz.⁷ The FCC received six petitions for reconsideration in response to the final rule. One, filed by the Association of Global Automakers (“Global Automakers”), expresses concern that the decision to allow U-NII-3 devices to operate adjacent to DSRC devices at 5.85 GHz puts its DSRC “investments, and the critical public safety services that [intelligent transportation systems] will make available to millions of U.S. drivers, may be at substantial risk unless steps are taken to address and resolve potential harmful interference issues before it is too late.”⁸ Many proceeding participants, including Cisco Systems and the National Cable & Telecommunications Association, reject the claims of DSRC interference risk from Global Automakers and have opposed their petition for partial reconsideration.

These facts suggest NHTSA has moved with excessive haste in issuing its ANPRM in two ways. First, NHTSA knew an active proceeding at the FCC could impact the spectrum currently allocated to DSRC services. Second, if the FCC’s final rule stands and leading DSRC advocate Global Automakers is correct in worrying about harmful interference with DSRC safety services from U-NII-3 devices, then NHTSA proceeding with the presumption that DSRC services at the 5.9 GHz band are safe runs counter to the public interest. Both suggest NHTSA’s current approach to this proceeding is flawed.

II. NHTSA Should Better Consider Competing V2V Technology

For DSRC to be effective, roadside equipment (“RSE”) units would need to be installed perhaps as close as 400 meters apart. The cost of such a system, presumably publicly funded, makes it an unattractive option. After all, merely reconstructing current Interstate Highway System infrastructure to meet basic modern standards is estimated to cost in the \$600 billion–\$1 trillion range over the next 20 years.⁹ It remains to be seen how federal and state transportation agencies will pay for new DSRC RSE units, as current revenue sources are proving inadequate for basic infrastructure maintenance and reconstruction.

One potential alternative to DSRC V2V connection is cellular. NHTSA does contemplate this alternative, although it does not mention recent advancements in Long-Term Evolution (“LTE”) cellular services that may be able to offer more rapidly

⁷ Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, *Final Rule*, ET Docket No. 13–49, FCC 14–30, 79 Fed. Reg. 24569 (May 1, 2014).

⁸ Petition for Partial Reconsideration from the Association of Global Automakers, ET Docket No. 13–49, FCC 14–30 (May 1, 2014), at iv.

⁹ Robert W. Poole, Jr., *Interstate 2.0: Modernizing the Interstate Highway System via Toll Finance*, REASON FOUNDATION POLICY STUDY 433 (Sep. 2013), available at http://reason.org/files/modernizing_interstates_toll_finance.pdf.

deployable V2V systems at lower costs. For instance, Nokia earlier this year announced its Liquid Applications LTE network system. This would rely on edge computing to transform, in Nokia's words, "a regular LTE base station into a roadside unit for vehicle-to-infrastructure (V2I) communications."¹⁰

Furthermore, harnessing existing wireless networks will not only reduce costs, it will harness the superior expertise of the wireless industry. As Roger Lancot of Strategy Analytics notes, "The U.S. Department of Transportation needs to take a closer look at wireless phones as a means for achieving communications between vehicles or between vehicles and their drivers and infrastructure. Mandating a module is a dead end deal."¹¹

NHTSA should be aware that selecting a single communications standard, particularly one that relies on expensive new infrastructure, risks locking in first-generation technology for the long-run. Markets tend to be quite adept to the selection of standards while still allowing innovative competitors to unseat the standards of an incumbent.¹² If innovation renders this technology obsolete, it will be extremely difficult for new competitors offering superior traffic safety technologies to gain entry to a V2V market defined by rigid technical regulations. For this reason, NHTSA should reject a DSRC mandate.

III. NHTSA Should Consider the Impact of Forced V2V on Vehicle Automation Systems

In the ANPRM's Question 56, NHTSA asks,

Self-driving vehicles have the potential to dramatically reduce motor vehicle collisions. Even though these vehicles do not exist for sale to the public, how should we take account of this in evaluating the potential safety benefits of V2V? Is V2V an essential input into developing a viable self-driving car, an alternative technology that might compete with or discourage development of self-driving vehicles, or a complementary technology that can enable self-driving vehicles over time? Please explain why or why not.¹³

Advanced vehicle automation systems developers, including Google and Bosch, are developing their prototypes in a manner that does not assume widespread connected vehicle technology. Such systems use onboard sensors and computers to map the surrounding world in real-time and to make direction decisions. Google, for instance,

¹⁰ Dirk Lindemeier, *LTE edge computing advances Connected Car road hazard alerts*, NOKIA NETWORKS BLOG (Sep. 10, 2014), available at <http://blog.networks.nokia.com/mobile-networks/2014/09/10/lte-edge-computing-advances-connected-car-road-hazard-alerts/>.

¹¹ Roger Lancot, *V2V Stops Here - No Module Mandate Needed*, STRATEGY ANALYTICS BLOG (Aug. 20, 2014), available at <http://blogs.strategyanalytics.com/AES/post/2014/08/20/Vehicle-to-vehicle-communication-and-a-lot-more-can-be-achieved-without-a-module-mandate.aspx>.

¹² Stan J. Liebowitz and Stephen E. Margolis, *Market processes and the selection of standards*, 9 HARV. J.L. & TECH. 2 (1996), at 283-318.

¹³ ANPRM, *supra* note 1, at 49275.

recently announced a fully self-driving prototype, where a human operator has no ability to retake manual control at any point.¹⁴

A number of vehicle automation scholars such as Princeton University professor Alain Kornhauser doubt a V2V mandate will provide long-run benefits vis-à-vis rapidly advancing automated vehicle development. He notes:

Unfortunately, the mandated V2V architecture is likely to be obsolete before the entire fleet is equipped. Autonomous collision avoidance needs to be clearly prioritized ahead of V2V. Its safety implications accrue entirely to the vehicle on which the system is equipped. As long as the system remains turned on and functioning it reduces the probability of this vehicle being the cause of an accident. This is true for the first vehicle so equipped as well as the last of the fleet.¹⁵

One specific potential worry that a V2V mandate spawns in the context of automated vehicles relates to how the two systems might interact with one another. If the primary purpose of V2V, as NHTSA appears to express it in this ANPRM, is to alert drivers to hazards, how will automated systems interpret such warnings?

If both are required under a new Federal Motor Vehicle Safety Standard to interact with one another, then large and as yet un contemplated cybersecurity, crash, and products liability risks are generated. Spoofing an audible or visual alert when a human driver still bears full responsibility for the core driving tasks presents a minimal crash risk; the risk is much more substantial if an automated vehicle system must somehow interpret transmitted messages and then direct the core driving functions based on the V2V data received.

But if such systems would be completely separated under a proposed rule, the best case scenario for a fully automated vehicle under a V2V mandate aimed at generating driver warnings is that the automaker would be required to install completely useless technology—translating to zero benefits and some non-trivial costs, which would certainly fail a basic benefit-cost analysis. After all, what good is an advanced collision audible warning if a driver has no ability to take manual control of the vehicle in response?

None of this is to say that V2V or V2I is without value in the context of automated vehicles. Indeed, cooperative automated systems that utilize V2X networks for purposes such as high-speed vehicle platooning offer some of the most promising potential benefits of automated systems. But mandating early V2V technology in a manner that negatively impacts automated vehicle development will harm both V2X and vehicle automation in the long-run.

¹⁴ Alistair Barr, *For Google's Self-Driving Cars, It's a Bumpy Trip*, THE WALL STREET JOURNAL (Aug. 24, 2014), available at <http://online.wsj.com/articles/for-googles-self-driving-cars-its-a-bumpy-trip-1408921031>.

¹⁵ Alain Kornhauser, *Summary of the Testimony by the Witnesses* (Nov. 19, 2013), available at http://orfe.princeton.edu/~alaink/SmartDrivingCars/HouseHearing_119113/SummaryOfTestimony_HouseHearing_111913.pdf.

Conclusion

For these reasons, we urge NHTSA to reconsider its current approach and appreciate the harm it is capable of doing in the intelligent vehicle space through a misguided V2V mandate.

Respectfully Submitted,

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APPENDIX B

**Before the
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
Washington, D.C. 20590**

In the Matter of)	
)	Docket No. NHTSA-2016-0126
Federal Motor Vehicle Safety Standards;)	
V2V Communications)	82 Fed. Reg. 3854
)	
)	

**COMMENTS OF
THE COMPETITIVE ENTERPRISE INSTITUTE**

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Introduction

On behalf of the Competitive Enterprise Institute (“CEI”), I respectfully submit these comments in response to the National Highway Traffic Safety Administration’s (“NHTSA”) Notice of Proposed Rulemaking regarding Federal Motor Vehicle Safety Standards; V2V Communications (“NPRM”).¹ CEI is a nonprofit, nonpartisan public interest organization that focuses on regulatory policy from a pro-market perspective.² CEI previously submitted comments in response to NHTSA’s 2014 Advance Notice of Proposed Rulemaking regarding Federal Motor Vehicle Safety Standards; Vehicle-to-Vehicle (V2V) Communications.³

Our comments develop the following points:

1. NHTSA fails to adequately consider technology alternatives to Dedicated Short Range Communications (“DSRC”);
2. Secure Credential Management System (“SCMS”) issues remain unresolved;
3. Requiring owner consent for each V2V software update undermines the potential safety benefits of the mandate; and
4. NHTSA fails to adequately consider interactions with vehicle automation technologies.

I. NHTSA Fails to Adequately Consider Technology Alternatives to a DSRC Road Side Equipment Network

To NHTSA’s credit, it does accept the possibility that alternative V2V technologies in the future will outperform DSRC and that alternative compliance with non-DSRC V2V technologies will be permitted provided the alternatives are interoperable with DSRC.⁴ However, NHTSA’s currently contemplated V2V-DSRC approach remains flawed.

NHTSA’s “two-radio” DSRC-exclusive approach would rely extensively on roadside equipment (“RSE”) to provide connectivity to the SCMS.⁵ NHTSA estimates nearly 20,000 RSEs would need to be deployed throughout the National Highway System to provide secure nationwide V2V connectivity.⁶ NHTSA then compares estimated future costs of a two-radio DSRC-exclusive approach with a hybrid “one-radio” approach that would harness existing communications technologies such as cellular and Wi-Fi.

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1. Federal Motor Vehicle Safety Standards; V2V Communications, *Notice of Proposed Rulemaking*, Docket No. NHTSA–2016–0126, 82 Fed. Reg. 3854 (Jan. 12, 2017) [hereinafter NPRM].
 2. *See* About CEI, <https://cei.org/about-cei> (last visited Apr. 2, 2017).
 3. Comments of the Competitive Enterprise Institute in the Matter of Federal Motor Vehicle Safety Standards; Vehicle-to-Vehicle (V2V) Communications, *Advance Notice of Proposed Rulemaking*, Docket No. NHTSA–2014–0022, 79 Fed. Reg. 49270 (Aug. 20, 2014), *available at* <https://www.regulations.gov/document?D=NHTSA-2014-0022-0662>.
 4. NPRM, *supra* note 1, at 3896–3897, 4018.
 5. *Id.* at 3969.
 6. *Id.* at 3975.

Yet in considering these costs, NHTSA fails to distinguish between public and private costs. Under the two-radio approach, federal and state funding would need to be provided to deploy a nationwide RSE infrastructure network. In contrast, the one-radio approach would harness existing private infrastructure networks and require private providers and users to bear the costs of V2V.

At a time where state and local transportation infrastructure facilities face large maintenance backlogs, approaching reconstruction needs, and uncertain funding, NHTSA's failure to adequately consider fiscal burdens in its analysis of alternatives is troubling. Further, questions remain as to NHTSA's authority to even regulate the public RSE network.⁷

Finally, the timeframe NHTSA estimates a V2V rollout under the mandate is surprisingly similar to many industry estimates of the rollout of 5G cellular technology.⁸ With 5G cellular, many of the concerns of latency and capacity with existing 4G cellular networks is mitigated.⁹ The deployment of 5G would rely on private infrastructure upgrades of existing cellular networks rather than assume public funds will be made available for the creation of a new RSE network.

For these reasons, NHTSA should better consider superior, less costly alternatives to a DSRC-centric V2V mandate.

II. SCMS Issues Remain Unresolved

As NHTSA notes in the NPRM, it “has included no regulatory text for SCMS-based message authentication and instead has a bracketed [sic] placeholder for where it would be if this were to be part of a final rule.”¹⁰ The agency then goes on to say, “NHTSA strongly believes in the need for cybersecurity, which is essential to the public acceptance of increasingly computerized vehicle systems, to the safety technology they govern, and to the realization of the safety-enhancement potential they offer.”¹¹

Despite the years of work by NHTSA and industry groups attempting to address cybersecurity and privacy concerns by way of SCMS-style basic safety message authentication, it still has not determined what such a system would look like or even who would operate and maintain it.¹² Further, the discussion of the issues involved is so

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7. See 49 U.S.C. § 105(c)(1), which limits NHTSA's authority over certain aspects of highway safety, including over the traffic control devices to which some RSEs would connect.
 8. See, e.g., IHS Economics and HIS Technology, *The 5G economy: How 5G technology will contribute to the global economy* (Jan. 2017), available at <https://www.qualcomm.com/invention/5g/economy>. A study commissioned by Qualcomm projects widespread 5G deployment will begin in 2020, the same year NHTSA's proposed V2V mandate would begin its phase-in with model year 2021 light-duty vehicles.
 9. *Id.* See also Roger Lanctot, *The Fastest Route to V2V*, STRATEGY ANALYTICS BLOGS (Nov. 7, 2016), <https://www.strategyanalytics.com/strategy-analytics/blogs/infotainment-telematics/2016/11/07/the-fastest-route-to-v2v>.
 10. NPRM, *supra* note 1, at 3911.
 11. *Id.* at 3915.
 12. See, e.g., Comments of Secure/Set in the Matter of Federal Motor Vehicle Safety Standards; V2V Communications, *Notice of Proposed Rulemaking*, Docket No. NHTSA-2016-0126, 82 Fed. Reg.

broad and vague that NHTSA even entertains the possibility of not requiring message authentication at all.¹³

If cybersecurity protections are “essential,” as NHTSA alternatively claims, to the operation and public acceptance of the technologies at issue, it should not proceed with a rulemaking until it answers these critically important questions—and proposes regulatory text subject to notice-and-comment.

It is highly unusual for an agency to fail to include proposed regulatory language in its NPRM, as the Administrative Procedure Act as interpreted by the courts requires that a final rule follow a “logical outgrowth” from the proposed rule.¹⁴ As a commentator noted with regard to another recent proposed rule that omitted regulatory text, “‘Outgrowth’ implies something to grow out of. The public cannot be asked to ‘divine’ the agency’s ‘unspoken thoughts.’ And words matter. Specific word choices, and even the placement of a comma, can make a significant difference in how a regulation is interpreted and applied by the [agency] itself and federal courts.”¹⁵

The issue of whether or not mere vague discussion of the issues involved is sufficient to satisfy the “logical outgrowth” test has not yet been decided by the courts. At the very least, NHTSA should issue a supplemental notice of proposed rulemaking as soon as it develops the proposed SCMS regulatory text, as the inclusion of such language would constitute a substantive change to the NPRM and the public deserves the opportunity to comment.

III. Requiring Owner Consent for Each V2V Software Update Undermines the Potential Safety Benefits of the Mandate

NHTSA concedes it lacks the legal authority to require consumers to update V2V device software and security certificates.¹⁶ Further, it notes that “V2V will not work if they are out of certificates or in need of some other kind of update.”¹⁷ NHTSA proposes that manufacturers provide telltale lamps or messages to alert consumers that the V2V system has malfunctioned or is disabled.¹⁸

Yet, the agency does not contemplate consumer responses to these telltales or messages. For instance, the Car Care Council recently estimated that “[n]early one out of

3854 (Jan. 12, 2017), at 12, available at <https://www.regulations.gov/document?D=NHTSA-2016-0126-0117>.

13. NPRM, *supra* note 1, at 3917.

14. *See, e.g.*, *Fertilizer Inst. v. EPA*, 935 F.2d 1303, 1311 (D.C. Cir. 1991). *See also* Phillip M. Kannan, *The Logical Outgrowth Doctrine in Rulemaking*, 48 ADMIN. L. REV. 213 (1996).

15. Tammy D. McCutchen, *Working on Overtime: The U.S. Department of Labor’s Proposal to Revise the Overtime Exemption Regulations*, 16 ENGAGE 3 at 70 (Oct. 2015) (citations omitted).

16. NPRM, *supra* note 1, at 3958.

17. *Id.*

18. *Id.* at 4016.

10 vehicles had the check engine light on.”¹⁹ As consumers have become accustomed to excessive automated warnings displayed in their vehicles, many appear to have discounted the warnings altogether.

It can be reasonably anticipated that consumers will respond to a V2V failure telltale or message in a fashion similar to their present response to “check engine” telltales. This should be particularly concerning to NHTSA as informed consumers will know that the safety benefits of V2V, and thus the costs of nonfunctioning V2V devices, are projected to be trivial in the initial deployment years. Perceived privacy and cybersecurity risks on the part of consumers would amplify this effect.

If consumers do behave in this manner, NHTSA’s projected benefits of V2V should be significantly reduced. The agency spills a significant amount of ink discussing misbehavior rates, but very little on what could be termed “apathy rates.” NHTSA should address this major omission before proceeding with a final rule.

IV. NHTSA Fails to Adequately Consider Interactions with Vehicle Automation Technologies

CEI appreciates NHTSA addressing our earlier comments in response to the 2014 advance notice of proposed rulemaking.²⁰ However, NHTSA’s consideration of the interplay between vehicle automation systems and the proposed V2V mandate remains lacking.

First, NHTSA does not resolve cybersecurity concerns stemming from the interaction between vehicle automation systems and forced V2V connectivity.²¹ As is noted above, it is inappropriate for NHTSA to proceed with a rulemaking until SCMS issues are resolved. This is especially important with respect to potential interactions between forced V2V and vehicle automation systems, where the risk of catastrophic incidents that result from misbehavior is significantly greater relative to forced V2V without vehicle automation systems.

Second, automated vehicle developers continue to express little interest in forced V2V.²² Even the strongest automaker supporters of the V2V mandate are currently developing automated vehicle prototypes without V2V connectivity.²³ Many in this

19. Car Care Council, “Car Care Events Reveal Need for Increased Maintenance,” Car Care Council website (Mar. 21, 2012), <http://www.carcare.org/car-care-events-reveal-need-for-increased-maintenance/>.

20. NPRM, *supra* note 1, at 3866. *See also* Comments of the Competitive Enterprise Institute in the Matter of Federal Motor Vehicle Safety Standards; Vehicle-to-Vehicle (V2V) Communications, *supra* note 3.

21. *See, e.g.*, Comments of Robert Bosch LLC in the Matter of Federal Motor Vehicle Safety Standards; Vehicle-to-Vehicle (V2V) Communications, *Advance Notice of Proposed Rulemaking*, Docket No. NHTSA–2014–0022, 79 Fed. Reg. 49270 (Aug. 20, 2014), *available at* <https://www.regulations.gov/document?D=NHTSA-2014-0022-0775>.

22. *See, e.g.*, Waymo, “Technology,” Waymo website (last accessed Mar. 28, 2017), <https://waymo.com/tech/>.

23. For instance, General Motors’ Chevrolet Bolt EV automated vehicle prototype does not rely on V2V connectivity.

emerging industry are outright hostile to NHTSA's proposed rule and have expressed the same concerns regarding the obsolescence of DSRC and the cybersecurity and innovation risks posed by a V2V mandate as many did in 2014.²⁴

Finally, forced V2V will at best serve as a distraction for automated vehicle developers. NHTSA's proposed rule repeatedly hedges its discussion of V2V technology and its benefits with words such as "potential" and "promising." As Princeton University's Alain Kornhauser has noted:

One must always be well aware of the caveats! Here the caveats are "potential" and "fully deployed": Potential implies that vehicles don't already have Automated Collision Avoidance (ACA) systems that work (aka 'Safe-driving Cars'). If they do, the potential incremental reduction of crashes that this proposed rule would have is a small fraction of what is claimed above. Moreover, an infinitesimally small portion of what is already a small fraction can't be achieved until there is substantial deployment. V2V only avoids crashes between vehicles that both have the mandated technology. That means that the chances that V2V can play a part is the product of the probability that vehicle A has it and the probability that vehicle B has the technology. It isn't until 70% of the vehicles on the road have the technology that there is even a 'Coin flip's' chance that V2V could play any part in avoiding a crash ($0.7 \times 0.7 = 0.49!$) That level of penetration isn't going to happen for at least 25 years given that there is no "retrofit" requirement.

At 33% deployed (which might be achieved in 10-15 years), V2V is only 10% effective at potentially avoiding crashes that haven't already been avoided by ACA.... Essentially no value is achieved until we've been really successful at deployment/adoption and what's been adopted/deployed actually works.²⁵

Given these uncomfortable realities, it is unsurprising that NHTSA would frame its discussion of V2V benefits with a significant degree of uncertainty. It also suggests that NHTSA's approach in this proceeding is fundamentally misguided.

Conclusion

CEI appreciates the opportunity to comment on the NPRM. For the reasons above, we urge NHTSA to withdraw its proposed V2V rule.

Respectfully Submitted,

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Competitive Enterprise Institute

24. Michaela Ross, *Regulatory Chill May Pivot Connected Vehicle Tech's Course*, BLOOMBERG BNA (Feb. 8, 2017), <https://www.bna.com/regulatory-chill-may-n57982083525/>.

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