



SUBMITTED ELECTRONICALLY

November 28, 2018

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, D.C. 20554

Re: FCC Office of Engineering and Technology Requests Comment on Phase I Testing of Prototype U-NII-4 Devices, ET Docket No. 13-49, (October 29, 2018)

Dear Ms. Dortch:

The Alliance of Automobile Manufacturers (“Auto Alliance” or “Alliance”)¹ is pleased to submit this letter in response to the Federal Communications Commission (FCC) Office of Engineering and Technology’s (OET) request for comment on their report for Phase I of tests performed to evaluate potential sharing solutions between the proposed Unlicensed National Information Infrastructure (U-NII) devices and Dedicated Short Range Communications (DSRC) operations in the 5850-5925 MHz (U-NII-4) frequency band. The FCC allocated the 5.850-5.925 GHz band for intelligent transportation systems, and it is commonly referred to as the 5.9 GHz spectrum band.

In 2015, recognizing the demand for spectrum resources and the importance of protecting transportation safety applications operating in the 5.9 GHz band, Senator John Thune, Chairman of the Senate Committee on Commerce, Science, and Transportation, spearheaded a letter² to the heads of the FCC, United States (“U.S.”) Department of Commerce (DOC), and U.S. Department of Transportation (DOT) urging them to collaborate to determine the possibility of allowing unlicensed operations in the 5.9 GHz band. Chairman Thune and his colleagues encouraged these respective agencies to work together to facilitate the testing of various sharing proposals in the band, and outlined a set of principles and goals to fairly administer the testing. In conjunction with Chairman Thune’s letter, a diverse cross-section of industries with strong interest in the 5.9 GHz spectrum band, including the Alliance, Association of Global Automakers, Intelstat, Qualcomm, SES, and the National Cable and Telecommunications Association (NCTA), submitted their own letter³ to the three agencies in support of the same recommendations.

¹ The Auto Alliance is the leading advocacy group for the auto industry. Its members include BMW Group, FCA US LLC, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of America and Volvo Cars North America, and represent approximately 70 percent of all car and light truck sales in the United States. For further details, see <http://www.autoalliance.org/>.

² Letter from Senators John Thune, Cory A. Booker, and Marco Rubio to Anthony Foxx, Secretary, U.S. DOT, Penny Pritzker, Secretary U.S. Department of Commerce, and Tom Wheeler, Chairman, FCC (September 9, 2015).

³ Letter from the Alliance, Association of Global Automakers, Intelstat, National Cable and Telecommunications Association, Qualcomm, and SES to Anthony Foxx, Secretary, U.S. DOT, Penny Pritzker, Secretary U.S. Department of Commerce, and Tom Wheeler, Chairman, FCC (September 9, 2015).

As a result, on June 1, 2016, the FCC issued a public notice⁴ proposing three interdependent phases of a test program to assess the potential compatibility between proposed U-NII-4 and emerging DSRC networks operating in the band utilizing two sharing proposals, “detect and vacate” and “re-channelization” interference mitigation strategies. Phase I testing would occur in a laboratory environment to determine the technical characteristics of prototype unlicensed devices and how they are designed to avoid causing harmful interference to DSRC. Phase II would involve basic field tests with a few vehicles at a DOT facility to help determine whether the techniques to avoid interference to DSRC that were evaluated in Phase I’s laboratory tests are effective in the field. Lastly, Phase III testing would involve tests with many more vehicles, more test devices, and real-world scenarios at a suitable facility. FCC’s public notice invited submittal of prototype devices to the OET Laboratory for use in the Phase I testing. The Alliance and other stakeholders provided prototype devices to evaluate the “detect and vacate” proposal.

This three-phase collaborative test program involving the FCC, U.S. DOT and the National Telecommunications and Information Administration (NTIA) to explore sharing in the 5.9 GHz spectrum band with unlicensed devices is interdependent, and all three phases are necessary to determine the viability of allowing unlicensed devices to share the spectrum in the 5.9 GHz band with the incumbent designated uses supporting automotive safety. Each phase of testing relies on the other phases to provide requisite data needed for meaningful comparison and evaluation, and to determine how best to proceed with interference-avoidance and allocation of spectrum use rights in the 5.9 GHz band. Also, the introduction of new technologies since the 2016 FCC announcement of the three-phase test plan does not lessen the necessity to complete each phase. Therefore, it is essential that the FCC continue its three-phase testing plan. All three phases are necessary to show whether unlicensed devices can safely operate in the 5.9 GHz spectrum band without harmful interference to incumbent technologies that support automotive safety. The principles and goals strongly urged by the Senate letter, agreed upon by the FCC, DOT, and DOC, and endorsed by automotive and telecommunications stakeholders, unlicensed spectrum advocates and technology companies, can be achieved only with the completion of all phases of testing.

While the findings in OET’s Phase I testing report stipulate that both sharing proposals (detect and vacate and re-channelization) are able – in a limited laboratory testing setting – to successfully detect a DSRC signal and implement post detection steps as initially proposed, OET notes that Phase I investigated the feasibility of the two proposed interference mitigation strategies in a *controlled* laboratory environment and *not* in an outdoor setup representing real life scenarios.⁵ Additionally, OET observed that re-channelization affords a higher probability of transmission to DSRC devices during co-channel operation, and that there are also potential risks of interference during adjacent channel operation for both sharing proposals.⁶ Potential decisions regarding lifesaving safety capabilities are at stake based on this incomplete three-phase testing process. We strongly oppose the FCC relying only on limited phase I laboratory test results for decision making in its proceeding on unlicensed use in the 5.9 GHz band. Until the joint FCC, DOT and NTIA testing under phase II and phase III is completed, it would be premature to make a judgment about reallocating this safety-critical

⁴ See The Commission Seeks to Update and Refresh the Record in the “Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band” Proceeding, ET Docket No. 13-49, Public Notice, FCC 16-68 (June 1, 2016). See also, Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, Notice of Proposed Rulemaking, 28 FCC Rcd 1769 (2013).

⁵ Laboratory Division of the FCC Office of Engineering and Technology, *Phase I Testing of Prototype U-NII-4 Devices*, Report: TR 17-1006 (October 22, 2018), Page 94.

⁶ *Id.* at 94-95, 97.

spectrum. The Alliance strongly encourages the Commission to complete its three-phase test plan to gather data from field testing and real-world scenarios to determine whether sharing within the spectrum band will cause harmful interference to incumbent uses and technologies that support automotive safety.

Additionally, we felt it was important to emphasize the actions being taken by some organizations despite the unified effort that was set in motion by industry partners and your respective departments back in 2015. Attached you will find the joint letters that were sent both from Congressional leaders and industry stakeholders (including NCTA) – which set in motion the FCC’s Phase I testing of prototype devices to evaluate potential sharing within the 5.9 GHz spectrum band. Although previously supportive of the three-phase testing plan, in a recent filing⁷, the NCTA recently did an about-face and urged the FCC to reallocate the 5.9 GHz band for unlicensed Wi-Fi operations. In response to NCTA’s filing, the Alliance and a coalition of six other organizations committed to preserving the 5.9 GHz band for transportation safety applications, released a joint statement⁸ underscoring the important public safety benefits and investments that have been made in the band. In particular, we stressed the following risks with any suggestion that the 5.9 GHz spectrum should be reallocated for commercial purposes:

“With 37,133 deaths on U.S. roadways last year alone, we must take every opportunity to save the lives of road users. Connected vehicle technologies offer the U.S. a powerful set of tools to save lives, but only if these technologies are given the ability to progress. We support protecting the entire 5.9 GHz band for transportation safety applications. Any unlicensed use in the band should be done without harmful interference to the incumbent technology or other intelligent transportation systems technologies.”

In an October 24, 2018 public statement,⁹ the U.S. DOT expressed that preserving the 5.9 GHz band for transportation communications is essential to public safety today and in the future. According to the U.S. DOT, more than 70 active deployments of vehicle-to-everything (V2X) communications with thousands of vehicles are already on the road, and this technology has the potential to improve infrastructure, safety, and efficiency as the Department works to make road travel and future transportation significantly safer. Today, more than 30 states have active connected vehicle deployments with over 70,000 vehicles and over 65,000 other devices.¹⁰ These deployments have been enabled by investments by states and cities, infrastructure owners and operators, and vehicle manufacturers. All of those existing investments rely on the availability of the 5.9 GHz spectrum band to operate.

The U.S. taxpayer and the automotive industry have spent several hundreds of millions of dollars to research, test, and develop V2X technologies that can provide significant public safety benefits, all in reliance on the FCC’s allocation of the 5.9 GHz band for transportation safety applications. Together, their investments total over a billion dollars. Additionally, deployments of hundreds of millions of dollars are occurring today in many states and funded by state taxpayers to implement infrastructure to

⁷ Letter from Rick Chessen, Chief Legal Officer, NCTA, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 13-49 (filed October 16, 2018).

⁸ <https://autoalliance.org/2018/10/24/multi-stakeholder-statement-preserving-5-9ghz-band/>

⁹ <https://www.nhtsa.gov/press-releases/us-department-transportations-national-highway-traffic-safety-administration-issues>

¹⁰ Belcher, S., Merlis, E., McNew, J., & Wright, M., *Roadmap to Vehicle Connectivity*. (September 2018). SFB Consulting. p. 25.

enable V2X systems. For example, the U.S. DOT has invested \$45 million to initiate connected vehicle pilot deployment programs in New York City, Wyoming, and Tampa, Florida.¹¹ In 2017, the three sites began a 20-month phase of the project, to design, build, and test connected vehicle technologies and applications for various purposes, including improving monitoring and reporting of road conditions, providing vehicle-to-vehicle and vehicle-to-infrastructure safety messaging, addressing urban congestion, reducing collisions, and preventing wrong way entry. Subsequently, New York City has pledged to invest an additional \$5 million into its connected vehicle pilot program. The University of Michigan Transportation Research Institute in Ann Arbor, Michigan recently secured private funding to continue to deploy V2X technology and infrastructure throughout the city.¹² The Colorado Department of Transportation committed \$20 million for its RoadX program, which deploys both DSRC and cellular-based transportation safety applications to improve congestion and infrastructure challenges.¹³ In April 2018, Toyota announced that it would deploy DSRC in vehicles for sale in the U.S. beginning in 2021.¹⁴ General Motors deployed DSRC in its 2017 Cadillac CTS vehicles, and this year announced that it would offer V2X communications in a high-volume Cadillac crossover vehicle by 2023 and extend the technology to the entire Cadillac portfolio thereafter.¹⁵ These, and other ongoing investments in the safety of our nation's roadways, would be wasted and significantly hampered if the FCC reallocates the 5.9 GHz spectrum band for unlicensed use.

Connected vehicle and infrastructure technologies hold great promise to provide economic, environmental, and societal benefits, such as reduced crashes, decreased congestion and fuel consumption, and increased access for the elderly and disabled. These technologies support safer and more efficient transportation systems throughout our nation. But, these technologies could be severely undermined and potentially extinguished by harmful interference from unlicensed use in the 5.9 GHz spectrum band. The Alliance strongly urges the FCC not to reallocate spectrum and not to allow unlicensed devices to operate in the 5.9 GHz band until: (i) all three phases of its test plan are completed, and (ii) the results clearly indicate that sharing can occur without harmful interference to the incumbent technologies or other intelligent transportation systems technologies.

Sincerely,



Robert Strassburger
Vice President
Vehicle Safety & Harmonization

Enclosure: Multi-stakeholder statement in response to NCTA's filing with the FCC (Oct. 24, 2018)
Letter from Senator John Thune to FCC, DOC, and DOT (Sep. 9, 2015)

¹¹ <https://www.its.dot.gov/pilots/index.htm>

¹² See Belcher at 28.

¹³ <https://www.codot.gov/programs/roadx>

¹⁴ <https://corporatenews.pressroom.toyota.com/releases/toyota+and+lexus+to+launch+technology+connect+vehicles+infrastructure+in+u+s+2021.htm>

¹⁵ <https://ecfsapi.fcc.gov/file/107132653414467/GM%20Ex%20Parte%20Letter%20ET%20Docket%20No.%2013-49.pdf>

Multi-stakeholder letter to FCC, DOC and DOT (Sep. 9, 2015)

Cc: Ajit Pai, FCC Chairman
Elaine Chao, DOT Secretary
Wilbur Ross, DOC Secretary
Heidi King, NHTSA Deputy Administrator
Jessica Rosenworcel, FCC Commissioner
Michael O’Rielly, FCC Commissioner
Brendan Carr, FCC Commissioner
David Redl, NTIA Administrator
U.S. Senator John Thune, Chairman Senate Committee on Commerce, Science, and
Transportation
U.S. Senator Bill Nelson, Ranking Member, Senate Committee on Commerce, Science, and
Transportation
Representative Greg Walden, Chairman House Energy and Commerce Committee
Representative Frank Pallone, Ranking Member House Energy and Commerce Committee
U.S. Senator Marco Rubio
U.S. Senator Cory Booker