

September 5, 2017

Ex Parte

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *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

Dear Ms. Dortch:

On June 28, 2017, the Association of Global Automakers (AGA) submitted a letter concerning several open questions relating to the 5.9 GHz proceeding and the use of Dedicated Short Range Communications (DSRC) technology for vehicle-to-vehicle (V2V) communications.¹ As detailed below, AGA's responses underscore how the ecosystem planned by DSRC proponents would use spectrum resources inefficiently, use valuable mid-band spectrum to replicate existing commercial services, and operate without meaningful international harmonization. With challenges this serious still unresolved after twenty years, even important elements of the automotive industry have begun to question the utility of DSRC. The 5.9 GHz band has been underused for far too long, and the Commission should move forward with opening it to Wi-Fi technologies that will begin creating value immediately.

I. The Society of Automotive Engineers (SAE) proposal to spread future DSRC safety services across the 5.9 GHz band is an inefficient spectrum-warehousing effort aimed at preserving channels for non-safety uses.

Having received access to 75 megahertz of spectrum without a meaningful sharing mandate or build-out requirements, DSRC proponents have never had an economic incentive to use spectrum efficiently. It is no surprise, then, that AGA proposes using the 5.9 GHz band in an inefficient manner that appears to be geared more to protect their access to the band than to use the spectrum intensively. AGA and other DSRC proponents assert that the FCC should consider the entire band as safety-related because DSRC licensees could spread a thin layer of safety uses on top of every channel, including those primarily used for non-safety operations, without regard to efficiency.²

¹ Letter from Scott D. Delacourt, Counsel to Association of Global Automakers, to Nicholas Degani, Senior Counsel, Office of Chairman Pai, ET Docket No. 13-49 (filed June 28, 2017) (AGA Ex Parte).

² *Id.* at 1.

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In an environment where mid-band spectrum resources are both limited and increasingly valuable thanks to new technological advancements, there are several reasons that the Commission should not accept this gambit. First, there is little reason to believe that most of the “less mature” services and message types that AGA lists will ever come to market.³ After twenty years of development, only the Basic Safety Message (BSM) has received any meaningful real-world testing, and even this service is commercially available in only one vehicle model produced by one manufacturer. Furthermore, even the Department of Transportation’s (DOT) undetermined-status NPRM would mandate only the use of the BSM on one 10 megahertz channel, not any of the “less mature” services on which AGA’s strategy depends.⁴ Second, many applications proposed for the non-BSM “safety messages” AGA describes have little to do with safety and are already provided by other technologies. For example, the University of Michigan has identified weather alerts, border wait time messages, and fuel station pricing messages as future operations using the Traveler Information Message that may someday be transmitted in the 5.9 GHz band.⁵ But consumers receive these services today via already-deployed, ubiquitous, dynamic mobile broadband connections that do not require the Commission to continue to set aside 75 megahertz for the use of this one specific technology.⁶ And in the time it would take for still-developing DSRC applications to become widespread, the market-driven wireless and mobile apps sectors will have innovated and improved upon the applications available today. Third, although AGA asserts that six of the seven DSRC channels will *all* be “primarily” used for safety, they make no effort to square that claim with their extensive plans for commercial DSRC operations, which are discussed in more detail below.⁷

³ Letter from Andre Welch, Manager of Advanced Safety Rulemakings and Policy, Ford Motor Company, to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 13-49 (filed April 21, 2017).

⁴ Automakers have been unwilling to commit to implementing DSRC if DOT does not require them to do so. *See id.* at 2.

⁵ Letter from Huei Peng, Director, University of Michigan Mobility Transformation Center, to Tom Wheeler, Chairman, Federal Communications Commission, ET Docket No. 13-49, at Appendix II (filed July 5, 2016).

⁶ For example, a variety of apps for iPhone enable weather alerts targeted to a user’s location, and apps like GasBuddy enable users to see fuel prices nearby. *See* John Patrick Pullen, *These Are the Best Weather Apps for Your iPhone*, TIME (Feb. 27, 2015), <http://time.com/3725092/iphone-weather-apps/>; GASBUDDY, <https://www.gasbuddy.com/> (last visited Aug. 31, 2017).

⁷ AGA Ex Parte, Attachment at 1.

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II. DSRC proponents plan non-safety commercial uses for the 5.9 GHz band—many of which replicate existing services using other frequencies.

FCC staff also asked AGA about the commercial uses of DSRC, but not surprisingly, AGA preferred to emphasize DSRC’s potential safety applications.⁸ In other contexts, however, DSRC proponents highlight non-safety plans for DSRC. These include the communication, commerce, and entertainment applications already available to consumers over much more dynamic commercial mobile networks deployed across the country. For example, descriptions by the National Highway Traffic and Safety Administration (NHTSA) and in patent applications filed by DSRC proponents confirm that DSRC advocates may use the 5.9 GHz band for many duplicative commercial services already available to drivers today, including: paying tolls (EZ-Pass), finding parking spots (Parker app) and paying parking fees (Parkmobile app), transacting at drive-thrus (Apple Pay), sending drivers “points of interest” messages (Google Maps), delivering location-targeted advertising (many apps and websites accessible on mobile devices), route guidance and navigation (Waze), sending instant messages between vehicles (Snapchat), and even video downloads (YouTube).⁹ DSRC proponents seem to have concluded that these commercial operations are necessary “for DSRC to be cost effective,” so researchers have worked to develop spectrum management techniques for “maximizing the *commercial* use of DSRC”¹⁰ (although whether such commercialization plans could succeed appears dubious, given that a much more dynamic ecosystem already exists to provide the same types of applications). The Commission should reject attempts to hide well-documented commercial plans for the 5.9 GHz band behind a single safety service that would require only one 10 megahertz channel.

III. The 5.9 GHz band is not internationally harmonized for DSRC.

In response to the FCC’s inquiry regarding international harmonization of 5.9 GHz, AGA provides a brief overview of the status of 5.9 GHz in several countries, but notably does not

⁸ AGA Ex Parte, Attachment at 8.

⁹ NHTSA, *Vehicle Safety Communications Project Task 3 Final Report—Identify Intelligent Vehicle Safety Applications Enabled by DSRC* at 33-39 (Mar. 2005), <https://ntl.bts.gov/lib/29000/29500/29505/CAMP3scr.pdf>; see also *Proposed Text For Subsection 7.5: Applications, In Section 7: Advanced ITS Radiocommunication, of the Working Document Toward a Preliminary Draft New Report ITU-R M.[ITS Usage]*, Doc. 5A/216-E, at 48-50 (Oct. 31, 2016) (describing e-commerce, infotainment, advertising, and Internet connection applications envisioned for DSRC); Comments of the National Cable & Telecommunications Association on the Request to Update the U-NII-4 Band Record, ET Docket No. 13-49 (filed July 7, 2016) (describing the many commercial DSRC services announced by automakers and other DSRC proponents).

¹⁰ Zhe Wang & Mahbub Hassan, *How Much of DSRC is Available for Non-Safety Use?* (Sept. 15, 2008), https://www.cse.unsw.edu.au/~mahbub/PDF_Publications/vanet_2008.pdf (emphasis added).

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contend that the band is currently harmonized internationally for use by DSRC. It could not reasonably make that argument because only a handful of countries are currently using any form of DSRC—much less the approach DSRC interests are describing for the United States—and a handful of others are exploring spectrum allocations for intelligent transportation system (ITS) technology. The United States is the only country in the world currently considering a formal regulatory mandate for DSRC-based V2V communications at 5.9 GHz.

Japan has allocated spectrum for DSRC use, but the frequencies it uses do not align with the U.S. 5.9 GHz band. Furthermore, Japan’s services focus on vehicle-to-infrastructure (V2I), not V2V communications. Japan uses frequencies from “5.77 – 5.85 GHz for tolling and V2I safety and mobility services.”¹¹ Although Europe has set aside spectrum in the 5.9 GHz band for use by DSRC-based ITS, like Japan, it has also focused primarily on V2I communications.¹² Moreover, the European Commission’s latest roadmap for cooperative ITS, published in November 2016, notes that an optimal ITS platform for implementation across Europe “can only be achieved through a hybrid communication approach,” the most promising of which “is a combination of ETSI ITS-G5 [a European standard based on DSRC] and existing cellular networks.”¹³ 5G Americas also notes ongoing work in Europe to ensure that ETSI standards relating to ITS are technology neutral, not narrowly focused on DSRC.¹⁴ These developments suggest that, even in Europe, interest may be shifting away from DSRC to other connected vehicle technologies using commercial LTE networks. Australia, New Zealand, and China are all considering options for the use of 5.9 GHz spectrum, but by AGA’s own admission have not even allocated 5.9 GHz spectrum for DSRC, much less mandated its use.¹⁵ DSRC equipment makers acknowledge “a strong belief that China is going to deploy LTE-based cellular V2X”

¹¹ AGA Ex Parte, Attachment at 7; *see also* AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY, *Proposed Regulatory Measures for the Introduction of Cooperative Intelligent Transport Systems in Australia*, Consultation Paper, at 13 (Aug. 2016), <https://www.acma.gov.au/theACMA/proposed-regulatory-measures-for-the-introduction-of-c-its-in-australia>.

¹² For instance, the cooperative ITS corridor across the Netherlands, Germany, and Austria, allows for testing V2I road works warnings and facilitates the collection of vehicle data to inform traffic congestion management. *See* COOPERATIVE ITS CORRIDOR, *Applications*, <http://c-its-korridor.de> (last visited Aug. 31, 2017).

¹³ EUROPEAN COMMISSION, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, COM(2016) 766, at 8-9 (Nov. 30, 2016), <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0766&from=EN>.

¹⁴ 5G AMERICAS, *V2X Cellular Solutions*, at 30 (Oct. 2016), http://www.5gamericas.org/files/2914/7769/1296/5GA_V2X_Report_FINAL_for_upload.pdf.

¹⁵ AGA Ex Parte, Attachment at 7-8.

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technology instead of DSRC.¹⁶ Uncertainty regarding DSRC standards development appears to have caused New Zealand's regulator to put its own consideration of DSRC spectrum on hold.¹⁷

Many countries appear to be shifting their attention away from the last-generation idea of DSRC warnings to a more modern plan to use higher band spectrum to support autonomous vehicle technology. Today's autonomous vehicles rely primarily on LIDAR, cameras, and non-5.9 GHz vehicular radar¹⁸—so it should come as no surprise that regulators have changed their focus. During World Radiocommunication Conference 2015 (WRC-15), for example, administrations adopted a primary allocation to the radiolocation service in the 77.5-78.0 GHz band for ground-based applications including automotive radar, and agreed to study compatibility of automotive radar and other operations in the 76-81 GHz band at the next WRC.¹⁹ The FCC quickly followed up on this work, recently adopting a Report and Order expanding the spectrum available for vehicular radar in the United States from 76-77 GHz all the way up to 81 GHz.²⁰

¹⁶ Junko Yoshida, *V2X Radio War Still Smoldering in China, Europe*, EE TIMES (Oct. 25, 2016), http://www.eetimes.com/document.asp?doc_id=1330670 (quoting Ravi Puvvala, CEO of DSRC equipment vendor Savari); *see also* Roger Lanctot, *The Fastest Route to V2V*, STRATEGY ANALYTICS (Nov. 7, 2016), <https://www.strategyanalytics.com/strategy-analytics/blogs/infotainment-telematics/2016/11/07/the-fastest-route-to-v2v#.WYnAA1WGPmF> (“China and Europe are decoupling from the V2V mandate process and shifting their emphasis to 5G development and deployment – with LTE-V2V wireless technology seen as a useful interim step to enabling collision avoidance applications in consumer vehicles.”).

¹⁷ Government of New Zealand, Ministry of Business, Innovation, and Employment, Radio Spectrum Management, *Intelligent Transport Systems* (last updated Oct. 23, 2015), <https://www.rsm.govt.nz/consumers/intelligent-transport-systems> (“Work to harmonise the US and EU standards has been slow, and it is uncertain when this will be completed. If compatible with other uses, New Zealand would be likely to favour a joint US/EU standard for its own use. However, until the details of this standard are clear, it is difficult to judge the possible impacts on users of adjacent bands.”).

¹⁸ *See* Letter from Ryan Hagemann, Director of Technology Policy, The Niskanen Center, to Elaine L. Chao, Secretary, U.S. Dep’t of Transp., and Ajit Pai, Chairman, Federal Communications Commission, Docket No. 13-49, at DSRC Infographic Appendix (filed June 12, 2017) (Niskanen Letter).

¹⁹ OFCOM, *UK Report on the Outcome of the World Radiocommunication Conference 2015 (WRC-15)*, at 17 (Mar. 16, 2016), https://www.ofcom.org.uk/__data/assets/pdf_file/0018/50067/uk_report_of_wrc-15.pdf.

²⁰ *Amendment of Parts 1, 2, 15, 90 and 95 of the Commission’s Rules to Permit Radar Services in the 76-81 GHz Band*, Report and Order, FCC 17-94, ET Docket No. 15-26, ¶¶ 1, 3 (rel. July 14, 2017).

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In short, the 5.9 GHz band is not currently internationally harmonized for DSRC use, and regulators worldwide appear to have shifted their focus to other spectrum bands that can better meet the needs of autonomous vehicle technology. The Commission can act on 5.9 GHz without disrupting any widespread international harmonization.

IV. Automakers are deeply divided on DSRC.

Finally, AGA's response provides an incomplete picture of equipment manufacturer and supplier views on DSRC generally and DOT's proposed mandate specifically.²¹ For two decades, DSRC interests have worked to get DSRC off the ground, but the market has not responded for several reasons. First, despite years of development, stakeholders continue to be concerned about DSRC's effectiveness. Automakers like BMW and Mercedes-Benz have explained to DOT that DSRC is not "trustworthy" when it comes to basic safety features.²² The comments filed in response to the V2V NPRM revealed significant concerns regarding DSRC communications failures or inaccuracies caused by congestion and GPS problems.²³ Second, market-driven alternatives are flourishing. As numerous commenters have emphasized to DOT, technologies like cellular-V2X can support vehicle safety in existing cellular bands—without a government mandate or a spectrum subsidy for DSRC. It should come as no surprise, then, that numerous automakers (including the 5G Automotive Association, BMW, Fiat Chrysler, Mercedes-Benz, and Tesla), technology organizations (including Broadcom, NGMN Alliance, and Verizon), and policy groups oppose the proposed mandate.²⁴ Third, conversations about the future of automobile safety have shifted to autonomous vehicles. DSRC is not a necessary or preferred communications protocol for autonomous vehicles, and attempts to link the two are merely red herrings.

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AGA's responses to Mr. Degani's questions highlight the problems with FCC rules that allow a last-generation technology to block access to valuable spectrum resources and undermine

²¹ AGA Ex Parte, Attachment at 8.

²² Niskanen Letter at 2.

²³ *See, e.g.*, Letter from Jill Ingrassia, Managing Director, Government Relations & Traffic Safety Advocacy, AAA, to U.S. Dep't of Transp., Nat'l Highway Traffic Safety Admin., Docket No. NHTSA-2016-0126, at 2 (filed Apr. 12, 2017); Letter from David Tait, General Manager, Engineering Services, Mercedes-Benz USA, LLC, to Elaine L. Chao, Secretary, U.S. Dep't of Transp., Docket No. NHTSA-2016-0126, at 2 (filed Apr. 12, 2017); Waymo Comments on NHTSA's V2V NPRM, Docket No. NHTSA-2016-0126, at 2-3 (filed Apr. 17, 2017).

²⁴ *See* Niskanen Letter at 2.

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technological advances in automotive safety systems. Although hundreds of millions of taxpayer dollars have been spent subsidizing DSRC over the last 20 years, the technology has not come to market in any meaningful way and has now been surpassed by newer, better vehicle safety and commercial technologies. Given these obvious deficiencies, and given DOT's recent decision to downgrade the status of the DSRC mandate,²⁵ the Commission should enable more efficient use of the 5.9 GHz band by unlicensed technologies that stand ready to begin maximizing the band's value.

Sincerely,

A handwritten signature in blue ink, appearing to read "Paul Margie".

Paul Margie
*Counsel to NCTA – The Internet &
Television Association*

²⁵ See U.S. DEP'T OF TRANSP., *Report on DOT Significant Rulemakings*, at 84 (Aug. 2017), <https://cms.dot.gov/regulations/august-2017-significant-rulemaking-report> (downgrading the stage of the V2V rulemaking from “NPRM” to “undetermined”); OFFICE OF MGMT. AND BUDGET, Office of Info. & Reg. Affairs, *Update 2017 Unified Agenda of Federal Regulatory and Deregulatory Actions, Federal Motor Vehicle Safety Standard (FMVSS) 150—Vehicle to Vehicle (V2V) Communication*, RIN: 2127-AL55, <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201704&RIN=2127-AL55> (downgrading the V2V NPRM status from “active” to “long-term”).