



Comments in the Matter of Use of the 5.850 – 5.925 GHz Band

ET Docket No. 19-138

International Center for Law & Economics

Authored By:

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**Before the
Federal Communications Commission**

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**COMMENTS OF IAN ADAMS, EXECUTIVE DIRECTOR OF
THE INTERNATIONAL CENTER FOR LAW & ECONOMICS**

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Introduction

On behalf of the International Center for Law & Economics, I offer the following reply comments in support of the Federal Communications Commission's (FCC) Notice of Proposed Rulemaking (NPRM) to expand and enhance the use of the 5.850 – 5.925 GHz spectrum band.¹

In previously submitted comments,² I offered support for the FCC's proposed reallocation of the lower 45 MHz of the 5.9 GHz band based on the spectrum's current underuse relative to its value in the context of Wi-Fi. Since those comments were submitted, subsequent studies have estimated that opening the lower 45 MHz of the 5.9 GHz band would result in \$28.14 billion in economic value by 2025.³ These findings lend further support to the FCC's proposed plan of action. Yet, opposition from elements of the transportation sector persists. Those opponents have offered, broadly, four justifications for delaying, modifying and/or abandoning elements of the FCC's 5.9 GHz NPRM. ICLE's reply comments will address and rebut each, in turn.

I. Contention: allowing Wi-Fi access to the lower portion of the 5.9 GHz band will result in harmful interference to Intelligent Transportation System (ITS) applications.^{4 5 6 7}

Harmful wireless interference in the context of ITS safety systems is a serious matter, but there is no indication that interference concerns regarding the FCC's proposal to reallocate the lower 45 MHz of the 5.9 GHz band cannot be resolved with appropriate technical rules. Further, claiming that harmful interference from adjacent Wi-Fi applications is inevitable if an ITS band abuts a Wi-Fi band is in tension with the claim that the entirety of the 5.9 GHz band should be preserved for ITS purposes, because the lower edge of the existing ITS band *already* abuts the U-NII-3 band, which is widely used today for unlicensed applications such as Wi-Fi. Indeed, some ITS proponents have argued that U-NII-4 out-of-band emission limits into the ITS band must be more restrictive than the longstanding out-of-band emissions rules that apply to the U-NII-3 band—even at the same ITS band frequencies.⁸ This begs the question: if the out-of-

¹ *In the Matter of Use of the 5.850-5.925 GHz Band*, Notice of Proposed Rulemaking, FCC 19-129 (released December 17, 2019) (“5.9 GHz NPRM”).

² Comments of TechFreedom, ET Docket No. 19-138 (filed Mar. 9, 2020).

³ WiFiForward, *Assessing the Economic Value of Unlicensed Use in the 5.9 GHz & 6 GHz Bands* at 4 (April, 2020), <http://wififorward.org/wp-content/uploads/2020/04/5.9-6.0-FINAL-for-distribution.pdf>.

⁴ Comments of the 5G Automotive Association at 39-40, ET Docket No. 19-138 (filed Mar. 9, 2020).

⁵ Comments of the Alliance for Automotive Innovation at 24-27, ET Docket No. 19-138 (filed Mar. 9, 2020).

⁶ Comments of Ford Motor Company at 9-10, ET Docket No. 19-138 (filed Mar. 9, 2020).

⁷ Comments of General Motors LLC at 9-10, ET Docket No. 19-138 (filed Mar. 9, 2020).

⁸ See, e.g., General Motors Comments at 11.

band emissions from unlicensed applications that business and consumers have used extensively for years present such a high interference risk to adjacent ITS, perhaps the 5.9 GHz band is simply unsuited to safety-critical ITS applications and those services should be moved elsewhere?

II. Contention: there is already enough spectrum for Wi-Fi applications and, therefore, access to the 5.9 GHz band is superfluous.^{9 10 11}

As the number of high-speed internet users and the intensity of their uses increases in the years to come, Wi-Fi networks must be able to keep pace. And in order for Wi-Fi networks to continue to offer similar speeds to those available through fixed and mobile broadband, unlicensed spectrum designations must support next-generation Wi-Fi technologies, including wide-bandwidth channels. If the Covid-19 crisis has demonstrated anything, it is that Wi-Fi has become vital to the day-to-day operation of the U.S. economy and the Commission should continue to ensure a robust spectrum pipeline for unlicensed uses. Given that wireless spectrum is a finite resource, and in the absence of the spectral greenfields of yore, scrutinizing the existing disposition of spectrum for underuse and reallocation is necessary to ensure efficient use and enable next-generation Wi-Fi connectivity.

Designating spectrum in the 6 GHz band for shared unlicensed use was an important first step to create a long-term home for next-generation Wi-Fi. But auto industry claims that changes to the 6 GHz band will accommodate the anticipated long-term need for unlicensed spectrum overlook the logistical hurdles associated with the hardware updates necessary to utilize that band and the unlicensed use-case limitations necessitated by widespread incumbent use in that band. Only the 5.9 GHz band, as discussed below, offers virtually immediate access to a contiguous 160 MHz channel in existing equipment via a software/firmware update. And because the band lies virtually empty today, the Commission can adopt more flexible technical rules to enable a broader range of use cases.

III. Contention: it is necessary to delay the proceeding until further testing is completed and/or the transportation industry decides between C-V2X and DSRC.^{12 13 14}

The ITS band has maintained its current dispositions for 20 years. In that time, the transportation industry has had ample opportunity to carry out tests and to promulgate uniform technical standards to provide for

⁹ 5GAA Comments at 36-39.

¹⁰ Alliance for Automotive Innovation Comments at 31-33.

¹¹ General Motors Comments at 12-13.

¹² General Motors Comments at 3-4, 15-17.

¹³ Comments of Toyota Motor Corporation at 27, ET Docket No. 19-138 (filed Mar. 9, 2020).

¹⁴ Comments of AT&T at 5, 24, ET Docket No. 19-138 (filed Mar. 9, 2020).

the widespread deployment of V2X-equipped vehicles – it simply hasn't. On that basis, calls for continued delay are not credible in the face of other more immediate needs.

The significance of the 5.9 GHz band's ability to address immediate needs stems from its spectral location adjacent to the U-NII-3 band. Some existing hardware, already widely deployed, is capable of operating in the 5.9 GHz band to provide access to a wide-bandwidth, next-generation Wi-Fi channel and to add additional Wi-Fi capacity. The FCC has already taken steps in recognition of this unique characteristic by granting Wireless ISPs temporary access to meet increased broadband demand in rural areas related to the pandemic.¹⁵

Delaying the reallocation of the lower 45 MHz of the 5.9 GHz band would forego immediate tangible improvements to people's lives in exchange for possible future benefits that are likely readily achievable with less spectrum.

IV. Contention: automakers will deploy five million vehicles equipped with V2X technology by 2025 if, and only if, the entirety of the 5.9 GHz band is preserved for automotive use.¹⁶

Claims by the Alliance for Automobile Innovation, the automobile industry's largest trade association, that its members will commit to the deployment of five million V2X devices by 2025 if, and only if, the FCC forestalls reallocation of a portion of the 5.9 GHz band appear to be a commitment to do what has already been projected.

The automobile industry is global in scope and reach. Its product development processes and timelines contemplate markets around the world. With respect to V2X technologies, specifically, it's clear that the industry is poised to move forward aggressively and quickly with deployment in Europe and China. In China alone, Alliance members are projected to deploy two million V2X-equipped vehicles by 2021,¹⁷ and in less spectrum than is contemplated by the FCC's proposal.¹⁸

The future of V2X technologies is not certain but given that aggressive V2X deployment is already underway in other jurisdictions that are no-less spectrally friendly to ITS systems, it clearly does not hinge on the disposition of the lower 45 MHz of the 5.9 GHz band.

¹⁵ Press Release of the Federal Communications Commission, (March 27, 2020), <https://docs.fcc.gov/public/attachments/DOC-363358A1.pdf>.

¹⁶ Press Release of the Alliance for Automotive Innovation, (April 23, 2020), <https://www.autosinnovate.org/press-release/auto-industry-unites-behind-safety-technology-by-committing-at-least-5-million-v2x-radios-and-devices-by-the-end-of-2025/>.

¹⁷ *More Than 11.2 Million Vehicles Will Be Equipped with V2X Communications in 2024, IHS Markit Says*, IHS Markit (May 16, 2019), https://news.ihsmarkit.com/prviewer/release_only/slug/automotive-more-112-millionvehicles-will-be-equipped-v2x-communications-2024-ihs-mark.

¹⁸ Comments of R Street Institute at 6, ET Docket No. 19-138 (filed Mar. 9, 2020).