

**Before the
Federal Communications Commission
Washington, D.C. 20554**

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| Unlicensed Use of the 6 GHz Band |) | ET Docket No. 18-295 |
| |) | |
| Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz |) | GN Docket No. 17-183 |
| |) | |

**REPLY COMMENTS OF
THE SOCIETY OF BROADCAST ENGINEERS, INC.**

The Society of Broadcast Engineers, Inc. (“SBE”)—the professional organization of television and radio engineers and those in related fields, with over 4,500 members in 116 chapters worldwide—submits these reply comments regarding the comments filed thus far in response to the Second Further Notice of Proposed Rulemaking (the “NPRM”)¹ in the above-captioned proceeding. SBE previously filed comments and an ex parte statement regarding earlier proposals and actions in this matter.²

There is significant risk of harmful interference to incumbent broadcast auxiliary services (“BAS”) in the 6 GHz band (the “band”) if the NPRM’s proposals to expand operations of unlicensed very low power (“VLP”) devices and low power indoor (“LPI”) devices are adopted. As SBE, the National Association of Broadcasters (“NAB”), and others have previously explained, BAS deployments in the band enable the timely collection and delivery to the public of live, local,

¹ *Unlicensed Use of the 6 GHz Band*, Second Report and Order, Second Further Notice of Proposed Rulemaking, and Memorandum Opinion and Order on Remand, ET Docket No. 18-295, GN Docket No. 17-183, FCC 23-86 (Nov. 1, 2023).

² Comments of the Society of Broadcast Engineers, Inc., ET Docket No. 18-295, GN Docket No. 17-183 (May 25, 2022); Ex Parte Statement of the Society of Broadcast Engineers, Inc., ET Docket No. 18-295, GN Docket No. 17-183 (Feb. 18, 2020); Comments of the Society of Broadcast Engineers, Inc., ET Docket No. 18-295, GN Docket No. 17-183 (Feb. 15, 2019).

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and often critical news and other information via, among other things, mobile electronic newsgathering (“ENG”). SBE therefore supports the comments filed by NAB³ and others seeking to ensure the continued efficacy and reliability of these incumbent BAS operations. Specifically, SBE urges the Commission to: (1) refrain from permitting VLP and LPI operations in the U-NII-6 and U-NII-8 bands without—at minimum—reserving 55 MHz at the top of the U-NII-8 band for licensed mobile operations; and (2) not adopt higher power limits for VLP devices, given that no compelling record data undercut broadcasters’ legitimate interference concerns.

I. The Unpredictable Nature and Unique Technical Characteristics of Mobile BAS Deployments Warrant Reserving—At Least for Now—a Small, 55 MHz Sliver of Spectrum for Licensed Mobile Operations

The NPRM notes that the U-NII-6 and -8 bands are used for both fixed and mobile BAS operations, including “BAS . . . pick-up stations to transmit programming material from special events or remote locations, including electronic newsgathering, back to the studio or other central receive locations.”⁴ This is an accurate description, but it belies the complexity and volatility of mobile operations in these bands. SBE has significant first-hand knowledge of such operations because for decades SBE has operated a local market-based frequency coordination program involving broadcast auxiliary spectrum, including within the 6 GHz band. This universally lauded program assists all licensed users of shared spectrum in coordinating operations based on the changing day-to-day—even hour-to-hour—needs within the band. Mobile BAS operations are particularly unpredictable, as newsworthy events often occur without warning and require rapid

³ Comments of the National Association of Broadcasters, ET Docket No. 18-295, GN Docket No. 17-183 (Mar. 27, 2024) (“NAB Comments”).

⁴ NPRM, ¶ 7.

deployment of broadcast resources to document the event and transmit the reporting back to a receive site, which may itself be either fixed *or mobile*.

Because of this unpredictability inherent in ENG deployments, SBE agrees with NAB that the Commission should, at least temporarily, maintain 55 MHz at the top of the U-NII-8 band exclusively for licensed mobile operation until additional data can be collected to show that no interference is caused by VLP and LPI operations in the remainder of the 6 GHz band.⁵ Doing so will allow the Commission to gain real-world data with which to render any subsequent decision regarding the band⁶ while simultaneously ensuring that no harm is done to incumbent mobile ENG operations. Crucially, such an approach will preserve the timely delivery of core informational content on which many communities throughout the nation rely, until the Commission can carefully analyze actual real-world deployments in the band to identify any appropriate further rule changes. In addition, the Commission should require licensed operations in the 55 MHz sub-band to undergo frequency coordination by SBE in order to ensure the most efficient use of the limited spectrum and minimize disruption to broadcasters' mobile operations in the band.

II. Higher Power VLP Devices Should Not Be Authorized Given the Likelihood that They Will Interfere with Critical Incumbent BAS Operations and the Lack of Valid Record Evidence to the Contrary

For many of the same reasons that 55 MHz should be reserved for licensed incumbent BAS operations, the Commission should not permit higher-power VLP operations in the 6 GHz band.

⁵ See NAB Comments, at 2.

⁶ See Comments of AT&T Servs. Inc., ET Docket No. 18-295, GN Docket No. 17-183, 1-2 (Mar. 27, 2024) (explaining that “it makes little policy sense to ignore the inevitable learnings that will arise from actual operation of newly authorized VLP devices” and therefore “urg[ing] the Commission to defer expanding VLP flexibility until some operational experience with VLP devices has been gained”).

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In particular, the NPRM’s proposed geofencing requirements would not provide adequate protections for itinerant and irregular incumbent mobile BAS operations. As NAB aptly described, although electronic newsgathering commonly involves transmission from a mobile news truck to a fixed central receive site, that is certainly not the only use case—for example, broadcasters also utilize camera-back transmitters connecting to temporary and mobile receivers mounted on trucks that may operate nationwide.⁷ As a consequence, the NPRM’s geofencing proposal to restrict higher-power VLP operations around registered fixed receive sites⁸ would be inadequate to protect all incumbent mobile operations in the band.⁹

Further, more information and study are needed to ensure adequate protection of licensed operations in the 6 GHz band before the Commission authorizes any expanded or higher-powered unlicensed operations. While the bulk of comments supporting expanded unlicensed access to the band cite studies showing little or no interference risk, those cited studies have been clearly shown either to fail to account for the breadth of BAS operations in the band, or to have been intentionally designed to support a predetermined outcome.

Comments advocating for expanded VLP operations in the band almost universally base their support on studies provided by Apple Inc., Broadcom Inc., Google LLC, and Meta Platforms,

⁷ *Id.* at 11.

⁸ *See* NPRM, ¶ 130.

⁹ Further, as NAB explains: “ENG receivers are ‘hidden nodes’ because ENG receivers are passive and therefore cannot be detected by unlicensed devices (whether LPI access points or VLP devices). This hidden node problem would be exacerbated under the proposal to allow VLP devices in UNII-6 and -8 because VLP devices may be located far from an ENG transmitter, but near a passive ENG receiver.” NAB Comments, at 3.

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Inc. (collectively, the “RLAN Group”).¹⁰ However, as multiple commenters explain, the RLAN Group’s studies are fundamentally flawed. For example, as NAB demonstrates at length, not only do the studies fail to account for the full range of mobile BAS operations in the band, they further ignore objective operational facts and instead rest on mere assumptions—assumptions that clearly support the Group’s desired outcome.¹¹ Further, the Electric Power Research Institute’s comments note that its own real-world interference testing shows differing results from the Monte Carlo simulations provided by the VLP proponents, and call for the models and inputs of those studies (as opposed to solely the results) to be made public in order to better understand the reasons for the discrepancies.¹²

In short, the studies proffered by the supporters of expanded unlicensed operation in the 6 GHz band are flawed and inconsistent with real-world data. Consequently, the Commission should not move forward with expanding access to the band based on such flawed data. Instead, the Commission must better understand and account for the risks of interference prior to authorizing any additional expanded access to the band.¹³

¹⁰ See, e.g., Comments of Apple Inc., Broadcom Inc., Google LLC, Intel Corp., Meta Platforms, Inc., Microsoft Corp., Qualcomm Incorporated, ET Docket No. 18-295, GN Docket No. 17-183 (Mar. 27, 2024); Comments of the Information Tech. Industry Council, ET Docket No. 18-295, GN Docket No. 17-183 (Mar. 27, 2024); Comments of Wi-Fi Alliance, ET Docket No. 18-295, GN Docket No. 17-183 (Mar. 27, 2024); Comments of the Dynamic Spectrum Alliance, ET Docket No. 18-295, GN Docket No. 17-183 (Mar. 27, 2024).

¹¹ See generally NAB Comments, at Section II (explaining multiple study deficiencies, including assuming fixed—rather than mobile or variable—VLP and ENG locations and heights, assuming an extremely low antenna receive height (that is thus less likely to receive interference), and failing to use the Commission’s adopted interference protection criterion).

¹² Technical Comments of the Electric Power Res. Institute, Inc., ET Docket No. 18-295, GN Docket No. 17-183, 3 (Mar. 27, 2024); see also NAB Comments, at 9 & n.24.

¹³ See, e.g., Comments of AT&T Servs. Inc., ET Docket No. 18-295, GN Docket No. 17-183, 1-2 (Mar. 27, 2024) (“[T]his proceeding is pre-mature as the rules authorizing VLP devices
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CONCLUSION

For all the foregoing reasons, SBE urges the Commission not to authorize expanded operations in the 6 GHz band at this time. Instead, the Commission should proceed cautiously. In order to protect incumbent BAS operations in the band, the Commission should reserve 55 MHz at the top of the band for mobile operations, and should not authorize increased VLP power levels until interference risks can be more thoroughly understood and a comprehensive and effective solution is proposed to protect all incumbent operations in the band.

are barely effective and the Commission, licensed users, and unlicensed operators should gain some practical experience with these new devices before further liberalization of the regulations.”).

Respectfully submitted,

The Society of Broadcast Engineers, Inc.

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