

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

In the Matter of)
)
Wi-Fi Alliance Request for Waiver) ET Docket No. 23-107

**REPLY COMMENTS
OF THE
NATIONAL WIRELESS COMMUNICATIONS COUNCIL**

The National Wireless Communications Council (“NWCC”)¹ hereby submits its reply comments in response to the Office of Engineering and Technology’s (“OET”) Public Notice regarding the Request for Waiver by the Wi-Fi Alliance (“WFA”).² The NWCC opposes the Request for Waiver because it completely fails to meet the requirements established in OET’s AFC Public Notice for waivers to allow automated frequency coordination (“AFC”) systems to account for building entry loss (“BEL”) for indoor standard power devices.³ Specifically, it fails to provide “full support for how standard power devices will be constrained to indoor locations, how interference protection to incumbent spectrum users will be provided, and any arrangements with AFC providers to ensure that indoor versus outdoor location data is being properly transmitted, interpreted, and acted on appropriately.”⁴ Moreover, the requested relief would increase the potential for harmful interference to licensed microwave systems in the 6 GHz band from standard power composite devices. This would compound harmful interference from low-power indoor (“LPI”) devices, which is certain to occur based on numerous real-world tests submitted on the record in

¹ For more information about the National Wireless Communications Council, go to <https://wirelesscouncil.org/>.

² Request for Waiver of the Wi-Fi Alliance in ET Docket No. 21-352, filed Feb. 17, 2023 (hereinafter “Request for Waiver”). *See also* Office of Engineering and Technology Seeks Comment on Wi-Fi Alliance Request for Waiver of Section 15.407(L)(2) of the Commission’s Part 15 Rules for AFC System Operation in the 6 GHz Band, *Public Notice*, DA 23-239 (Mar. 21, 2023).

³ OET Announces Conditional Approval for 6 GHz Band Automated Frequency Coordination Systems, *Public Notice*, DA 22-1146 (Nov. 2, 2022)(hereinafter “*AFC Public Notice*”).

⁴ *Id.* at 19, ¶40.

this proceeding.⁵ Finally, the Request for Waiver fails to meet the standard for a waiver of the rules,⁶ and, in any event, it is premature because the AFC certification process has not been completed yet, and therefore OET should not grant WFA or any other AFC system operator a waiver to adjust for BEL for standard power composite devices.

I. Introduction

The NWCC is a non-profit association of organizations representing virtually all users of land mobile radio systems, providers of land mobile services, and manufacturers of land mobile radio equipment. The NWCC acts on behalf of the vast majority of public safety, business, industrial, transportation, and private commercial radio users, as well as a diverse group of land mobile service providers and equipment manufacturers. Membership includes the following organizations:

- American Association of State Highway and Transportation Officials (“AASHTO”)
- American Automobile Association (“AAA”)
- American Petroleum Institute (“API”)
- Association of American Railroads (“AAR”)
- Association of Public-Safety Communications Officials-International, Inc. (“APCO”)
- Aviation Spectrum Resources, Inc. (“ASRI”)
- Enterprise Wireless Alliance (“EWA”)
- Forest Industries Telecommunications (“FIT”)
- Forestry-Conservation Communications Association (“FCCA”)
- Government Wireless Technology & Communications Association (“GWTC”)
- International Association of Fire Chiefs (“IAFC”)
- International Municipal Signal Association (“IMSA”)

⁵ See e.g., Letter from Coy Trosclair, Director of Telecom Services, Southern Company Services, Inc., to Marlene H. Dortch, Secretary, FCC, ET Docket No. 18-295 at 2 (filed March 21, 2021)(“Southern Company Study”). See also Letter from Greg Kunkle, Counsel to FirstEnergy Corp., to Marlene H. Dortch, Secretary, Federal Communications Commission (filed Oct. 12, 2022) and Attachment: EPRI, “FirstEnergy 6 GHz Additive Interference Study – Public,” 2022 Technical Report (“FirstEnergy Study”). And see Letter from Michael Bennet, Counsel to Evergy, to Marlene H. Dortch, Sec’y, FCC, ET Docket No. 18-295 (filed Dec. 8, 2022), attaching Wi-Fi 6E and 6 GHz Microwave Testing (“Evergy Study”).

⁶ See 47 CFR § 1.3 (providing for suspension, amendment, or waiver of Commission rules, in whole or in part, for good cause shown). See also 47 CFR 1.925(b)(3)(“The Commission may grant a request for waiver if it is shown that: (i) [t]he underlying purpose of the rule(s) would not be served or would be frustrated by its application to the instant case, and that a grant of the requested waiver would be in the public interest, or (ii) [i]n view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.”)

- MRFAC, Inc. (“MRFAC”)
- Telecommunications Industry Association (“TIA”)
- The Monitoring Association (“TMA”)
- Utilities Technology Council (“UTC”)
- Wireless Infrastructure Association (“WIA”)

The NWCC has advocated in this proceeding in support of protecting incumbent microwave licensees from harmful interference by unlicensed operations in the 6 GHz band.⁷ The NWCC’s members include several organizations who facilitate frequency coordination activities of point-to-point microwave systems, including in the 6 GHz band. The NWCC has an interest in this proceeding, and it is concerned that interference to these microwave systems puts public safety and other licensees providing essential services to the American public at risk. It is providing its reply comments in opposition to the Request for Waiver, because the NWCC is concerned that allowing AFC systems to adjust for BEL when controlling indoor standard power client and composite devices would increase the potential for harmful interference in the 6 GHz band, contrary to the underlying purpose of section 15.407(l)(2) of the Commission’s rules and the public interest. NWCC also opposes the Request for Waiver, because it is premature to consider waiving section 15.407(l)(2) when the OET has not yet completed the certification process for AFC systems. Therefore, the NWCC respectfully requests that the Request for Waiver be denied as explained in more detail in these reply comments.

II. The WFA Has Failed to Provide Full Support for How Standard Power Devices Will be Constrained to Indoor Locations.

NWCC opposes the Request for Waiver because it fails to provide the required proof that standard power client and composite devices will be constrained to operate indoors. NWCC agrees with AT&T that “it is reasonable to expect users with [standard power] clients to take advantage of enhanced outdoor coverage, whether intentionally or not.”⁸ Moreover, “the Commission should deny WFA’s Waiver Request

⁷ See e.g., Letter from David B. Smith, President, NWCC to Marlene H. Dortch, Secretary, FCC in ET Docket No. 18-295 and GN Docket No. 17-183 (filed June 21, 2022)(supporting the Joint Petition for Rulemaking and Request for Stay filed by representatives of public safety and utility licensees in the 6 GHz band).

⁸ *Id.* at 4.

because it fails to evaluate the potential interference to primary FS microwave incumbents from [standard power] clients communicating with composite LPI/[standard power] access points (“APs”).⁹ As AT&T pointed out, under Section 15.407(a), standard power client devices can operate at up to 30 dBm EIRP with a maximum power spectral density (“PSD”) of 17 dBm/MHz—power limits that exceed the power of LPI clients by 18 dB (64 times) for 20 MHz channel bandwidths.¹⁰ Given the likelihood that standard power client devices will be used outdoors and pose a significant interference threat to licensed microwave systems, the NWCC opposes the Request for Waiver to allow AFC systems to assume these devices will be operating indoors and adjust for BEL.

Contrary to the WFA, it should not assume that certain standard power client and composite devices will operate indoors merely because they must comply with Product Form Factor (“PFF”) restrictions designed to limit them to indoor use. Instead, the OET was clear that it wanted waiver applicants to demonstrate that standard power devices will in fact be constrained to indoor locations.¹¹ The NWCC agrees with comments on the record that observe that “the PFF restrictions can be easily circumvented by end-users to operate outdoors using something as simple as an electrical extension cord.”¹² Moreover, NWCC echoes that “the Waiver Request provides no technical evidence demonstrating that standard power operations subject to the waiver request would deploy a methodology that is effective at ‘precisely determining location’ of these devices as suggested by OET.”¹³ Therefore, NWCC agrees that the WFA

⁹ Opposition of AT&T Services in ET Docket No. 23-107 and ET Docket No. 21-352 at 1 (filed Feb. 27, 2023).

¹⁰ *Id.* at 3-4.

¹¹ AFC Public Notice at ¶40 (stating “neither the *6 GHz Report and Order* nor the rules governing AFC system operations directly address how the AFC systems could determine that a device is, in fact, located indoors” and adding that “there may be methods for making this determination and providing it to the AFC” and that “[w]e will continue to monitor how these technologies mature and their effectiveness at precisely determining location, and, if warranted, provide additional guidance in the future.”)

¹² Comments of the Utilities Technology Council in ET Docket No. 23-107 at 3 (filed Apr. 5, 2023).

¹³ Comments of Southern Company Services, Inc. in ET Docket No. 23-107 at 4 (filed Apr. 5, 2023).

has failed to provide “full support” for how standard power devices will be constrained to operate indoors and its Request for Waiver should be denied.

III. The WFA Has Failed to Provide Full Support How Interference Protection to Incumbent Spectrum Users Will be Provided.

The NWCC also opposes the Request for Waiver because it does not provide any technical support about how interference protection to incumbent spectrum users will be provided. Instead, the WFA claims that it “can effectively differentiate between composite and other standard-power devices” using the FCC ID, and it only provides conclusory statements that “[t]his arrangement will allow [the] Wi-Fi Alliance AFC system to maintain protection of the incumbent microwave receivers.”¹⁴ It fails to explain exactly how it will protect incumbents from interference. It does not explain how it will be able to accurately rely on the FCC ID to distinguish standard power composite devices. Nor does it explain how the AFC system will “determine permitted frequencies and power levels while accounting for the building entry propagation loss.”¹⁵ Most importantly, it fails to demonstrate how this arrangement would protect incumbent microwave receivers.¹⁶

As Southern Company recommended, “the Wi-Fi Alliance should first be required to develop and provide to the record a methodology for applying an appropriate BEL value, based on the pinpointed location of the standard power device, and address how standard power clients will protect incumbent operations under its proposed approach.”¹⁷ As Southern notes, the WFA only provides one sentence which only refers in passing to the Commission’s rules for LPI devices for its conclusion that it will be able to protect incumbent receivers from interference.¹⁸ NWCC agrees with Southern that there are important

¹⁴ Request for Waiver at 5.

¹⁵ Request for Waiver at 5.

¹⁶ *Id.*

¹⁷ Comments of Southern Company Services, Inc. at 5-6.

¹⁸ *Id.* at 6.

questions that should be answered by the WFA including, whether a uniform BEL figure would be applied to any indoor standard power device and if so what value and what basis for it; how that information would be applied utilizing the propagation models accepted by the Commission for protection of incumbent operations, including whether it would strictly follow the -6 dB I/N protection threshold; and finally how the AFC would take into account environmental factors as the indoor standard power device continues to operate to maintain the -6 dB I/N protection threshold.¹⁹ The OET should not grant any waivers until these and other questions are answered by WFA and others who request waivers.

IV. WFA Fails to Describe Any Arrangements With AFC Providers to Ensure that Indoor Versus Outdoor Location Data is Being Properly Transmitted, Interpreted, and Acted on Appropriately.

The NWCC also opposes the Request for Waiver because WFA fails to provide full support about its arrangements with AFC providers to ensure that the indoor versus outdoor location data is being properly transmitted, interpreted and acted on appropriately. Clearly, OET wanted technical information regarding how location information of devices operating indoors was being transmitted to the AFC systems. However, WFA fails to provide any information about the transmission of location information, apparently because there are no such transmissions in its AFC system approach. Instead, the WFA assumes that the composite devices are operating indoors based solely on the PFF restrictions, but it does not actually validate that assumption. In addition, the WFA fails to provide any information about how the AFC system is processing location information, nor does it provide any information about how the AFC systems and the composite devices are acting appropriately to control operations and prevent interference to licensed microwave systems. NWCC agrees with comments on the record that “[a]s there is no commitment to collect any location data whatsoever, the Wi-Fi Alliance Waiver Request is facially insufficient and should be summarily dismissed.”²⁰ Therefore, OET should deny the Request for Waiver for failing to provide detailed technical information about the transmission of accurate location information and to ensure that

¹⁹ *See Id.* at 6-7.

²⁰ *Id.* at 6.

the AFC systems process this information and the standard power devices appropriately act to control operations to prevent interference to licensed microwave receivers.

V. The Request for Waiver Fails to Meet the Standard for a Waiver of the Rules and It is Premature.

The NWCC believes that the Request for Waiver has failed to meet the general standards for a waiver of the Commission's rules. The underlying purpose of section 15.407(1)(2) would not be served by granting the waiver, and in fact it would frustrate the rule in this case because it would increase the potential for interference to licensed microwave receivers.²¹ Also, there are no unique circumstances that would make compliance with the rule an undue burden in this case or contrary to the public interest. Nor has the Wi-Fi Alliance shown that it has no reasonable alternatives.²² Finally, the Wi-Fi Alliance has not shown good cause or special circumstances that would justify granting a waiver of the rules.²³ As APCO explained in its comments, the WFA does not raise issues that OET didn't already know earlier, and it has failed to provide the information that OET requested in the *AFC Public Notice* when it offered to consider waiver requests.²⁴ Also the public interest would not be served by granting the waiver, because granting the waiver would not protect incumbents against interference and it would not meaningfully improve broadband connectivity.²⁵

The NWCC believes that the Request for Waiver is premature, because OET has yet to complete the AFC certification process. The AFC certification process includes a trial period, which will include testing, both in a controlled environment (lab testing) and through demonstration projects (field testing) to provide interested parties an opportunity to check that the AFC systems provide accurate results and fully protect incumbent systems from harmful interference. The NWCC agrees with comments on the record

²¹ See also Comments of UTC at 5 (“the underlying purpose of section 15.407(1)(2) is to protect microwave systems from interference using the propagation model and the interference criteria for AFC systems.”)

²² See also *Id.* at 6.

²³ See Comments of APCO International, Inc. in ET Docket No. 23-107 (filed Apr. 5, 2023).

²⁴ *Id.* at 2-3.

²⁵ *Id.* at 4-5.

that the Request for Waiver should be denied and should not be revisited until AFC systems have been approved by the Commission (after thorough and extensive testing, as required) and demonstrated in the real-world to fully protect incumbent operations from harmful interference.²⁶

VI. Conclusion

For all these reasons, the NWCC opposes the Request for Waiver and respectfully requests that OET deny the waiver and any others at least until the AFC certification process has been completed. The WFA Request for Waiver fails to provide any of the technical information that OET requested from waiver applicants. Moreover, it is clear that the waiver would increase the potential for interference to licensed microwave receivers. Therefore, the NWCC joins with other comments on the record and urges OET to deny the Request for Waiver.

Respectfully submitted,

**NATIONAL WIRELESS
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²⁶ *Id.* at 4.