

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)
)
m-Wave Networks LLC) File No. 0557-EX-CR-2023
Application for Renewal of Experimental)
License)

To: The Office of Engineering and Technology

OPPOSITION

Tower Research Capital LLC (“TRC”), on behalf of its subsidiary, m-Wave Networks LLC (“m-Wave”), hereby submits this Opposition to the informal objection submitted by Skywave Networks LLC (“Skywave”)¹ requesting denial of the above-captioned, two-year experimental license extension application.² Nothing contained in the Informal Objection provides a basis for denial of m-Wave’s application.

m-Wave has explained its need for an additional two-year period for testing. Specifically, m-Wave continues to refine its interference mitigation techniques, and additional time would allow m-Wave to make technical improvements that could decrease transmit power and increase efficiency and accuracy of the company’s “Listen Before Transmit” functionality.³

¹ See Skywave Networks LLC, Informal Objection, File No. 0557-EX-CR-2023 (filed Sept. 6, 2023) (“Informal Objection”). Skywave also filed a materially identical informal objection regarding the license extension application of another TRC subsidiary, Rockland Wireless LLC. See Skywave Networks LLC, Informal Objection, File No. 0539-EX-CR-2023 (filed Sept. 6, 2023). That application has since been granted. See Rockland Wireless LLC, Application for Renewal of Experimental License, File No. 0539-EX-CR-2023 (granted Sept. 13, 2023). Accordingly, TRC is not submitting a response to that informal objection. Nonetheless, TRC’s comments in this application proceeding are equally applicable to the informal objection submitted in the other proceeding.

² See m-Wave Networks LLC, Application for Renewal of Experimental License, File No. 0557-EX-CR-2023 (filed Aug. 31, 2023) (the “Extension Application”).

³ *Id.* at 1.

Such reasons are legitimate grounds for continued experimental operations⁴ and are comparable to justifications and cumulative license terms that the Office of Engineering and Technology (“OET”) has deemed acceptable for similar applications.⁵

None of Skywave’s arguments warrants a different conclusion. Mr. Proudley’s statements made in a separate rulemaking proceeding merely identify the technologies and innovations that TRC has been developing.⁶ Those statements do not demonstrate, as Skywave misleadingly suggests, that testing is complete and that no further refinements or improvements can be made.⁷ Indeed, Mr. Proudley’s declaration itself expressly states that “experimental

⁴ See, e.g., 47 C.F.R. § 5.3(j) (experimental operations are permitted to conduct “development of radio technique, related to an existing or proposed radio service”).

⁵ See, e.g., 10Band LLC, Application for Renewal of Experimental License, File No. 0497-EX-CR-2023 (granted Aug. 17, 2023) (granting second license renewal application for a cumulative period of nine years and allowing applicant to continue to “experiment with [high frequency] technology and signal processing techniques to mitigate [transmission] issues”); 3DB Communication Inc., Application for Renewal of Experimental License, File No. 0453-EX-CR-2023 (granted Aug. 17, 2023) (granting fourth license renewal application for a cumulative period of eight years to “advance high-frequency hardware, software, and transmission technologies”); Skycast Services LLC, Application for Renewal of Experimental License, File No. 0725-EX-CR-2022 (granted Jan. 4, 2023) (granting third license renewal application for a cumulative period of nine years to permit applicant to continue to conduct “(i) scientific or technical radio research; (ii) technical demonstrations of equipment or techniques; and (iii) the development of radio technique, equipment, operational data, and engineering data”). TRC believes the identified applications and applicants are similar, and accordingly, m-Wave and the Extension Application must be treated the same. See *Melody Music v. FCC*, 345 F.2d 730 (D.C. Cir. 1965) (stating that the FCC must treat similarly situated parties the same).

⁶ See Petition for Rulemaking of the Shortwave Modernization Coalition, Docket No. RM-11953, Appendix F, Declaration of Tom Proudley on Behalf of Tower Research Capital LLC, at 4 (filed Apr. 28, 2023) (“Proudley Declaration”).

⁷ See Informal Objection, at 2.

efforts ... are ongoing, and [TRC's] transmission systems would benefit from further experimentation[,]" including with respect to aspects of the "Listen Before Transmit" capability.⁸

Moreover, the FCC rules for conventional experimental licenses expressly allow ten years of experimental operations.⁹ m-Wave has been conducting experimental operations for approximately five years, and accordingly, grant of the Extension Application is fully consistent with FCC rules.¹⁰

For essentially the same reason, the sole case Skywave cites, *Wilfred G. Blanco*, does not support denial of the Extension Application.¹¹ In that case, the FCC declined to further extend the respective license terms of the applicant's three broadcast experimental licenses. Each of the three licenses already had been licensed for over the six-year period applicable to broadcast experimental licenses,¹² and the applicant had not provided an adequate showing of need for

⁸ See Proudley Declaration, at 4 (identifying the need for "[f]urther development of our spectrum-wide monitoring system with regional polling stations and public/private available SDR systems").

⁹ See 47 C.F.R. § 5.71(a), (b) (permitting conventional, program, medical testing, and compliance testing experimental radio license applicants to seek licenses for an initial term of up to five years and an additional renewal term of five years, upon an adequate showing of need). Further, as a practical matter, OET has permitted licensees to operate longer than ten years in certain circumstances. See, e.g., Motorola Solutions, Inc., Application for Renewal of Experimental License, File No. 0502-EX-CR-2021 (granted Aug. 27, 2021) (granting license renewal application for a cumulative period of thirteen years); AT&T CORP., Application for Renewal of Experimental License, File No. 0116-EX-RR-2015 (granted Mar. 4, 2015) (granting license renewal application for a cumulative period of twelve years).

¹⁰ Skywave also appears to argue that m-Wave failed to provide progress reports or testing results in the Extension Application. See Informal Objection, at 1 ("M-Wave provided no technical information to describe its experiment or report progress or results."). However, there is no such FCC requirement. Licensees are obligated to file reports only if expressly requested to do so by the Commission. See 47 C.F.R. § 5.73(a)(1).

¹¹ See Letter from Peter H. Doyle, Chief, Audio Division, Media Bureau, to Wilfredo G. Blanco-Pi, Applicant, File No. BR-20160920AAA et al., DA 17-372, 32 FCC Rcd 3100, 3 (Apr. 19, 2017) ("*Wilfred G. Blanco*").

¹² See 47 C.F.R. § 5.71(c).

further extensions.¹³ In contrast, m-Wave has a conventional experimental license, which has an applicable ten-year period,¹⁴ and the company has provided a demonstration of need for continued testing, as discussed above.¹⁵

With respect to Skywave's accusations that m-Wave has engaged in unauthorized or inappropriate activities, m-Wave's testing is disclosed in its application and was approved by OET.¹⁶ Moreover, these activities are comparable to those approved by OET for other similar authorizations.¹⁷ OET is also aware of TRC's commercial objective for the testing.¹⁸

More fundamentally, Skywave asserts no legitimate reason for its participation in this license extension proceeding. It does not allege any harmful interference or identify any other potential injury.¹⁹ Accordingly, Skywave's motivations for submitting the Informal Objection are suspect.

Skywave's actions may be designed simply to attack the efforts of TRC to develop its technology or similarly to thwart the actions of TRC and other members of the Shortwave

¹³ *Wilfred G. Blanco*, at 3.

¹⁴ *See* 47 C.F.R. § 5.71(a).

¹⁵ *See supra* note 3 and accompanying text.

¹⁶ *See* m-Wave Networks LLC, Application for New Experimental License, File No. 0676-EX-CN-2020 (granted Sept. 10, 2020).

¹⁷ *See supra* note 5.

¹⁸ *See* Proudley Declaration, at 2 (“I supervised the development of technology for, and construction of, a 2-25 MHz Band transmission system used to conduct various technical experiments to, among other things, determine the extent to which time-sensitive financial market information can be reliably transmitted using 2-25 MHz Band frequencies at a reduced latency as compared to other wireless frequencies or fiber.”).

¹⁹ *See, e.g., Maritime Commc'ns/land Mobile, LLC, Debtor-in-Possession*, 32 FCC Rcd 3907, 3911-12, ¶ 10 (May 11, 2017) (petitioners lacked standing to file petitions to dismiss or deny where they “d[id] not argue that grant of the Renewal Applications would cause competitive harm of any sort”).

Modernization Coalition (“SMC”) to establish technical and operating rules for the flexible use of the high-frequency bands in a separate rulemaking proceeding.²⁰ As Skywave has made clear, it vehemently opposes SMC’s proposals in that proceeding.²¹ However, Skywave’s objections to SMC’s proposals in that rulemaking proceeding provide no legitimate grounds for challenging m-Wave’s separate and distinct experimental license application.

Indeed, in a recent decision, OET rejected several Freedom of Information Act (“FOIA”) requests submitted by Skywave, aggressively seeking to expand its complaints regarding the SMC proposals to encompass the experimental application proceedings of several members of the SMC, including TRC.²² In denying the FOIA requests, OET concluded there was “no credible connection” between the rulemaking proceeding and the individual experimental licenses of the parties submitting the rulemaking petition.²³ For similar reasons, OET should reject Skywave’s efforts here to extend its criticisms about the SMC proposals to a wholly separate and distinct application proceeding. Further, TRC urges OET to caution Skywave that the Commission will not countenance Skywave’s repeated efforts to use the FCC’s processes for improper purposes.²⁴

²⁰ See generally Shortwave Modernization Coalition Petition for Rulemaking to Amend the Commission’s Rules to Allow Fixed, Long-Distance, Non-Voice Communications Above 2 MHz and Below 25 MHz, Docket No. RM-11953 (filed Apr. 28, 2023).

²¹ See, e.g., Informal Objection, at 2 n.2 (criticizing the proposals of TRC and others as “deliriously flawed” and contrary to the interests of others); see also *id.* at 2 (questioning the validity of certain statements made by TRC in the rulemaking proceeding).

²² See, e.g., Letter from Ronald T. Repasi, Chief, Office of Engineering and Technology, FCC, to Timothy Eloë, Chief Executive Officer, Skywave Networks LLC, FOIA Control No. 2023-000714, Call Sign WL2XEE *et al.*, at 3 (Aug. 31, 2023).

²³ *Id.*

²⁴ The Commission deems pleadings frivolous if they lack good grounds, rely on specific arguments the Commission previously rejected or were interposed for delay. See 47 C.F.R. §1.52.

For these reasons, TRC requests that OET dismiss or deny the Informal Objection. Alternatively, OET should grant the Extension Application without expressly addressing the Informal Objection. OET has no obligation to consider Skywave's alleged concerns, and Skywave has provided no legitimate reason to do so.

Respectfully submitted,

Tony Lin
Mike Lewis
Raymond Navarro
DLA Piper LLP (US)
500 8th St., NW
Washington, DC 20004
+1 202-799-4450

Counsel for Tower Research Capital LLC

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CERTIFICATE OF SERVICE

I, Raymond Navarro, hereby certify that on September 19, 2023, a copy of the above
Opposition was sent by electronic mail to the following:

Marjorie K. Conner
2413 N. Dearing St.
Alexandria, VA 22302
mkconner@mkconnerlaw.com
703-626-6980

Counsel for Skywave Networks LLC

/s/Raymond Navarro
Raymond Navarro