

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

IPR2024-00430
Patent 8,284,690 B2

Before JON M. JURGOVAN, FREDERICK C. LANEY, and
AARON W. MOORE, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

DECISION
Granting-in-Part Petitioner's Request on Rehearing
of the Final Written Decision
37 C.F.R. § 42.71(d)

I. INTRODUCTION

On October 6, 2025, Comcast Cable Communications, LLC (“Petitioner”) filed a Request for Rehearing (Paper 28, “Req. Reh’g”) of our Final Written Decision (Paper 27, “Decision” or “Dec.”) entered on September 4, 2025.

In our Decision, we determined that Petitioner had demonstrated that claims 1–3, 6–9, 10, 14–18, and 22–24 of U.S. Patent No. 8,284,690 B2 (“the ’690 patent,” Ex. 1001) are unpatentable, but had not demonstrated that claims 4, 5, 11–13, and 19–21 are unpatentable. Dec. 78–79.

In the Request for Rehearing, Petitioner contends that the Board’s finding for claim 4 of the ’690 patent relies on a misstatement of the claim language. Req. Reh’g 1–2. Petitioner further argues that the Board’s finding regarding claim 5 relied upon a claim construction that was never argued. *Id.* at 2–7. In addition, Petitioner asserts that the Board’s finding regarding claims 11 and 19 overlooked the prior art’s teachings of simultaneous transmission. *Id.* at 7–15.

After review, for the following reasons, we grant-in-part Petitioner’s Request for Rehearing limited to correcting the language of claim 4 and modify the Final Written Decision accordingly.

II. STANDARD OF REVIEW

A party requesting rehearing bears the burden of showing that the decision should be modified. 37 C.F.R. § 42.71(d). Under 37 C.F.R. § 42.71(d), a party requesting rehearing of a decision must identify specifically all matters we misapprehended or overlooked, and the place where each matter was previously addressed. *Id.* When rehearing a decision on petition, the Board “review[s] the decision for an abuse of discretion.”

37 C.F.R. § 42.71(c) (2021). An abuse of discretion may be determined if a decision is based on an erroneous interpretation of law, if a factual finding is not supported by substantial evidence, or if the decision represents an unreasonable judgment in weighing relevant factors. *Star Fruits S.N.C. v. U.S.*, 393 F.3d 1277, 1281 (Fed. Cir. 2005).

III. ANALYSIS

We address Petitioner's contentions below in the order presented in the Request for Rehearing.

A. Board's Finding Regarding Claim 4 Relied on Misstatement of Claim Language

Petitioner contends that the Board in the Final Written Decision incorrectly stated that claim 4 recites that a probe request, not probe, identifies a hidden node. Req. Reh'g 1–2. We agree with Petitioner that we misstated the claim language. Dec. 32. The correct language of claim 4 is recited as follows:

4. The method of claim 3, wherein the probe request identifies a hidden node.

Ex. 1001, 14:5–6. However, this does not change that Petitioner has not demonstrated unpatentability of claim 4 by a preponderance of the evidence.

All examples in the '690 patent involve the probe being used to reveal hidden nodes in response to the probe request. These examples are repeated below:

For example, a probe request could request an amplified non-OFDMA probe in order to reach or identify a distant or hidden node.

Id. at 9:4–6.

Probes can be emulated, in part, by applying an appropriate payload scale factor. For example, a probe request may specify a payload that modulates only a single subcarrier with the maximum available payload scaling factor (amplification) in order to reach or identify a distant or hidden node. In another example, a payload scale factor may be requested which produces a probe transmission which exceeds the transmitting node's nominal total output power, in order to reach or identify a distant or hidden node.

Id. at 9:16–24; *see also* claims 13 and 21. Hence, we decline to read claim 4 as meaning that the probe request identifies a hidden node without using a probe.

Accordingly, we grant-in-part Petitioner's rehearing request to modify the Final Written Decision to recite the correct language of claim 4 but do not otherwise modify the Decision.

B. Board's Finding Regarding Claim 5 Allegedly Relied on Erroneous Claim Construction That Was Never Argued

Petitioner asserts that we adopted an erroneous construction for “emulates” in claim 5 that was never argued by the parties. Req. Reh'g 2–7.

Claim 5 is reproduced below:

5. The method of claim 3, wherein the modulation profile for the probe *emulates* an orthogonal frequency division multiple access (OFDMA) transmission.

Ex. 1001, 14:7–9 (emphasis added).

In the Final Written Decision, we found that the term “emulate” means “imitate” under its ordinary and customary meaning. Dec. 33 (citing <https://www.merriam-webster.com/dictionary/emulate>). Petitioner contended that IEEE 802.16's WirelessMAN-OFDMA PHY layer emulates an OFDMA transmission. Pet. 27–28. However, since the WirelessMAN-OFDMA PHY layer is an OFDMA transmission, and does not merely

emulate one, we determined that Petitioner had not shown by a preponderance of the evidence that claim 5 was unpatentable as anticipated by IEEE-802.16. Dec. 33.

Petitioner argues that the claim language “emulates an orthogonal frequency division multiple access (OFDMA) transmission” was never construed by Patent Owner during this proceeding, and asserts that its assertion that a Ranging Response (the claimed “probe”) is an OFDMA transmission stands unrebutted. Req. Reh’g 3–4. Petitioner contends the Board relied only on its own extrinsic evidence—a single dictionary definition introduced for the first time in the Final Written Decision—and overlooked that the ’690 patent’s specification discusses “emulate” and does not distinguish between an emulated OFDMA transmission and an actual one. *Id.* at 4–5 (citing Ex. 1001, 5:35–51, 7:51–63, 9:24–28). Petitioner further asserts there are other definitions of “emulate” that could have been applied. *Id.* at 5–6. In addition, Petitioner argues that “an actual OFDMA transmission is the most perfect emulation of it.” *Id.* at 6. Petitioner also complains that “the Board’s construction was not previously proposed or considered by any party at any point in this proceeding” and that it did not have an opportunity to address it. *Id.* at 6. Petitioner thus contends that the Board’s findings regarding claim 5 misapprehended the claim language and overlooked Petitioner’s arguments. *Id.* at 7.

We do not agree with Petitioner’s arguments. Petitioner asserted that all claim terms should be given their ordinary meaning (Pet. 6), so our referring to a dictionary for the definition of “emulate” in the Final Written Decision was appropriate. Req. Reh’g 6. The claim language uses

“emulate” to imply that the OFDMA transmission is a test to be used for checking channel conditions, not an actual OFDMA transmission.

If Petitioner thought a particular meaning should be applied to “emulate” it had the opportunity to do so in its Petition or at another opportunity in this proceeding. It did not do so. Accordingly, we hold to our Final Written Decision and deny rehearing for claim 5.

C. Board’s Finding Regarding Claims 11 and 19 Allegedly Overlooked the Prior Art’s Teachings of Simultaneous Transmission

Petitioner contends that we overlooked prior art teachings of the claimed simultaneous transmission of probes in claims 11 and 19. Req. Reh’g 7–15. Claim 11 is set forth below (including Petitioner’s bracketed identifiers):

11. The method of claim 9, further comprising:

[11A] a) the first node transmitting a second probe request to a third node;

[11B] b) and the first node receiving a second probe from the third node, wherein the second probe is generated according to the second probe request; and

[11C] wherein the first probe and second probe are *transmitted simultaneously* using OFDMA.

Ex. 1001, 14:32–39 (emphasis added). Claim 19 recites a similar limitation.

1. IEEE-802.16 Incidental Simultaneous Transmission

Petitioner contends that the Board overlooked that claim 11 and claim 19 contain no requirement to actively control simultaneous transmission of the first and second probes, and that this happening by pure chance meets the claim language. Req. Reh’g. 9. Petitioner argues that the ’690 patent’s specification does not mandate coordination of OFDMA transmission from different nodes. *Id.* at 9–10 (citing Ex. 1001, 6:18–32, 7:56–58; Pet. 38, Pet. Reply 14–15; Ex. 1036 ¶¶ 40–43; Ex. 1002

¶¶ 257–259). Petitioner asserts that the purpose of using OFDMA is to allow for efficient multiple transmissions at the same time, and that the Board misapprehended the evidence in concluding that IEEE-802.16’s multiple service flows and maintaining link quality is insufficient to disclose simultaneous transmission of probes. *Id.* at 10–11 (citing Ex. 1002 ¶¶ 257–259, 429–430, 526–531; Dec. 40; Ex. 1036 ¶ 43; Ex. 1013, 493–504; Ex. 1016 ¶¶ 8, 65–67, 131–132, 134, Figs. 1A–1C).

We do not agree with Petitioner’s arguments. For example, in stating “the probe is simultaneously transmitted by multiple nodes and received by a single node (multipoint-to-point, such as OFDMA)” (Ex. 1001, 6:25–27), we do not agree that the ’690 patent is suggesting that these simultaneously transmitted probes are transmitted by happenstance, as Petitioner argues. We further note a rehearing request is not an opportunity to reargue points made but lost at trial.

2. *Waxman and Zuckerman Simultaneous Transmission*

Petitioner further argues that the Board misapprehended that Petitioner’s obviousness required Waxman to explicitly disclose limitation 11C, and overlooked that Zuckerman disclosed situations that include simultaneous transmission of DOCSIS messages. Req. Reh’g 11–14. Specifically, Petitioner contends the Board overlooked its contention that OFDMA is beneficial to allocate bandwidth to allow for simultaneous transmission, and that a POSITA would have found it obvious that stations configured to employ OFDMA would have received probe responses that were simultaneously transmitted by different APs. *Id.* at 12–13 (citing Dec. 58, 60, 63, 64; Ex. 1002 ¶¶ 429–430, 527–532; Ex. 1007 ¶ 38; Ex. 1016 ¶¶ 8, 176, 211–212, 215–216; Pet. 59, 66; Pet. Reply 21).

Petitioner contends that the Board overlooked that obviousness does not require an express disclosure of the claim limitation. *Id.* at 13–14.

Petitioner repeats its argument that “it would have been obvious to configure Waxman’s stations to employ OFDMA to receive communications (particularly Waxman’s probe responses) simultaneously, as taught by Zuckerman because OFDMA beneficially allocates bandwidth to allow for simultaneous transmissions,” which Patent Owner allegedly never addressed. *Id.* at 14 (citing Pet. 66–67; Pet. Reply 21; PO Resp. 41–43; Ex. 1002 ¶¶ 528–532).

Petitioner’s argument misapprehends that the language of claims 11 and 19 requires simultaneous transmission of probes from different nodes to another node. Because the ’690 patent discloses an embodiment in which the probe is simultaneously transmitted by multiple nodes and received by a single node (*see, e.g.*, Ex. 1001, 6:25–28), we assume this means the transmission is coordinated and not by happenstance. Accordingly, we do not agree with Petitioner’s argument.

Furthermore, Petitioner’s arguments repeat what it argued in the Petition and at trial generally, and they are not persuasive for the reasons explained in the Final Written Decision.

3. *DOCSIS-2.0 and Zuckerman Simultaneous Transmission*

Petitioner argues that the Board misapprehended that Petitioner’s obviousness ground required DOCSIS-2.0 to explicitly disclose limitation 11C, and overlooked that Zuckerman teaches “simultaneously” transmitting DOCSIS messages. *Id.* at 14. Petitioner contends that the Board failed to apprehend that an express disclosure is not required for obviousness, and that DOCSIS-2.0’s Test Responses would have been

simultaneously transmitted using OFDMA because the messages that trigger them would have been sent simultaneously to perform testing on multiple channels simultaneously. *Id.* (citing Pet. 92; Ex. 1002 ¶¶ 682, 685).

Petitioner states that the Board overlooked that DOCSIS-2.0 teaches CMs independently transmitting Test Responses using OFDMA while Zuckerman teaches “simultaneously” transmitting DOCSIS messages. *Id.* at 14–15 (citing Pet. 89–92; Ex. 1016 ¶¶ 6–8, 15, 41, 48–54, 58–65, 71–72, 76, 80, 110, 134, 141, 174, 176, 198, 210–212; Ex. 1002 ¶¶ 682–687; Pet. Reply 27). Petitioner contends that the Board additionally overlooks that there is no evidence contradicting Petitioner’s showing for limitation 11C.

We hold to our finding in the Final Written Decision that neither DOCSIS-2.0 nor Zuckerman, nor their combination, renders obvious the claimed “wherein the first probe and second probe are *transmitted simultaneously* using OFDMA.” Appellant again rehashes arguments made and lost at trial.

IV. CONCLUSION

We conclude that Petitioner is correct that we misstated claim 4 in the Final Written Decision and we grant-in-part Petitioner’s rehearing request limited to correcting the language of claim 4 but decline to otherwise modify the Decision. We disagree that citing a dictionary definition for “emulates” in claim 5 was improper, particularly when Petitioner argued that its ordinary meaning applies. In addition, we reject Petitioner argument that the Board overlooked the prior art’s teachings of simultaneous transmission in the prior art.

Outcome of Decision on Rehearing:

Claims	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
4, 5	102	IEEE-802.16		4, 5
4, 5, 11, 19	103(a)	IEEE-802.16		4, 5, 11, 19
4, 5, 11, 19	102	Waxman		4, 5, 11, 19
4, 5, 11, 19	103(a)	Waxman		4, 5, 11, 19
4, 5	103(a)	Waxman, Giesberts		4, 5
11, 19	103(a)	Waxman, Zuckerman		11, 19
5	103(a)	Waxman, Giesberts, Zuckerman		5
11, 19	103(a)	DOCSIS-2.0, Zuckerman		11, 19
11, 19	103(a)	DOCSIS-2.0, ISO8802-2, Zuckerman		11, 19
Overall Outcome				4, 5, 11, 19

Final Outcome after Rehearing:

Claims	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1–7, 9–10, 14–15	102	IEEE-802.16	1–3, 6–7, 9, 14–15	4, 5, 10
3–5, 11– 13, 16–24	103(a)	IEEE-802.16	3, 17, 22–23	4–5, 10–13, 18–21, 24
8, 16, 24	103(a)	IEEE-802.16, Won	8, 16, 24	

Claims	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1–11, 14–19, 22–24	102	Waxman	9	1–8, 10–11, 17–19, 22–24
1–11, 14–19, 22–24	103(a)	Waxman	9	1–8, 10–11, 17–19, 22–24
3–5, 12–13, 20–21	103(a)	Waxman, Giesberts		3–5, 12–13, 20–21
5, 10–11, 18–19	103(a)	Waxman, Zuckerman		5, 10–11, 18–19
5	103(a)	Waxman, Giesberts, Zuckerman		5
7–8, 15–16, 23–24	103(a)	Waxman, Won		
1–2, 6–7, 9, 14–15	102	DOCSIS-2.0	9	
1–2, 6–7, 9, 14–15	103(a)	DOCSIS-2.0, ISO8802-2	9	
8, 10–11, 16–19, 22–24	103(a)	DOCSIS-2.0, Zuckerman	10, 17, 18	11, 19
8, 10–11, 16–19, 22–24	103(a)	DOCSIS-2.0, ISO8802-2, Zuckerman	10, 17, 18	11, 19
Overall Outcome			1–3, 6–9, 10, 14–18, 22–24	4–5, 11–13, 19–21

V. ORDER

For the foregoing reasons, it is

ORDERED that Petitioner's Request for Rehearing is granted-in-part.

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