

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.,
Petitioner

v.

NEO WIRELESS LLC,
Patent Owner

Case IPR2023-00426
U.S. Patent No. 8,467,366 B2

**PETITIONER'S REQUEST FOR REHEARING OF THE DECISION
DENYING INSTITUTION OF *INTER PARTES* REVIEW (PAPER 12)**

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TABLE OF CONTENTS

I.	BACKGROUND	1
A.	The Petition	1
B.	The POPR.....	4
C.	Petitioner’s Request for Reply Briefing	4
D.	The DI.....	6
II.	LEGAL STANDARD	7
III.	GOOD CAUSE EXISTS TO CONSIDER EXHIBIT 1033	8
IV.	ARGUMENTS	8
A.	The Panel abused its discretion in denying Petitioner’s timely request to reply to Patent Owner’s construction of Limitation 1.5.	8
B.	The Panel abused its discretion in misapplying <i>Nidec</i>	10
C.	The Panel misapprehended Limitation 1.5, which does not recite that the zero-power subcarriers are included within the block.	12
D.	In Grounds 3-4, the Panel misapprehended Petitioner’s motivation-to-combine arguments and overlooked Dr. Cimini’s testimony about <i>adjacent</i> channel interference.....	14
V.	CONCLUSION.....	15

PETITIONER’S UPDATED EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 8,467,366 B2 to Li et al. (“the ’366 patent”)
1002	Prosecution History of U.S. Patent No. 8,467,366 B2
1003	Declaration of Leonard J. Cimini, Jr., Ph.D.
1004	<i>Curriculum Vitae</i> of Leonard J. Cimini, Jr., Ph.D.
1005	Declaration of Sylvia Hall-Ellis, Ph.D.
1006	Declaration of Richard M. Bembien
1007	KR 2003-0058589 A to Jeong et al.
1008	Certified translation of KR 2003-0058589 A to Jeong et al. (“ Jeong ”)
1009	U.S. Patent No. 5,903,614 to Suzuki et al. (“ Suzuki ”)
1010	Jerry D. Gibson, “The Mobile Communications Handbook,” 2nd Edition, CRC Press LLC, 1999 (“ Gibson ”)
1011	U.S. Pub. No. 2003/0198179 A1 to Koo et al. (“ Koo ”)
1012	Air Interface for Fixed Broadband Wireless Access Systems, Part A: Systems between 2 and 11 GHz, IEEE 802.16ab-01/01r2, July 2001 (“ 802.16ab ”)
1013	WO 03/075500 A2 to Chayat et al. (“ Chayat ”)
1014	<i>Intentionally Left Blank</i>
1015	U.S. Copyright Office record: The mobile communications handbook / editor-in-chief, Jerry D. Gibson.
1016	October 26, 2001 Letter from Chairman of ETSI Project Broadband Radio Access Networks, Jamshid Khun-Hush, Dr.-Ing., to Dr. Roger B. Marks, Chair IEEE 802.16 Working Group on Broadband Wireless Access
1017	Krinock et al., “Fast and Efficient BW Request Mechanism for IEEE 802.16a OFDM PHY,” November 8, 2001
1018	Cimini, “Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing,” IEEE Trans. Comm., Vol. 33, No. 7, July 1985.
1019	U.S. Patent No. 3,488,445 to Chang

Exhibit No.	Description
1020	<i>Dell Inc. v. Neo Wireless LLC</i> , IPR2021-01480, Paper 11 (P.T.A.B. March 16, 2022).
1021	Defendant’s Proposed Intrepetations, <i>In Re Neo Wireless, LLC Patent Litigation</i> , 2:22-MD-03034 (E.D. Mich.), Dec. 30, 2022.
1022	U.S. Patent No. 6,556,557 to Cimini, Jr. et al.
1023	U.S. Patent No. 6,928,084 to Cimini, Jr. et al.
1024	Transfer Order, Docket No. 18, <i>Neo Wireless, LLC v. Volkswagen Group of America, Inc.</i> , Case No. 1:22-cv-00076 (E.D. Tenn.) (June 14, 2022).
1025	Docket Sheet, <i>Neo Wireless, LLC v. Volkswagen Group of America, Inc. et al.</i> , Case No. 2:22-cv-11404 (E.D. Mich.)
1026	United States District Courts – National Judicial Caseload Profile, June 2022
1027	June 21, 2022 Memorandum: Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation (“June 2022 Memo”)
1028	Plaintiff Neo Wireless LLC’s Disclosure Of Proposed Interpretations And Evidence Of Disputed Claim Terms, <i>In Re Neo Wireless, LLC Patent Litigation</i> , 2:22-MD-03034-TGB, December 30, 2022.
1029	Carl Eklund, et al., “IEEE Standard 802.16: A Technical Overview of the WirelessMAN™ Air Interface for Broadband Wireless Access,” IEEE Communications Magazine, June 2002.
1030	Working Group Review Document 802.16ab-01/01r2 (IEEE Projects P802.16a/P802.16b), September 26, 2001.
1031	Minutes of IEEE 802.16 Session #15, Denver, CO, USA, October 3, 2001.
1032	Minutes of IEEE 802.16 Plenary Session #16, November 19, 2001.
1033	E-mail Exchange between Board and Parties, July 26-28, 2023

Petitioner, Volkswagen Group of America, Inc., respectfully requests rehearing of the Decision Denying Institution of *Inter Partes* Review (Paper 12, “DI”).

I. BACKGROUND

The Petition challenges claims 1-24 of U.S. 8,467,366 as obvious over combinations including, among other references, Jeong and Suzuki (Grounds 1-2) and Koo, 802.16ab, and Suzuki (Grounds 3-4). Pet., 9. It is supported by testimony of Dr. Leonard J. Cimini, Jr., who is recognized as one of the world’s pre-eminent experts in the wireless communications technologies described and claimed in the ’366 patent. EX1003, ¶¶8-15. Claim 1 is representative and recites a mobile station configured to transmit “a ranging signal” over “a ranging subchannel” wherein:

[1.5] the ranging subchannel comprises at least one block of subcarriers within the communication channel and power levels of subcarriers at both ends of a block are set to zero.

EX1001, 7:23-26 (bold emphasis added).

The DI turned on Limitation 1.5, primarily on the Panel’s interpretation of “power levels of subcarriers at both ends of a block are set to zero.” DI, 15-30.

A. The Petition

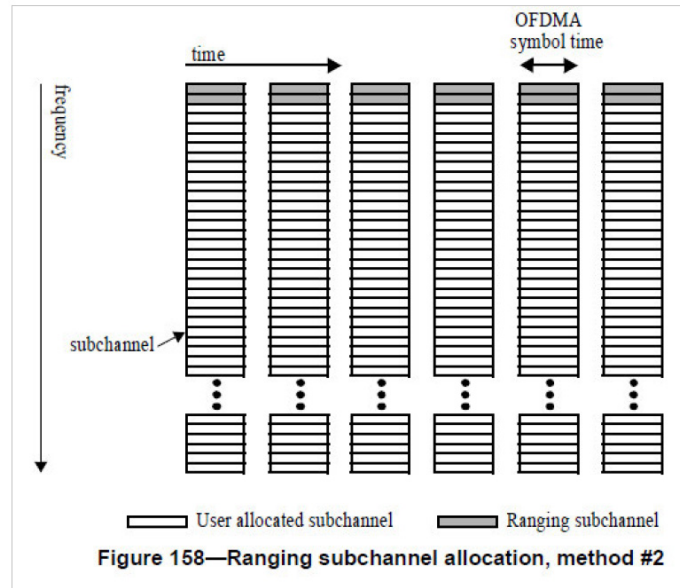
Petitioner did not expressly construe any terms but “reserve[d] the right to respond to any construction proposed by Patent Owner.” Pet., 13. Petitioner explained, however, that “[t]he ’366 patent does not define a ‘*block of subcarriers*’” and that Limitation 1.5 merely indicates that a block “has plural subcarriers.” Pet.,

30. Following this explanation, in Grounds 1-2, Petitioner pointed out that Jeong's ranging sub-channel "is bounded, at both ends, by guard subcarriers," and presented alternative theories as to how Jeong satisfies the "block of subcarriers," both theories identifying a "block" having plural subcarriers. Pet., 31.

Petitioner's first theory defined "Jeong's 127 subcarrier ranging sub-channel [as] a '*block of subcarriers.*'" Pet. 31. Under this definition, guard subcarriers are at the end of but not included within the block. Petitioner's second theory defined "Jeong's 127 subcarrier ranging sub-channel plus one or more guard subcarriers on each end [as] a '*block of subcarriers.*'" Pet., 31. Under this definition, guard subcarriers are both at the end of and included within the block. Under both theories, Petitioner explained that it would have been obvious to set Jeong's guard subcarriers to zero power in order to reduce interference between subchannels, as taught by Suzuki. Pet., 33; *see also id.*, 22-23.

In Grounds 3-4, Petitioner focused primarily on 802.16ab and Suzuki to address Limitation 1.5, explaining that 802.16ab teaches ranging subchannels (e.g., Figure 158 below) and using "[n]ull carriers" as guard bands. Pet., 54, 69. Petitioner explained, "Figure 158 shows a 'Ranging subchannel' is allocated in the portion of the frequency band, and 'User allocated subchannel[s]' are allocated in other portions of the frequency band," Pet., 53-54, i.e., adjacent to the Ranging subchannel. Petitioner then explained that it would have been obvious to use Suzuki's zero-

power subcarriers “at both ends of a block of subcarriers in 802.16ab’s ranging subchannel in order to reduce interference **between adjacent** blocks of subcarriers, as discussed in **Section IX.E.3.**” Pet., 70 (bold emphasis added); *see also id.*, 59-60 (Section IX.E.3, citing EX1003, ¶¶150-151).



EX1012, 0087.

Dr. Cimini, in turn, opined that adjacent channel interference was a “well-known and widely studied” form of interference in wireless systems. EX1003, ¶55; *see id.*, ¶151 (citing Sections VII.C (¶53) and VII.E (¶¶55-56)). He explained that “adjacent channel interference occurs when a signal in one channel (such as a frequency band or group of subcarriers) interferes with a signal in an adjacent channel (such an adjacent frequency band or group of subcarriers)” and that “[b]y March 2004, various techniques had been developed to mitigate adjacent channel interference, **including the use of guard bands.**” EX1003, ¶55 (bold emphasis added; cit-

ing Gibson for support, EX1003, 0315, 0416).

B. The POPR

On June 29, 2023, Patent Owner filed its POPR and a supporting declaration from Mr. Alberth, Exhibit 2001. Patent Owner construed Limitation 1.5 to “require that the zero-power subcarriers be a part of the ranging subchannel,” and asserted that Figure 4 and the related disclosure in the ’366 patent supported Patent Owner’s construction. POPR, 24-26. Applying its construction, Patent Owner argued that the Jeong-Suzuki combination (Grounds 1-2) fails to teach or render obvious zero-power subcarriers that are part of a ranging subchannel. *Id.*, 26. It acknowledged, however, that “Jeong’s guard intervals are provided between adjacent subchannels,” *id.*, 27, and thus Patent Owner’s distinction turned on its construction.

Regarding Grounds 3-4, Patent Owner’s arguments focused on Petitioner’s proffered motivation to combine 802.16ab and Suzuki to address Limitation 1.5. Here, Patent owner (i) mischaracterized Petitioner’s motivation as merely to “reduce interference,” POPR, 42-43, omitting “between adjacent blocks of subcarriers,” Pet., 70; and (ii) and argued that 802.16ab’s use of CDMA for signaling on the ranging subchannel negated the need for guard bands at either end of the ranging subchannel, *see* POPR, 42-43.

C. Petitioner’s Request for Reply Briefing

On July 26, 2023—less than one month after Patent Owner filed its POPR

and more than two months before the DI was due—Petitioner timely requested authorization to file a limited Reply to the POPR. EX1033, 2-4. Petitioner explained that good cause existed because the “POPR include[d] critical mischaracterizations and inconsistencies,” including “Patent Owner’s allegations regarding the appropriate scope of the claimed ‘power levels of subcarriers at both ends of a block are set to zero,’ which are insolubly inconsistent with its infringement theories in the corresponding multi-district litigation.” *Id.*, 3. Petitioner indicated that it did not oppose Patent Owner having an equal opportunity to respond. *Id.*

On July 27, 2023, Patent Owner opposed Petitioner’s request. *Id.*, 1-2. It argued, among other things, that claim construction briefing was not necessary because “the parties’ District-Court claim construction positions are in the record (Exhs. 1021, 1028.)” *Id.*, 2. Notably, however, this briefing does not include proposed constructions for Limitation 1.5. EX1021, 15-17; EX1028, 7-10, 33-45.

On July 28, 2023, Supervisory Paralegal Specialist Esther Goldschlager responded to Petitioner’s request, simply stating: “From the Board – Petitioner’s request to file a reply to Patent Owner’s Preliminary Response is denied. No additional briefing is authorized at this time.” *Id.*, 1. The email did not provide any explanation for denying Petitioner’s timely request, offer to have a call with the parties, or address Petitioner’s good cause showing. *Id.*

D. The DI

The Panel’s decision for all Grounds turned on the zero-power subcarrier requirement of Limitation 1.5. DI, 15-30. Before analyzing the prior art, the Panel alleged that no claim term needed to be expressly construed in order to resolve the dispute. DI, 11 (quoting the Federal Circuit’s decision in *Nidec* for the proposition that “claim terms need to be construed ‘only to the extent necessary to resolve the controversy.’”). The Panel, however, interpreted (without performing any claim construction analysis) Limitation 1.5 as requiring the zero-power subcarriers to be part of the subcarrier block, adopting Patent Owner’s construction:

Petitioner, therefore, must show that the combined teachings of Jeong and Suzuki disclose a block of subcarriers that includes **the zero power subcarriers as part of the subcarrier block**.

DI, 15 (bold emphasis added).

The Panel then found that the prior-art combinations of Grounds 1-4 fails to satisfy the Panel’s narrow interpretation:

Because Jeong’s guard intervals are not defined **as a part** of the ranging subchannel that Petitioner identifies as the claimed “ranging subchannel compris[ing] at least one block of subcarriers within the communication subchannel,” Petitioner’s proposed substitution of **Suzuki’s zero-power subcarriers for Jeong’s guard intervals results in the zero-power subcarriers being adjacent to Jeong’s ranging subchannel, not a part of the block of subcarriers that comprise the ranging subchannel as limitation 1.5 requires**.

DI, 19 (bold emphasis added).

Specifically, Petitioner’s analysis, and Dr. Cimini’s testimony in this regard, are conclusory and fail to explain adequately how or why a POSA would have implemented Suzuki’s zero power subcarriers **into 802.16ab’s block of subcarriers.**

DI, 26-27 (bold emphasis added).

For Grounds 3-4, the Panel was also persuaded by Patent Owner’s argument that a skilled artisan would not have been motivated to use Suzuki’s zero-power guard bands with 802.16ab’s ranging subchannel because “the CDMA scheme described in 802.16ab has a high tolerance to interference,” allegedly negating the need for Suzuki’s guard bands. DI, 28-29. The Panel’s analysis focused on the use of CDMA to mitigate interference **within** the ranging subchannel, but not on interference on subchannels **adjacent** to the ranging subchannel (which was the focus of Petitioner’s motivation argument). DI, 28-29.

II. LEGAL STANDARD

A party dissatisfied with a decision may request rehearing, which must identify all matters the party believes the Board misapprehended or overlooked, and where each matter was previously addressed. 37 C.F.R. § 42.71(d). Such requests are reviewed for abuse of discretion, *id.* at § 42.71(c), which “occurs when a court misunderstands or misapplies the relevant law or makes clearly erroneous findings of fact,” *Renda Marine, Inc. v. U.S.*, 509 F.3d 1372, 1379 (Fed. Cir. 2007).

III. GOOD CAUSE EXISTS TO CONSIDER EXHIBIT 1033

The Board may consider new evidence submitted to support a request for re-hearing upon a showing of good cause. *Huawei Device Co., Ltd. v. Optis Cellular Tech., LLC*, IPR2018-00816, Paper 19, 3-4 (PTAB Jan. 8, 2019) (precedential). Good cause exists to consider Exhibit 1033—the July 26-28, 2023 email exchange between Petitioner, Patent Owner, and PTAB staff—because it furthers the Board’s objective of maintaining a complete and understandable record of the proceeding. *See* 37 C.F.R. § 42.14 (“The record of a proceeding, including documents and things, shall be made available to the public, except as otherwise ordered.”).

IV. ARGUMENTS

The Panel should reverse the DI because: (A) The Panel abused its discretion in denying Petitioner’s timely request to reply to Patent Owner’s construction of Limitation 1.5. (B) The Panel abused its discretion in misapplying *Nidec*. (C) The Panel misapprehended Limitation 1.5, which does not recite that the zero-power subcarriers are included within the block. (D) In Grounds 3-4, the Panel misapprehended Petitioner’s motivation-to-combine arguments and overlooked Dr. Cimini’s testimony about **adjacent** channel interference.

A. The Panel abused its discretion in denying Petitioner’s timely request to reply to Patent Owner’s construction of Limitation 1.5.

The Panel abused its discretion in denying Petitioner’s timely request to reply to the POPR, particularly with respect to Petitioner’s request to reply to Patent

Owner’s claim construction of Limitation 1.5—which the Panel adopted and applied as the basis for denying the Petition. *See* DI, 15, 19-20, 26-27. Petitioner’s request was timely, made in response to newly introduced testimony from Mr. Alberth, and identified a good cause basis for limited briefing. EX1033, 3-4. The Panel did not provide any basis or explanation for denying Petitioner’s request, and thus the Panel’s decision was arbitrary and capricious and an abuse of discretion.

“A petitioner may seek leave to file a reply to the preliminary response in accordance with §§ 42.23 and 42.24(c). Any such request must make a showing of good cause.” 37 C.F.R. § 42.208(c). The Trial Practice Guide explains, “Submission of patent owner testimonial evidence at the preliminary stage may warrant granting the petitioner a reply to such evidence.” TPG, 51. And Panels routinely grant timely requests to reply to new testimonial evidence and to address claim construction positions presented in a preliminary response. *See, e.g., BJ Energy Solutions, LLC v. Yant AI Jereh Petroleum Equip. & Tech. Co. LTD*, PGR2021-00060, Paper 8, 4 (PTAB July 7, 2021) (“the testimonial evidence relied upon and the ... claim construction positions in the Preliminary Response warrant the grant of a reply for Petitioner”); *Unified Patents, LLC v. AK Meeting IP LLC*, IPR2022-01142, Paper 7, 3 (PTAB Oct. 19, 2022); *Edward Lifesciences Corp. v. Cardiovalve Ltd.*, IPR2021-00383, Paper 10, 4 (PTAB May 20, 2021).

Here, Patent Owner advanced in the POPR a claim construction of Limita-

tion 1.5, POPR, 24-26, and presented new testimonial evidence from Mr. Alberth about, among other things, the construction of this term, EX2001, ¶¶55-59. Petitioner timely requested authorization to reply to, among other things, Patent Owner's claim construction of Limitation 1.5—which, notably, the parties had not identified as a term for construction in the co-pending multi-district litigation. EX1003, 3; EX1021, 15-17; EX1028, 7-10, 33-45. After arbitrarily denying Petitioner an opportunity to brief the claim construction issue, the Panel adopted Patent Owner's construction, credited the new testimonial evidence, and denied institution on the basis of its interpretation of Limitation 1.5. DI, 18 (citing EX2001, ¶¶57-59).

This sequence of events was unduly prejudicial to Petitioner and warrants reversal of the Panel's decision to deny institution. Because Petitioner was denied an opportunity to respond to Patent Owner's claim construction of a term that the Panel determined to be dispositive and the parties clearly dispute the scope of the term, the Panel should institute review and allow the record to develop as to the proper scope of Limitation 1.5. Additionally, the Panel, although adopting Patent Owner's construction, failed to provide any analysis of the term under the *Phillips* claim construction standard, further warranting reversal in order to allow record development of this key issue.

B. The Panel abused its discretion in misapplying *Nidec*.

The Panel further abused its discretion in misapplying *Nidec Motor Corp. v.*

Zhongshan Broad Ocean Motor Co., 868 F.3d 1013 (Fed. Cir. 2017) and declining to expressly construe Limitation 1.5. DI, 11. *Nidec* holds that claim terms need to be construed “only to the extent necessary to resolve the controversy.” *Nidec*, 868 F.3d at 1017. The corollary is that when the construction of a term is dispositive, the term should be construed and its construction should be made explicit so that the parties and the public can rely on it. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“[C]laim construction may occasionally be necessary in obviousness determinations, when the meaning or scope of technical terms and words of art is unclear and in dispute and requires resolution in order to determine obviousness.”).

After denying Petitioner’s request to brief the claim construction issue, the DI turned on the Panel’s interpretation of Limitation 1.5 as requiring the zero-power subcarriers to be part of the subcarrier block. DI, 15, 19-20, 26-27. The Panel held, for example, that “Petitioner ... must show that the combined teachings of Jeong and Suzuki disclose a block of subcarriers that includes the zero power subcarriers **as part of** the subcarrier block,” DI, 15 (bold emphasis added), and denied institution because it found that Petitioner failed to make this showing, DI, 19-20. But the Panel did not provide any analysis under the *Phillips* claim construction standard to show that the proper construction of Limitation 1.5 requires the zero-power subcarriers to be part of the block. *See* DI, 11 (declining to provide an ex-

press construction for any term). The Panel’s failure to construe this claim term upon which the Panel “resolve[d] the controversy” misapplied prevailing Federal Circuit caselaw and thus was an abuse of discretion. *Nidec*, 868 F.3d at 1017.

Here, the scope of the term “at both ends” in Limitation 1.5 is not readily apparent from the claim language and is clearly disputed by the parties. The parties and the Panel also appear to agree that, if the proper construction does not require the zero-power subcarriers to be part of the block, that Limitation 1.5 is met by at least the Jeong-Suzuki combination. *See* POPR, 26 (acknowledging that “Jeong’s guard intervals are provided *between* subchannels”); DI, 18-19 (same). Accordingly, the Panel should reverse the DI and institute review to allow the parties to develop the record on the scope and meaning of this dispositive term.

Additionally, it is sound public policy that the Board allow the record to develop and to provide its analysis of the construction of a term that is dispositive so that the parties and the public can rely on a fully developed record. That is particularly true here because Patent Owner has asserted the ’366 patent in multi-district litigation against many defendants in the automotive industry. Paper 5, 1-3.

C. The Panel misapprehended Limitation 1.5, which does not recite that the zero-power subcarriers are included within the block.

Limitation 1.5 is a “wherein” clause that recites two sub-limitations: (1) wherein “the ranging subchannel comprises at least one block of subcarriers within the communication channel” and (2) wherein “power levels of subcarriers at both

ends of a block are set to zero.” EX1001, 7:15, 7:23-26. The Panel misapprehended the second sub-limitation as requiring the zero-power subcarriers to be part of and included within the “at least one block of subcarriers.” DI, 15, 19-20, 26-27. But neither the claim language nor the disclosure supports this narrow construction.

The claim language of Limitation 1.5 recites only that the zero-power subcarriers are “**at both ends of a block,**” not that the zero-power subcarriers are part of and included within the “at least one block of subcarriers” of the first sub-limitation. Indeed, the term “at least one block” does not provide antecedent basis for “a block” in the second sub-limitation. Also, claims 6 and 7 further define the power level of subcarriers at the boundary of a block as merely “lower than a power level of subcarriers towards the center” and as merely “attenuated,” EX1001, 7:45-52, indicating by claim differentiation that Limitation 1.5 encompasses subcarriers at both ends and included within a block that may **not** have zero power.

Figure 4 and the corresponding disclosure in the '366 patent also support that Limitation 1.5 does not require zero-power subcarriers to be included within the block. Figure 4 graphs frequency on the x-axis and power on the y-axis. *See* EX1001, 3:27-35. The highlighted block $b_j(2)$ shows first and last subcarriers that are part of and included within the block are not set to zero. Rather, the subcarriers that are immediately adjacent to the first and to last subcarriers of the block (i.e., subcarriers “at both ends” but outside the block) are set to zero.

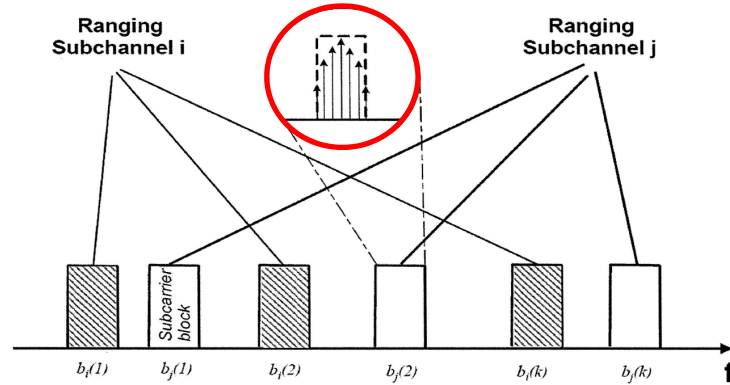


FIG. 4

EX1001, FIG. 4 (annotated).

So Figure 4 plainly supports an embodiment in which subcarriers at both ends of but **not** included within a block are set to zero. And even if the '366 patent supports other embodiments (including one in which subcarriers at both ends and included within a block are set to zero), it is improper to read embodiments into the claims, as Patent Owner and the Panel did here. *See* POPR, 24-26; DI, 15.

D. In Grounds 3-4, the Panel misapprehended Petitioner's motivation-to-combine arguments and overlooked Dr. Cimini's testimony about *adjacent* channel interference.

In denying Grounds 3-4, the Panel also (i) misapprehended Petitioner's motivation-to-combine arguments and (ii) overlooked Dr. Cimini's testimony about different types of interference in wireless communications and well-known techniques for mitigating **adjacent** channel interference.

The Panel held that Petitioner did not adequately explain why a skilled artisan would have combined 802.16ab with Suzuki's guard bands. Specifically, the Panel agreed with Patent Owner that 802.16ab taught using CDMA for the ranging

signal, which, because CDMA avoids certain types of interference, the Panel found negates the need to use Suzuki's guard bands. DI, 27-28 ("Given 802.16ab's CDMA scheme that already has a high tolerance to interference...."). It also disregarded Cimini's testimony as "mirror[ing]" the Petition. DI, 27 n.10.

Patent Owner's argument about using CDMA within the ranging subchannel is a red herring because CDMA would reduce interference **within** the ranging subchannel (that is, allow multiple users to the shared channel at the same time). But interference within the same subchannel is not the the type of interference that Petitioner and Cimini alleged would have motivated the combination. Rather, Petitioner argued that a skilled artisan would have been motivated to use Suzuki's zero-power guard bands to reduce interference between **adjacent** subcarriers, Pet., 59 ("between groups of subcarriers"), 70 ("between adjacent blocks of subcarriers"), such as between the ranging subchannel and the adjacent user allocated subchannel in Figure 158 of 802.16ab, *see* Pet., 54, 64. Dr. Cimini also provided opinions, relied on but not repeated in the Petition, that guard bands were commonly used to reduce such adjacent channel interferece. EX1003, ¶¶53, 55 (referenced in ¶151, Pet., 59).

V. CONCLUSION

Petitioner respectfully requests that the Panel reverse the DI to allow the record to develop with respect to claim construction and the obviousness grounds.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

A handwritten signature in black ink, reading "Richard M. Bemben". The signature is fluid and cursive, with a large, stylized "R" at the beginning.

Richard M. Bemben
Registration No. 68,658
Attorney for Petitioner

Date: October 26, 2023

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PETITIONER'S REQUEST FOR RE-
HEARING OF THE DECISION DENYING INSTITUTION OF *INTER*
PARTES REVIEW AND EXHIBIT 1033** was served in its entirety on October
26, 2023, upon the following parties via electronic mail:

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Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

A handwritten signature in black ink, reading "Richard M. Bemben". The signature is fluid and cursive, with the first letter of each name being capitalized and prominent.

Richard M. Bemben
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Date: October 26, 2023

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