

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS AMERICA, INC.,
and SAMSUNG ELECTRONICS CO., LTD.,
Petitioners,

v.

COLLISION COMMUNICATIONS, INC.,
Patent Owner.

Case No. IPR2024-01248
U.S. Patent No. 9,814,071

PETITIONER'S REQUEST FOR DIRECTOR REVIEW

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Petitioner respectfully requests that the Director review the Board's denial of institution regarding U.S. Patent No. 9,814,071 (the "'071 patent"). The Board abused its discretion by denying institution on two sets of grounds based on clearly erroneous findings.

With respect to Grounds 4-5, the Board's determination rested entirely on its conclusion that Baum does not disclose the "requiring" aspect of limitation 1b of claim 1. The Board then extended its reasoning to independent claim 21, despite the fact that no such limitation even appears in claim 21.

With respect to Grounds 1-3, the Board failed to address the Petition's mapping of the claimed "unique signal parameters" to Jin's phase differences and radio channel parameters, and incorrectly determined that the Petition lacked "particularity" and was "inconsistent" because it subsequently used the term "unique pilot parameter" to refer to the same disclosure in Jin. The Board instead evaluated a mapping the Petition never even proposed (equating Jin's "pilot patterns" to the claimed "unique signal parameters") and found it deficient.

Both of these determinations constitute an abuse of discretion and clear erroneous factual findings, and warrant review by the Director.

LEGAL STANDARD

The Director may review the Board's institution decision for "abuse of discretion" and "erroneous findings of material fact." Revised Interim Director

Review Process, § 5(A)(ii)(c). ““An abuse of discretion is found if [a] decision: (1) is clearly unreasonable, arbitrary, or fanciful; (2) is based on an erroneous conclusion of law; (3) rests on clearly erroneous fact finding; or (4) involves a record that contains no evidence on which the Board could rationally base its decision.”” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016) (quoting *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1121 (Fed. Cir. 2004) (citations omitted).

BACKGROUND

A. U.S. Patent No. 9,814,071 (Ex. 1001)

The '071 patent is directed to a wireless communication method where multiple users share a communication channel, and signal parameters are used to distinguish each user's transmitted data. Ex. 1001, 3:18-29. A “parameter-estimating signal” is transmitted on an unshared “parameter channel” and is used to estimate “at least one unique signal parameter” for each transmitting user. *Id.*, 4:41-51. The unique estimated signal parameters are then used to distinguish information sent by different users on the shared channel. *Id.*

Independent claim 1 claims one embodiment that “requires each transmitting node to transmit a parameter-estimating signal on an unshared said parameter channel.” *Id.*, cl. 1. Independent claim 21 claims an alternate embodiment that

requires “receiving a plurality of parameter-estimating signals each on an unshared parameter channel from a corresponding transmitting node.” *Id.*, cl. 21.

B. The Petition’s Reliance on Jin (US2005/0286408) (Ex. 1004) and Baum (US5867478) (Ex. 1005) for the “Parameter-Estimating Signals” and “Unique Signal Parameters”

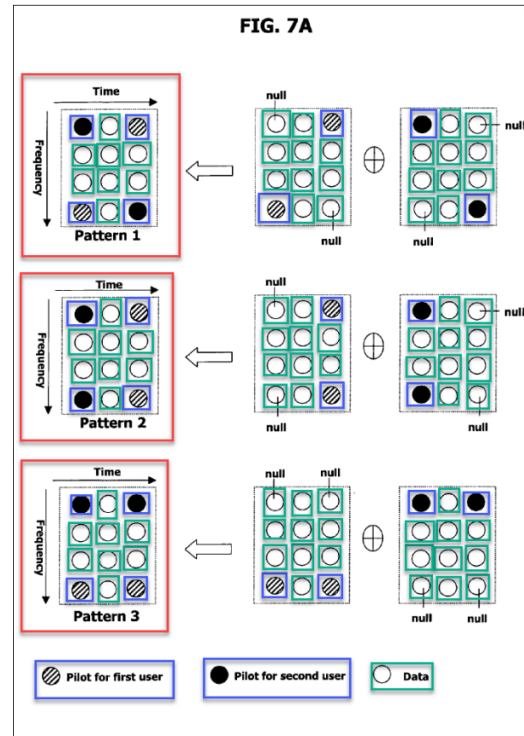
The Petition challenged two independent claims in the ’071 patent: Claims 1 and 21. The Petition presents two sets of grounds challenging these claims and their associated dependent claims: Grounds 1-3 assert obviousness based on Jin for the independent claims; and Grounds 4-5 assert obviousness based on Baum for the independent claims. Pet. 7-8. In Grounds 1-3, the Petition relies upon Jin as disclosing the limitations relating to the “parameter-estimating signals” and “unique signal parameters.” *Id.*, 30-34. In Grounds 4-5, the Petition relies upon Baum as disclosing these limitations. *Id.*, 64-68. Grounds 4-5 are discussed first below.

1. The Petition’s Reliance on Baum’s Synchronization Signals (Grounds 4-5)

Grounds 4-5 of the Petition rely upon Baum’s disclosure of synchronization signals as the claimed parameter-estimating signal. Pet. at 64. Baum teaches that different base stations send synchronization signals on “non-interfering” (*i.e.*, unshared) channels. Pet. at 64-65; Ex. 1005, 9:27-36, 10:5-11, 24:39-50. A subscriber unit uses the received synchronization signal to “measure the relative propagation delay” and estimate “phase change,” which are the claimed unique estimated signal parameters. Pet. at 66-67; Ex. 1005, 9:24-36, 19:3-20:56.

2. The Petition’s Reliance on Jin’s Pilot Patterns (Grounds 1-3)

Grounds 1-3 of the Petition rely upon Jin’s disclosure of “pilot patterns ... for identifying signals delivered from two mobile terminals” as the claimed parameter-estimating signals. Pet. at 30. The pilot patterns are “unique for each user device” and sent on an “unshared ‘subcarrier or subchannel.’” *Id.* at 28; Ex. 1004, ¶¶ 73-76. Figure 7A (right)



shows examples of pilot patterns (annotated in red) transmitted on unshared parameter channels (annotated in blue). Pet. at 30-32; Ex. 1004, Fig. 7A.

The Petition explains that Jin “*uses* the received pilot pattern signal” to distinguish between users by “estimating phase differences and ‘measuring the radio channel for each user and compensating the channel.’” Pet. 33-34 (emphasis added); Ex. 1004, ¶¶ 72, 78. In other words, the pilot patterns are not themselves parameters that are used to distinguish between users; instead, the base station estimates parameters of the pilot patterns, including phase differences and the radio channel parameters associated with received pilot pattern signals. These estimated

parameters are then used to “identify which user (i.e., mobile terminal) has transmitted the data.” Pet. at 34; Ex. 1004, ¶¶ 72, 78.

C. The Institution Decision

The Board denied institution on both sets of grounds based on limitations relating to the parameter-estimating signals and unique signal parameters.

With respect to Grounds 4-5, the Board found that the Petition had failed to show that Baum discloses “*requiring* each transmitting node to transmit a parameter-estimating signal on an unshared said parameter channel,” as recited in limitation 1b of claim 1 of the ’071 patent, because it “fails to ... identify where or how Baum teaches such a requirement.” ID at 27. The Board also cited to PO’s argument that Baum’s synchronization signal “is not required to be transmitted and is optional.” ID at 25. The Board did not separately analyze claim 21 with respect to Baum, and instead stated that claim 21 “recites subject matter substantially similar to claim 1,” and “the deficiency identified in the Petition regarding claim 1 also applies to the Petition’s analysis of independent claim 21.” ID at 28.

With respect to Grounds 1-3, the Board stated that the Petition was “lacking in particularity because it does not clearly identify what aspect of Jin is alleged to teach the unique signal parameters (or unique estimated signal parameters) recited in claim 1.” Paper 11 (“ID”) at 17. The Board acknowledged that the Petition “identifies ‘phase differences and radio channel parameters’ as ‘**unique signal**

parameters’ in the context of limitation 1c.” ID at 19. However, the Board noted that the Petition elsewhere equates the “unique estimated signal parameters” with a “unique pilot parameter,” which “is not a term or phrase recited in Jin.”¹ ID at 18. The Board found these disclosures to be “inconsistent” and concluded that it “cannot discern whether Petitioner relies on the (unknown) ‘unique pilot parameter’ as Petitioner states in limitation 1d or the ‘phase differences and radio channel parameters’ as Petitioner states in limitation 1c.” ID at 19. The Board also noted an “additional point of confusion” because the Petition refers to Jin’s pilot parameters as “teaching ‘unique estimated signal parameter’ on the one hand and ‘unique signal parameter’ (omitting the term ‘estimated’) on the other.” ID at 18-19 n.8.

ARGUMENT

A. The Board Abused Its Discretion By Failing To Address Differences Between Challenged Claims in Grounds 4-5

The Board based its decision not to institute Grounds 4-5 based solely on the Petition’s failure to establish that Baum discloses “*requiring* each transmitting node to transmit a parameter-estimating signal on an unshared said parameter channel,” as recited in limitation 1b. ID at 27 (emphasis in original). Without any further

¹ The Board separately explained that Jin’s “pilot *patterns*” cannot be the “unique estimated signal parameters” because they “are known beforehand ... and, therefore, are not estimated.” ID at 19.

analysis, the Board reasoned that the same “deficiency ... also applies to the Petition’s analysis of independent claim 21.” ID at 28. But *there is no “requiring” limitation* in claim 21—thus the Petition cannot be “deficient” for failing to address a non-existent limitation.

While claim 21 also describes the use of a “parameter-estimating signal” on “unshared parameter channels,” the corresponding limitation in claim 21 does “requir[e]” each transmitting node to transmit the claimed parameter-estimating signal. Instead, claim 21 merely recites “receiving *a plurality of parameter-estimating signals* each on an unshared parameter channel from a corresponding transmitting node.” Ex. 1001, cl. 21. Thus, the Board’s reasoning in its analysis of claim 1—which turned entirely on the Petition’s failure to show that Baum’s synchronization signal is “required” (ID at 25-27)—is inapplicable to claim 21.

Importantly, the Board recognized that the Petition *does* explain how Baum discloses “(1) ‘parameter estimating signal’ and (2) ‘each transmitting node transmits a parameter-estimating signal on an unshared said parameter channel.’” ID at 24. That is not in dispute: PO’s only argument regarding Baum and limitation 1b is that Baum’s “synchronization signal is optional and not a required signal as in claim limitation 1b.” POPR at 25. PO did not otherwise dispute that Baum’s synchronization signal discloses the claimed “parameter-estimating signal,” or that different nodes transmit their respective synchronization signals on an unshared

parameter channel, as recited in claim 21. *Id.* at 26-28. Accordingly, the Board's determination to deny institution on Grounds 4-5 based on limitation 1b alone is unsupportable and an abuse of discretion.

B. The Board Abused Its Discretion By Failing To Address Arguments In The Petition in Ground 1-3

The Federal Circuit has previously reprimanded the Board for failing to address arguments that were presented in a petition. *See, e.g., Provisur Techs. Inc. v. Weber, Inc.*, 50 F.4th 117, 123–24 (Fed. Cir. 2022); *Netflix v. DivX, LLC*, 2023 WL 3115576, at *5 (Fed. Cir. 2023); *Uniloc 2017 LLC v. Facebook, Inc.*, 2021 WL 5370480, at *8–9 (Fed. Cir. 2021); *Microsoft Corp. v. Parallel Networks Licensing, LLC*, 715 F. App'x 1013, 1021 (Fed. Cir. 2017). Here, the Board acknowledged that the Petition “identifies [Jin's] ‘phase differences and radio channel parameters’ as ‘**unique signal parameters**’ in the context of limitation 1c,” where the term first appears. ID at 19. But the Board never considered whether Jin's phase differences and radio channel parameters are “unique signal parameters” or “unique estimated signal parameters” as recited in the claims.

The Board chose not to evaluate Petitioner's argument on the merits because it believed the Petition was “inconsistent in its identification of an element in Jin that Petitioner contends teaches a unique signal parameter.” ID at 19. The Petition, however, expressly states that Jin's “phase differences and radio channel parameters are **unique signal parameters**.” Pet. at 34 (limitation 1c). And while the Petition

subsequently uses the term “unique pilot parameters” to refer to these parameters, that is not an “inconsistent” identification: the Petition makes clear that it continues to rely on the same phase differences and radio channel parameters because it quotes from and cites to *the same disclosure in Jin* describing “estimating phase differences and ‘measuring the radio channel for each user and compensating the channel’”. Pet. at 34 (limitation 1d, quoting Ex. 1004, ¶¶ 72, 78).

The Board additionally stated that Petitioner’s expert, Dr. Min, “does not help resolve the ambiguity in the Petition” because he also “refers to a ‘unique pilot parameter (*i.e.*, ‘**unique signal parameter**’) for each user.” ID at 18. In the same paragraph, however, Dr. Min equates the “pilot parameters” with the phase differences and radio channel parameters disclosed by Jin, explaining that “[t]he phase differences and radio channel parameters are *signal parameters of the pilot*” (*i.e.*, unique *pilot parameters*). Ex. 1003, ¶ 89. Dr. Min’s testimony should have thus resolved any confusion as to the term “unique pilot parameter” as used in the Petition, and made clear that it refers to Jin’s phase differences and radio channel parameters that are estimated from the pilot patterns.

The Board separately determined that “if Petitioner intended to refer to a ‘pilot pattern,’ [instead of a ‘pilot parameter,’] we agree with Patent Owner that Jin’s pilot patterns do not teach the ‘unique estimated signal parameters’ of limitation 1d.” ID at 19. But as the Board was aware, the Petition never mapped Jin’s “pilot patterns”

to the claimed “unique estimated signal parameters.” Indeed, the Board described its understanding of how the Petition “maps elements from Jin to limitations 1c and 1d,” noting that the Petition mapped Jin’s “pilot patterns” to the claimed “parameter-estimating signals,” **not** the “unique estimated signal parameters.” ID at 17. Further, the Petition makes clear that Jin’s base station “**uses** the received pilot pattern signal” to estimate phase differences and radio channel parameters, not that the pilot pattern **is itself** the unique signal parameters. Pet. at 33; *see also* Pet. at 30 (“Pilot patterns in Jin are used to estimate parameters as the base station **uses pilot patterns** for estimating phase differences and ‘measuring the radio channel for each user and compensating the channel...’”).

Finally, to the extent the Board’s decision relied at all on its “confusion” regarding the Petition’s alternative use of the terms “unique estimated signal parameters” and “unique signal parameter” (omitting “estimated”) (*see* ID at 18-19 n.8), such confusion was not warranted because the claims use both terms to refer to **the same element**. Specifically, limitation 1c requires “estimating ... at least one unique signal parameter,” and limitation 1d refers back to the same parameters as “**said** unique estimated signal parameters.” *See* Ex. 1001, cl. 1; *see also id.*, cl. 21 (similar disclosure of “estimating at least one unique signal parameter” and subsequent reference to each transmitting node’s “corresponding estimated unique

signal parameter”). The relevant dependent claims also refer back to “the at least one unique signal parameter” that was estimated in limitation 1c. *See id.*, cls. 6-9.

Accordingly, the Board’s determination that the Petition lacks “particularity” in mapping Jin’s disclosures to the claimed “unique estimated signal parameters” was clearly erroneous, and its failure to consider the Petition’s proposed mapping of Jin’s estimated phase differences and radio channel parameters was an abuse of discretion.

CONCLUSION

For all the foregoing reasons, Petitioner respectfully requests Director Review of the Board’s institution decision, and that the decision be vacated and reversed.

Respectfully submitted,

Dated: April 21, 2025

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CERTIFICATE OF SERVICE

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