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Paper 7
Date: September 21, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

TELEFONAKTIEBOLAGET LM ERICSSON,
Patent Owner.

IPR2022-00349
Patent 10,374,768 B2

Before SALLY C. MEDLEY, GEORGIANNA W. BRADEN, and NATHAN A ENGELS, *Administrative Patent Judges.*

ENGELS, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Apple Inc. filed a Petition requesting an *inter partes* review of claims 1–18 of U.S. Patent No. 10,374,768 B2 (Ex. 1001, "the '768 patent"). Paper 2, 1. Patent Owner filed a Preliminary Response. Paper 6 ("Prelim. Resp."). Petitioner also submitted the Declaration of Dr. Zhi Ding in support of the Petition. Ex. 1003.

An *inter partes* review may not be instituted unless it is determined that "the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314 (2018).

For the reasons set forth below, upon considering the parties' arguments and the evidence of record, we conclude that the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing the unpatentability of any of the challenged claims. Accordingly, we do not institute *inter partes* review.

B. Real Parties in Interest

Petitioner states that Apple Inc. is the real party in interest. Pet. 68. Patent Owner states that Telefonaktiebolaget LM Ericsson and Ericsson Inc. are the real parties in interest. Paper 3, 2.

C. Related Proceedings

The parties state that the '768 patent was challenged in IPR2021-00683, which is now terminated, and that the '768 patent is the subject of *Apple Inc. v. Telefonaktiebolaget LM Ericsson*, 2:21-cv-00460-JRG (E.D. Tex.). Pet. 68; Paper 3, 1.

D. The '768 Patent (Ex. 1001)

The '768 patent relates to a method of identifying reference signal resources to be used in a transmission by a wireless device. Ex. 1001, code (57). The method includes a wireless device receiving signaling configuring the wireless device with a plurality of reference signal resource groups, each group comprising a plurality of reference signal resources. *Id.* The wireless device subsequently receives an indication in a control channel of a selection of reference signal resources to be used. *Id.* Each of the plurality of reference signal resources to be used is selected from a different one of the plurality of reference signal resource groups such that reference signal resources belonging to the same reference signal resource group are not selected for simultaneous use. *Id.* A reference signal is then transmitted to a network node in the network using the indicated selection of reference signal resources. *Id.*

E. Illustrative Claims

Claims 1, 8, and 13 are independent claims. Claim 1 is illustrative and is reproduced below with bracketed labels added to reflect those references by Petitioner.

> 1. [preamble] A method in a wireless device, operable in a cellular wireless communication network, of identifying reference signal resources to be used in a transmission by the wireless device, the method comprising:
>
> [1.1] receiving signaling configuring the wireless device with a plurality of reference signal resource groups, each group comprising a plurality of reference signal resources;
>
> [1.2] receiving an indication, in a control channel, of a selection of reference signal resources to be used,
>
> [1.3] wherein each of the plurality of reference signal resources to be used is selected from a different one of the plurality of

reference signal resource groups such that reference signal resources belonging to the same reference signal resource group are not selected for simultaneous use; and

[1.4] transmitting a reference signal to a network node in the network using the indicated selection of reference signal resources,

[1.5] wherein the indication of the plurality of reference signal resources to be used includes a bit field,

[1.6] the length of the bit field depending on a maximum number of MIMO layers that the wireless device is capable of transmitting and a number of reference signal resources in a corresponding one of the reference signal resource groups.

F. Asserted Challenges to Patentability

Petitioner challenges the patentability of claims 1–18 of the '915 patent based on the following basis:

Claim(s) Challenged	35 U.S.C. §	References/Basis
1–6, 8–17	103[1]	Liu[2], Huang[3]
1–18	103	Liu, 3GPP TS 38.214 V0.1.2[4]

II. DISCUSSION

A. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art would have had "a Bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and 2–3 years of

[1] The '768 patent's earliest priority date falls after the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29, 125 Stat. 284 (2011), took effect. Thus, we apply the AIA version of § 103.
[2] US 10,735,157 B2; filed Sept. 27, 2017. Ex. 1005.
[3]. US 2020/0366429 A1; filed Aug. 10, 2018.
[4] "Further Details on UE-Specific UL DMRS," 3GPP TSG RAN WG1 #68 Meeting R1-120106, submitted by CATT. Ex. 1009

experience in the design or development of wireless communication systems/networks, or the equivalent." Pet. 8 (citing Ex. 1003 ¶¶ 20–22). Patent Owner does not address the level of ordinary skill.

For purposes of this Decision, we apply Petitioner's assessment of the level of ordinary skill.

B. Obviousness

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time of the invention to a person having ordinary skill in the art. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). An assertion of obviousness "cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *accord In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that conclusory statements amount to an "insufficient articulation [] of motivation to combine"; "instead, the finding must be supported by a 'reasoned explanation'" (citation omitted)); *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016)

("To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.").

Claim 1 recites "the length of the bit field depending on . . . a number of reference signal resources in a corresponding one of the reference signal resource groups." Independent claims 8 and 13 recite similar limitations. Both grounds asserted by Petitioner rely on the combination of Liu and Huang to meet those limitations. . Pet. 1. Petitioner advances three reasons why a person of ordinary skill "would have been motivated to modify Liu's control message for indicating the uplink resources for transmission of a reference signal to include a bit field, where its length is based on a maximum number of transmission layers (also referred to as MIMO layers) and a number of reference signal resources in a group, as taught by Huang." Pet. 14.

First, Petitioner contends a person of ordinary skill implementing Liu's system "would have been familiar with references such as Huang." Pet. 14. But a person of ordinary skill is presumed to be aware of references such as Huang; this does not constitute a rationale for combining references. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955 (Fed. Cir. 1986) ("The person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art.").

Second, Petitioner argues a person of ordinary skill "would have been motivated to combine the teachings of Liu and Huang because Liu discloses transmitting/receiving uplink transmission indication information, such as one or more SRS resource indications and Huang provides specific details in

terms of how many bits are used in a control message to encode the information." Pet. 15 (citing Ex. 1003 ¶ 66). Petitioner also states a person of ordinary skill "would have modified Liu's control message with a bit field such as Huang's bit field because Huang discloses an efficient technique for encoding SRS-related indication signaling into a bit field in the downlink control message that can reduce overhead or payload to avoid waste of resources." Pet. 15 (citing Ex. 1003 ¶ 66; Ex. 1006 PP 4, 5, 55; Ex. 1008 at 14–15, 24. But modifying Liu's control message "with a bitfield such as Huang's bit field" would not arrive at the claimed invention; these arguments do not address why a person of ordinary skill would have been motivated to combine Liu and Huang "on a per-group basis," as Petitioner contends. *See* Pet. 34 (arguing a person of ordinary skill "would have realized that Huang's teaching can be applied on a per-group basis").

Third, Petitioner argues "[g]iven that Liu's device already receives SRS-related control messages from a network node, it would have been a simple modification for a [person of ordinary skill] to use the type of bit field, and associated bit field length determinations, disclosed by Huang (which also provide SRS resource assignments) to transmit/receive SRS resource assignments." Pet. 16 (citing Ex. 1003 ¶ 67). Further, Petitioner argues a person of ordinary skill would have understood that bit fields are used to convey control information in digital wireless communications systems and "adding one or more bits in the communications would have been well within the skill of a [person of ordinary skill] because that is how all the other control information is already being conveyed." Pet. 16. Petitioner also contends that its proposed combination amounts to a combination of known elements with predicable success. Pet. 16. Again

though, these arguments do not address why a person of ordinary skill would have been motivated to combine Liu and Huang "on a per-group basis," as Petitioner contends. *See* Pet. 34.

Petitioner's discussion of limitation [1.6] also fails to adequately support Petitioner's proposed combination. *See* Pet. 30–35. Petitioner contends "given multiple reference signal resource groups as configured by Liu . . . a [person of ordinary skill] would have recognized that Huang's disclosures about configuring *N* SRS resources and bit length determination of the bit field can also be applied on a per-group basis, e.g., applied to one or more allocated reference signal reference groups" (Pet. 33 (citing Ex. 1003 ¶ 97)). Further, Petitioner argues a person of ordinary skill "would have modified Liu's control message to include a bit field where its length is based at least on a number of reference signal resources (as taught by Huang) in a corresponding one of the reference signal resource groups (because a [person of ordinary skill] would have realized that Huang's teaching can be applied on a per-group basis)." Pet. 34.

But none of Petitioner's arguments reasonably establish why a person of ordinary skill—a person having a bachelor's degree with two or three years of experience (Pet. 8)—would have combined the teachings of Liu and Huang to arrive at the claimed invention. Even though Liu teaches reference signal resource groups, Huang teaches determining the bit field length based on the total number of reference signal resources. Petitioner has not sufficiently explained why Huang's teachings regarding bit length determinations would have been applied on a per-group basis as opposed to the manner taught by Huang. Indeed, even if a person of ordinary skill would have "modified Liu's control message" to include a bit field having a

length based on the number of reference signal resources as taught by Huang, Petitioner has not reasonably shown that the person of ordinary skill would have had reason to apply Huang's teachings on a per-group bases. Instead, Petitioner's arguments for combining the references as claimed amount to improper hindsight.

Accordingly, we determine Petitioner has not shown a reasonable likelihood of prevailing in its challenge to any of claims 1–18, each of which requires Petitioner's proposed combination of Liu and Huang.

C. Discretionary Denial

Because we deny the Petition on the merits, we do not reach Patent Owner's arguments for discretionary denial under 35 U.S.C. § 325(d). *See* Prelim. Resp. 3–17.

III. CONCLUSION

For the foregoing reasons, we are not persuaded that the Petition establishes a reasonable likelihood that Petitioner would prevail in its challenge to claims 1–18 of the '768 patent.

IV. ORDER

In consideration of the foregoing, it is hereby ordered that the Petition is *denied*, and no trial is instituted.

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