

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC.,
Petitioner,

v.

CELLULAR COMMUNICATIONS EQUIPMENT LLC,
Patent Owner.

Case IPR2016-00197
Patent 8,848,556 B2

Before JENNIFER S. BISK, GREGG I. ANDERSON, and
ROBERT J. WEINSCHENK, *Administrative Patent Judges*.

BISK, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

INTRODUCTION

A. Background

Petitioner, LG Electronics, Inc., filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 13–15 and 21–23 (the “challenged claims”) of U.S. Patent No. 8,848,556 B2 (Ex. 1001, “the ’556

patent”). Patent Owner, Cellular Communications Equipment LLC, filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

After considering the Petition and Preliminary Response, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of the challenged claims. Accordingly, we decline to institute an *inter partes* review.

B. Related Matters

The parties indicate that the ’556 patent is the subject of several concurrent proceedings in the United States District Court for the Eastern District of Texas. Pet. 3; Paper 5, 2.

C. The Asserted Grounds of Unpatentability

Petitioner contends that claims 13–15 and 21–23 of the ’556 patent are unpatentable under 35 U.S.C. § 103 based on the following grounds (Pet. 7):¹

¹ Petitioner also provides a Declaration from Professor Branimir Vojcic. Ex. 1002.

Statutory Ground	Basis	Challenged Claims
§ 103	Ho ² and Zhang ³	13–15 and 21–23
§ 103	Heo ⁴ and Ho	13, 14, 21, and 22
§ 103	Heo, Ho, and Pelletier ⁵	15 and 23

D. The '556 Patent

The '556 patent relates to telecommunication systems. Ex. 1001, Abstract. In particular, the '556 patent addresses a technique called “carrier aggregation,” in which user devices (referred to as “user equipment” or “UEs”) may aggregate the bandwidths of two or more component carriers to support wider transmission bandwidths. *Id.* at 1:14–25. The '556 patent also describes known methods, used in non-carrier aggregation contexts, of power headroom reporting—reporting an amount of power available (i.e., headroom)—to a UE when a particular trigger event occurs. *Id.* at 1:26–41. According to the '556 patent, although similar methods for power headroom reporting could also be applied to carrier aggregation, these known methods

² U.S. Patent No. 8,867,440 B2, filed May 25, 2011 (Ex. 1005) (“Ho”). Ho claims priority to U.S. Provisional Patent Application No. 61/349,671, filed May 28, 2010 (Ex. 1006) (“Ho Provisional”).

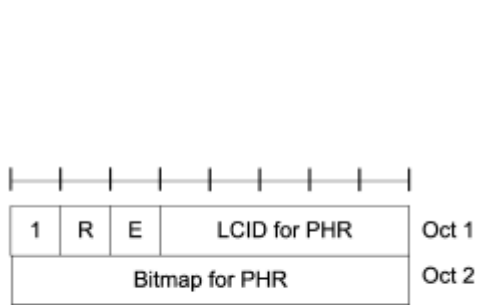
³ U.S. Patent No. 8,537,767 B2, filed April 5, 2011 (Ex. 1007) (“Zhang”). Zhang claims priority to U.S. Provisional Patent Application Nos. 61/282,813, filed April 6, 2010 (Ex. 1008) (“First Zhang Provisional”), 61/344,237, filed June 17, 2010 (Ex. 1009) (“Second Zhang Provisional”), and 61/410,655, filed November 5, 2010 (Ex. 1010) (“Third Zhang Provisional”).

⁴ U.S. Patent No. 8,626,225 B2 (Ex. 1011) (“Heo”). Heo claims priority to U.S. Provisional Application Nos. 61/180,652, filed May 22, 2009 (Ex. 1012), 61/303,920, filed February 12, 2010 (Ex. 1013), and 61/320,211, filed April 1, 2010 (Ex. 1014).

⁵ U.S. Patent Application Publication No. 2010/0296467 A1 (Ex. 1015) (“Pelletier”).

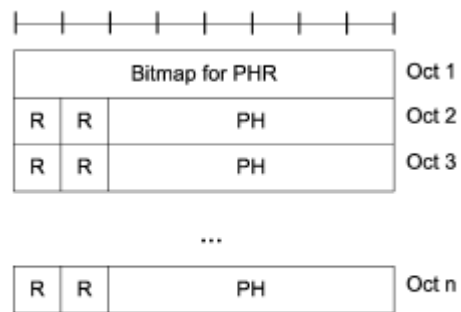
suffered from problems including increased overhead and increased use of resources. *Id.* at 1:41–62.

In response to these deficiencies, the '556 patent describes reporting power headroom using a new power headroom report control element, which includes a bitmap indicating which component carrier is reporting, the order in which the reports appear in the control element, and the size of the various reports. *Id.* at 3:61–4:6. The '556 patent illustrates, in various embodiments, that different formats of a power headroom report may be used with the bitmap. For example, Figures 3 and 5 of the '556 patent are reproduced below.



Sub-header for PHR

Fig. 3



n depend on how many individual PHRs indicated in the the bitmap

Fig. 5

Figure 3, on the left above, illustrates a power headroom report with the bitmap placed in a sub-header. *Id.* at 5:66–67. Figure 5, on the right above, illustrates a power headroom report in which the first octet of the payload is the bitmap. *Id.* at 6:8–10.

1. Illustrative Claim

Of the challenged claims in the '556 patent, claims 13 and 21 are independent. Claim 13 recites:

13. A non-transitory computer readable medium encoded with a computer program that, when executed in hardware, causes the hardware to perform a process, the process comprising:
preparing a power headroom report control element, based on a trigger configured by a base station,
the trigger determining when the power headroom report control element is to be sent in an uplink,
the preparing of the power headroom report control element includes incorporating a bitmap indicating which power headroom reports are being reported,
the preparing of the power headroom report element further includes preparing the bitmap to include bits for power headroom reports for a plurality of secondary cells;
and sending the prepared power headroom report control element to the base station.

Ex. 1001, 9:23–38 (line breaks and formatting added).

ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms are given their broadest reasonable interpretation in light of the specification in which they appear and the understanding of others skilled in the relevant art. 37 C.F.R. § 42.100(b). Applying that standard, we interpret the claim terms of the '556 patent according to their ordinary and customary meaning in the context of the patent's written description. See *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). For purposes of this Decision, we need not address explicitly the construction of any particular claim term.

B. Effective Filing Dates

Both the Petition and the Preliminary Response examine whether the patents involved in this proceeding are entitled to the filing dates of their

respective provisional applications for purposes of the unpatentability analysis.

First, regarding the '556 patent, Petitioner notes that it does not concede that the challenged claims are entitled to the benefit of the filing date of Provisional Application No. 61/356,867 (“the '867 Provisional”), June 21, 2010, to which it claims priority on its face. Pet. 4 n.2. In its Preliminary Response, Patent Owner, however, presumes that the '556 patent receives that benefit. Prelim. Resp. 17 (“[T]he '556 patent has a priority date of June 21, 2010, which is the filing date of its provisional”).⁶

Second, regarding the asserted prior art references, Petitioner asserts that each reference—Ho, Zhang, Heo, and Pelletier—should receive the benefit of the filing date of each of its respective provisional applications. Pet. 6. According to Petitioner, Ho, Zhang, Heo, and Pelletier are prior art under 35 U.S.C. § 102(e) based at least on the filing date of the respective reference’s provisional(s), if not also the filing date of the reference’s application. *Id.* at 6–7.⁷

⁶ Patent Owner does not present any evidence, or endeavor otherwise to show that the claims of the '556 patent meet the requirements of 35 U.S.C. § 119 to entitle the '556 patent to the earlier filing date of the '867 Provisional.

⁷ According to Petitioner, “[e]ach disclosure in Ho, Zhang, Heo, and Pelletier on which the Petition relies is fully supported independently by each of their respective provisions.” *Id.* Petitioner, however, does not explain how any of the provisional applications provide adequate written description support for the claims of the corresponding reference patent. *See Dynamic Drinkware LLC v. National Graphics, Inc.*, 800 F.3d 1375, 1381 (Fed. Cir. 2015).

We do not need to decide, for purposes of this Decision, the effective filing date of the '556 patent or any of the asserted references. Even assuming all the asserted references are properly prior art to the '556 patent under 35 U.S.C. § 102(e), for the reasons discussed below, we are not persuaded that Petitioner has shown a reasonable likelihood of prevailing in showing unpatentability of the challenged claims.

C. Obviousness over Ho and Zhang

Petitioner asserts that claims 13–15 and 21–23 would have been obvious over Ho and Zhang. Pet. 23–43. Specifically, Petitioner points to two embodiments—Options #2 and #5—described in Ho as teaching sending a power headroom report (“PHR”) for a respective carrier being transmitted upon a trigger. *Id.* at 24–26 (citing Ex. 1005, 4:13–17, 10:9–20, 10:45–49, 11:2–15, 11:43–46; Ex. 1002 ¶¶ 44–46). In addition, Petitioner points to a process in Zhang by which a UE triggers transmission of a bitmap indicating whether the PHR of a component carrier will be included in a Medium Access Control Element (“MAC CE”) that uses one of the same triggers as the Ho Provisional. *Id.* at 26–27 (citing Ex. 1007, 6:51–7:26; Ex. 1002 ¶ 49).

We determine that Petitioner’s obviousness analysis lacks sufficient articulated reasons with rational underpinnings to support the combination of Ho and Zhang. Here, the Petition asserts that Ho by itself or Ho and Zhang “independently” disclose most of the elements of the challenged claims. Petitioner relies on Zhang, apparently, only “[t]o the extent that [Ho] do[es] not disclose the claimed ‘bitmap indicating which power headroom reports are being reported.’” Pet. 33; *see also* Pet. 36 (arguing that Zhang discloses a bitmap that could be used for CC mapping). Petitioner, however, does not

explain under what circumstances Ho would not disclose this element. In fact, Petitioner asserts that Ho discloses this element under various constructions of the term “bitmap,” including “[e]ven under Patent Owner’s district court *Phillips* construction of ‘bitmap.’” *Id.* at 32–33. There is, therefore, no indication in the Petition that Ho has any deficiencies related to this element. It is, thus, unclear why a person of ordinary skill would turn to Zhang for the teaching of an element that, according to Petitioner, is already taught by Ho.

Although the Petition purports to provide some rationale why an ordinary artisan would combine the two references, that rationale does not address the particular element for which Petitioner is relying on Zhang. For example, Petitioner states that “Zhang itself provides the motivation for an ordinary artisan to combine Zhang with Ho,” explaining that “power headroom reporting mechanisms of prior single-carrier systems are insufficient for LTE-A” and “[t]hus, to improve the efficiency of the PHR reporting mechanism in Ho, an ordinary artisan would be motivated to incorporate Zhang’s MAC CE and bitmap into Ho’s system.” *Id.* at 34–35. This reasoning, however, addresses only the general motivation for creating an efficient reporting mechanism for multiple component carrier systems, which Ho itself already does. It does not explain why a person of ordinary skill would find it advantageous to specifically look to Zhang for its teaching of a Ci field bitmap.

Petitioner also relies on Zhang “[t]o the extent that [Ho does] not disclose” the limitation “preparing the bitmap to include bits for power headroom reports for a plurality of secondary cells.” Pet. 36. Again, the Petition makes no indication that Ho has any deficiency with respect to this

limitation (Pet. 35–36) and, thus, does not make clear why a person of ordinary skill would look to Zhang for its teaching of a Ci field bitmap. According to Petitioner “Zhang discloses that use of a bitmap allows a variable size of the PHR MAC control element” and “suggests to an ordinary artisan that the bitmap technique can be used to replace a length field or a carrier indication field (CIF) against each PHR in the MAC CE with a bitmap, thus potentially reducing overhead.” *Id.* at 38. The Petition, however, states that “Ho discloses that its bitmap is prepared to include bits for power headroom reports for a plurality of secondary cells.” *Id.* at 36. Given that, according to Petitioner, Ho already discloses the use of a bitmap, Petitioner’s stated rationale for combining the teachings of Zhang, tied to the advantages of using bitmaps, does not make sense.

In sum, we are not persuaded that the Petition shows sufficiently why one of ordinary skill in the art—without improper hindsight—would have combined Ho and Zhang to account for all the features of the challenged claims of the ’556 patent. Therefore, we determine that the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that any of the challenged claims would have been obvious over Ho and Zhang.

D. Obviousness over Heo and Ho

Petitioner asserts that claims 13, 14, 21, and 22 would have been obvious over Heo and Ho and claims 15 and 23 would have been obvious over Heo, Ho, and Pelletier. Pet. 43–57. Specifically, Petitioner points to Figure 9 and the corresponding description in Heo as teaching a bitmap indicating whether a power headroom report for each respective carrier is included in the power headroom control element. *Id.* at 44–45 (citing Ex.

1011, 10:39–11:13). Further, Petitioner points to Heo’s description of triggers, such as dl-PathlossChange, periodicPHR-Timer, and prohibitPHR-Timer, as determining which carriers are to send power headroom reports. *Id.* at 45–46 (citing Ex. 1011, 6:5–39).

Petitioner adds that the Ho Provisional “also discloses these same prior art triggers” and “discloses a specific trigger that is configured by an evolved Node B.” *Id.* at 46–47 (citing Ex. 1006 ¶¶ 25, 55, 75). According to Petitioner, the Ho Provisional also expressly “provides motivation for an ordinary artisan to use [the Ho Provisional]’s eNB-configured trigger in Heo’s system—‘to help the scheduler of the eNB.’” *Id.* at 47 (citing Ex. 1006 ¶ 75; Ex. 1002 ¶¶ 91–92).

We determine that Petitioner’s obviousness analysis lacks sufficient articulated reasons with rational underpinnings to support the combination of Heo and Ho. Here, it is frankly unclear why Petitioner relies upon Ho at all.⁸ The Petition mentions Ho only when discussing two limitations of the independent claims—“based on a trigger configured by a base station” and “preparing the bitmap to include bits for power headroom reports for a plurality of secondary cells.” Pet. 45–48, 51–53. Petitioner, however, does not explain why it relies on Ho for these limitations. *Id.* There is no indication, in the Petition, that Heo has any deficiencies related to these elements. *Id.* In fact, as noted above, Ho is referred to as disclosing “[the] same prior art triggers” as Heo with an additional “specific trigger that is configured by an evolved Node B.” *Id.* at 46. Petitioner does not explain,

⁸ Petitioner does not assert a ground of obviousness over Heo alone.

however, why a person of ordinary skill would turn to Ho for this additional disclosed trigger, which is not specifically recited in the claim.

Although the Petition purports to provide some rationale why an ordinary artisan would combine the two references, that rationale does not explain what differences between the challenged claims and Heo are being addressed by Ho. For example, Petitioner states that “Ho expressly provides motivation for an ordinary artisan to use Ho’s eNB configured trigger in Heo’s system—‘to help the scheduler of the eNB.’” *Id.* at 47. This reasoning, however, does not appear to be tied in any way to the limitation of “based on a trigger configured by a base station.”

In sum, we are not persuaded that the Petition shows sufficiently why one of ordinary skill in the art—without improper hindsight—would have combined Heo and Ho to account for all the features of the challenged claims of the ’556 patent. Therefore, we determine that the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that any of the challenged claims would have been obvious over Heo and Ho or Heo, Ho, and Pelletier.

CONCLUSION

Upon consideration of the Petition and Preliminary Response, we are not persuaded that there is a reasonable likelihood that Petitioner will prevail on at least one alleged ground of unpatentability with respect to the ’556 patent. We, therefore, decline to institute *inter partes* review on any of the asserted grounds as to any of the challenged claims. 37 C.F.R. § 42.108.

ORDER

It is ordered that the Petition is *denied* as to all challenged claims, and no trial is instituted.

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