

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED,
TCT MOBILE INTERNATIONAL LIMITED,
TCT MOBILE, INC.,
TCT MOBILE (US) INC., and
TCT MOBILE (US) HOLDINGS INC.,
Petitioner,

v.

MITSUBISHI ELECTRIC CORPORATION,
Patent Owner.

IPR2023-00997
Patent 10,200,976 B2

Before NORMAN H. BEAMER, SEAN P. O'HANLON, and
MICHAEL T. CYGAN, *Administrative Patent Judges*.

CYGAN, *Administrative Patent Judge*.

PRELIMINARY GUIDANCE
PATENT OWNER'S MOTION TO AMEND

I. INTRODUCTION

On December 7, 2023, we instituted trial as to claim 2 of U.S. Patent No. 10,749,976 B2 (“the ’976 patent”). Paper 8 (“Decision” or “Dec.”). After institution, Patent Owner filed a Contingent Motion to Amend, which proposes substitute claim 3 to replace original claim 2. Paper 13, 1–2 (“Motion” or “Mot.”). The Motion was accompanied by a Supplemental Declaration from Dr. Cooklev. Ex. 2011 (“Cooklev Decl.”). Petitioner filed an Opposition to the Motion. Paper 16 (“Opposition” or “Opp.”). The Opposition was accompanied by a Supplemental Declaration from Mr. Lanning. Ex. 1028 (“Lanning Decl.”).

In the Motion, Patent Owner requested that we provide preliminary guidance concerning the Motion in accordance with the Board’s pilot program concerning motion to amend practice and procedures. Mot. 1; *see also* Notice Regarding a New Pilot Program Concerning Motion to Amend Practice and Procedures in Trial Proceedings Under the America Invents Act Before the Patent Trial and Appeal Board, 84 Fed. Reg. 9,497 (Mar. 15, 2019) (providing a patent owner with the option to receive preliminary guidance from the Board on its motion to amend) (“Notice”). We have considered Patent Owner’s Motion and Petitioner’s Opposition.

In this Preliminary Guidance, we provide information indicating our initial, preliminary, non-binding views on whether Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend in an *inter partes* review, and whether Petitioner (or the record) establishes a reasonable likelihood that the substitute claims are unpatentable. *See* 35 U.S.C. § 316(d) (2018); 37 C.F.R. § 42.121 (2022); *Lectrosonics, Inc. v Zaxcom*,

Inc., IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (precedential); *see also* Notice, 84 Fed. Reg. at 9,497 (“The preliminary guidance . . . provides preliminary, non-binding guidance from the Board to the parties about the [motion to amend].”); Rules of Practice to Allocate the Burden of Persuasion on Motions to Amend in Trial Proceedings Before the Patent Trial and Appeal Board, 85 Fed. Reg. 82,923 (Dec. 21, 2020) (“Rules”).

For this Preliminary Guidance, we focus on the amendments reflected in the substitute claims proposed in the Motion.¹ *See* Notice, 84 Fed. Reg. at 9,497. We do not address the patentability of the originally challenged claims. *Id.* We emphasize that the views expressed below may change upon consideration of the complete record. Additionally, the views expressed below may not apply to any revised motion to amend that Patent Owner may file in response to this Preliminary Guidance. Thus, this Preliminary Guidance is not binding on the Board when rendering its final written decision. *See id.* at 9,500.

II. PRELIMINARY GUIDANCE

A. Statutory and Regulatory Requirements

For the reasons discussed below, at this stage of the proceeding, and based on the current record, Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend.

¹ Petitioner’s Opposition includes arguments for original claim 2. Opp. 16–19, 21–24. We only address those arguments to the extent they are referenced for proposed substitute claim 3.

1. Reasonable Number of Substitute Claims

Does Patent Owner propose a reasonable number of substitute claims? (35 U.S.C. § 316(d)(1)(B))

Yes. Patent Owner proposes one substitute claim to replace challenged claim 2. Mot. 2. Petitioner does not argue otherwise. *See Opp.*

2. Respond to Ground of Unpatentability

Does the Motion respond to a ground of unpatentability involved in the trial? (37 C.F.R. § 42.121(a)(2)(i))

Yes. Patent Owner contends that the grounds presented in the Petition do not disclose or suggest the limitations of proposed substitute claim 3. Mot. 11–24. Petitioner does not argue that the Motion is nonresponsive. *See generally Opp.*

Under Rule 42.121, the amendment must be responsive to “a ground of unpatentability.” 37 C.F.R. § 42.121(a)(2)(i). Patent Owner has met this requirement by amending the claims in response to the Petition’s asserted prior art.

3. Scope of Amended Claims

Does the amendment seek to enlarge the scope of the claims? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

No. Patent Owner contends that “substitute claim 3 retains the claim limitations of original claim 2 and adds additional claim limitations making the substitute claim 3 narrower in scope than original claim 2. Mot. 2. Petitioner does not argue otherwise. *See Opp.*

Because no subject matter is removed along with the addition of new limitations, the amendments do not seek to enlarge the scope of the claims.

4. New Matter

Does the amendment seek to add new subject matter? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

No.

Patent Owner cites several passages in support of proposed substitute claim 3 in the as-filed application for the '976 patent. Mot. 3–4 (citing Ex. 2012). With respect to paired uplink and downlink frequency bands for the claimed resource for uplink and resource for downlink, Patent Owner points to a cell n configured with a downlink (“DL”) component carrier (“CC”) and an uplink (“UL”) CCn that is associated with the DL CCn. *Id.* (citing *inter alia* Ex. 2012, 39, 115, 129, Fig. 13). The as-filed application explains that carrier frequency is denoted by F_n , which appears to be the horizontal axis “f” in Figure 13. Ex. 2012, 39. Paragraph 61 further describes pairing a frequency band for uplink with the downlink frequency band. *Id.* at 16. With respect to the non-associated cell, having a resource for downlink not paired with any uplink frequency band, Patent Owner points to Figures 28 and 41. *Id.* at 2–3, 7–8. Figure 28 illustrates two cells, one of which having downlink and uplink, and the other having only downlink in their respective frequencies. Ex. 2012, 126. Patent Owner characterizes Figure 41 as illustrating a frequency band A having a designated downlink frequency range with no paired uplink frequency range. Mot. 7. In addition, Figure 43, cited by Patent Owner, depicts a cell1 having both a DL CC1 and a UL CC1 in use with “[a] cell2 [that] is configured by only a DL CC2 and does not include a UL CC.” *Id.* at 96, 138. Therefore, on this record, the as-filed application appears to support an associated cell configured by a base station to include a resource for uplink and a resource for downlink, the resource for uplink being included in an uplink frequency band paired with a first downlink frequency band for a downlink resource, as proposed substitute claim 3 recites. These disclosures also appear to support, on this record, the use of a second resource for downlink that is included in a second downlink frequency band, as proposed substitute claim 3 recites.

Petitioner first argues against Patent Owner’s reliance on separate embodiments of the as-filed application. Petitioner acknowledges that Figure 28 depicts a cell1 having both a DL CC1 and a UL CC1 and “[a] cell2 is configured by only a DL CC2, where a UL CC is not configured.”

Opp. 2–3. Petitioner also acknowledges that Figure 41 depicts a band that includes only downlink resources. *Id.* at 3. However, according to Petitioner, “the Third Embodiment does not have any uplinks” and includes “only two downlinks,” which “does not meet the limitation of the associated cell having a downlink and an uplink.” *Id.* at 3; *see also id.* at 4–7.

We acknowledge that Patent Owner cites to several embodiments of the as-filed application (e.g., the First Embodiment (Figs. 13 and 28), the Third Embodiment (Fig. 41), and the Fourth Embodiment (Fig. 43)). It would be more helpful if Patent Owner explained how these various embodiments together demonstrate possession of the invention for proposed substitute claim 3. In view of this, there are lingering questions regarding support for proposed substitute claim 3. However, we note that paragraph 251 of the as-filed application contemplated combining these embodiments. *Id.* at 67. Consequently, we do not agree that the as-filed application may not be relied upon for features in separate embodiments. Therefore, taken together on this record, these descriptions appear to adequately describe the new limitations of proposed substitute claim 3.

Petitioner further argues a distinction between unpaired resources and unallocated resources. Petitioner contends that Ex. 1001, 32:40–50, “does not disclose an embodiment where there is an unpaired UL resource; rather, it discusses not allocating the paired UL resource to the UE such that it can be used by a different UE or cell.” Opp. 4. Petitioner argues that “Figures 1-28 similarly do not support a limitation that the DL resource for the non-associated cell is not paired with an uplink resource, unless Patent Owner is taking the position that this limitation means only that no UL resource has been allocated to the non-associated cell.” Opp. 7.²

We do not agree that such a distinction needs to be resolved at this stage. As discussed above, we are persuaded on the current record that Patent Owner has shown the as-filed application to teach a cell in which

² As a corollary to that argument, Petitioner asserts that, “[i]f so, the new limitations of proposed claim 3 do not further limit existing claim 2.” *Id.* We do not agree with Petitioner’s argument that proposed substitute claim 3 does not further limit 2 because the former adds limitations, including the limitation that the “other resource for downlink being in a second downlink frequency band.” Mot. App. A 1.

downlink frequency has no paired uplink frequency; i.e., Figure 41. Even if the claim were to be read as a cell in which no uplink resource is allocated, rather than no uplink frequency has been assigned in a pair with a downlink frequency, Petitioner admits that Figure 28 describes as much. Opp. 4. Consequently, we determine that Patent Owner has shown written description support under either claim interpretation. Thus, after considering the parties' arguments and evidence, it is our preliminary view that Patent Owner has met its burden to show substitute claim 3 contains no new matter.

B. Patentability

For the reasons discussed below, at this stage of the proceeding, and based on the current record, Petitioner has shown a reasonable likelihood that proposed substitute claims are unpatentable.

Does the record establish a reasonable likelihood that the proposed substitute claims are unpatentable?

Claim Construction

Patent Owner's arguments appear to rely upon an implicit construction that the new limitation "not paired with any uplink frequency band" means no uplink frequency band is provided. Mot. 11–16. In other words, if both UL and DL resources are provided to a non-associated cell but the non-associated cell is configured by a base station to ignore the UL resources and use only the UL resources, Patent Owner's implied construction would appear to exclude such a situation. *Id.*

As applied to Petitioner's first ground, Patent Owner contends that one of ordinary skill in the art would have understood that all versions of 3GPP Release 10 and early versions of Release 11 would have required pairing of uplink and downlink resources for all operating bands. *Id.* Patent Owner argues that 4G LTE established predetermined pairing of DL and UL frequency bands, which resulted in a significant inefficiency that was overcome by the '976 patent's technique of using a DL frequency band without a paired UL frequency band. *Id.* at 5–9. Patent Owner further asserts that the asserted references for the first ground do not teach or suggest a non-associated cell configured by a base station to include only another resource for downlink that is "included in a second downlink

frequency band that is not paired with any uplink frequency band,” as proposed substitute claim 3 recites, because they do not teach the use of only downlink resources and the prior art provides both UL and DL resources for its operating bands. *Id.* at 16–18. The cited portions of Dr. Cooklev’s testimony take a similar position. Ex. 2011 ¶¶ 31–37, 39–49.

Petitioner provides two arguments contrary to Patent Owner’s implicit construction. First, Petitioner contends that the ’976 patent does not support a base station having only unpaired downlink resources. Opp. 8–13. We have addressed this argument in our discussion of new matter, and determined that Patent Owner has shown a reasonable likelihood that the as-filed application does provide such support.

Second, Petitioner also argues that the predetermined pairings asserted by Patent Owner are merely potential or possible resources that are available to all user equipment (“UE”). *Id.* at 13–14. As to this second argument, we look first to the as-filed patent application of the ’976 patent.

We note that the ’976 patent describes an embodiment in which “an eNB and a UE communicate with each other using the non-associated cell being the cell that includes a resource for DL but does not include a resource for UL.” Ex. 1001, 32:40–44. According to the ’976 patent, “[t]his eliminates the need to always reserve a resource for UL in the same frequency band as that of a resource for DL in a communication system.” *Id.* at 32:44–46. However, the ’976 patent also states that “a UE can recognize the configuration of a frequency band in which that cell is configured, and can recognize that a frequency band for uplink is not configured in that frequency band” and “[t]his enables to recognize that there is no UL CC to be associated with a DL CC of that cell.” *Id.* at 50:11–17. The ’976 patent further describes the use of parameters to indicate whether a UL CC is used. *Id.* at 25:10–52. Specifically, the ’976 patent describes a “ul-CarrierFreq” parameter to indicate whether a UL CC to be associated with a DL CC may be used or no UL CC is configured. *Id.* at 25:10–41. The ’976 patent also describes a “ULCCconfig” parameter that indicates the presence or absence of a UL CC configuration. *Id.* at 25:42–52.

At this stage, the record does not reflect that the new limitation “not paired with any uplink frequency band” means that no uplink frequency band is provided with the uplink frequency band. Therefore, at this stage, we decline to construe proposed substitute claim 3 in this manner.

35 U.S.C. § 103 — Obviousness over TS 36.300 V10.0.0 and R2-104515

Yes. At this point in the proceeding, Petitioner has shown a reasonable likelihood that proposed substitute claim 3 is rendered obvious by TS 36.300 V.10.0.0 (Ex. 1012) and R2-104515 (Ex. 1013). Opp. 15, 19–21. Petitioner also provides arguments for original claim 2. *Id.* at 16–19. We do not address the patentability of original claim 2 in this guidance. Notice, 84 Fed. Reg. at 9,504 (“The Board’s preliminary guidance will focus on the limitations added in the patent owner’s MTA, and will not address the patentability of the originally challenged claims”).

As discussed above with regard to claim construction, Patent Owner argues that one of ordinary skill in the art would have understood that all versions of 3GPP Release 10 and early versions of Release 11 would have required pairing of uplink and downlink resources for all operating band and that the asserted references do not teach or suggest a non-associated cell configured by a base station to include only another resource for downlink that is “included in a second downlink frequency band that is not paired with any uplink frequency band,” as proposed substitute claim 3 recites, because they do not teach the use of only downlink resources. Mot. 11–18.

Citing V10.1.0 of TS 36.300 (Ex. 2003), Petitioner contends that because TS 36.300 describes using a different number of CCs originating from the same eNB and possibly different bandwidths in the UL and DL, “TS 36.300 teaches that the eNB can configure a UE with DL and UL with the same bandwidths (paired) or different bandwidths (unpaired).” Opp. 19 (citing Ex. 2003, 43–44; Ex. 1028 ¶ 133). Petitioner argues that “TS 36.300 teaches the eNB tells the PCell (associated cell) of the DL, the PCell of the UL, the SCell (non-associated cell) of the DL and the SCell can be given a grant, but if the UE is not configured for uplink, then the UE ignores it.” *Id.* at 20 (citing Ex. 1012 81-82; Ex. 1028 ¶ 135).

With regard to R2-104515, Petitioner cites this reference’s teaching that “it is permitted that only DL resources are configured to secondary cells.” *Id.* (citing Ex. 1013, 1). R2-104515’s disclosure appears to support Petitioner’s position. In fact, R2-104515 describes the configuration of a secondary cell according to relationships indicated in SIB2, a situation in which “it is permitted that only DL resources are configured to secondary cells,” and the “how to indicate UL absence of secondary cells.” Ex.

1013, 1. We note that R2-104515 further describes options to indicate UL absence by using a statement or information elements (“IE”s). *Id.* at 2–4.

R2-104515’s methods appear to be similar to the parameters described by the ’976 patent to indicate whether a UL CC is used or is absent. Ex. 1001, 25:10–52. As discussed with respect to claim construction, the ’976 patent describes recognizing whether an uplink resource is configured, and that its desired benefits of improving the use efficiency of frequency resources will result from eliminating the need to reserve a resource for uplink where no uplink is configured. Ex. 1001, 32:35–54. Consequently, the current record supports Petitioner’s assertion that R2-104515 teaches a non-associated cell configured by a base station to include only another resource for downlink “that is not paired with any uplink frequency band,” as proposed substitute claim 3 recites.

As discussed in the Decision, Petitioner has articulated a sufficient reason to combine the no-uplink teaching of R2-104515 with TS 36.300 V10.0.0. Dec. 15. Therefore, at this stage of the proceeding, Petitioner has established a reasonable likelihood that the combination of TS 36.300 V10.0.0 and R2-104515 renders proposed substitute claim 3 obvious.

35 U.S.C. § 102 — Anticipation by Malladi

No. At this point in the proceeding, Petitioner has not shown a reasonable likelihood that proposed substitute claim 3 is anticipated by Malladi (Ex. 1023). Opp. 21–23.

Petitioner asserts that “Malladi teaches paired carriers with both uplink and downlink resources” and that “Malladi describes multi-carrier communication systems are based on two or more carrier frequencies with multi-carrier capability in both the uplink and downlink or only on the downlink.” *Id.* 22 (citing Ex. 1028 ¶¶ 76–77; Ex. 1023 ¶ 7). Petitioner further contends that “Malladi discloses using paired frequency bands when the number of downlink carriers and uplink carriers configured for a cell are equal” and “Malladi also discloses allocating a downlink carrier frequency that is not paired with an uplink carrier frequency when the number of downlinks is greater than the number of uplinks (i.e. 0 uplink carriers are allocated for the non-associated cell as

discussed above).” *Id.* at 22–23 (citing Ex. 1028 ¶ 77; Ex. 1023 ¶¶ 90–92).

Patent Owner argues that, as acknowledged in the Decision, “Petitioner has not shown Malladi to disclose a non-associated cell having no uplink carriers.” Mot. 19 (citing Dec. 21).

Petitioner’s Opposition arguments regarding Malladi are similar to those presented in the Petition. As discussed in the Decision, Petitioner cited “Malladi’s statement that the number of uplink carriers can be equal to one, and that the number of downlink carriers can be greater than the number of uplink carriers.” Dec. 20 (citing Pet. 70–72; Ex. 1023 ¶ 8). We determined that “Malladi describes an unequal number of downlink and uplink resources in its communication system.” *Id.* at 20.

On this record, Petitioner’s arguments and cited evidence do not present a substantially different picture of Malladi’s teachings. Malladi describes downlink carriers having an associated uplink carrier “[w]hen the number of uplink carriers equals the number of downlink carriers ($N=M$).” Ex. 1023 ¶ 90. Malladi also describes each uplink carrier having an associated (paired) downlink carrier “when the number of downlink carriers exceeds the number of uplink carriers ($N>M$).” *Id.* ¶ 91. At this stage, Petitioner’s citations to Malladi do not indicate that Malladi describes the use of a resource for downlink that is not paired with any uplink frequency band, as proposed substitute claim 3 recites for its non-associated cell. Petitioner’s citations to Mr. Lanning’s testimony also do not indicate that Malladi describes downlink communication that uses such a non-associated cell.

Therefore, at this stage of the proceeding, Petitioner has not established a reasonable likelihood that Malladi anticipates proposed substitute claim 3.

35 U.S.C. § 103 — Obviousness over Malladi and TS 25.319

No. At this point in the proceeding, Petitioner has not shown a reasonable likelihood that this limitation is rendered obvious by Malladi and TS 25.319 (Ex. 1015). Opp. 23–25.³

Patent Owner asserts that Petitioner misinterprets TS 25.319 and that “TS 25.319 has no disclosure or suggestion of a cell having downlink resources only.” Mot. 19–20 (citing Ex. 2011 ¶ 52). According to Patent Owner, the cited portion of TS 25.319 lacks “any discussion whatsoever about the number of uplink and downlink component carriers” and TS 25.319 “teaches that ‘zero or one’ Serving E-DCH cell can be ‘on the secondary uplink carrier,’ not that a secondary cell can have zero or one secondary uplink carriers.” *Id.* at 21–22 (emphasis omitted).

Petitioner’s arguments in the Opposition focus on the same issue discussed in the Decision. Specifically, the Petition and the Opposition both rely on TS 25.319’s description of a “Secondary Serving E-DCH cell” and that, in Dual Cell E-DCH operation, a “UE can have zero or one Serving E-DCH cell on the secondary uplink carrier.” Dec. 22 (citing Pet. 76); Opp. 23 (citing Ex. 1015, 7). Petitioner and Mr. Lanning reason that UE may have zero or one serving E-DCH cell on a secondary uplink carrier, which means a UE can have zero or one Serving E-DCH cell, but if a base station were to configure the Secondary Serving Cell with one downlink carrier and zero uplink carriers, no frequency assignment would be required for the non-configured secondary uplink. Opp. 23–24 (citing Ex. 1028 ¶¶ 88–99).

We do not address Petitioner’s arguments except as to the limitations added in Patent Owner’s Motion to Amend. Should Petitioner prevail on the non-added limitations of claim 3, and show that the combined references teach a downlink carrier with zero uplink carriers in a non-associated cell as claimed, that would sufficiently show a cell having an unpaired downlink frequency under the above-discussed claim construction.

³ Petitioner’s argument for proposed substitute claim 3 refer to the arguments for original claim 2. Opp. 24–25. Therefore, we reference the arguments for claim 2 only to the extent they apply to proposed substitute claim 3.

III. CONCLUSION

This concludes the Preliminary Guidance. Patent Owner may file a revised MTA by DUE DATE 3. Paper 9, 11.

Patent Owner is reminded that amendments of the challenged claims may also be pursued in a separate reissue or reexamination proceeding before, during, or after an AIA trial proceeding, including subsequent to the issuance of the Final Written Decision. We draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

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