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DECISION ON APPEAL

Appellants\(^1\) appeal under 35 U.S.C. § 134(a) from the Examiner’s decision to reject claims 1–21. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

\(^1\) According to Appellants, the real party in interest is HUAWEI TECHNOLOGIES CO., LTD.  App. Br. 3.
STATEMENT OF THE CASE

Appellants’ disclosed and claimed invention “relates to a radio communications system, and in particular, to a cell discovery method, device, and system.” Spec. ¶ 2.

Claims 1 and 11 are illustrative of the claimed invention and read as follows:

1. A cell discovery method, comprising:
   receiving, by a first base station, first radio frequency information of a handover area;
   receiving, by the first base station, second radio frequency information that is reported by a user equipment served by a cell of the first base station;
   detecting whether the second radio frequency information reported by the user equipment matches the first radio frequency information of the handover area; and
   when the second radio frequency information reported by the user equipment matches the first radio frequency information of the handover area, sending a measurement instruction message to the user equipment that reports the second radio frequency information for instructing the user equipment to measure signal strength and/or signal quality of a cell at a frequency of a cell of a second base station or only of the cell of the second base station.

11. A first base station, comprising:
   a memory; and
   a processor in communication with the memory, the processor configured to:
   receive first radio frequency information of a handover area;
   receive second radio frequency information that is reported by a user equipment served by a cell of the first base station;
   detect whether the second radio frequency information reported by the user equipment matches the first radio frequency information of the handover area; and
   send, when the processor detects that the second radio frequency information reported by the user equipment matches the first radio frequency information of the handover area, a measurement instruction message to the user equipment that reports the second radio frequency information for instructing the user equipment to measure signal strength and/or signal quality
of a cell at a frequency of a cell of a second base station or only of the cell of the second base station.

THE REJECTIONS

The Examiner rejected claims 1, 2, 4, 11, 12, and 14 under 35 U.S.C. § 103 as unpatentable over Moe (US 2008/0207207 A1; Aug. 28, 2008), Matsuo (8,577,373 B2; Nov. 5, 2013), and Siomina (US 2013/0182583 A1; July 18, 2013). Final Act. 6–8.


ANALYSIS

THE § 103 REJECTION BASED ON MOE, MATSUO, AND SIOMINA

Claims 1, 2, 4, 11, 12, and 14

Based on the record before us, we are not persuaded that the Examiner erred in rejecting claims 1, 2, and 4, but we are persuaded that the Examiner erred in rejecting claims 11, 12, and 14.

Appellants contend that the Examiner fails to support sufficiently the combination of Moe, Matsuo, and Siomina to teach or suggest the sending the measurement instruction message limitation. App. Br. 25–26. Appellants, in particular, assert “there is no relevant reason to modify Moe’s system to include such a message.” App. Br. 25. According to Appellants, “Moe’s system requires ongoing and frequent quality reports” that are done prior to sending the instruction to determine the unique cell ID. App. Br. 20–21. Appellants further note that including an additional measurement instruction message to Moe would increase signaling load. App. Br. 26.

We agree that the Examiner has not supported sufficiently the proposed combination. Namely, the Examiner reasons that it would have been obvious to a skilled artisan to modify Moe to “incorporate the ability to send a specific measurement instruction of Matsuo since it enables reducing signaling load caused by unnecessary measurements. (Matsuo Page 3[0040]).” Final Act. 7. This reasoning, though, fails to consider the teachings of Moe. For example, Moe describes that “[t]he base station frequently receives, in step 202, reports from the terminal on measures made on other cells, not only the second cell.” Moe ¶ 29. Further, while Moe teaches sending an instruction message to identify a neighboring cell’s non-unique identity, this instruction is sent after determining that the cell’s
quality measure exceeds a threshold value. Moe ¶ 31. As such, the Examiner fails to support sufficiently why a skilled artisan would have been motivated to modify Moe to send an additional measurement instruction message in view of Moe’s already frequent measurement reports, which Moe uses to determine whether to send the non-unique identify instruction message. Based on the record before us, we are persuaded that the Examiner erred in rejecting independent claim 11 as obvious in view of Moe, Matsuo, and Siomina.

However, as the Examiner points out, the sending a measurement instruction message in claim 1 is a contingent limitation. See Ans. 4. Namely, claim 1 recites “sending a measurement instruction message” “when the second radio frequency information matches the first radio frequency information.” Claim App’x (emphasis added). In other words, if the first and second radio frequency do not match, the method will not send the measurement instruction message. Because Moe, Matsuo, and Siomina teach or suggest the limitations of claim 1 other than the disputed contingent limitation, we are not persuaded that the Examiner erred in rejecting claim 1 as obvious. See Ex parte Schulhauser, Appeal No. 2013-007847, 2016 WL 6277792 (PTAB Apr. 28, 2016) (precedential).

Accordingly, we affirm the Examiner’s rejection of claims 1, 2, and 4, but reverse the rejection of claims 11, 12, and 14.

THE § 103 REJECTION BASED ON MOE, MATSUO, SIOMINA AND CHOI

Claims 3 and 13

Appellants do not argue the limitations of claims 3 and 13 separately. See App. Br. 29. For the reasons discussed above, we affirm the Examiner’s
rejection of claim 3, which depends from claim 1, but we reverse the
rejection of claim 13, which depends from claim 11.

THE § 103 REJECTION BASED ON MOE, MATSUO, SIOMINA AND KANG

Claims 5, 6, 15, and 16

Appellants do not argue the limitations of claims 5, 6, 15, and 16
separately. See App. Br. 30. For the reasons discussed above, we affirm the
Examiner’s rejection of claims 5 and 6, which depend from claim 1, but we
reverse the rejection of claims 15 and 16, which depend from claim 11.

THE § 103 REJECTION BASED ON CHOI AND AYOYAMA

Claims 7–9 and 17–19

Based on the record before us, we are not persuaded that the Examiner
erred in rejecting claims 7–9 and 17–19 as unpatentable over Choi and
Aoyama.

Appellants argue that the cited combination of Choi and Aoyama fails
to teach or suggest “detecting, by the user equipment, whether the first radio
frequency information of the handover area matches second radio frequency
information acquired by the user equipment,” as required by claim 7.
According to Appellants, “[e]ven a cursory review of [the cited paragraphs
of Choi] fails to show any disclosure or teaching regarding a frequency at
all, and certainly no teaching of [the disputed limitation].” App. Br. 32.

The Examiner, however, points out that Choi teaches “searching and
finding” the second base station. Final Act. 11–12. More specifically, Choi
teaches that user equipment receives handover information including
frequency information. See Ans. 9. The user equipment then uses this
frequency information to match a reference signal from the second base station. Ans. 9 (citing Choi ¶¶ 68, 118–120); see also, e.g., Choi ¶ 68 (“The terminal may search for a reference signal that is transmitted from the at least one second base station, using the spreading code information or the frequency information about the at least one second base station.”). As such, we are not persuaded that Choi fails to teach or suggest the claimed detecting limitation.

Next, Appellants contend that Choi fails to teach or suggest “measuring, by the user equipment, signal strength and/or signal quality of a cell at a frequency of a cell of a second base station or only of the cell of the second base station.” App. Br. 32–34. Specifically, Appellants allege “Choi does not teach that any such measurement is performed when the first radio frequency information of the handover area matches second radio frequency information acquired by the user equipment.” App. Br. 34.

We disagree. Choi teaches searching and detecting, i.e. matching a first and second radio frequency information. Final Act. 11–12. Once the second base station is found or matched, Choi “generates wireless channel quality information among the first base station 720, the terminal 730, and the second base station 740, using a reference signal that is received from the second base station 740.” Choi ¶ 120; see also Choi Fig. 7 (S753 and S754); Final Act. 12; Ans. 9. In particular, Choi “compares wireless channel quality information between the first base station 720 and the terminal 730, and another wireless channel quality information between the terminal 730 and the second base station 740.” Choi ¶ 121; see also Final Act. 12; Ans. 9. Therefore, we find Appellants’ arguments unpersuasive.
Appellants assert that Choi does not teach or suggest performing the measurement in response to a measurement instruction message. App. Br. 34. Additionally, Appellants contend that Aoyama’s control message is not the claimed instruction message because “it is not sent or received when the processor detects that the first radio frequency information of the handover area matches second radio frequency information acquired by the user equipment.” See App. Br. 35. These arguments, however, fail to consider the combination of Choi’s detecting and Aoyama’s control message. See, e.g., Final Act. 12. “[O]ne cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.” See In re Keller, 642 F.2d 413, 426 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Finally, Appellants argue that the Examiner fails to support sufficiently the combination of Choi and Aoyama. App. Br. 36–37. According to Appellants, “Choi does not need any measurement control message as in Aoyama, since it already preforms any necessary measurements under its own criteria.” Id. The Examiner, however, points out that the handover message of Choi is analogous to Aoyama’s measurement control message “since they both enable checking signal quality of a specific neighboring base station in order to determine whether it is a better serving choice.” Ans. 11. In other words, a skilled artisan would understand Choi’s handover information message, in view of Aoyama’s control message, at least suggests the claimed measurement instruction message. Therefore, based on the record before us, we are not
persuaded that the Examiner erred in determining the claimed invention is obvious in view of Choi and Aoyama.

Accordingly, we affirm the Examiner’s rejection of claims 7–9 and 17–19 as unpatentable over Choi and Aoyama.

THE § 103 REJECTION BASED ON CHOI, AOYAMA, AND KIM

Claims 10 and 20

Appellants do not argue the limitations of claims 10 and 20 separately. See App. Br. 38. Instead, Appellants rely on the arguments presented for claim 7. For the reasons discussed above, we find these arguments unpersuasive and affirm the rejection of claims 10 and 20.

THE § 103 REJECTION BASED ON MOE, MATSUO, SIOMINA, TAO, AND CHARBIT

Claim 21

Appellants do not argue the limitations of claim 21 separately. See App. Br. 39. For the reasons discussed above, we affirm the rejection of claim 21, which depends from claim 1.

DECISION

We affirm the Examiner’s decision to reject claims 1–10 and 17–21, but we reverse the Examiner’s decision to reject claims 11–16.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART