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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YOSUKE AKIMOTO, TATSUSHI AIBA, SHOHEI YAMADA, and HIROSHI KATSURAGAWA

Appeal 2018-007292
Application 13/090,061
Technology Center 2400


BUI, Administrative Patent Judge.

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of claims 29–39, which are all the claims pending in the application. Claims App’x. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.²

¹ According to Appellants, Huawei Technologies Co., Ltd., is the real party in interest. App. Br. 2.
STATEMENT OF THE CASE

Appellants’ invention relates to “a wireless communication system, base station apparatus and mobile station apparatus for setting transmission frequencies individually with flexibility corresponding to kinds of feedback information for the mobile station apparatus to transmit to the base station apparatus, thereby optimizing transmission periods corresponding to the kinds of feedback information, and minimizing a reduction in system throughput caused by disagreement of the transmission period with the optimal period.” Spec. ¶ 25; Abstract (emphasis added).

Claims 29, 32, 35, 37, and 39 are independent. Claim 29 is illustrative of the claimed subject matter, as reproduced below with disputed limitations in italics:

29. A base station apparatus comprising:
   a processor; and
   a non-transitory computer-readable storage medium storing a program to be executed by the processor, the program including instructions for:
   
   [1] allocating a first periodicity corresponding to a transmission of reception quality information, a second periodicity corresponding to a transmission of transmission signal precoding information, and a third periodicity corresponding to a transmission of transmission signal sequence information, wherein the transmission signal sequence information is indicative of a number of transmission sequences communicable with a mobile station apparatus, wherein the first periodicity, the second periodicity, and the third periodicity are different from each other;

   [2] assigning same periodical physical uplink control channel resources for [i] the transmission of reception quality information, [ii] the transmission of transmission signal precoding information, and [iii] the
transmission of transmission signal sequence information; and

[3] transmitting, to the mobile station apparatus through radio resource control (RRC) signaling, a transmission parameter indicative of the first periodicity, the second periodicity, the third periodicity, and information of the periodical physical uplink control channel resources.

App. Br. 9 (Claims App’x) (bracketing added).

EXAMINER’S REJECTION & REFERENCES

DISCUSSION
In support of the obviousness rejection, the Examiner finds Ihm teaches most aspects of Appellants’ “base station” recited in claim 29 and similarly, claims 32, 35, 37, and 39, including:

[1] “allocating a first periodicity corresponding to a transmission of reception quality information, a second periodicity corresponding to a transmission of transmission signal precoding information, and a third periodicity corresponding to a transmission of transmission signal sequence information . . .” (Final Act. 3 (citing Ihm ¶¶ 37, 39, 40, 55, 68, 70, 78–81, 83, Table 4, Table 7, Table 9));
[2] assigning same periodical physical uplink control channel resources for [i] the transmission of reception quality information, [ii] the transmission of transmission signal precoding information, and [iii] the transmission of transmission signal sequence information (Final Act. 3 (citing Ihm ¶¶ 37, 39, 40, 55, 68, 70, 78–81, 83, Table 4, Table 7, Table 9)); and

[3] transmitting, to the mobile station apparatus . . . a transmission parameter indicative of the first periodicity, the second periodicity, the third periodicity, and information of the periodical physical uplink control channel resources.” (Final Act. 4–5 (citing Ihm ¶¶ 39, 40, 55, 68, 70, 78–81, 83, Table 4, Table 7, Table 9)).

For example, Ihm’s Figure 3 shows allocation of uplink control channel resources at a base station (BS) based on feedback information received from a mobile station (MS), as reproduced below with additional markings:

Ihm’s Figure 3 shows BS allocation of uplink control channel resources.
According to Ihm, the feedback information received from MS includes, but is not limited to: (1) channel quality information (CQI), (2) MIMO channel matrix and weight value, and (3) mode information (i.e., MIMO mode or permutation mode). Ihm ¶¶ 6–7, 39–40.

To support the conclusion of obviousness, the Examiner further relies on: (1) Kotecha for teaching that feedback information expressly includes (i) “precoding information” and (ii) “sequence information” (Final Act. 8 (citing Kotecha ¶¶ 17, 21, 31, 34, 49)); (2) Wanguemert Perez for teaching “wherein the first periodicity, the second periodicity, and the third periodicity are different from each other” (Final Act. 9–10 (citing Wanguemert Perez ¶¶ 3, 13, 20, 31)); and (3) Pecen for teaching the transmission of a transmission parameter, via radio resource control (RRC) signaling. Final Act. 11 (citing Pecen ¶ 41).

Appellants do not dispute the Examiner’s factual findings regarding Ihm, Kotecha, Wanguemert Perez, and Pecen. Nor do Appellants dispute the Examiner’s rationale for combining Ihm, Kotecha, Wanguemert Perez, and Pecen. Instead, Appellants present three principal arguments against the Examiner’s combination of Ihm, Kotecha, Wanguemert Perez, and Pecen.

First, Appellants argue “the cited references do not teach or render obvious a system or method where transmissions of reception quality information, transmission signal precoding information and transmission signal sequence information are assigned the same periodical physical uplink control channel resources.” App. Br. 4–5. According to Appellants, Ihm “only discloses that the mobile station (MS)-selected MIMO mode and permutation mode can be transmitted periodically . . . and does not disclose that the resources for transmission of the MS-selected MIMO mode and
permutation mode are transmitted on the *same periodical physical uplink control channel resources*" and the “resources for transmitting the mobile station (MS)-selected MIMO mode and permutation mode are assigned separately for each information type . . . [as such] are not the same periodical resources.” App. Br. 4–5 (citing Ihm ¶¶ 44, 55).

Second, Appellants argue “the cited references do not teach or render obvious a system or method for allocating a second periodicity corresponding to a transmission of transmission signal precoding information, and a third periodicity corresponding to a transmission of transmission signal sequence information, where the periodicities are different from each other.” App. Br. 5–7 (emphasis added). According to Appellants, “[n]othing in Ihm teaches that different types of [feedback] information are transmitted sing [sic] different periodicities.” App. Br. 6. Appellants also argue “Ihm teaches way from the feature where ‘the first periodicity, the second periodicity, and the third periodicity are different from each other,’ which allows the three types of feedback information to be transmitted individually” because (1) Ihm’s “feedback information” is included in a MAC header that “belongs to a data packet, rather than to a physical uplink control channel” and (2) “various information is fed back in one MAC header, which means the various information is fed back in a bundled mode, rather than being fed back individually.” App. Br. 6.

Third, Appellants argue “the cited references do not teach or render obvious a system or method for transmitting, to the mobile station apparatus through RRC signaling, a transmission parameter indicative of the first periodicity, the second periodicity, the third periodicity, and information of the periodical physical uplink control channel resources.”
App. Br. 7. In particular, Appellants acknowledge Pecen teaches “transmitting transmission signal sequence information using RRC signaling” but argue that “the RRC signaling in claim 29 is used to transmit a transmission parameter indicative of the first periodicity, the second periodicity and the third periodicity, and information of the periodical physical uplink control channel resources, which is not disclosed in Pecen.” App. Br. 7.

Appellants’ arguments are not persuasive. Instead, we find the Examiner has provided a comprehensive response to Appellants’ arguments supported by evidence. Ans. 3–8. As such, we adopt the Examiner’s findings and explanations provided therein. *Id.* For example, as correctly recognized by the Examiner, Ihm’s feedback information (inclusive of multiple types of feedbacks) is transmitted on the same uplink control channel (CQICH) periodically which could correspond to Appellants’ claimed “same periodical physical uplink control channel resources” recited in claim 29. Ans. 5 (citing Ihm ¶¶ 37, 68, 70, 78, 83, Table 9). Second, Ihm is not relied upon for teaching different types of feedbacks transmitted at “different periods” as Appellants argue. App. Br. 5–7. Instead, Wanguemert Perez teaches “different feedbacks [transmitted] at different periods,” as recognized by the Examiner. Ans. 6 (citing Wanguemert Perez ¶¶ 3, 13, 20, 31). Similarly, Pecen teaches allocating resources, via RRC (radio resource control) signaling. Ans. 8 (citing Pecen ¶ 41). One cannot show nonobviousness by attacking references individually where the rejection is based on combinations of references. In re Keller, 642 F.2d 413, 425 (CCPA 1981). The test of obviousness is what the combined teachings would have suggested to those of ordinary skill in the art. Keller, 642 F.2d
at 425. Contrary to Appellants’ arguments, the combination of Ihm and Wanguemert Perez teaches the second disputed limitation of claim 29. Likewise, the combination of Ihm, Wanguemert Perez, and Pecen teaches the third disputed limitation of claim 29.

In the Reply, Appellants raise new arguments against the Examiner’s combination, including: (1) “Ihm is completely silent about the transmission signal precoding information, and transmission signal sequence information”; and (2) “Wanguemert [Perez] does not relate to the three kinds of specific information in claim 29, that is, [i] reception quality information, [ii] transmission signal precoding information, and [iii] transmission signal sequence information.” Reply Br. 2–4. These arguments are belated disputes regarding the Examiner’s factual findings. In the absence of a showing of good cause by Appellants, we can decline to consider these new argument raised for the first time in the Reply Brief. See 37 C.F.R. § 41.41(b)(2) (2018); In re Hyatt, 211 F.3d 1367, 1373 (Fed. Cir. 2000) (noting that an argument not first raised in the brief to the Board is waived on appeal); Ex parte Nakashima, 93 USPQ2d 1834, 1837 (BPAI 2010) (informative) (explaining that arguments and evidence not timely presented in the principal Brief, will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Principal Brief); Ex parte Borden, 93 USPQ2d 1473, 1477 (BPAI 2010) (informative) (“[p]roperly interpreted, the Rules do not require the Board to take up a belated argument that has not been addressed by the Examiner, absent a showing of good cause.”).

Nevertheless, for purposes of completeness, we address Appellants’ new arguments below. At the outset, we note claim terms are given their
broadest reasonable interpretation consistent with the Specification. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under the broadest reasonable interpretation, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

The terms “transmission signal precoding information” and “transmission signal sequence information” are not specifically defined by Appellants’ Specification; rather, the term “transmission signal precoding information” is described as “information of precoding on a transmission signal.” Spec. ¶¶ 72; see also id. 73, 76, 90, 104 and originally-filed claims 1–5. Similarly, the term “transmission signal sequence information” is described as “the number of transmission sequences communicable with the base station.” Spec. ¶¶ 72; see also id. 73, 76, 90, 104 and originally-filed claims 1–5.

Based on Appellants’ Specification, the terms “transmission signal precoding information” and “transmission signal sequence information” can be broadly, but reasonably interpreted to encompass (1) Ihm’s MIMO channel [precoding] matrix and weight value, and mode information (i.e., MIMO mode or permutation mode) (see Ihm ¶¶ 6–7, 39–40); and/or (2) Kotecha’s “precoding matrix” and “encoded feedback value” indicating “a number of spatial streams to be used during transmission of a data signal sent over the transmission channel” (see Kotecha ¶¶ 21, 31, 34, 49).

Appellants do not direct us to evidence to show the Examiner’s interpretations are erroneous. “[T]he fact that [Appellants] can point to definitions or usages that conform to their interpretation does not make the
PTO’s definition unreasonable when the PTO can point to other sources that support its interpretation.” In re Morris, 127 F.3d 1048, 1056 (Fed. Cir. 1997).

For these reasons, we are not persuaded of Examiner error. Accordingly, we sustain the Examiner’s obviousness rejection of claim 29, and similarly, claims 32, 35, 37, and 39, and their respective dependent claims 30, 31, 33, 34, 36, and 38, which Appellants do not argue separately.

CONCLUSION

On the record before us, we conclude Appellants have not demonstrated the Examiner erred in rejecting claims 29–39 under 35 U.S.C. § 103(a).

DECISION

As such, we AFFIRM the Examiner’s rejections of claims 29–39 under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED