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14/708,476	05/11/2015	Gaurav R. NUKALA	30134/01204 (P11993USC1)	9511
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Apple Inc. -- FKM 150 Broadway Suite 702 New York, NY 10038			HUNT, KENNETH P	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* GAURAV R. NUKALA,  
VENKATASUBRAMANIAN RAMASAMY, and  
GIRI PRASSAD DEIVASIGAMANI

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Appeal 2018-003892  
Application 14/708,476<sup>1</sup>  
Technology Center 2400

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Before CAROLYN D. THOMAS, IRVIN E. BRANCH, and  
JOSEPH P. LENTIVECH, *Administrative Patent Judges*.

BRANCH, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 24–44, which are all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

*Technology*

The application relates to “increasing capacity of a control channel between a radio access portion of a wireless network a[nd] multiple mobile wireless devices using multi-user multiple-input multiple-output communication.” Spec. ¶ 1.

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<sup>1</sup> According to Appellants, the real party in interest is Apple Inc. App. Br. 2.

*Illustrative Claim*

Claims 24–44 are pending. Claim 24 is illustrative and reproduced below with the limitations at issue emphasized:

24. A method, comprising:

at a base station:

estimating a received downlink signal quality for each mobile wireless device of a plurality of mobile wireless devices connected to the base station;

determining a number of control channel elements to be transmitted to each mobile wireless device based on the received downlink signal quality of each mobile wireless device;

*grouping a portion of the plurality of mobile wireless devices into a first group based on a first distance of each mobile wireless device from the base station and at least one of the received downlink signal quality of each mobile wireless device and a number of receive antennas for each mobile wireless device;*

*grouping a portion of the plurality of mobile wireless devices into a second group based on a second distance of each mobile wireless device from the base station and at least one of the received downlink signal quality of each mobile wireless device and the number of receive antennas for each mobile wireless device; and*

transmitting control channel information comprising the number of control channel elements to each of the first group of mobile wireless devices, wherein the control channel information is simultaneously transmitted to each of the first group of mobile wireless devices using the same frequency and time resource elements based on multi-user multiple-input multiple-output (MU-MIMO) transmissions.

*References and Rejections<sup>2</sup>*

Claims 24–30, 32–35, 39–41, and 44 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sampath (US 2011/0002227 A1, Jan. 6, 2011), Marks (US 2011/0068981 A1, Mar. 24, 2011), Kwak (US 2008/0273479 A1, Nov. 6, 2008), and Lindh (US 2012/0207099 A1, Aug. 16, 2012). Final Act. 5–14.

Claims 31 and 36 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sampath, Marks, Kwak, Lindh, and DiRenzo (US 2005/0271174 A1, Dec. 8, 2005). Final Act. 14–15.

Claim 37 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Sampath, Marks, Kwak, Lindh, and Pan (US 2006/0146755 A1, July 6, 2006). Final Act. 15–16.

Claim 38 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Sampath, Marks, Kwak, Lindh, and Teikari (US 2011/0065400 A1, Mar. 17, 2011). Final Act. 16.

Claims 42 and 43 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sampath, Marks, Kwak, Lindh, and Zhou (US 2010/0103832 A1, Apr. 29, 2010). Final Act. 16–17.

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<sup>2</sup> Rather than repeat the Examiner’s positions and Appellants’ arguments in their entirety, we refer to the above mentioned Appeal Brief filed September 20, 2017 (“App. Br.”), as well as the following documents for their respective details: the Final Action mailed April 20, 2017 (“Final Act.”), the Examiner’s Answer mailed December 28, 2017 (“Ans.”), and Appellants’ Reply Brief filed February 28, 2018 (“Reply Br.”).

### ISSUE<sup>3</sup>

This appeal turns on a single issue: whether the combination of Sampath, Marks, Kwak, and Lindh teaches, suggests, or otherwise renders obvious the limitations emphasized above in claim 24.

### ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' arguments. We have considered in this Decision only those arguments Appellants actually raised in the Briefs. Any other arguments Appellants could have made but chose not to make in the Briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv). We adopt the Examiner's findings and conclusions as our own, to the extent consistent with our analysis herein.

Appellants argue in the Appeal Brief that "because Sampath [merely] discloses path loss, which is the reduction in power density (e.g., attenuation) and, as will be explained in greater detail below, path loss is not analogous to grouping mobile devices based on a distance of the mobile devices from a base station." App. Br. 5.

Appellants' argument here overlooks that the Examiner cited Marks for "a given path loss corresponds to a distance." *See* Final Act. 7 (citing Marks ¶ 25); Ans. 2. Accordingly, Appellants' Appeal Brief arguments are unpersuasive at least because Appellants failed to address Marks, which contributes to the basis of the Examiner's rejection.

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<sup>3</sup> Appellants argue the rejection of claims 24–30, 32–35, 39–41, and 44 based on claim 24 and do not argue the additional rejections except to say that the additional references fail to cure the deficiencies argued with respect to the rejection of claim 24. App. Br. 4–9; Reply Br. 2–5. Thus, the rejection of claim 24 is dispositive, and, except for our ultimate Decision, we do not further address the remaining claims.

In the Reply Brief, Appellants argue that “distance,” as used in the claim, should be based on “measured” distance. Reply Br. 3. Appellants state that “[t]he present Specification discloses that the measured distances are used to group wireless devices with comparable signal strength and/or signal quality.” *Id.* (citing Spec. ¶ 44). We are not persuaded that Appellants’ Specification discloses that “distance” should be construed as “measured distance.” Paragraph 44 of Appellants’ Specification describes mobile wireless devices with “relatively high signal strength and/or high signal quality” for which “a minimum of only one CCE can be used for the control channel information.” Spec. ¶ 44. The Specification uses “location” merely as exemplary of a factor that can result in relatively high signal strength and/or high signal quality.” *Id.* (“e.g. located in a near region 802 relatively close to the radio access subsystem 106”). We are not persuaded that this disclosure requires “distance” to be construed as “measured distance,” or “actual distance,” as Appellants subsequently argue. Reply Br. 4 (“The present claims do not recite an estimation of distance, but an actual distance.”).

Accordingly, we are unpersuaded of error in the Examiner’s rejection.

We note, but do not reach, Appellants’ belatedly presented argument that “in addition, claim 1 recites a grouping based on two criteria: distance and ‘at least one of the received downlink signal quality . . . and a number of receive antennas.” *Id.* at 3. This argument is newly presented in the Reply Brief. As this argument is not responsive to an argument presented for the first time in the Examiner’s Answer, and good cause has not been shown as to why the argument was not earlier presented, the argument will not be considered for the purposes of this appeal. 37 C.F.R. § 41.41(b)(2).

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Application 14/708,476

DECISION

For the reasons above, we affirm the Examiner's decision rejecting claims 24–44.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED