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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 IVAN JESUS FERNANDEZ-CORBATON,  
SRIKANT JAYARAMAN, and CHARLES WHEELER SWEET III

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Appeal 2009-015321  
Application 10/728,680  
Technology Center 2600

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Before CARL W. WHITEHEAD, JR., ERIC S. FRAHM, and  
ANDREW J. DILLON, Administrative Patent Judges.

FRAHM, Administrative Patent Judge.

DECISION ON APPEAL

STATEMENT OF THE CASE<sup>1</sup>

*Introduction*

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1, 4-18, and 21-36.<sup>2</sup> Claims 9, 10, 16, 17, 26, 27, 33, and 34 stand objected to as being dependent upon a rejected base claim, but as allowable if rewritten in independent form including all of the limitations of the base claim(s) and any intervening claim(s). Ans. 2. Claims 1, 4-8, 11-15, 18, 21-25, 28-32, 35, and 36 were rejected by the Examiner and are before us on appeal. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

*Appellants' Disclosed Invention*

Appellants disclose a method of optimizing the data transmission capacity of wireless communications systems (Spec. ¶ [0001]) by adaptively allocating power between a traffic signal and a dedicated reference signal using a quality metric that the base station receives from a remote station (Spec. ¶¶ [0007]-[0008]).

*Exemplary Claims*

An understanding of the invention can be derived from a reading of exemplary claims 1 and 7, which are reproduced below with *emphases* added:

1. A base station that adaptively allocates at least one resource

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<sup>1</sup> Our decision will make reference to the Examiner's Final Rejection ("Final Rej.," mailed Nov. 2, 2007), Appellants' Appeal Brief ("App. Br.," filed June 13, 2008), the Examiner's Answer ("Ans.," mailed June 18, 2009), and Appellants' Reply Brief ("Reply Br.," filed August 13, 2009).

<sup>2</sup> In the Examiner's Answer, Appellants' arguments regarding claims 9, 10, 16, 17, 26, 27, 33, and 34 were found persuasive, their respective rejections were withdrawn, and these claims were objected to as being allowable but dependent upon a rejected base claim (*see* Ans. 2, 18).

between a traffic signal and a dedicated reference signal, comprising:

means for *receiving a quality metric from a remote station*, wherein the quality metric indicates the quality of a signal transmitted from the base station in a common reference signal and received by the remote station;

means for *using the quality metric to adaptively allocate a fixed amount of power between the traffic signal and the dedicated reference signal* to maximize the capacity for transmitting the traffic signal to the remote station; and

means for transmitting the dedicated reference signal and the traffic signal to the remote station, wherein the received common reference signal and the received dedicated reference signal are used to train a receiver at the remote station.

7. The base station of claim 1, further comprising means for transmitting a parameter  $e_x$  to the remote station, wherein the parameter  $e_x$  represents the portion of the resource allocated to the dedicated reference signal.

#### *The Examiner's Rejections*

(1) The Examiner rejected claims 1, 4, 11, 18, 21, 28, 35, and 36 under 35 U.S.C. § 102(b) by Aoyama (US 2002/0154616 A1; Oct. 24, 2002/Aug. 20, 2001). Ans. 3-5.

(2) The Examiner rejected claims 5, 6, 12, 13, 22, 23, 29, and 30 under 35 U.S.C. § 103(a) over the combination of Aoyama and Yuvaz (US 2003/0123406 A1; Jul. 3, 2003/Dec. 28, 2001). Ans. 5-6.

(3) The Examiner rejected claims 7, 8, 14, 15, 24, 25, 31, and 32 under 35 U.S.C. § 103(a) over the combination of Aoyama and Farlow (WO 02/13448 A2). Ans. 6-7.

(4) The Examiner rejected claims 9, 10, 16, 17, 26, 27, 33, and 34 under 103(a) over Aoyama and Frank (US 6,904,081 B2; Jun. 7,

2005/Aug. 30, 2002). Final Rej. 6-11. The Examiner has withdrawn this rejection (Ans. 18), therefore it is not before us on appeal and we will not address it further herein.

*Appellants' Contentions*<sup>3</sup>

(1) Appellants contend (App. Br. 13-17-18; Reply Br. 5-10) that the Examiner erred in rejecting claims 1, 4, 11, 18, 21, 28, 35, and 36 under 35 U.S.C. § 102(b) by Aoyama for numerous reasons, including Aoyama does not disclose, “using the quality metric [received by the remote station] to adaptively allocate a fixed amount of power between the traffic signal and the dedicated reference signal,” as recited in claim 1.<sup>4</sup>

(2) Appellants contend (App. Br. 18) that the Examiner erred in rejecting claims 5, 6, 12, 13, 22, 23, 29, and 30 under 35 U.S.C. § 103(a) over the combination of Aoyama and Yuvaz for numerous reasons, including Aoyama fails to meet the limitations of claim 1.

(3) Appellants contend (App. Br. 19-22) that the Examiner erred in rejecting claims 7, 8, 14, 15, 24, 25, 31, and 32 under 35 U.S.C. § 103(a) over the combination of Aoyama and Farlow for numerous reasons,

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<sup>3</sup> We recognize that Appellants' arguments present additional issues. Many of the arguments presented by the additional issues are not persuasive; nonetheless we were persuaded of error by this issue and as such we do not reach the additional issues as this issue is dispositive of the appeal.

<sup>4</sup> Claim 1 is representative of claims 1, 4, 18, 21, and 35. Claim 11 is representative of claims 11, 28, and 36. While claim 11 was argued separately, we find that the issue between claim 11 and claim 1 to essentially be the same: whether or not Aoyama discloses the base station to use a quality metric received from/transmitted by the remote station to adaptively allocate a fixed amount of power between the dedicated reference signal and the traffic signal. Therefore, we group claims 1 and 11 together and treat claim 1 and 11 as representative of claims 1, 4, 11, 18, 21, 28, 35, and 36.

including Aoyama fails to meet the limitations of claim 1.<sup>5</sup>

*Issues on Appeal*

Did the Examiner err in rejecting:

(1) claims 1, 4, 11, 18, 21, 28, 35, and 36 under 35 U.S.C. § 102(b) by Aoyama because Aoyama does not disclose, “using the quality metric [received by the remote station] to adaptively allocate a fixed amount of power between the traffic signal and the dedicated reference signal,” as recited in claim 1;

(2) claims 5, 6, 12, 13, 22, 23, 29, and 30 under 35 U.S.C. § 103(a) over the combination of Aoyama and Yuvaz because Aoyama fails to meet the limitations of claim 1; and

(3) claims 7, 8, 14, 15, 24, 25, 31, and 32 under 35 U.S.C. § 103(a) over the combination of Aoyama and Farlow because Aoyama fails to meet the limitations of claim 1?

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellants’ contention in the Appeal Brief (App. Br. 13-22) and the Reply Brief (Reply Br. 5-12) that the Examiner has erred.

We agree with Appellants’ above contention that Aoyama does not disclose “using the quality metric [received by the remote station] to adaptively allocate a fixed amount of power between the traffic signal and the dedicated reference signal,” as recited in claim 1 and as similarly recited in claim 11. Aoyama expressly discloses (¶[0144]) that the state of the

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<sup>5</sup> While claims 7 and 14 are argued separately, we are persuaded by Appellants’ arguments that the limitations of claims 1 and 11 are not met.

propagation environment is determined by measuring, by way reception level measurement sections in the base station, a signal spread by the despreading section. In other words, Aoyama does not disclose the carrier to interference ratio or the values from the data rate control signal is extracted to determine the state of the propagation environment.

Aoyama's disclosed types of modulation (e.g., 16QAM and 64QAM at ¶ [0039]) involve allocating power to signals, and the base station determines which type of data modulation was used by the DRC signal demodulated from the signal transmitted from a remote station (¶ [0036]). However, the quadrature amplitude modulation techniques described (16QAM, 64QAM) appear to be based upon two carrier signals that are amplitude modulated and then summed so as to create a data signal. This is not the same as allocating power between a dedicated reference/pilot signal and a traffic/data signal, as set forth in claims 1 and 11 on appeal.

When the DRC is used to determine the data modulation method, the determined data modulation method appears to only control the modulation for the data signal (*see* Fig. 4, element 153 controls the adaptive modulation element 153 which is for the data signal) as opposed to both the data signal and the dedicated reference signal (*see* Fig. 4, noting that element 153 does not appear to control the modulation elements 156 and 160 which are for the dedicated pilot signal). The dedicated pilot signal is modulated in a manner not requiring any information from the DRC signal.

The Examiner relied upon Aoyama's power ratio controller of embodiment 6 (*see* Fig. 12, noting the additional elements 801 and 802) to meet allocating power between the dedicated reference signal and the data

signal. The Examiner's anticipation rejection fails to explain or articulate the relationship between the CIR measurement or the DRC signal (of embodiment 1) and the state of the propagation environment (embodiment 6) that is used to determine the power allocation. Further, as can be seen in Aoyama's Figure 12, the DRC signal that would have been demodulated by the demodulation section (Fig. 12, element 105) does not appear to be transmitted to the power ratio control section (Fig. 12, element 802), thus neither the CIR nor DRC control the power allocation between the dedicated reference/pilot signal and the traffic/data signal.

Therefore we will not sustain the rejection of: (1) claims 1, 4, 11, 18, 21, 28, 35, and 36 under 35 U.S.C. § 102(b) by Aoyama; (2) claims 5, 6, 12, 13, 22, 23, 29, and 30 under 35 U.S.C. § 103(a) over the combination of Aoyama and Yuvaz for the reasons of claim 1 and 11; and (3) claims 7, 8, 14, 15, 24, 25, 31, and 32 under 35 U.S.C. § 103(a) over the combination of Aoyama and Farlow for reasons of claim 1 and 11.

## CONCLUSIONS

(1) Appellants have established that the Examiner erred in rejecting claims 1, 4, 11, 18, 21, 28, 35, and 36 under 35 U.S.C. § 102(b) by Aoyama because Aoyama does not disclose, "using the quality metric [received by the remote station] to adaptively allocate a fixed amount of power between the traffic signal and the dedicated reference signal," as recited in claim 1 and as similarly recited in claim 11.

(2) Appellants have established that the Examiner erred in rejecting claims 5, 6, 12, 13, 22, 23, 29, and 30 under 35 U.S.C. § 103(a) over the combination of Aoyama and Yuvaz because the limitations of claims 1 and

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11 are not met.

(3) Appellants have established that the Examiner erred in rejecting claims 7, 8, 14, 15, 24, 25, 31, and 32 under 35 U.S.C. § 103(a) over the combination of Aoyama and Farlow because the limitations of claims 1 and 11 are not met.

#### DECISION

The Examiner's rejections of claims 1, 4-8, 11-15, 18, 21-25, 28-32, 35, and 36 are reversed.

REVERSED

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