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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EUN-YONG KIM, JUNE MOON,
CHUNG-RYUL CHANG, YOUNG-KY KIM and
EUN-SEOK KO¹

Appeal 2018-007512
Application 13/206,886
Technology Center 2400

Before CAROLYN D. THOMAS, CARL W. WHITEHEAD JR. and
MICHAEL J. STRAUSS, *Administrative Patent Judges*.

WHITEHEAD JR., *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant is appealing the final rejection of claims 1, 3, 6, 9, 12, 15 and 29–34 under 35 U.S.C. § 134(a). Appeal Brief 6. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies Samsung Electronics Co., Ltd., as the real party in interest. Appeal Brief 2. An oral hearing was held on February 25, 2020.

Introduction

According to Appellant, the invention is:

A method for transmitting a signal by an evolved Node B (eNB) in a mobile communication system includes transmitting a same control channel signal to each of a plurality of Radio Units (RUs), and transmitting a different data channel signal to each of the plurality of RUs. A data channel signal transmitted to each of the plurality of RUs may be determined taking into account at least one of a location of a User Equipment (UE) that will receive the data channel signal, and load balancing.

Abstract.

Representative Claim

1. A method for transmitting a signal by a base station in a wireless communication system, the method comprising:
determining a plurality of user equipments (UEs) with a maximum scheduling metric based on channel quality information;
generating a common signal for the plurality of UEs;
generating a radio unit (RU) specific data signal for each of RUs;
multiplexing the common signal and the RU specific data signal; and
transmitting, to each of the RUs, the multiplexed signal on a channel through a common public radio interface (CPRI) based on a wired medium, wherein a cell is identified by the plurality of UEs based on the common signal,
wherein the cell includes a plurality of sub-cells and each sub-cell is identified by at least one UE which is located in the each sub-cell, based on the RU specific data signal.

References

Name	Reference	Date
Murai	US 2005/0130662 A1	June 16, 2005
Akman et al.	US 2010/0075678 A1	March 25, 2010
Lee et al.	US 2010/0260156 A1	October 14, 2010
Chung et al.	US 2012/0114021 A1	May 10, 2012

Rejections on Appeal

Claims 1, 3, 6, 9, 12 and 15 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Lee, Chung and Akman. Final Action 3-6.

Claims 29–34 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Lee, Chung, Akman and Murai. Final Action 6–7.

ANALYSIS

Rather than reiterate the arguments of Appellant and the Examiner, we refer to the Appeal Brief (filed January 24, 2018), the Reply Brief (filed July 18, 2018), the Final Action (mailed March 22, 2017) and the Answer (mailed May 18, 2018), for the respective details.

Appellant contends:

Lee, *as a whole*, does not disclose “**generating a common signal for the plurality of UEs**”, “generating a radio unit (RU) specific data signal **for each of RUs**”, and “**wherein a cell is identified by the plurality of UEs based on the common signal**, wherein **the cell includes a plurality of sub-cells** and each sub-cell is identified by at least one UE which is located in the each sub-cell, based on the RU specific data signal” as recited in pending claim 1.

Appeal Brief 7.

The Examiner finds, “Lee discloses generating **(the message generator 1610 generates, ¶ [0206])** a common signal **(generates a control message signal, ¶ [0206])** for the plurality of UEs **(The message generator 1610 generates a control message signal to be transmitted to the MSs (implied UEs), ¶ [0206]).**” Answer 3; Final Action 3.

The Appellant “point[s] out that [Lee’s] message generator 1610 is a part of a subordinate BS in a broadband wireless communication system (see paras. [0034], [0201] and [0202 [(‘[T]he subordinate BS includes a wired communicator **1602**, a controller **1604**, a synchronization signal generator **1606**, a data signal generator **1608**, a message generator **1610**, a frame mapper **1612**, an OFDM modulator **1614**, and an RF transmitter **1616.**’)]])” and “Therefore, it is the subordinate BS that generates control message signal to be transmitted to MSs having access to the subordinate BS (i.e., MSs that are in the coverage of the subordinate BS).” Appeal Brief 7–8.

Appellant contends:

In contrast, when reading claim 1 *as a whole*, it is the base station of the claimed invention that generates a common signal for the plurality of UEs in the cell of the base station where the cell includes a plurality of sub-cells (subordinate cells) and at least one UE is located in each sub-cell of the plurality of sub-cells. In other words, the base station generates a common signal to be provided to a plurality of UEs through a plurality of sub-cells. Stated otherwise, the base station not the sub-cell generates a common signal and each of the sub-cells is to provide the common signal generated by the base station to the UEs having the access the sub-cells.

Appeal Brief 8.

We find Appellant’s contention persuasive because claim 1 recites a “method for transmitting a signal by a base station in a wireless communication system, the method comprising” and therefore the limitation

Appeal 2018-007512
Application 13/206,886

“generating a common signal for the plurality of UEs” is performed at least by the base station. Lee does not disclose generating a common signal by the base station. Lee discloses generating a common signal by the subordinate base or radio unit. *See* Lee Figure 16, ¶¶ 202, 206. Neither Chung nor Akman address Lee’s noted deficiency. *See* Final Action 4–6.

We are constrained by the record and therefore we reverse the Examiner’s obviousness rejection of independent claim 1, as well as, independent claims 3, 6, 9, 12 and 15, commensurate in scope. We also reverse the obviousness rejection of dependent claims 29–34.

CONCLUSION

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3, 6, 9, 12, 15	103	Lee, Chung, Akman		1, 3, 6, 9, 12, 15
29–34	103	Lee, Chung, Akman, Murai		29–34

REVERSED