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Patterson & Sheridan, L.L.P.
Qualcomm
24 Greenway Plaza, Suite 1600
Houston, TX 77046
UNITED STATES OF AMERICA

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MAARTEN MENZO WENTINK

Appeal 2018-005605
Application 12/888,221¹
Technology Center 2400

Before ST. JOHN COURTENAY III, ERIC S. FRAHM, and
CATHERINE SHIANG, *Administrative Patent Judges*.

SHIANG, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner’s rejection of claims 1, 4–16, 19–31, and 34–51, which are all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

Introduction

According to the Specification, the present invention relates to “wireless communications and, more particularly, to transmit opportunity scheduling in uplink spatial division multiple access (SDMA).” Spec. ¶ 2. Claim 1 is exemplary:

¹ Appellants identify Qualcomm Incorporated as the real party in interest. App. Br. 3.

1. A method for wireless communications, comprising:
 - receiving, from a plurality of apparatuses, a plurality of request messages for a transmission slot for a spatial division multiple access (SDMA) transmission; and
 - transmitting a transmit opportunity (TXOP) start frame to each apparatus of the plurality of apparatuses to indicate a start of an SDMA TXOP, wherein the TXOP start frame comprises:
 - an indication of the apparatuses that are scheduled to transmit during the SDMA TXOP;
 - an indication of one or more spatial streams assigned to each of the apparatuses for transmission during the SDMA TXOP; and
 - a value for a back-off timer that indicates when a request for acknowledgement can be transmitted by at least one apparatus of the plurality of apparatuses.

References and Rejections²

Claims 1, 4, 9, 10, 14, 16, 19, 24, 25, 29, 31, 34, 39, 40, 44, and 46–49 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Seok1 (US 2012/0002634 A1; Jan. 5, 2012), Seok2 (US 2014/0105201 A1; Apr. 17, 2014), and Park (US 2009/0207769 A1; Aug. 20, 2009). Final Act. 2–8.

Claims 5–7, 15, 20–22, 30, 35–37, and 45 stand rejected under pre-AIA § 35 U.S.C. 103(a) as being unpatentable over Seok1, Seok2, and Meylan (US 2007/0058605 A 1; Mar. 15, 2007). Final Act. 8–10.

Claims 8, 11–13, 23, 26–28, 38, and 41–43 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Seok1, Seok2, Park, and Ishibashi (US 2005/0025167 A1; Feb. 3, 2005). Final Act. 11–13.

Claim 50 stands rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Seok1, Seok2, Park, and Ho (US 2005/0003843 A1; Jan. 6, 2005). Final Act. 13–14.

² Throughout this opinion, we refer to the (1) Final Rejection dated June 7, 2017 (“Final Act.”); (2) Appeal Brief dated November 15, 2017 (“App. Br.”); (3) Examiner’s Answer dated March 13, 2018 (“Ans.”); and (4) Reply Brief dated May 11, 2018 (“Reply Br.”).

Claim 51 stands rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Seok1, Seok2, Park, and Takizawa (US 2006/0271969 A1; Nov. 30, 2006). Final Act. 14–15.

ANALYSIS³

We have reviewed the Examiner’s rejection in light of Appellants’ contentions and the evidence of record. We concur with Appellants’ contention that the Examiner erred in determining the cited portions of Seok1, Seok2, and Park collectively teach “a transmit opportunity (TXOP) start frame . . . comprises . . . a value for a back-off timer that indicates when a request for acknowledgement can be transmitted by at least one apparatus of the plurality of apparatuses,” as recited in independent claim 1. *See* App. Br. 11–13; Reply Br. 2–6.

The Examiner maps the claimed “transmit opportunity (TXOP) start frame” to Seok1’s clear to send (CTS) frame. *See* Final Act. 3. The Examiner finds the combined teachings of Seok1 and Seok2 do not teach the claimed “a value for a back-off timer that indicates when a request for acknowledgement can be transmitted by at least one apparatus of the plurality of apparatuses.” Final Act. 4. The Examiner then cites Park’s paragraphs 43–45, and maps the claimed “request for acknowledgement” to Park’s request to send (RTS) frame. *See* Final Act. 4.

Claim 1 recites “a transmit opportunity (TXOP) start frame . . . comprises . . . a value for a back-off timer that indicates when a request for acknowledgement can be transmitted by at least one apparatus of the plurality of apparatuses.” In the Examiner’s proposed combination, the CTS frame *precedes* the RTS frame, as the CTS frame indicates when the RTS frame can be transmitted. However, that sequence contradicts the knowledge of one skilled in the art. As pointed out by Appellants (Reply Br. 4) and

³ Appellants raise additional arguments. Because the identified issue is dispositive of the appeal, we do not need to reach the additional arguments.

repeatedly demonstrated by Seok1 and Park, one skilled in the art would understand a CTS frame *is in response to*—and does not precede—a RTS frame. *See* Seok1 ¶ 52 (“The CTS frame is transmitted in response to the RTS”), ¶ 62 (“Upon receiving an RTS frame from an STA, an AP transmits the CTS frame in response to the RTS frame.”), Fig. 4, ¶¶ 48–51; Park ¶¶ 43, 45. In particular, one skilled in the art would understand the RTS/CTS sequence is a handshaking mechanism for eliminating collision between nodes: when a first node wants to transmit data to a second node, it sends a RTS frame. If the second node replies with a CTS frame, then the first node may transmit data to the second node. *See* Park ¶¶ 43, 45; Seok1 Fig. 4; ¶¶ 48–52, 62.

Based on a preponderance of the evidence, Appellants have persuaded us the Examiner erred. Therefore, we are constrained on this record to reverse the Examiner’s rejection of independent claim 1.

Each of independent claims 9, 16, 24, 31, 39, and 46–49 recites a claim limitation that is substantively similar to the disputed limitation of claim 1. *See* claims 9, 16, 24, 31, 39, and 46–49. Therefore, for similar reasons, we reverse the Examiner’s rejection of independent claims 9, 16, 24, 31, 39, and 46–49.

We also reverse the Examiner’s rejection of corresponding dependent claims 4–8, 10–15, 19–23, 25–30, 34–38, 40–45, 50, and 51. Although the Examiner cites additional references for rejecting some dependent claims, the Examiner has not shown the additional references overcome the deficiency discussed above in the rejection of claim 1.

Appeal 2018-005605
Application 12/888,221

DECISION

We reverse the Examiner's decision rejecting claims 1, 4–16, 19–31, and 34–51.

REVERSED