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Row 1: 13/871,647, 04/26/2013, Sreekar Marupaduga, 9072, 5215
Row 2: 28004, 7590, 02/09/2018, SPRINT, 6391 SPRINT PARKWAY, KSOPHT0101-Z2100, OVERLAND PARK, KS 66251-2100, EXAMINER HAILE, FEBEN, ART UNIT 2474, PAPER NUMBER, NOTIFICATION DATE 02/09/2018, DELIVERY MODE ELECTRONIC

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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* SREEKAR MARUPADUGA, NICHOLAS DAVID KULLMAN,  
and ANDREW MARK WURTENBERGER<sup>1</sup>

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Appeal 2017-009992  
Application 13/871,647  
Technology Center 2400

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Before BRUCE R. WINSOR, BETH Z. SHAW, and  
DAVID J. CUTITTA II, *Administrative Patent Judges*.

CUTITTA, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–4, 6, 8–14, 16, and 18–20.<sup>2</sup> We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> Appellant is the Applicant, Sprint Communications Company L.P., which, according to the Appeal Brief, is the real party in interest. *See* Appeal Br. 1.

<sup>2</sup> Claims 5, 7, 15, and 17 are cancelled. *See* Appeal Br. 3, 5.

## STATEMENT OF THE CASE

### *Introduction*

According to Appellant, the claimed invention relates to a “base station and user devices [that] exchange signaling and responsively exchange user data over BS2D [Base Station-To-Device] traffic links.” Spec. ¶ 4.<sup>3</sup>

### *Exemplary Claim*

Claims 1 and 11 are independent. Claim 1 is exemplary of the claimed subject matter and is reproduced below with disputed limitations emphasized:

1. A method of operating a wireless communication system to implement a plurality of Device-To-Device (D2D) configurations, the method comprising:

wirelessly exchanging first control signaling between a base station system and a plurality of user communication devices over Base Station-To-Device (BS2D) signaling links, and in response, wirelessly exchanging first user data between the user communication devices and the base station system over BS2D traffic links;

wirelessly exchanging second control signaling between the base station system and the user communication devices over the BS2D signaling links, and in response, wirelessly exchanging second user data directly between the user communication devices over direct D2D traffic links;

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<sup>3</sup> Throughout this Decision, we refer to: (1) Appellant’s Specification, filed April 26, 2013 (“Spec.”); (2) the Final Office Action (“Final Act.”), mailed May 4, 2016; (3) the Appeal Brief filed December 5, 2016 and Response to Notification of Non-Compliant Appeal Brief filed January 20, 2017 (“Appeal Br.”); (4) the Examiner’s Answer (“Ans.”), mailed May 19, 2017; and (5) the Reply Brief (“Reply Br.”), filed July 18, 2017.

selecting one of the D2D configurations based on communication system conditions wherein the plurality of D2D configurations have at least one of the user communication devices as hub user device(s) and have the other user communication devices as non-hub user devices; and

wirelessly transferring a D2D configuration instruction to the user communication devices over the BS2D signaling links, and in response, wirelessly exchanging third control signaling and third user data using the selected D2D configuration, wherein the selected D2D configuration comprises [at least one of:] a first D2D configuration where the non-hub user devices wirelessly transfer at least a portion of the third user data to one another through the hub user device(s), and a second D2D configuration where *the non-hub user devices wirelessly transfer at least a portion of the third control signaling to the base station system through the hub user device(s).*

Appeal Br. Claims Appendix 2.<sup>4</sup>

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<sup>4</sup> Claims 1 and 11 are incorrectly recited in Appellant's claim appendix. In the Amendment After Final filed August 4, 2016 Appellant requested that the "at least one of" limitation be deleted from claim 1 and 11. The Examiner indicated in the Advisory Action mailed January 31, 2017 that neither of these claim amendments were entered and therefore this limitation should be, but is not, reflected in claims 1 and 11 of the claim appendix. In the event the limitation is not deleted in a future Amendment, we agree with the Examiner's finding that a broadest reasonable interpretation requires that only one of the two limitations following the "at least one of" language need be shown by the prior art. *See* Advisory Action mailed January 31, 2017, pg. 2.

## REFERENCE AND REJECTION

Claims 1–4, 6, 8–14, 16, and 18–20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ishii et al. (US 2014/0198655 A1; published July 17, 2014) (“Ishii”).<sup>5</sup> Final Act. 4–12.

Our review in this appeal is limited only to the above rejection and issues raised by Appellant. We have not considered other possible issues that have not been raised by Appellant and which are, therefore, not before us. *See* Manual of Patent Examining Procedures (“MPEP”) § 1205.02; 37 C.F.R. §§ 41.37(c)(1)(iv), 41.39(a)(1).

## ISSUE

Does the Examiner err in finding Ishii teaches or suggests “the non-hub user devices wirelessly transfer at least a portion of the third control signaling to the base station system through the hub user device(s),” as recited in claim 1?

## ANALYSIS

Appellant disputes the Examiner’s factual findings. Specifically, Appellant argues:

Ishii may teach the non-hub user devices wirelessly transferring at least a portion of the third *user data* to one another through the hub user device(s). However, Ishii fails to teach *non-hub user devices wirelessly transferring at least a portion of the third control signaling to the base station system through the hub user device*.

Appeal Br. 5.

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<sup>5</sup> The Examiner erroneously indicates claims 1–20 are rejected (Final Act. 4), but claims 5, 7, 15, and 17 are cancelled (*See* Appeal Br. 3, 5).

We are not persuaded. Ishii's Figure 9 shows a local area radio access system using small-node devices.

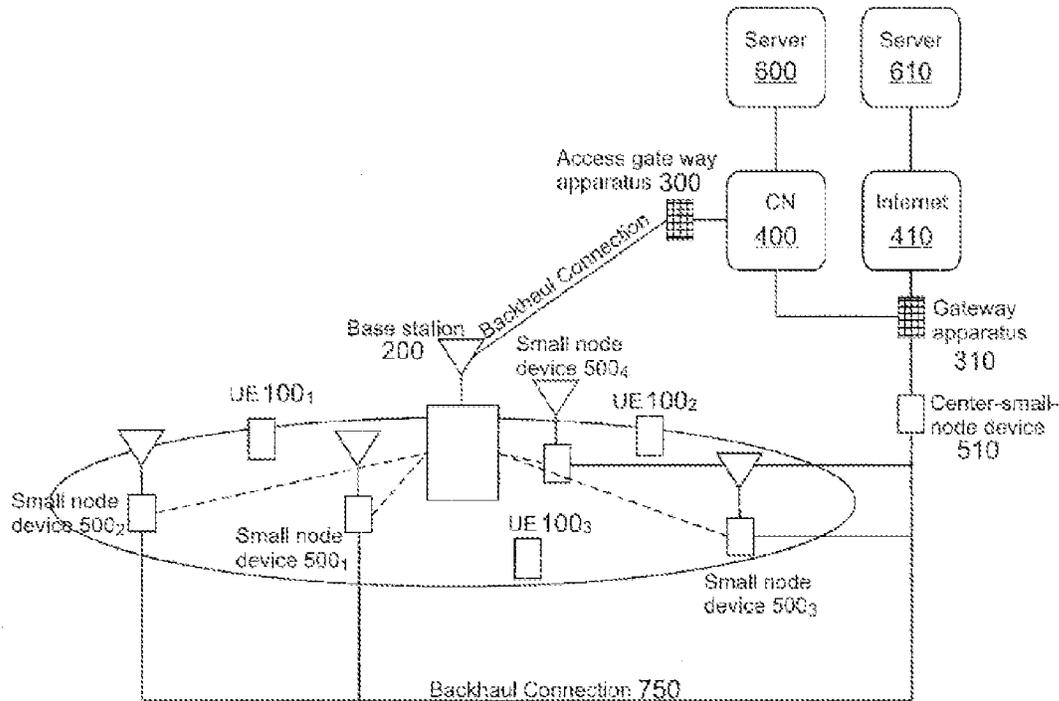


FIG. 9

Ishii's Figure 9 illustrates backhaul links from the small-node devices that route through a center small-node device. Ishii ¶ 25.

The Examiner finds, and we agree, that Ishii's Figure 9 shows center-node small-node device 510 acting as a hub for routing signals from small-node devices 500 to base station 200. Ans. 3. The Examiner further finds, and we agree, that "Ishii discloses that small node devices transmit **control signaling** to base station notifying the base station that the D2UE connection has been reconfigured." Ans. 3 (citing Ishii ¶ 189). Appellant notes in the Reply that Appellant does not dispute the assertion that "Ishii teaches that small-node device 500 transmits control signaling to base station 200." Reply Br. 2. Appellant clarifies, however, that "Appellant's argument is that the small-node device in Ishii *does not receive and transfer control*

***signaling for the connected UEs to the base station.*** In other words, small-node device 500 does not transmit control signaling for user equipment 100 to base station 200.” Reply Br. 2. Instead, Ishii teaches “small-node device 500 transmitting its own control signaling to base station 200.” Appeal Br. 5.

We find this argument unpersuasive because Appellant’s do not rebut the Examiner’s finding that “the control signaling is related to how both the small-node device and the user equipment are configured to the D2UE connection.” Ans. 5. Moreover, Appellant’s proposed interpretation is inconsistent with the scope of claim 1, which merely indicates the non-hub user devices wirelessly transfer *third control signaling*. Appellant provides insufficient evidence to establish that the claimed third control signaling refers *only to* control signaling “for the connected UEs” (Reply Br. 2, emphasis removed) or for the claimed user communication devices.

As discussed, Appellant has not shown error in the Examiner’s factual findings or conclusion of obviousness. Accordingly, we sustain the Examiner’s 35 U.S.C. § 103 rejection of independent claim 1 as well as the rejection of independent claim 11, which is argued for similar reasons as independent claim 1. *See* Appeal Br. 6. Dependent claims 2–4, 6, 8–10, 12–14, 16, and 18–20 are not argued separately and so the rejection of these claims are sustained for the reasons given for independent claim 1. *See* Appeal Br. 6.

## DECISION

We affirm the Examiner’s decision rejecting claims 1–4, 6, 8–14, 16, and 18–20 under 35 U.S.C. § 103.

Appeal 2017-009992  
Application 13/871,647

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