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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDREAS HANSSON and IAN RUDOLF BRATT

Appeal 2019-001093
Application 14/973,261
Technology Center 2400

Before MICHAEL J. STRAUSS, JEREMY J. CURCURI, and
BARBARA A. BENOIT, *Administrative Patent Judges*.

CURCURI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as CommScope Technologies LLC. Appeal Br. 1.

CLAIMED SUBJECT MATTER

The claims are directed to “allocating bandwidth among communication links in a telecommunication system.” Spec. ¶ 2. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method comprising:

simultaneously receiving, by a wireless receiver, beacon signals at a common frequency from a first access point and a second access point, respectively, wherein each of the beacon signals has a data sequence that is different than other beacon signals;

determining, by a processing device and based on the data sequences received by the wireless receiver, channel responses for channels between the first access point and the wireless receiver and between the second access point and the wireless receiver;

outputting, by the processing device and based on the channel responses, an indicator that the first access point and the second access point are suitable for a specified configuration of a telecommunication system for providing wireless coverage using the first access point and the second access point.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Forenza	US 2011/0003607 A1	Jan. 6, 2011
Govindswamy	US 8,036,658 B2	Oct. 11, 2011
Hugl	US 2013/0250876 A1	Sept. 26, 2013
Roman	US 8,731,001 B2	May 20, 2014

REJECTIONS

Claims 1–4, 8–10, and 12–17 are rejected under 35 U.S.C. § 103 as obvious over Roman and Govindswamy. Final Act. 6–15.

Claims 5, 6, and 18–20 are rejected under 35 U.S.C. § 103 as obvious over Roman, Govindswamy, and Forenza. Final Act. 15–18.

Claims 7 and 11 are rejected under 35 U.S.C. § 103 as obvious over Roman, Govindswamy, and Hugl. Final Act. 19–21.

OPINION

The Obviousness Rejection of Claims 1–4, 8–10, and 12–17 over Roman and Govindswamy

The Examiner finds Roman and Govindswamy teach all limitations of claim 1. Final Act. 6–8. In particular, the Examiner finds Roman teaches all limitations of claim 1, except for “*simultaneously* receiving, by a wireless receiver, beacon signals *at a common frequency* from a first access point and a second access point” (emphasis added) as recited in claim 1. *See* Final Act. 6–7. The Examiner further finds Govindswamy teaches “*simultaneously* receiving, by a wireless receiver, beacon signals *at a common frequency* from a first access point and a second access point” (emphasis added) as recited in claim 1. Final Act. 8. The Examiner reasons

It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to use **Govindswamy** to modify **Roman** in order to measure the difference between channel responses of the same channels from different access points. One would have been motivated to do this, because using two RF receive chains simultaneously reduces time diversity while achieving spatial diversity for faster, more accurate measurements.

Final Act. 8 (citing Govindswamy col. 10, ll. 29–39).

Appellant presents the following principal arguments:

i. “[T]here is no teaching in Roman that different CSI-RS transmissions, with different CSI-RS symbol sequences, (the alleged ‘beacon signals’ with differing data sequence) are transmitted simultaneously at a common frequency. Also, there is nothing in Govindswamy to suggest otherwise.” Appeal Br. 7. “[*I*f *there is only a single signal transmitted on that channel, only a single signal will be received by the Govindswamy receivers even if it is received using multiple receive chains at the same time.*” Appeal Br. 7; *see also* Reply Br. 2–3 (“[O]ne of skill in the art would not have been motivated to modify a receiver to receive *multiple* simultaneous CSI-RS symbol sequences, where *multiple* simultaneous CSI-RS symbol sequences are not being transmitted in the first place.”).

ii. “The teachings of Govindswamy cited by the Examiner in connection with this rejection relate to *network acquisition* -- that is, the process of a client terminal (UE) searching for the network, acquiring network information, registering and camping on to the network in the first instance.” Appeal Br. 8 (citing Govindswamy col. 1, ll. 26–30). “[T]he portions of Roman cited by the Examiner relate to *channel state information acquisition* -- which occurs well after the UE has completed the network acquisition process and is already being served by a cell. Indeed, no searching for the CSI-RSs is needed in Roman since the relevant UE is provided with the information about the CSI-RSs.” Appeal Br. 8 (citing Roman Fig. 4, step 402). “[O]ne of skill in the art would not have been motivated to use the network acquisition improvement techniques of Govindswamy in the channel state information acquisition of Roman since no beacon channel search process is used.” Appeal Br. 8; *see also* Reply Br.

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3–4 (“[W]ith respect to the alleged benefit of achieving spatial diversity, the Examiner has not shown how Roman’s UE 106 would utilize such *diversity in the processes of determining channel state information*, and therefore has no basis to assert that Roman’s UE 106 would obtain any benefit from such diversity.”).

Regarding *simultaneously* receiving beacon signals *at a common frequency*, the Examiner further explains as follows:

Roman does not explicitly disclose beacon signals being simultaneously received on a common frequency. However, in analogous art, Govindswamy discloses a similar process for determining whether a current configuration of a communication system is performing adequately by disclosing a radio frequency receiver subsystem comprising radio frequency (RF) receive chains capable of being tuned to the same RF channel (i.e., a common frequency) in order to measure signal level measurements on a set of channels such that the RF receive chains measure the same channels at the same time.

Ans. 5–6 (citing Govindswamy Figs. 7 and 8, col. 9, ll. 23–35, col. 10, ll. 29–39).

Regarding motivation to combine, the Examiner further explains as follows:

[E]ven if the processes [in Roman and Govindswamy] are for somewhat different purposes, the processes are similar enough for one to take lessons from improving one of the processes in order to improve the other, especially when the process steps are both for measuring channel information in order to determine if the current system configuration is performing as required.

Ans. 7; *see also* Ans. 8 (citing Govindswamy col. 9, ll. 23–35, col. 10, ll. 29–39) (“Govindswamy discloses that one may reduce signal reception and

measurement time while ensuring accuracy by receiving signals at the same time by two RF reception chains tuned to the same channel.”).

We do not see any error in the contested findings of the Examiner. We concur with the Examiner’s conclusion of obviousness.

Roman discloses a UE receiving transmissions from multiple transmission points. Roman Fig. 4, *cited at*, Final Act. 6. Roman further discloses “reference symbols may be used to distinguish transmission points from one another.” Roman col. 13, ll. 55–56, *cited at*, Final Act. 7. Thus, Roman teaches receiving beacon signals with different data sequences.

Regarding *simultaneously* receiving beacon signals *at a common frequency*, Govindswamy discloses “the RF receive chains can be simultaneously tuned to different RF channels or the same RF channel.” Govindswamy col. 9, ll. 25–26, *cited at*, Final Act. 8. Thus, Govindswamy teaches *a receiver* for simultaneous reception at a common frequency.

When Roman’s system is modified, it would transmit its beacon signals simultaneously at a common frequency because Govindswamy teaches simultaneous reception of signals at a common frequency. Govindswamy col. 9, ll. 25–26. Thus, Appellant’s argument (i) does not show any error.

Further, we agree with and adopt as our own the Examiner’s reason to combine the references and to modify Roman to incorporate Govindswamy’s receiver. *See* Final Act. 8 (“One would have been motivated to do this, because using two RF receive chains simultaneously reduces time diversity while achieving spatial diversity for faster, more accurate measurements.”). This reasoning is supported by evidence drawn from the record. *See* Govindswamy col. 10, ll. 36–38 (“[T]ime diversity is reduced but at the same time spatial diversity is achieved.”). Thus,

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Appellant's argument (ii) does not show any error because Roman's UE, when Roman is modified to incorporate Govindswamy's receiver, would utilize the two RF chains simultaneously in the process of determining channel state information.

We, therefore, sustain the Examiner's rejection of claim 1.

We also sustain the Examiner's rejection of claims 2–4 and 8, which depend from claim 1 and are not separately argued with particularity. *See* Appeal Br. 8.

Regarding independent claim 9, Appellant argues “independent claim 9 is allowable over the combination of Roman and Govindswamy for [] substantially similar reasons as presented above for claim 1.” Appeal Br. 9.

For the same reasons discussed above when addressing claim 1, we, therefore, sustain the Examiner's rejection of claim 9.

We also sustain the Examiner's rejection of claims 10, 12, and 13, which depend from claim 9 and are not separately argued with particularity. *See* Appeal Br. 9.

Regarding independent claim 14, Appellant directs attention to claim 14's recitation of “identifying data sequences in beacon signals received simultaneously from a first access point and a second access point at a common frequency, respectively, wherein each of the beacon signals has a data sequence that is different than other beacon signals” (claim 14), and argues “there is no finding on record of how the proposed combination renders such an element obvious.” Appeal Br. 9–10; *see also* Reply Br. 5.

In our analysis above addressing claim 1, we determined Roman and Govindswamy teach “simultaneously receiving, by a wireless receiver, beacon signals at a common frequency from a first access point and a second access point, respectively, wherein each of the beacon signals has a data

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sequence that is different than other beacon signals” (claim 1). Based on the same evidence and the same reasons discussed above when addressing claim 1, we determine Roman and Govindswamy teach “identifying data sequences in beacon signals received simultaneously from a first access point and a second access point at a common frequency, respectively, wherein each of the beacon signals has a data sequence that is different than other beacon signals” (claim 14). *See* Final Act. 15 (rejecting claims 14–17 under the same reasoning as claims 1–4).

We, therefore, sustain the Examiner’s rejection of claim 14.

We also sustain the Examiner’s rejection of claims 15–17, which depend from claim 14 and are not separately argued with particularity. *See* Appeal Br. 10.

The Obviousness Rejection of Claims 5, 6, and 18–20 over Roman, Govindswamy, and Forenza

Appellant argues Forenza does not cure the alleged deficiencies of Roman and Govindswamy. *See* Appeal Br. 10.

For the same reasons discussed above when addressing claims 1 and 14, we, therefore, sustain the Examiner’s rejection of claims 5, 6, and 18–20.

The Obviousness Rejection of Claims 7 and 11 over Roman, Govindswamy, and Hugl

Appellant argues Hugl does not cure the alleged deficiencies of Roman and Govindswamy. *See* Appeal Br. 11.

For the same reasons discussed above when addressing claims 1 and 9, we, therefore, sustain the Examiner’s rejection of claims 5, 6, and 18–20.

CONCLUSION

The Examiner's decision to reject claims 1–20 is affirmed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–4, 8–10, 12–17	103		1–4, 8–10, 12–17	
5, 6, 18–20	103		5, 6, 18–20	
7, 11	103		7, 11	
Overall Outcome			1–20	

TIME PERIOD FOR RESPONSE

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. § 1.136(a)(1)(iv).

AFFIRMED