UNITED STATES PATENT AND TRADEMARK OFFICE

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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 SHAHRNAZ AZIZI,
THOMAS J. KENNEY, and ELDAD PERAHIA

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Appeal 2018-000698
Application 14/127,605
Technology Center 2400

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Before JUSTIN BUSCH, STEVEN M. AMUNDSON, and
JASON M. REPKO, *Administrative Patent Judges.*

AMUNDSON, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants[1] seek our review under 35 U.S.C. § 134(a) of a final

rejection of claims 21–40. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellants identify the real party in interest as Intel Corporation.
App. Br. 2.

STATEMENT OF THE CASE

The Invention

According to the Specification, the invention concerns "communication networks" and "coexistence techniques for devices that operate in accordance with one of the IEEE 802.11 standards, including the IEEE 802.11n and IEEE 802.11ac standards." Spec. ¶ 2.[2]

Exemplary Claim

Independent claim 21 exemplifies the claims at issue and reads as follows:

> 21. A method, performed by a user station (STA), for operating in a wireless network, the method comprising:
>
> detecting that a signal, received on a wireless communication channel, was transmitted by a device operating with a bandwidth of a set of bandwidths, the set including bandwidths less than 20 MHz;
>
> determining, responsive to the detecting, contents of a signal (SIG) field and at least one of a short training field (STF), and a long training field (LTF) of the signal; and
>
> applying a coexistence technique based on information of the SIG field, by refraining from transmitting on the channel.

App. Br. 12 (Claims App.).

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[2] This decision uses the following abbreviations: "Spec." for the Specification, filed December 19, 2013; "Final Act." for the Final Office Action, mailed September 9, 2016; "App. Br." for the Appeal Brief, filed July 10, 2017; "Ans." for the Examiner's Answer, mailed August 29, 2017; and "Reply Br." for the Reply Brief, filed October 26, 2017.

The Prior Art Supporting the Rejections on Appeal

As evidence of unpatentability, the Examiner relies on the following prior art:

Richmond et al. ("Richmond")	US 7,296,170 B1	Nov. 13, 2007
Mabuchi et al. ("Mabuchi")	US 2009/0103652 A1	Apr. 23, 2009
Pare, Jr. et al. ("Pare")	US 2010/0315953 A1	Dec. 16, 2010
Siti et al. ("Siti")	US 2011/0096816 A1	Apr. 28, 2011
Lee et al. ("Lee")	US 2011/0096863 A1	Apr. 28, 2011
Xhafa et al. ("Xhafa")	US 2012/0214464 A1	Aug. 23, 2012
Venkatesh et al. ("Venkatesh")	US 8,705,679 B1	Apr. 22, 2014 (filed Mar. 22, 2011)

The Rejections on Appeal

Claims 21–23, 28–30, 34, 35, 38, and 39 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Xhafa, Siti, and Pare. Final Act. 2–13.

Claims 24, 25, and 31 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Xhafa, Siti, Pare, and admitted prior art. Final Act. 13–15.

Claim 26 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Xhafa, Siti, Pare, Lee, Richmond, and admitted prior art. Final Act. 15–16.

Claims 32 and 36 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Xhafa, Siti, Pare, Lee, and Richmond. Final Act. 16–17.

Claims 27, 33, 37, and 40 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Xhafa, Siti, Pare, Venkatesh, and Mabuchi. Final Act. 17–19.

ANALYSIS

We have reviewed the rejections of claims 21–40 in light of Appellants' arguments that the Examiner erred. For the reasons explained below, we disagree with Appellants' assertions regarding Examiner error. We adopt the Examiner's findings and reasoning in the Final Office Action (Final Act. 2–19) and Answer (Ans. 2–23). We add the following to address and emphasize specific findings and arguments.

The § 103(a) Rejection of Claims 21–23, 28–30, 34, 35, 38, and 39

DETERMINING CONTENTS OF A SHORT TRAINING
FIELD (STF) AND/OR A LONG TRAINING FIELD (LTF)

Appellants argue that the Examiner erred in rejecting independent claims 21, 28, 34, and 38 because Pare does not teach or suggest the following limitation in claims 21 and 38 and a similar limitation in claims 28 and 34: "determining, responsive to the detecting, contents of a signal (SIG) field and at least one of a short training field (STF), and a long training field (LTF) of the signal." *See* App. Br. 8–9; Reply Br. 2–3. In particular, Appellants contend that Pare (1) "at best determine[s] 'contents of a signal (SIG) field' but is silent regarding the fields before that" and (2) "depicts [in Figure 1] an STF and LTF field but there is no disclosure that the contents thereof are determined." App. Br. 8; Reply Br. 2. Further, Appellants assert that Pare paragraph 24 "admits that the packet will not be decodable, which

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is an admission that 'at least one of a short training field (STF), and a long
training field (LTF) of the signal,' will not be decodable." Reply Br. 2.

Appellants' arguments do not persuade us of Examiner error because,
as the Examiner finds, Pare teaches or suggests the disputed limitation. *See*
Final Act. 3–4, 7–8, 10–11; Ans. 4, 7–8, 11, 20–21; Pare ¶¶ 4, 18, 22–26, 37,
Fig. 1. In particular, Pare discloses preambles for packets containing a
signal (SIG) field, a short training field (STF), and a long training field
(LTF). Pare ¶¶ 4, 22–25, 37, Fig. 1; *see* Final Act. 3, 7, 10; Ans. 4, 7, 11,
20–21. Pare explains that (1) the "signal field . . . carries information about
data rate, packet length, and other packet parameters," (2) the signal field
"prescrib[es] the length of the packet" so a receiving device "will know how
long the packet will be," and (3) the "short and long training fields (STF,
and LTF) . . . are primarily for packet detection, AGC and channel training."
Pare ¶¶ 4, 22, 24. Thus, the Examiner finds that the "STF and LTF fields are
used for packet detection." Final Act. 3, 7, 10; Ans. 4, 7, 11, 20–21.
Appellants do not address that finding. *See* App. Br. 8–9; Reply Br. 2–3.

Although Pare paragraph 24 states that an 802.11a device can detect
an 802.11n packet and "the packet will not be decodable" by the 802.11a
device, that statement concerns the 802.11n packet's data fields rather than
its preamble. *See* Pare ¶¶ 22, 24. Based on the 802.11n packet's preamble,
however, the 802.11a device "will know how long the packet will be" and
will "defer the medium to the particular transmitting device." *Id.* ¶ 24.

CHANGING THE PRINCIPLE OF OPERATION
AND RENDERING INOPERABLE

Appellants assert that the Examiner erred in rejecting claims 21, 28,
34, and 38 because combining Pare and Xhafa "would change a basic

principle of the operation of Xhafa" and "would render Xhafa inoperable."
App. Br. 9; Reply Br. 3. More specifically, Appellants assert that: (1) Xhafa
enables coexistence "between 802.11p and 802.11a/n/ac channels" by "time-
multiplexing any transmissions so that certain time periods are allocated
exclusively to different signal types"; and (2) detecting signal fields
according to Pare to enable coexistence "by determining the amount of time
for transmission deferral, would change the coexistence principles taught in
Xhafa" because "Xhafa would have to determine an exact amount of time"
to defer transmitting. App. Br. 9 (citing Xhafa ¶ 17); Reply Br. 3.

      Appellants' assertions do not persuade us of Examiner error because
they rest on an erroneous understanding of Xhafa. Xhafa does not require a
multiplexing method that allocates equal time to each 802.11 standard. *See*
Xhafa ¶¶ 6, 14–21, 30–32; Ans. 20–21. Instead, Xhafa discloses that a
device "may be time multiplexed to mitigate interference and enable
coexistence between the 802.11a/n/ac and 802.11p standards" and "each
802.11 standard may be allocated exclusively . . . for a time period." Xhafa
¶ 17. Xhafa uses the word "may" and does not require time multiplexing.
Id. Moreover, Xhafa does not preclude time multiplexing for different
periods for different standards. *Id.* Thus, the Examiner correctly finds that
(1) "a time multiplexing method can support dynamic time slot allocation"
based on detecting signal fields according to Pare and (2) Xhafa "can use
dynamic time slot allocation to dynamically assign different numbers of time
slots based on a packet length" in the signal fields. Ans. 20–21.

      Consistent with the Examiner's finding, Xhafa explains that
"communications using 802.11p may be given a higher priority than those
using 802.11a/n/ac." Xhafa ¶ 17. Giving some communications a higher

priority than others requires a multiplexing method that does not allocate equal time to each 802.11 standard, e.g., assigning different numbers of time slots based on a packet length.

In addition, Appellants contend that "[t]here is no teaching in Xhafa that would permit Xhafa" to detect signal fields "from signals having different bandwidths" and, therefore, "Xhafa would not be able to implement coexistence techniques in devices having 802.11a/n/ac transceivers and 802.11p transceivers." App. Br. 9; *see* Reply Br. 3. But Xhafa implements "coexistence techniques in devices having 802.11a/n/ac transceivers and 802.11p transceivers." Xhafa ¶¶ 18–19, Fig. 1B; *see id.* ¶¶ 16–17, 20–21, Figs. 1A, 1C. For instance, Figure 1B depicts wireless communication device 120 with 802.11a/n/ac 5.0 GHz transceiver 124 and 802.11p 5.0 GHz transceiver 125. *Id.* Fig. 1B. Further, paragraph 19 discusses coexistence techniques for those transceivers. *Id.* ¶ 19.

Also, contrary to Appellants' contention, the Specification explains that "[a]n IEEE 802.11p packet has a same structure as an IEEE 802.11a/n/ac packet" and includes a preamble containing a signal (SIG) field, a short training field (STF), and a long training field (LTF). Spec. ¶ 14. And the Examiner finds that Pare discloses 802.11a devices that "use a bandwidth of 20 MHz" and 802.11n devices that "use a bandwidth of up to 40 MHz." Ans. 22. Hence, Pare teaches or suggests detecting signal fields from signals having different bandwidths. *See* Pare ¶¶ 4, 18, 22–26, 37, Fig. 1. Consequently, nothing prevents Xhafa from detecting signal fields according to Pare and implementing Pare's coexistence techniques. *See* Ans. 22.

In addition, Appellants contend that the proposed "combination would render Pare inoperable" because the signal fields in Pare are for "different signal types than those described in Xhafa." App. Br. 10. Contrary to Appellants' contention, Pare explains that the "detection method is easily extended to accommodate other signal field types, or a set of fields, for future expansion" of IEEE 802.11. Pare ¶ 39. Moreover, "[c]ombining the *teachings* of references does not involve an ability to combine their specific structures." *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973). Thus, Appellants' contention does not persuade us of Examiner error.

TEACHING AWAY

Appellants contend that "Xhafa teaches away from attempting to detect fields, e.g., 'SIG . . . STF . . . LTF' that were 'transmitted by a device operating with a bandwidth of a set of bandwidths, the set including bandwidths less than 20 MHz' as recited in the independent claims" because "Xhafa merely defers by giving priority to .11p." App. Br. 10; Reply Br. 4.

Appellants' contention does not persuade us of Examiner error. "A reference does not teach away . . . if it merely expresses a general preference for an alternative invention but does not 'criticize, discredit, or otherwise discourage' investigation into the invention claimed." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quoting *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004)). Here, Xhafa does not "criticize, discredit, or otherwise discourage" detecting signal fields according to Pare and implementing Pare's coexistence techniques. Hence, Xhafa does not teach away.

SUMMARY FOR INDEPENDENT CLAIMS 21, 28, 34, AND 38

For the reasons discussed above, Appellants' arguments have not persuaded us that the Examiner erred in rejecting claims 21, 28, 34, and 38 under § 103(a). Hence, we sustain the § 103(a) rejection of the independent claims.

DEPENDENT CLAIMS 22, 23, 29, 30, 35, AND 39

Appellants do not argue patentability separately for dependent claims 22, 23, 29, 30, 35, and 39. App. Br. 7–11; Reply Br. 1–4. Thus, we sustain the § 103(a) rejection of these dependent claims for the same reasons as the independent claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The § 103(a) Rejections of Claims 24–27, 31, 36, 37, and 40

Appellants do not argue patentability separately for dependent claims 24–27, 31, 36, 37, and 40. App. Br. 7–11; Reply Br. 1–4. Thus, we sustain the § 103(a) rejections of these dependent claims for the same reasons as the independent claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

We affirm the Examiner's decision to reject claims 21–40.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED