



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/668,469	01/11/2010	Hans-Juergen Reurmerman	2007P01214WOUS	6629
24737	7590	01/23/2019	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			HUANG, WEN WU	
465 Columbus Avenue			ART UNIT	
Suite 340			PAPER NUMBER	
Valhalla, NY 10595			2648	
			NOTIFICATION DATE	
			DELIVERY MODE	
			01/23/2019	
			ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patti.demichele@Philips.com  
marianne.fox@philips.com  
katelyn.mulroy@philips.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* HANS-JUERGEN REUMERMAN, GEORGIOS ORFANOS,  
BERNARD WALKE, JELENA MIRKOVIC, and  
THEODORUS JACOBUS JOHANNES DENTENEER

---

Appeal 2018-002075  
Application 12/668,469  
Technology Center 2600

---

Before ROBERT E. NAPPI, CATHERINE SHIANG, and  
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants<sup>1</sup> seek our review under 35 U.S.C. § 134(a) from a final rejection of claims 1–6, 9, 10, and 14–21, i.e., all pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

---

<sup>1</sup> Appellants identify the real party in interest as Koninklijke Philips Electronics N.V. App. Br. 3.

## STATEMENT OF THE CASE

### *The Invention*

According to the Specification, the “invention relates to a method of reducing interference in a communication system” and more specifically to a “link adaptation scheme applicable in various communication systems.” Spec. 1:2–4.<sup>2</sup> The Specification explains that (1) a “transmitter first determines” an “interference level at the transmitter” and (2) “based on the determined interference level, performs link adaptation” by applying “channel bundling for adapting the communication link so as to transmit simultaneously on at least two radio channels from the transmitter to the receiver.” *Id.* Abstract.

### *Exemplary Claim*

Independent claim 1 exemplifies the claims at issue and reads as follows:

1. A method of reducing interference in a communication system supporting multiple radio channel communication scheme, wherein a communication link is established between a transmitter and a receiver, the method comprising:
  - determining an interference level at the transmitter for a transmission from the transmitter to the receiver;
  - comparing the determined interference level to a threshold value, wherein the threshold value is adjusted dynamically based on a type of the transmission; and

---

<sup>2</sup> This decision uses the following abbreviations: “Spec.” for the Specification, filed January 11, 2010; “Final Act.” for the Final Office Action, mailed January 31, 2017; “App. Br.” for the Appeal Brief, filed June 22, 2017; “Ans.” for the Examiner’s Answer, mailed October 19, 2017; and “Reply Br.” for the Reply Brief, filed December 18, 2017.

when the determined interference level exceeds the threshold value, performing a link adaptation, wherein performing the link adaptation comprises applying a channel bundling and starting multiple backoff processes in parallel for adapting the communication link so as to begin the transmission concurrently on at least two radio channels from the transmitter to the receiver.

App. Br. 21 (Claims App.).

*The Prior Art Supporting the Rejections on Appeal*

As evidence of unpatentability under 35 U.S.C. § 103(a), the Examiner relies on the following prior art:

Parantainen et al. (“Parantainen”)	US 6,456,844 B1	Sept. 24, 2002
Stephens	US 2005/0136921 A1	June 23, 2005
Hundal et al. (“Hundal”)	US 2006/0068715 A1	Mar. 30, 2006
Flemming et al. (“Flemming”)	US 2006/0114823 A1	June 1, 2006
Hart	US 2008/0009243 A1	Jan. 10, 2008

*The Rejections on Appeal*

Claims 1–3, 6, 9, 10, and 14–21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hundal, Stephens, Flemming, and Parantainen. Final Act. 2–12.

Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hundal, Stephens, Flemming, Parantainen, and Hart. Final Act. 12–14.

ANALYSIS

We have reviewed the § 103(a) rejections in light of Appellants’ arguments that the Examiner erred. For the reasons explained below, we concur with the Examiner’s conclusions concerning unpatentability under

§ 103(a). We adopt the Examiner’s findings and reasoning in the Final Office Action (Final Act. 3–14) and Answer (Ans. 3–5). We add the following to address and emphasize specific findings and arguments.

*The § 103(a) Rejection of Claims 1–3, 6, 9, 10, and 14–21*

CLAIM 1: DYNAMICALLY ADJUSTING THRESHOLD VALUES

Appellants argue that the Examiner erred in rejecting claim 1 because Parantainen does not disclose or suggest the following limitation in claim 1: “wherein the threshold value is adjusted dynamically based on a type of the transmission.” *See* App. Br. 13–16; Reply Br. 5–6. Specifically, Appellants assert that (1) “Parantainen only discloses a threshold value with an equal adaptation step” and (2) the claimed threshold value “differs from Parantainen because the threshold value used in performing the link adaptation requires greater flexibility than an equal adaptation step.” App. Br. 15. In addition, Appellants contend that “Parantainen teaches that the interference threshold values are adapted in such a way that the adaptation steps are the same for all services.” Reply Br. 5.

Appellants’ arguments do not persuade us of Examiner error because the Examiner correctly finds that Parantainen discloses the disputed limitation. *See* Final Act. 5; Ans. 4–5; Parantainen 2:1–15, 3:45–57, 5:12–59, Abstract. In particular, Parantainen explains that a channel’s interference threshold value “is changed dynamically to correspond to the operating conditions.” Parantainen 3:45–57; *see id.* Abstract. Depending on “the quality value of the served radio connections,” the “interference threshold value of the channel is” lowered or raised. *Id.* at 5:12–36. Parantainen also explains that “[i]n one embodiment the interference threshold value of the channel” may “depend on the type of service

transmitted in the radio connection.” *Id.* at 5:37–48. Specifically, “for data transmission, the interference threshold value may differ greatly from the interference threshold used for speech services.” *Id.* at 5:45–48.

Parantainen teaches the disputed limitation because the Specification similarly explains that “the interference threshold may depend on the type of transmission” since “more interference is tolerated” when transmitting data than when transmitting speech. Spec. 5:24–26.

Appellants’ arguments about Parantainen address a different embodiment with “interference threshold values . . . adapted in such a way that adaptation steps are the same for all services.” *See* App. Br.

14–15(emphasis omitted); Reply Br. 5–6; *see also* Parantainen 5:49–59.

But even that embodiment teaches or suggests the disputed limitation. In that embodiment, the interference threshold values for data and speech start at different levels, i.e., -105 dBm for data and -100 dBm for speech.

Parantainen 5:52–55. Because the interference threshold values for data and speech start at different levels, changes to those values in equal adaptation steps produce different values for data and speech at each change. *See id.* at 5:49–59. Those changes dynamically adjust “the threshold value . . . based on a type of the transmission” as recited in claim 1.

Appellants attempt to distinguish claim 1 from Parantainen by asserting that claim 1 requires threshold values that “change[] independently of other services and change[] based on the type of service.” App. Br. 14–15. That attempt fails because claim 1 does not require dynamic adjustments to threshold values “independent[] of other services.” App. Br. 21 (Claims App.).

Appellants also attempt to distinguish claim 1 from Parantainen by asserting that “the threshold value in claim 1 is adjusted dynamically based on the transmission type and the number of channels bundled.” App. Br. 15. That attempt fails because claim 1 does not require dynamic adjustments to threshold values “based on . . . the number of channels bundled.” App. Br. 21 (Claims App.).

CLAIM 1: APPLYING CHANNEL BUNDLING AND  
STARTING MULTIPLE BACKOFF PROCESSES IN PARALLEL

Appellants argue that the Examiner erred in rejecting claim 1 because Hundal, Stephens, and Flemming do not disclose or suggest the following limitation in claim 1: “wherein performing the link adaptation comprises applying a channel bundling and starting multiple backoff processes in parallel for adapting the communication link so as to begin the transmission concurrently on at least two radio channels from the transmitter to the receiver.” *See* App. Br. 9–13; Reply Br. 2–5. In particular, Appellants contend that Stephens “teaches starting a backoff period independently for each channel” rather than “starting multiple backoff processes in parallel” as required by claim 1. App. Br. 10. Appellants also contend that (1) “Flemming is not related to channel bundling” and (2) Flemming’s backoff process “is not related to the backoff process to begin the transmission concurrently on at least two radio channels from the transmitter.” *Id.* at 11. According to Appellants, “Flemming teaches a backoff process for a plurality of buffers in a WLAN device attempting to access the same transmission channel.” *Id.*

Appellants’ arguments do not persuade us of Examiner error because they attack the references individually, while the Examiner relies on the

combined disclosures in the references to teach or suggest the disputed limitations. *See* Final Act. 3–5; Ans. 3–4. Where a rejection rests on the combined disclosures in the references, an appellant cannot establish nonobviousness by attacking the references individually. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Here, the Examiner correctly finds that Hundal discloses link adaptation by applying channel bundling to reduce interference in a communication system. *See* Final Act. 3. For instance, Hundal describes “a technique for increasing the performance of a wireless communication link operating in the presence of an external source of intermittent interference.” Hundal ¶ 2. The technique involves “establishing a redundant link” by using two bearers, i.e., a “primary” bearer and a “secondary” bearer, “established over different channels.” *Id.* ¶¶ 65–66. By using two bearers, “voice quality can be improved in the case of multi-path fading or interference generated” by other systems. *Id.* ¶ 66.

Also, the Examiner correctly finds that Stephens discloses applying channel bundling and starting multiple backoff processes in parallel. *See* Final Act. 4; Ans. 3. In particular, Stephens explains that (1) “[t]he backoff period is an interval that the device will wait, after a channel becomes free, before transmitting data,” and (2) “[i]f multiple channels become free” and “remain free during the backoff period, then . . . a combination of two or more of the free channels, may be used to transmit the data.” Stephens ¶ 16. A device “may be programmed to always select the maximum number of free channels possible to transmit the data.” *Id.* ¶ 19.

Further, Stephens' Figure 7 illustrates multiple backoff processes started "in parallel" as recited in claim 1. *See* Ans. 3. Figure 7 is reproduced below.

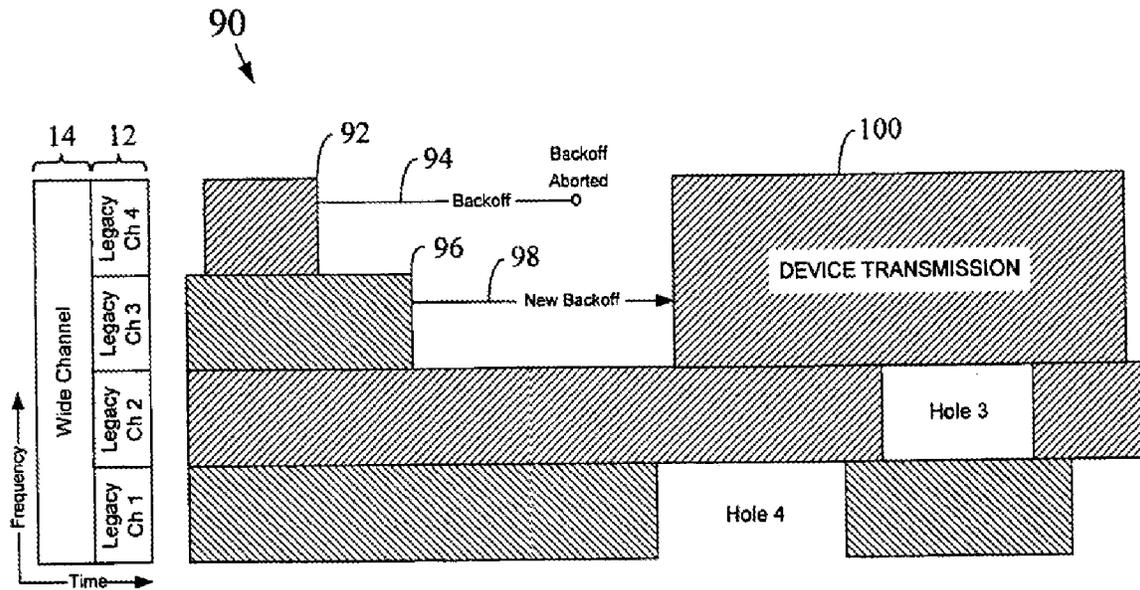


Figure 7 shows "a channel usage scenario" with (1) backoff period 94 starting at point 92 when channel 4 becomes free, (2) backoff period 98 starting at point 96 when channel 3 becomes free, and (3) device transmission occurring on channels 3 and 4 after both backoff periods have ended. Stephens ¶¶ 7, 21, Fig. 7. The device starts backoff periods 94 and 98 "in parallel" as recited in claim 1. *See* Ans. 3. As the Examiner explains, "the broadest reasonable interpretation of 'starting multiple backoff processes in parallel' includes . . . 'starting multiple backoff processes in parallel' at different times." *Id.*

Appellants contend that claim 1 requires "the multiple backoff processes [to] start at the same time not at 'different times in parallel' as alleged by the Examiner's Answer." Reply Br. 3; *see id.* at 4. We disagree.

"[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*,

211 F.3d 1367, 1372 (Fed. Cir. 2000). Here, the Specification explains that a device may “start multiple transmissions in parallel on the different channels” by transmitting “on each channel independently” so “the transmissions on different channels do not usually start at the same time.” Spec. 6:16–21; *see id.* Fig. 5. Figure 5 shows the transmissions on different channels started “in parallel” at different times. *Id.* Fig. 5; *see id.* at 6:16–22. Hence, contrary to Appellants’ contention, starting “in parallel” includes starting at different times as well as starting at the same time. *See id.* at 6:16–22, Fig. 5.

Appellants assert that the Specification “states: ‘Once the decision is made to apply channel bundling, then multiple backoff processes are started in parallel.’” Reply Br. 3 (quoting Spec. 6:12–13); *see* Ans. 3. Appellants then assert that “a skilled artisan understands that the ‘multiple backoff processes’ are ‘started’ based on a single event in the same point in time, the decision to apply channel bundling.” Reply Br. 3. But Appellants cannot rely on unclaimed features for patentability. *See In re Self*, 671 F.2d 1344, 1348, 1350 (CCPA 1982). Here, claim 1 does not require “starting multiple backoff processes” based on “the decision to apply channel bundling.” App. Br. 21 (Claims App.).

In addition, the Examiner correctly finds that Flemming discloses starting multiple backoff processes in parallel. *See* Final Act. 5; Ans. 4. In particular, Flemming describes a communication device that transmits different traffic classes. Flemming ¶¶ 15, 31, Abstract, Fig. 2. The device uses a separate buffer for each traffic class and “one single backoff generator” for all traffic classes. *Id.* ¶¶ 15–17, 31–32, 36, 48, claim 1, Abstract, Fig. 2. The single backoff generator “may perform a shared

backoff generation” for all traffic classes. *Id.* ¶ 40, Fig. 3. Although the traffic classes may use the same channel, that does not demonstrate error because the Examiner relies on Hundal and Stephens to teach or suggest channel bundling. *See* Final Act. 3–4.

For the reasons discussed above, the combined disclosures in the references teach or suggest the disputed limitation. *See, e.g.*, Final Act. 3–5; Ans. 3–4; Hundal ¶¶ 65–66; Stephens ¶¶ 15–16, 19, 21, Fig. 7; Flemming ¶¶ 15, 31–32, 36, 40, 48, Abstract, Figs. 2–3.

#### MOTIVATION TO COMBINE

Appellants argue that the Examiner “appears to apply impermissible hindsight to reach a legal conclusion of obviousness” when combining Hundal, Stephens, and Flemming. App. Br. 12. In particular, Appellants question the motivation to combine “[b]ecause Hundal and Stephens do not disclose or suggest ‘starting multiple backoff processes in parallel’ and because Flemming is not related to ‘performing the link adaptation comprises applying a channel bundling.’” *Id.*

Appellants’ arguments do not persuade us of Examiner error. “[T]he law does not require that the references be combined for the reasons contemplated by the inventor.” *In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992); *see Outdry Techs. Corp. v. Geox S.p.A.*, 859 F.3d 1364, 1371 (Fed. Cir. 2017). “[T]he desire to enhance commercial opportunities by improving a product or process is universal . . . .” *DyStar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006); *see In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003).

Here, the Examiner correctly finds that the references are properly “combinable,” e.g., because “Stephens teaches running multiple backoff

processes and Flemming is related to efficiently running multiple backoff processes.” Ans. 4; *see* Final Act. 4–5. For example, Flemming explains that using a separate backoff generator for each traffic class causes conventional communication devices to be “unnecessarily hardware consuming,” thus “suffer[ing] from the problem of increased manufacturing costs,” and “less suitable for device miniaturization, e.g., when aiming at providing WLAN compatible mobile telephones.” Flemming ¶ 13; *see* Final Act. 5 (citing Flemming ¶ 13). Flemming also explains that using a single backoff generator “may reduce the hardware consumption and thus manufacturing and product costs” and “may better allow for being miniaturized.” Flemming ¶ 14, Abstract. Thus, the Examiner properly finds that a person of ordinary skill would have been motivated to combine Flemming with the other references “to improve device miniaturization and power consumption.” Final Act. 5.

Further, Stephens identifies a higher data rate as an advantage achieved by “teaming” multiple channels, i.e., channel bundling. Stephens ¶¶ 2, 12. Thus, the Examiner properly finds that a person of ordinary skill would have been motivated to combine Stephens with the other references “to improve communication quality and data rate.” Final Act. 4.

#### SUMMARY FOR CLAIM 1

For the reasons discussed above, Appellants’ arguments have not persuaded us that the Examiner erred in rejecting claim 1 under § 103(a). Thus, we sustain the § 103(a) rejection of claim 1.

#### INDEPENDENT CLAIMS 9 AND 10

For independent claims 9 and 10, Appellants quote the claim limitations and assert that “one or more of the limitations” are not disclosed,

taught, shown, or suggested by the references. App. Br. 16–18. Those assertions do not constitute separate patentability arguments. The applicable rules “require more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art.” *In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011).

Because Appellants do not argue patentability separately for claims 9 and 10, we sustain the § 103(a) rejection of these claims for the same reasons as claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

#### DEPENDENT CLAIMS 2, 3, 6, AND 14–21

Claims 2, 3, 6, and 18–20 depend directly or indirectly from claim 1, while claims 14–17 and 21 depend directly or indirectly from claim 9. Appellants do not argue patentability separately for these claims. App. Br. 10–17; Reply Br. 2–6. Thus, we sustain the § 103(a) rejection of these claims for the same reasons as claims 1 and 9. *See* 37 C.F.R. § 41.37(c)(1)(iv).

#### *The § 103(a) Rejection of Claims 4 and 5*

Claims 4 and 5 depend directly from claim 1. Appellants contend that “claims 4 and 5 include all the features of claim 1 including all the particular patentably distinguishing limitations discussed” for claim 1. App. Br. 18. Appellants also contend that “Hart does not cure any of the defects discussed herein above with respect to the teachings of” the other references and the combination of references “fails to teach, show, or suggest all the limitation[s] of claim 1 and the claims dependent thereon.” *Id.* at 19.

Those contentions do not constitute separate patentability arguments. *See Lovin*, 652 F.3d at 1357. Because Appellants do not argue patentability

Appeal 2018-002075  
Application 12/668,469

separately for claims 4 and 5, we sustain the § 103(a) rejection of these claims for the same reasons as claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

#### DECISION

We affirm the Examiner's decision to reject claims 1–6, 9, 10, and 14–21.

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