

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HEWLETT PACKARD ENTERPRISE COMPANY,
Petitioner,

v.

INTELLECTUAL VENTURES II, LLC,
Patent Owner.

IPR2021-01377
Patent 8,023,991 B2

Before KEN B. BARRETT, NABEEL U. KHAN, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

I. INTRODUCTION

A. *Background and Summary*

Hewlett Packard Enterprise Company (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claim 1 (“the challenged claim”) of U.S. Patent No. 8,023,991 B2 (“the ’991 patent,” Ex. 1001). The Petition challenges the patentability of claim 1 of the ’991 patent. Intellectual Ventures II LLC (“Patent Owner”) timely filed a Preliminary Response (Paper 10, “Prelim. Resp.”).

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). Having considered the arguments and evidence presented by Petitioner and Patent Owner, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on the sole challenged claim of the ’991 patent. Accordingly, we institute an *inter partes* review as to the challenged claim of the ’991 patent on all the grounds of unpatentability set forth in the Petition.

B. *Related Proceedings*

The parties identify the following matter as related to this case: *Intellectual Ventures I LLC et al. v. Hewlett Packard Enterprise Company*, Case No. 6:21-cv-00226 (W.D. Tex.).¹ Pet. 1; Paper 4, 1.

Petitioner also identifies IPR2021-01376 as involving a patent related to the ’991 patent. Pet. 1.

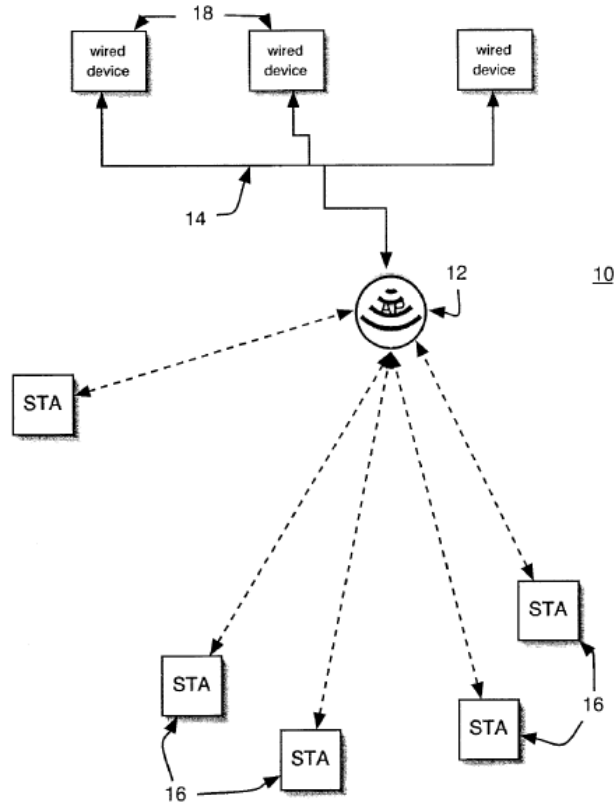
¹ Patent Owner indicates that, on November 30, 2021, the district court case was ordered to be transferred to the Northern District of California. Paper 6, 1.

C. The '991 Patent

The '991 patent, titled “Program for Adjusting Channel Interference Between Access Points in a Wireless Network,” relates generally to “wireless networks, and more particularly to wireless network configuration and power level adjustment for network performance optimization.” Ex. 1001, code (54), 1:19–22. The '991 patent describes that “[c]urrent wireless networks, such as IEEE 802.11b, 802.11a, 802.11g, (etc) networks, are subject to certain limitations that can limit a mobile user’s network performance and reliability.” *Id.* at 1:31–33. As an example, the patent explains that “only a very limited number of radio channels are available” and current “wireless access points cannot effectively share the same channel in the same area because of radio and control protocol interference.” *Id.* at 1:34–37. As a result, “bandwidth over a given area is limited by the number of non-overlapping channels available.” *Id.* at 1:39–43. The '991 patent further explains that “user roaming between wireless access points is inconsistent” and that users will tend to remain associated with an access point even if another access point is capable of providing higher performance. *Id.* at 1:43–47.

The '991 patent discloses “various apparatus, methods, and computer program products . . . to improve the performance and ease of management of wireless communications environments.” Ex. 1001, 1:54–57. “For example, a mechanism is provided to enable access points (APs) to perform automatic channel selection.” *Id.* at 1:57–59. The patent also describes APs that “can perform automatic power adjustment so that multiple APs can operate on the same channel while minimizing interference with each other.” *Id.* at 1:62–64.

Figure 1 of the '991 patent, reproduced below, “shows a wireless communications environment in which wireless users interact with other networked devices via an access point (AP).” Ex. 1001, 2:7–9.



As shown in Figure 1, “a typical wireless communications environment 10 includes access devices 12 (one shown) that interface between a wired communications medium 14 and wireless devices 16 to provide network access to the wireless devices 16.” *Id.* at 4:22–26. Access devices 12 are referred to in the '991 patent as “access points” or “APs” and wireless devices 16 are referred to as “stations” or “STAs.” *Id.* at 4:28–34.

The '991 patent explains that “once initialized on a channel, an AP 12 receives Beacons and DRCP Announce messages from all other APs 12 operating within the range of its radio, on its channel (steps 202, 204, 206)” and “uses these received messages to build the AP KnownAPs table 200.” Ex. 1001, 13:24–29. Figure 14, reproduced below, depicts “an example of

an AP KnownAPs table maintained by an AP, and used for power adjustment.” *Id.* at 2:38–39. “For each message it receives, the AP 12 checks to see if it has an entry in the AP knownAPs table for the AP-ID in the message (step 208)” and “[i]f found, the AP 12 updates the entry (step 210), otherwise it creates a new one (step 212), up to a maximum of Max_AP entries (step 214).” *Id.* at 13:29–33.

200

AP_ID	TP_Backoff	Max Power	DRCP	Age	Normalized power	sample size	corrected power
AP[1]	<list>	<list>	1	2	dbm	3	dbm
AP[2]	0	max power	0	3	dbm	4	dbm
...	...	...	...	...	...	...	...
AP[MAX_AP]	<list>	<list>	1	1	dbm	1	dbm

AP Known APs Table

The AP-ID, TP Backoff, and Max Power fields are extracted from each DRCP Announce and Hello message received. The TP Backoff value is stored as a list of values for each message received from each AP-ID. The sample size is the number of TP Backoff values received for each AP-ID.

Id. at 13:45–49.

During the channel selection process, the AP 12 transmits at maximum power, that is, it uses a TP backoff value of zero. Once the AP 12 has successfully claimed a channel, it calculates a TP Backoff value and adjust its transmit power for data transmissions down, in accordance with this value to minimize same channel interference and maximize channel coverage.

Id. at 14:41–48.

Figure 17, reproduced below, “is a block diagram representing a general mechanism by which an AP adjusts its transmit power backoff.” Ex. 1001, 2:44–45.

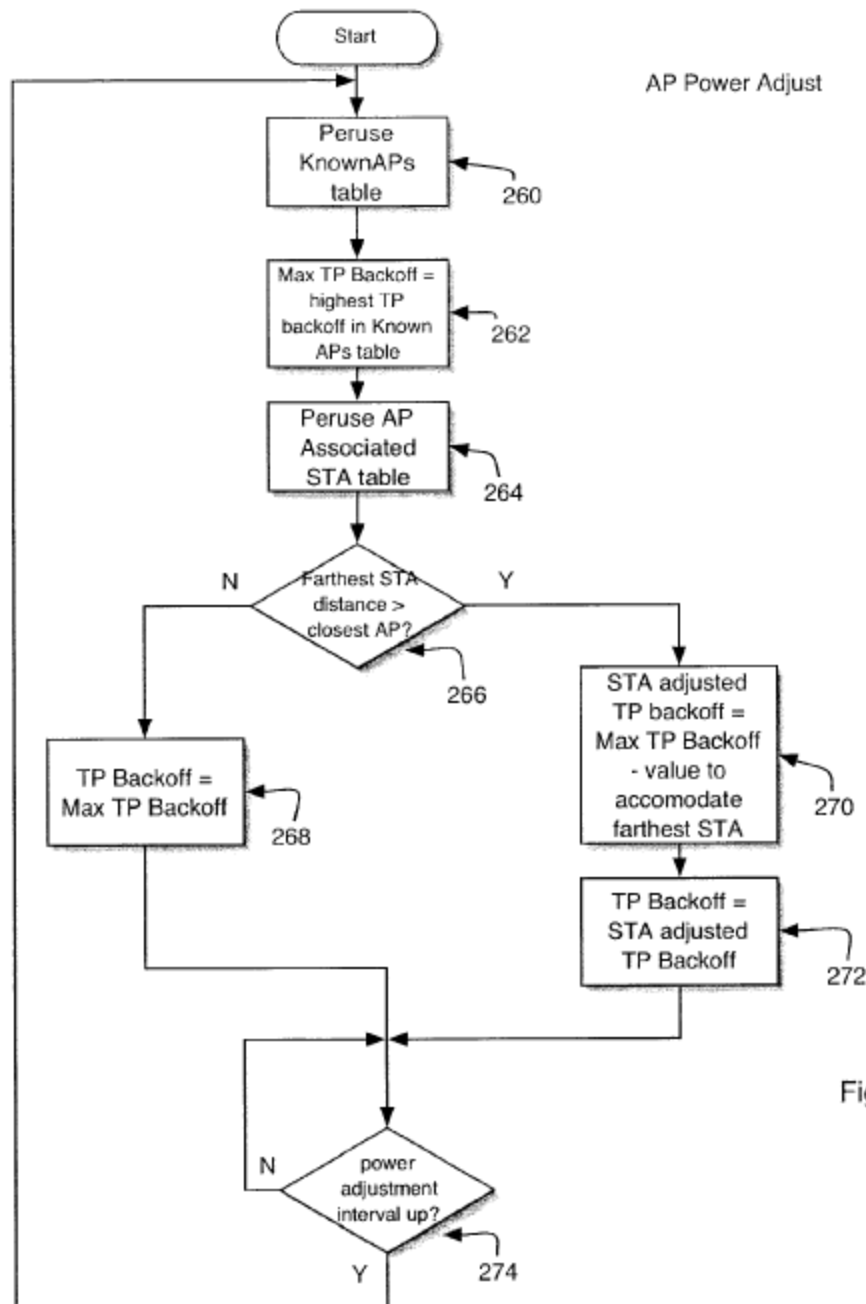


Fig. 17

The '991 patent describes the power adjustment shown in Figure 17 as follows:

The AP 12 peruses its AP KnownAPs table (step 260). The AP 12 finds the AP in the table with the highest TP Backoff value. The AP 12 then sets its own Max TPbackoff value to the highest TP Backoff value (step 262). This Max TP Backoff value, if used as the AP 12's TP Backoff value, would reduce the AP 12's

transmit power to a level just below the range of the nearest AP operating on the same channel.

Once the Max TP backoff is calculated, the AP then scans the AssociatedSTA table to ascertain the distance to the farthest associated STA 16 (step 264). The distance to the farthest associated STA 16 is compared to the distance to the closest AP 12 operating on the same channel (step 266). If the distance to the farthest associated STA 16 is less than the distance to the closest AP 12, the AP's TP Backoff value is left at Max TP Backoff (step 268). If the distance to the farthest associated STA is greater than the distance to the closest AP operating on the same channel (step 266), then the Max TP backoff value is adjusted back down to accommodate this STA (step 270), and the AP's TP backoff is set to this adjusted value (step 272). This power adjustment is periodically repeated to account for changes in the AP KnownAPs table and the AP AssociatedSTAs tables change (step 274). Power adjustment [sic] may be repeated every second, for example, in an 802.11 environment.

Id. at 14:49–15:7.

D. Challenged Claim

Claim 1, the sole claim of the '991 patent, is reproduced below with limitation identifiers in brackets corresponding to those used in the Petition.

[1-PRE] A computer program product recorded on a computer readable medium, comprising:

[1a] logic for detecting that a first access point is using a radio frequency channel;

[1b-1] logic for detecting that a second access point is also using the radio frequency channel,

[1b-2] the detecting logic including: logic for receiving messages from the second access point; and

[1b-3] logic for maintaining indications of the transmit power levels of other access points including the second access point; and

[1c] logic, responsive to the indications of the transmit power levels of other access points maintained by the detecting logic, for instructing the first access point to adjust transmit power to decrease interference with the second access point detected to be using the radio frequency channel;

[1d] wherein the first access point adjusts transmit power as instructed.

Ex. 1001, 42:47–64.

E. Evidence

The Petition relies on the following references:

Reference	Exhibit No.
US 6,957,067B1; filed Sept. 24, 2002; issued Oct. 18, 2005 (“Iyer”).	1004
US 2004/0017793A1; filed Feb. 4, 2003; published Jan. 29, 2004 (“Thermond”).	1005
US 2005/0003827A1; filed Feb. 13, 2004; published Jan. 6, 2005 (“Whelan”)	1007
US 2003/0100328A1; filed Nov. 28, 2001; published May 29, 2003 (“Klein”)	1009

Petitioner also relies on the Declaration of Matthew B. Shoemake, Ph.D. (Ex. 1003) in support of its arguments. The parties rely on other exhibits as discussed below.

F. Asserted Grounds of Unpatentability

Petitioner asserts that claim 1 would have been unpatentable on the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1	1	103(a) ²	Iyer, Thermond, Klein
2	1	103(a)	Whelan

II. ANALYSIS

A. Discretion Under 35 U.S.C. § 325(d)

Patent Owner contends “[t]he Board should exercise its discretion under Section 325(d) because the Petition presents substantially the same art and arguments considered by the Office during prosecution.” Prelim. Resp. 13. Specifically, Patent Owner argues that Petitioner’s Ground 2 challenge based on Whelan presents the same or substantially the same art and arguments to those considered during prosecution of US Patent No. 7,774,013 (’013 patent) which is a parent of the ’991 patent. *Id.* at 16–26.

Section 325(d) provides that, in determining whether to institute an *inter partes* review, “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d) (2018). The Board uses a two-part framework in determining whether to exercise its discretion under § 325(d), specifically:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103 and became effective March 16, 2013. Because the ’991 patent was filed before this date, the pre-AIA version of § 103 applies.

Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”).

The Petition contains two grounds and four references. Pet. 3–4. Whelan is involved only in the second ground. *Id.* Thus, Patent Owner’s § 325(d) arguments do not implicate sufficiently the Petition as a whole, or demonstrate that the same or substantially the same art or arguments that are set forth in the Petition were previously presented to the Office.³

Additionally, we agree with Petitioner that the challenged claim is materially different than claim 1 of the ’013 patent which recites that the computer program product be for a first access point while the challenged claim does not contain such a recitation. *See* Pet. 6, 8. Because claim 1 of the ’013 patent recites that the computer program be for a first access point, the Examiner focused on Whelan’s Access Points, which the Examiner found may include the functionality of the network management server. Ex. 1010, 141–142. Here, in light of the difference between claim 1 of the ’013 patent and the challenged claim, Petitioner argues that “any device” that satisfies the conditions set forth in paragraphs 17–22 of Whelan teaches the limitations of the challenged claim. Pet. 62–73. Thus, we agree the arguments set forth by Petitioner are different than the arguments and findings made by the Examiner during prosecution of the ’013 patent.

³ Patent Owner argues that the art relied upon in Ground 1 is cumulative but does not attempt to further explain or demonstrate this assertion. *See* Prelim. Resp. 16 (“Such discretionary denial of the Petition in its entirety is further appropriate given the cumulative nature of the art in Ground 1.”)

As such, we decline to exercise discretion under § 325(d) to deny institution.

B. Principles of Law

Petitioner bears the burden of persuasion to prove unpatentability of the claims challenged in the Petition, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) any objective evidence of obviousness or non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

C. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (internal quotation marks and citation omitted).

Petitioner’s declarant, Dr. Shoemake, opines that:

[A person of ordinary skill in the art] in the field of the ’991 patent at the time of the earliest possible priority date

(February 24, 2003) would have had at least a bachelor's degree in electrical engineering, plus three years of experience in the field of wireless networking/communications. Additional educational in the field of electrical engineering such as a masters or doctorate degree may serve as a substitute for experience in the field.

Ex. 1003 ¶ 36; *see* Pet. 19. Patent Owner, at this stage, does not disagree or propose a different definition of the person of ordinary skill in the art.

Dr. Shoemake's definition is consistent with the level of ordinary skill reflected in the prior art references of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (recognizing that the prior art itself may reflect an appropriate level of skill in the art). For purposes of this decision, we apply Dr. Shoemake's definition of the person of ordinary skill in the art.

D. Claim Construction

We apply the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2020).

In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner indicates that it “does not believe that any specific constructions are required at this time” but “reserves the right to propose specific constructions if it becomes appropriate/necessary during the course of these proceedings.” Pet. 19. In particular, Petitioner contends that the claim 1 term “logic for” should not be construed under § 112(6). *Id.* at 20–23.

Patent Owner does not dispute Petitioner’s position with regard to not construing “logic for” under § 112(6). Prelim. Resp. 12–13. Patent Owner argues that “Petitioner’s claim construction position is inconsistent with the position taken in the co-pending district court proceeding,” where “Petitioner argued that the plain and ordinary meaning of the claims require that the logic *not* be executed at the first access point.” *Id.* at 12 (citing Ex. 2001, 14). Thus, Patent Owner argues that Petitioner applies a broader invalidity-motivated position here in the Petition, as opposed to a narrower position taken in district court. *Id.* at 13. Patent Owner, however, does not dispute the claim construction position taken by Petitioner in this Petition, but rather, applies this position for purposes of their Preliminary Response. *Id.*

For purposes of this Decision, we determine that no claim term requires express construction. *See Vivid Techs.*, 200 F.3d at 803 (holding that only terms that are in controversy need to be construed, and “only to the extent necessary to resolve the controversy”). To the extent that the determination of the meaning of any claim term is necessary, we use its plain and ordinary meaning as discussed in our analysis below.

E. Obviousness over Iyer, Thermond, and Klein (Ground 1)

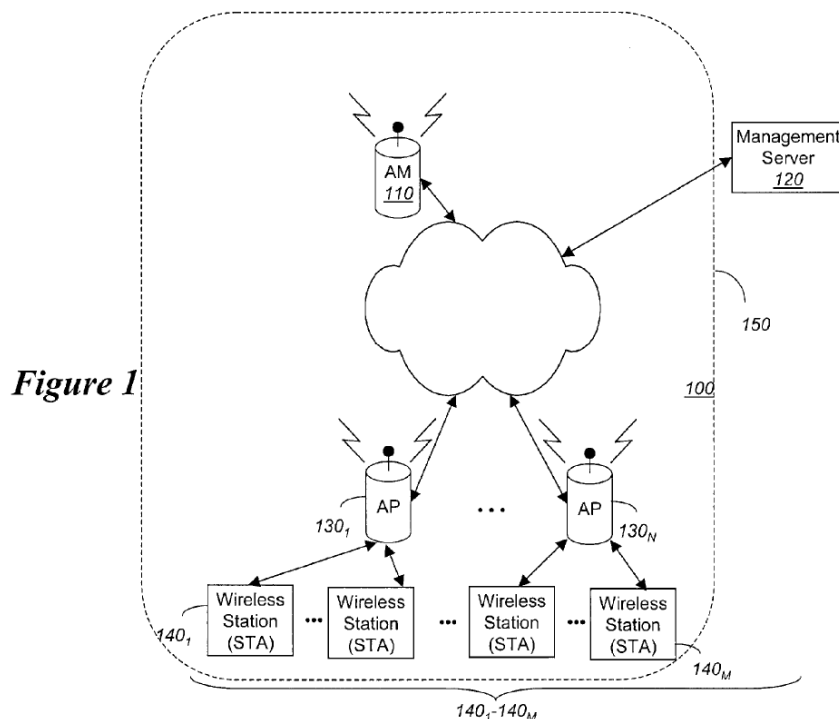
Petitioner argues claim 1 of the ’991 patent would have been obvious over Iyer, Thermond, and Klein. Pet. 40–62. Below we provide a brief

overview of the prior art references and then analyze Petitioner’s contentions in light of Patent Owner’s arguments.

1. *Iyer (Ex. 1004)*

Iyer relates to “wireless communications” and describes “monitoring and enforcing policy within a wireless network without being an active participant in the wireless network.” Ex. 1004, 1:7–9, 2:27–30. Iyer discloses that “monitoring and enforcement of [a] policy is conducted by a device that is not involved in the establishment of connectivity and exchange of data between Access Points and their corresponding wireless stations.” *Id.* at 2:30–34.

Iyer’s Figure 1, reproduced below, depicts “an enterprise network featuring a wireless network 100.” Ex. 1004, 3:30–31.



Iyer’s Figure 1 illustrates the relationship between wireless network 100, Air Monitor 110, Management Server 120, one or more Access Points (APs)

130₁–130_N, and one or more wireless stations (STAs) 140₁–140_M which are in communication with the APs. *Id.* at 3:30–37.

Iyer further describes that “Air Monitor (AM) 110 detects any AP within its signal coverage area 150, including both valid APs as well as unauthorized APs.” Ex. 1004, 3:39–41. “A ‘Valid’ AP is an authorized AP coupled to and resident of a wired portion of the enterprise network.” *Id.* at 3:41–42. In one embodiment, unauthorized APs can be classified into one or more classes, namely “Rogue,” “Unsecured,” and “Interfering.” *Id.* at 3:43–46. Iyer explains that “[a]n ‘Interfering AP’ is an AP that is installed on another network, but is within a coverage area of the enterprise network” and that “[t]his is a common scenario in multi-tenancy environments where APs from other networks are visible to each other.” *Id.* at 3:53–57.

2. Thermond (Ex. 1005)

Thermond “relates generally to wireless local area networks, and more particularly to the management of wireless access points within such wireless local area networks.” Ex. 1005, ¶ 2. Thermond describes “a wireless local area network (WLAN) infrastructure” that “includes a wired backbone network, an air controller communicatively coupled to the wired backbone network, and a plurality of wireless access points (WAPs).” *Id.* ¶ 9. Each WAP comprises a processor, a wired backbone interface, a first radio, a dynamically directional antenna coupled to the first radio, and a second radio that couples to an antenna. *Id.* Thermond’s air controller can “provide directions to the WAP that causes the WAP to alter the transmission power of the first radio” or cause the “WAP to alter the channels upon which the first radio operates.” *Id.* ¶ 11. Thermond explains that “by controlling at least one of the gain pattern of the directional antennas of the plurality of WAPs and the transmit power of coupled first

radios, the air controller reduces interference among the plurality of WAPs and increases WLAN performance.” *Id.* ¶ 13.

3. *Klein (Ex. 1009)*

Klein “relates to wireless local area networks (WLAN) and particularly, to avoidance of radio interference in such networks.” Ex. 1009 ¶ 1. By way of background, Klein explains that “[i]n order to provide sufficient high bandwidth connectivity for mobile units, the density of access point population is increased, particularly, in areas in which a high number of mobile units are anticipated,” and “[a]s the distance between access points is reduced, RF interference between access points can increase.” *Id.* Klein notes that “[i]nterference can also exist between transmissions of mobile units.” *Id.* ¶ 2. Klein discloses a method “for controlling transmitter power level of a mobile unit” that involves transmitting data representing transmitter power level an access point to a mobile unit. *Id.* ¶ 4. “The mobile unit receives the access point transmitter power level data and adjusts the power level of the mobile unit transmitter in accordance with the value of the access point transmitter power level.” *Id.*

4. *Petitioner’s Proposed Combination of Iyer, Thermond, and Klein and Reason to Combine*

Petitioner explains that Iyer discloses an Air Monitor (AM) and Management System (MS) that may be integrated into a single device. Pet. 40 (citing Ex. 1004, 5:48–50, Fig. 1). The AM+MS is in communication with APs and stores information about them including channel and signal strength. *Id.* at 41 (citing Ex. 1004, 2:63–66, 3:6–15, 4:22–24, 5:43–46, 3:29–38, 4:19–34, 4:44–5:28, 5:34–42, Figs. 1, 4, 7). Petitioner argues that Iyer recognized the problem of excessive network interference and that its AM+MS forced the AP to change its channel in response to the interference.

Id. at 42 (citing Ex. 1004, 9:38–44). Petitioner argues that Iyer’s solution to AP-to-AP interference was to have an AP change its channel, but that another known solution was to reduce the transmit power of the AP as taught by Thermond. *Id.* at 42 (citing Ex. 1003 ¶¶ 111, 140), 43.

According to Petitioner, Thermond solves the problem of excessive interference by having its APs change their channel but also “teaches that, instead of changing the channel, its air controller can change the transmit power in order to reduce excessive network interference.” Pet. 44 (citing Ex. 1004 ¶ 13, 34, 35, claim 10; Ex. 1003 ¶ 116). Petitioner argues that in light of Thermond, a person of ordinary skill in the art would have found it obvious to modify Iyer to mitigate excessive interference by not only changing the channel, but by also by controlling transmit power. *Id.* at 44. According to Petitioner, reducing transmit power was a viable and attractive alternative because it permits continuous data transfer and is available when changing channels may not be an option because other channels are already in use. *Id.* (citing Ex. 1003 ¶¶ 117–119; Ex. 1014, 223).

Petitioner explains that Iyer and Thermond both receive information from APs, such as their signal strength, and although neither reference teaches that such information includes actual transmit power of each AP, one of ordinary skill would have wanted to know the transmit power level of the APs for a variety of reasons, such as to confirm the proper power setting, to avoid generating coverage areas of greatly differing sizes, to prevent an AP at its minimum transmit power level from further lowering its transmit power, and to calculate path loss between each AP and their STA. Pet. 45–47 (citing Ex. 1003 ¶¶ 121–123).

Petitioner argues that Klein teaches a method for obtaining an APs transmit power wirelessly. Pet. 47. Petitioner contends that like Iyer and

Thermond, Klein also recognizes the problem of interference and like Thermond, Klein recognizes that interference can be reduced by adjusting the transmit power of the APs. *Id.* at 47–48 (citing Ex. 1009 ¶¶ 1, 8, 16). Klein teaches that its APs will insert data representing their transmit power level in their beacons and that this information may be extracted and stored by a device receiving the beacon. *Id.* at 48 (citing Ex. 1009 ¶¶ 4, 8, 20, Fig. 4; Ex. 1003 ¶¶ 125–126). Petitioner argues that one of ordinary skill would have found it obvious to implement Klein’s beacon teachings with Iyer and Thermond because Iyer and Thermond already receive beacon signals having channel information from APs and that it would have been beneficial to also include AP transmit power level data in those beacons. *Id.* at 48 (citing Ex. 1004, 4:25–32, Figs. 4, 5A, 5B, 7). Petitioner argues that including actual transmit power would reduce the utilization of computing power of Iyer’s AM+MS and also reduce uncertainty in system performance caused by having to calculate transmit power levels. *Id.* at 49 (citing Ex. 1003 ¶ 129).

Finally, Petitioner argues that one of ordinary skill would have had a reasonable expectation of success in implementing the teachings of Iyer, Thermond, and Klein because Iyer’s APs already send beacons and adding transmit power level to that information would have been straightforward. Pet. 49–50 (citing Ex. 1003 ¶¶ 130–131, Ex. 1014, 49–50).

Patent Owner argues that Petitioner does not provide a reasonable motivation to combine Iyer, Thermond and Klein. Prelim. Resp. 37–45. Specifically, Patent Owner argues that a person of ordinary skill would not have been motivated to combine Thermond’s teaching of addressing interference by reducing transmit power of an AP with Iyer because Iyer does not describe changing an access point’s channel to avoid interference

with other access points. *Id.* at 39–40 (citing Ex. 1004, 9:38–44). Instead, Patent Owner argues, Iyer teaches changing channels to avoid interference on the client. *Id.* at 39–40 (citing Ex. 1004, 9:38–44).

Patent Owner further argues that the various reasons provided by Petitioner why one of ordinary skill would have wanted to know the transmit power level of the APs are inapplicable and not beneficial to the Iyer/Thermond combination. Prelim. Resp. 40–41. For example, Patent Owner argues that the reasons provided are redundant to what the combination already provides (*Id.* at 41–42), are not supported by insights as to how the combination would be improved (*Id.* at 42), and do not explain why alternative methods for accomplishing the stated improvement would not be employed instead (*Id.* at 42–43).

Finally, Patent Owner argues that Petitioner has not provided sufficient reasons to combine Iyer and Thermond with Klein. Prelim. Resp. 44–45. Patent Owner argues that the reason to combine Klein with Iyer and Thermond proffered by Petitioner contradicts one of the reasons proffered by Petitioner as to why one of ordinary skill would have wanted to know the actual transmit power of an AP. *Id.* at 44 (arguing “Ppetitioner asserts that receiving transmit power levels wirelessly would be ‘better’ than performing calculations using the Friis equation—while simultaneously asserting that using the Friis equation to calculate coverage size areas would be a beneficial reason to maintain power transmit levels.”). Patent Owner also argues that Petitioner does not support the idea that receiving the power levels wirelessly would offer a benefit over using the wired connection already in place in Thermond. *Id.* at 45.

We have reviewed Petitioner’s description of the combination of Iyer, Thermond, and Klein and the reason to combine the references. At this

stage of the proceeding, we are persuaded Petitioner has provided a sufficient reason to combine the references in the manner described in the Petition and summarized above. Petitioner supports its assertions with evidence from the references and with credible testimony from Dr. Shoemake. Ex. 1003 ¶¶ 109–132. For example, Petitioner provides evidence that all three references identify excessive interference as a possible problem and Thermond and Klein address the problem by adjusting the transmit power of the APs. Pet. 42 (citing Ex. 1004, 9:38–44), 44 (citing Ex. 1004 ¶ 13, 34, 35, claim 10; Ex. 1003 ¶ 116), 47–48 (citing Ex. 1009 ¶¶ 1, 8, 16).

Patent Owner argues that Iyer does not describe changing an access point’s channel to avoid interference with other access points, but rather teaches changing channels to avoid interference on the client. Prelim. Resp. 39–40. While it is true that the relevant portion of Iyer is directed at “a wireless station experiencing interference” (Ex. 1004, 9:38–39), Dr. Shoemake provides un rebutted testimony that a person of ordinary skill would have recognized that Iyer’s excessive interference is due to two or more APs being on the same channel (Ex. 1003, 57 n. 5). At this stage of the proceeding we determine this un rebutted testimony sufficiently supports Petitioner’s argument.

We disagree with Patent Owner’s arguments that the various reasons provided by Petitioner why one of ordinary skill would have wanted to know the transmit power level of the APs are redundant or addressed by alternative methods. The existence of alternatives, even if they are advantageous, does not indicate that Petitioner’s proposed reason to combine is insufficient. *In re Mouttet*, 686 F.3d 1322, 1322 (Fed. Cir. 2012) (stating “just because better alternatives exist in the prior art does not mean that an

inferior combination is inapt for obviousness purposes.”); *see also In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004) (“[O]ur case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention.”); *In re Gurley*, 27 F.3d 551, 552–53 (Fed. Cir. 1994) (“A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use”).

Finally, we address Patent Owner’s argument that Petitioner’s reasons to combine Klein with Iyer and Thermond contradict each other. On the one hand, Petitioner argues that knowing the actual transmit power of the APs would be an improvement over calculating the transmit power level using the Friis equation because it would reduce uncertainty. Pet. 49 (citing Ex. 1003 ¶ 129). On the other hand, Petitioner also argues that the transmit power level of an AP may be useful in calculating the coverage area of that AP using the Friis equation. *Id.* at 45–46. Patent Owner argues that Petitioner contradicts themselves because in the first instance, Petitioner appears to be advocating against use of the Friis equation, while in the second, advocates for the use of the Friis equation. At this stage of the proceeding, we do not, however, discern an outright contradiction in Petitioner’s allegations. In the second instance, the Friis equation is being used to calculate a coverage area knowing the transmit power level of an AP, while in the first, the Friis equation would have been used to calculate the transmit power level itself. *Id.* at 45–46, 49. Thus the benefit of greater certainty could be achieved by avoiding the use of the Friis equation in calculating the transmit power level, while still using the Friis equation to calculate coverage areas.

5. Analysis of Claim 1

a) [1-PRE] A computer program product recorded on a computer readable medium, comprising:

Petitioner relies on the software contained in the Air Monitor (“AM”) and Management Server (“MS”) of Iyer as teaching the computer program product recited in the preamble of claim 1. Pet. 50–53 (citing Ex. 1004, 3:29–38; 5:43–50, Fig. 1). Petitioner contends that the AM+MS of Iyer includes hardware and software, in the form of a processor and memory, that execute software modules that perform functions including extracting information from APs to measure signal strength and maintaining data structures that can be used to influence the behavior of a wireless network. *Id.* at 51 (citing Ex. 1004, 2:63–3:4, 3:6–15, 4:19–34, 5:43–46, 3:29–38, 4:44–5:28, Fig. 4; Ex. 1003 ¶¶ 134, 135). Petitioner contends that “[a] POSITA would have known that a memory component is a computer-readable medium” and thus that Iyer’s AM+MS teaches a “computer program product recorded on a computer readable medium” as recited in the preamble of claim 1. Pet. 53 (citing Ex. 1003 ¶ 135). Patent Owner does not dispute Petitioner’s arguments regarding the preamble at this stage of the proceeding.

Generally, a preamble does not limit a claim. *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). Here, we need not decide whether the preamble limits the claim because, based on the evidence of record and for the reasons summarized above, Petitioner sufficiently establishes that Iyer teaches the preamble of claim 1.

b) [1a] logic for detecting that a first access point is using a radio frequency channel; [1b-1] logic for detecting that a second access point is also using the radio frequency channel, [1b-2] the detecting logic including: logic for receiving messages from the second access point; and

Petitioner argues Iyer teaches limitations 1a, 1b-1, and 1b-2 of claim 1. Pet. 53–57. Specifically, Petitioner argues that Iyer’s AM+MS detects any AP within its signal coverage area by constantly scanning different frequency channels and receiving Beacon and data frames from APs. *Id.* at 53–54 (citing Ex. 1004, 3:38–39, 4:25–30, 4:61–67, 5:7–11, 5:17–23, Fig. 1; Ex. 1003 ¶ 137). Petitioner contends that the Beacon frames include information for APs including channel number information and that the AM+MS maintains this information in a data structure in the form of AP Table 700. *Id.* at 54–55 (citing Ex. 1004, 5:29–36, 6:29–34, 6:36–38, Fig. 5A, 7). The information in the AP table can be manually input by an administrator or automatically updated by placing the AM+MS in LEARN mode in which the AM+MS collects information associated with APs within range and updates AP Table 700 with this information. *Id.* at 55 (citing Ex. 1004, 6:22–28). When the AM+MS is in LEARN mode, Petitioner argues, the AM+MS is “detecting that a first access point is using a radio frequency channel,” and “detecting that a second access point is also using the radio frequency channel.” *Id.* at 55–56 (citing Ex. 1003 ¶ 138).

Additionally, Petitioner argues that Iyer’s policy enforcements is to have the AM+MS change the channel of an AP when it detects excessive interference and that in order to change the AP to a different channel, the AM+MS would know the current channel of the AP, as well as the channels of the other APs in the network. Pet. 56 (citing Ex. 1004, Fig. 7; Ex. 1003 ¶ 140). Similarly, Petitioner relies on Iyer’s disclosure that the AM+MS can

assign APs to a subset of available channels, which Petitioner argues indicates that the AM+MS would know which APs are on which channels. *Id.* at 56 (citing Ex. 1004, 9:46–50, Fig. 7; Ex. 1003 ¶ 141).

Patent Owner does not separately dispute Petitioner’s arguments regarding limitations 1a, 1b-1, and 1b-2. *See* Prelim. Resp. 32–45. Based on a review of the evidence of record and Petitioner’s arguments we are persuaded that Iyer teaches limitations 1a, 1b-1, and 1b-2 for the reasons summarized above.

c) *[1b-3] logic for maintaining indications of the transmit power levels of other access points including the second access point; and*

Petitioner relies on its contentions describing the combination of Iyer, Thermond, and Klein and argues that in light of Thermond controlling the transmit power of APs in the network and Klein using AP beacons to transmit the current transmit power level of each AP, one of ordinary skill would modify Iyer’s beacons to include transmit power level. *Pet.* 57, 58. For these reasons, Petitioner argues that it would have been obvious “to store the transmit power level data on an AP-by-AP basis, such as in the data structure format shown in FIG. 7 of Iyer, modified to include a column for the current transmit power of each AP of the network” and that this would, therefore, teach limitation 1b-3. *Id.* at 58 (citing Ex. 1003 ¶ 149).

Patent Owner argues that while Iyer tracks general information about APs in its data structure, it does not store an AP’s transmit power levels in this structure. *Prelim. Resp.* 32–33. Patent Owner further argues that Thermond does not transmit power levels of access points and thus also does not teach limitation 1b-3. *Id.* at 34. Turning to Klein, Patent Owner argues that the mobile devices receive Beacons from access points used to determine the current transmit power level of the received transmission. *Id.*

at 35 (Ex. 1009 ¶ 8). However, according to Patent Owner, Klein's mobile device does not store power transmit levels of prior access points because a mobile device interacts with only one access point at a time and thus has no need for the power levels to persist. *Id.* at 35. Patent Owner argues, therefore, that Petitioner's contentions rest on an unsupported conclusion that it would have been obvious to store the transmit power level data on an AP-by-AP basis, such as in Iyer's data structure shown in Figure 7 of Iyer. *Id.* at 36. Patent Owner argues that such a conclusion is the result of hindsight. *Id.* at 37.

At this stage of the proceedings, we are persuaded by Petitioner's arguments. Petitioner's contentions show that Iyer receives information about APs in Beacons and stores that information in a data structure depicted in Figure 7 of Iyer. Pet. 54–55 (citing Ex. 1004, 5:29–36, 6:29–34, 6:36–38, Fig. 5A, 7). Petitioner demonstrates that Thermond teaches that adjusting transmit power level is one way to address interference between APs. *Id.* at 44 (citing Ex. 1004 ¶ 13, 34, 35, claim 10; Ex. 1003 ¶ 116). Finally, Petitioner demonstrates that Klein transmits transmit power level in beacons and that it would have been obvious to include transmit power level in Iyer's beacons along with the other information already included in those beacons. *Id.* at 48 (citing Ex. 1004, 4:25–32, Figs. 4, 5A, 5B, 7; Ex. 1009 ¶¶ 4, 8, 20, Fig. 4; Ex. 1003 ¶¶ 125–126). Because we agree with Petitioner that it would have been obvious to include transmit power level in Iyer's beacons we also agree that it would have been obvious to store this power level in Iyer's data structure since Iyer already stores other information received in the beacons pertaining to APs in that data structure. At this stage of the proceeding we find this conclusion to be sufficiently supported by Dr. Shoemake's testimony. Ex. 1003 ¶ 149.

We disagree with Patent Owner's arguments because they do not address Petitioner's contentions as set forth in the Petition. For example, Petitioner argues that Klein's mobile device does not store power transmit levels of prior access points. Prelim. Resp. 35. Petitioner, however, does not rely on Klein for storing power transmit levels and instead relies on Iyer's data structure as storing the power transmit levels of APs. Pet. 58.

d) [1c] logic, responsive to the indications of the transmit power levels of other access points maintained by the detecting logic, for instructing the first access point to adjust transmit power to decrease interference with the second access point detected to be using the radio frequency channel; [1d] wherein the first access point adjusts transmit power as instructed.

Petitioner argues that Iyer's AM+MS modified in view of Thermond and Klein would be capable of instructing APs to change their channels to mitigate excessive network interference and instructing APs to change their transmit power levels to mitigate excessive co-channel interference. Pet. 59–60 (citing Ex. 1004, 9:38–45, Ex. 1005 ¶¶ 13, 33–35). Petitioner further argues that the modified Iyer would instruct APs to reduce their transmit power levels responsive to indications of the transmit power levels of other access points because “Iyer knows the transmit power levels of the APs based on Klein, and a POSITA would have recognized that Iyer's AM+MS would need to know the current transmit power levels of the APs on the same channel to calculate the new, reduced transmit power level for the AP thereby reducing interference as taught by Thermond.” *Id.* at 61 (citing Ex. 1003 ¶ 156). Petitioner argues that it would have been obvious for Iyer's APs to adjust their transmit power levels in response to an instruction to do so from Iyer's AM+MS. *Id.* at 61 (citing Ex. 1003 ¶ 157).

Patent Owner does not separately dispute Petitioner's arguments regarding limitations 1c and 1d. *See* Prelim. Resp. 32–45. Based on a review of the evidence of record and Petitioner's arguments we are persuaded that Iyer teaches limitations 1c and 1d for the reasons summarized above.

e) Conclusion – Obviousness over Iyer, Thermond, and Klein (Ground 1)

Accordingly, having considered the arguments and evidence, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to claim 1 of the '991 patent as obvious over Iyer, Thermond, and Klein.

F. Obviousness over Whelan (Ground 2)

Petitioner argues claim 1 of the '991 patent would have been obvious over Whelan. Pet. 62–73. Below we provide a brief overview of Whelan and then analyze Petitioner's contentions in light of Patent Owner's arguments.

1. Whelan (Ex. 1007)

Whelan “relates to the field of Wireless Local Area Network (WLAN) network management.” Ex. 1007 ¶ 1. By way of background, Whelan explains that “[i]n a WLAN, one or more base stations or access points (AP) bridge between a wired network and radio frequency or infrared connections to one or more mobile stations or Mobile Units (MU).” *Id.* ¶ 2. Whelan identifies network management problems including “access points using the same or overlapping frequency bands or channels and the same or similar signal coding have the potential to create mutual interference,” and that interference “leads to packet collisions, the need to retransmit packets, potentially reducing network throughput.” *Id.* ¶ 3.

To address that problem, Whelan describes a “channel, coding and power management system” that employs “a simplified approach using data collected from mobile units to optimize the performance of the network.” Ex. 1007 ¶ 15. More specifically, Whelan discloses “a channel, coding and power management system” that “uses signal data and network traffic statistics collected by the mobile units to determine optimal configuration settings for the access points.” *Id.* ¶ 16. “The access point settings managed by the system can include the operating channel or center frequency, orthogonal signal coding used, if any, and the transmission power.” *Id.*

Whelan’s Figure 4, reproduced below, depicts “a simplified block diagram for some embodiments of [Whelan’s] channel, coding and power management system.” Ex. 1007 ¶ 115.

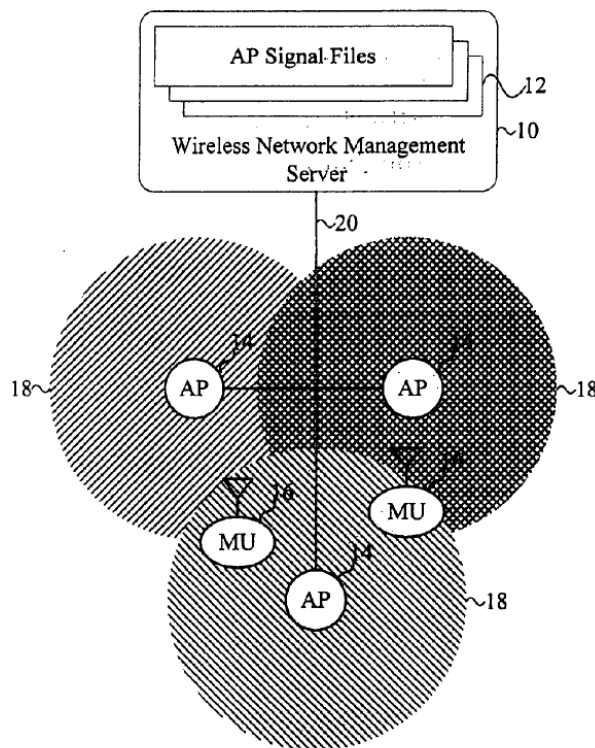


Figure 4. Overall System Block Diagram

As shown in Whelan’s Figure 4, “wireless network management server 10 connects to the access points 14 via a backbone network 20” (*id.* ¶ 116), and

“one or more access points 14 communicate with one or more mobile units 16, which are within the coverage area 18 of the access point” (*id.* ¶ 117). “As the mobile units 16 roam throughout the wireless network they roam from one coverage area 18 to another” and “collect strength information for the signals received from the access points, along with network performance data.” *Id.* ¶ 118. “The wireless network management server 10 collects the data, received from the mobile units 16, in the AP signal files 12” and “uses this information to compute channel, signal coding, transmission data rates and power level settings for the access points 14, in order to optimize the throughput of the wireless network.” *Id.* ¶ 119. Whelan explains that “the mobile units receive signals from one or more of the access points when coverage areas overlap” (*id.* ¶ 122), and “if packets are received from both access points in an overlapping time period the probability of both packets being received with errors is high” (*id.* ¶ 126).

Whelan’s Table 3, reproduced below, depicts channel and transmission power assignments for Access Points AP1 – AP11.

TABLE 3

Access Point	Number of Con-straints	Peak Throughput	Signal at Margin	Channel Assignment	Power Setting
AP 6	0	0.25	–75 dBm	1	100 dBm
AP 5	0	0.22	–70 dBm	2	100 dBm
AP 3	0	0.18	–65 dBm	3	100 dBm
AP 10	0	0.18	–80 dBm	2	100 dBm
AP 7	0	0.15	–70 dBm	3	100 dBm
AP 4	1	0.10	–85 dBm	2	100 dBm
AP 9	1	0.25	–60 dBm	3	70 dBm
AP 8	1	0.09	–80 dBm	2	100 dBm
AP 2	0	0.18	–75 DBm	1	100 dBm
AP 1	1	0.15	–85 dBm	1	100 dBm
AP 11	0	0.05	–50 dBm	1	100 dBm

Whelan explains that, in some embodiments, the settings contained in Table 3 “are transmitted from the wireless network management server 10

through the wired network 20 to the access points 14, possibly using SNMP protocols.” Ex. 1007 ¶ 214.

2. Analysis of Claim 1

Petitioner argues that Whelan discloses much of claim 1 but acknowledges that Whelan does not disclose a single device⁴ that includes all of the logic limitations of claim 1 (e.g. limitations 1a, 1b-1, 1b-2, 1b-3, 1c). Pet. 62. This is because some of the functionality relied upon by Petitioner (e.g. the collection and reporting of signal data) is disclosed as being performed by Whelan’s “mobile units,” (Pet. 69 (citing Ex. 1007 ¶¶ 16, 17, 122)) while other functionality is disclosed as being performed by the wireless network management server (WNMS) (Pet. 76 (citing Ex. 1007 ¶¶ 276–280, 284–288)). Petitioner argues, however, that Whelan’s WNMS would teach a single device that, when incorporating the functionality of Whelan’s mobile devices, would render obvious the limitations of claim 1. Pet. 63. According to Petitioner, Whelan explains that “any device can perform the collection and reporting of radio frequency signal data if it has the required receiver, signal measurement capabilities and any type of data connection to data repository.” Ex. 1007 ¶¶ 17–22. Thus, Whelan’s WNMS may be the “any device” according to Petitioner because it fulfills many of the requirements of the “any device” by being a general-purpose computer that also is related to the collection of radio signal data. Pet. 64–66 (citing Ex. 1003 ¶ 166; Ex. 1007 ¶ 16, 116, 119, 1899, 223).

⁴ We note that the preamble of claim 1 recites a “computer program product recorded on a computer readable medium.” Ex. 1001, 42:47–48. At this stage of the proceeding neither party takes a definitive position as to whether this language requires the computer program product to be on a single device.

Petitioner argues in the alternative that if the claim does not require a single device to include all the “logic for” limitations, then Whelan’s “any device” would perform the functions of Whelan’s mobile unit and interact with the WNMS and thus render obvious claim 1. Pet. 63 (citing Ex. 1003 ¶ 162).

a) *[1-PRE] A computer program product recorded on a computer readable medium, comprising:*

Petitioner argues that the WNMS includes a computer readable medium for storing computer program products that include logic for performing the functions recited in claim 1. Pet. 63 (citing Ex. 1003 ¶ 163). Patent Owner does not dispute Petitioner’s arguments regarding the preamble at this stage of the proceeding.

Generally, a preamble does not limit a claim. *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). Here, we need not decide whether the preamble limits the claim because, based on the evidence of record and for the reasons summarized above, Petitioner sufficiently establishes that Whelan teaches the preamble of claim 1.

b) *[1a] logic for detecting that a first access point is using a radio frequency channel; [1b-1] logic for detecting that a second access point is also using the radio frequency channel*

Petitioner argues Whelan detects whether two APs are on the same channel and then changing the transmit power of those APs in view of the mutual interference caused thereby. Pet. 69 (citing Ex. 1007 ¶¶ 333–334, 276–280, 284–288, 291, 85, 87, 90–101). Petitioner also argues that if the claim does not require a single device that includes all of the logic for limitations of the claim then Whelan also renders the claim obvious because it discloses that mobile units perform the functions of detecting APs on the

network via beacons and reporting that information to the WNMS. Pet. 70–71 (citing Ex. 1007 ¶¶ 17–22, 122; Ex. 1003 ¶¶ 175–176). Patent Owner does not separately dispute Petitioner’s contentions with respect to limitations 1a and 1b-1.

At this stage of the proceeding we are persuaded that Whelan teaches limitations 1a and 1b-1 for the reasons provided by Petitioner and summarized above.

c) [1b-2] the detecting logic including: logic for receiving messages from the second access point; and

Petitioner argues “that ‘the [WNMS] polls SNMP MIBs on the access points to determine the power levels being used [by the access points].” Pet. 71 (quoting Ex. 1007 ¶ 223). According to Petitioner, in response to the polls, the APs transmit messages to the WNMS with the transmit power level information. *Id.* For this first reason, Petitioner argues, Whelan teaches limitation 1b-2.

In the alternative, Petitioner argues that Whelan also discloses or suggests “that the WNMS collects radio frequency signal data from the access points via ‘beacons or broadcast messages.’” Pet. 71 (citing Ex. 1007 ¶ 115). The beacons and broadcast messages are from the access points, according to Petitioner, and thus Whelan also teaches or suggests limitation 1b-2 for this second reason. Pet. 71 (citing Ex. 1003 ¶ 179).

In response to Petitioner’s first reason, Patent Owner argues that Whelan discloses that the WNMS collects the access point signal strength information received from the mobile units and also discloses that the access point signal strength measurements are reported by the mobile units. Prelim. Resp. 49–50 (citing Ex. 1007 ¶¶ 223, 228). Patent Owner argues, therefore,

that Whelan gets measurement data from mobile devices, but does not receive messages from the second access point. Prelim. Resp. 50.

In response to the Petitioner's second reason, Patent Owner argues Whelan's beacon or broadcast messages are received by the mobile unit not another access point or centralized management server. Prelim. Resp. 50 (citing Ex. 1007 ¶ 122).

At this stage of the proceeding we are persuaded by Petitioner's arguments for the reasons provided by Petitioner and summarized above. Petitioner relies on Whelan's disclosure that the WNMS polls the access points to determine the power levels being used by the access points and that this is an embodiment separate from the embodiment in which signal strength information is received by the mobile devices. *See* Ex. 1007 ¶ 223 (Describing that signal strength information is received from mobile units but that "[i]n some embodiments, the wireless network management server polls SNMP MIBs on the access points to determine the power levels being used.") Moreover, even accepting that in the polling embodiment, it is the mobile units that receive signal strength information, Whelan discloses that this information is then transmitted to the WNMS. *Id.* at ¶¶ 199, 223. The claim does not require the WNMS to receive messages from the second access point directly. Additionally, Patent Owner's argument does not adequately address Petitioner's contention that it would have been obvious to include the functionality of the mobile units in Whelan's WNMS. Nor does Patent Owner dispute Petitioner's interpretation of the claim regarding whether or not the claim requires a single device to include the recited logic.

- d) *[1b-3] logic for maintaining indications of the transmit power levels of other access points including the second access point; and [1c] logic, responsive to the indications of the transmit power levels of other access points maintained by the detecting logic, for instructing the first access point to adjust transmit power to decrease interference with the second access point detected to be using the radio frequency channel; [1d] wherein the first access point adjusts transmit power as instructed.*

Petitioner relies on Whelan’s disclosure “that ‘the [WNMS] polls SNMP MIBs on the access points to determine the power levels being used [by the access points]’” and argues that “the WNMS stores determined power level settings for each managed access point in a table.” Pet. 72 (citing Ex. 1007 ¶¶ 214, 223, 333–334, Table 3; Ex. 1003 ¶ 181). Thus, according to Petitioner, Whelan teaches “maintaining indications of the transmit power levels of other access points including the second access point” as recited in limitation 1b-3.

Petitioner further argues Whelan discloses that one possible solution to mutual interference problem is to reduce the transmission power. Pet. 72 (citing Ex. 1007 ¶¶ 333–334). Petitioner argues the “WNMS instructs the APs to adopt the computed settings.” *Id.* (citing Ex. 1007 ¶¶ 214, 119; Ex. 1003 ¶¶ 183–184). Petitioner also argues that in order for the WNMS to calculate the new reduced transmit power level, it would need to know the current transmit power level of the APs. *Id.* at 73 (citing Ex. 1003 ¶¶ 185). In response to the instruction to reduce transmit power level, Petitioner argues that the APs reduce their power to reduce interference. *Id.* (citing Ex. 1007 ¶¶ 333–334, ¶¶ 54, 103, 119, 288–291; Ex. 1003 ¶ 186).

Patent Owner argues that Whelan does not disclose indications of transmit power levels and, at most, only discloses calculations of power transmit levels. Prelim. Resp. 52. For example, Patent Owner argues that the power settings stored in Table 3 of Whelan are calculated rather than

received. *Id.* at 52 (citing Ex. 1007 ¶ 223). Patent Owner further argues that Whelan's power adjustments are not responsive to indications of the transmit power levels of other access points and are instead responsive to the signal measurements made by mobile units. *Id.* at 53 (citing Ex. 1007 ¶ 109).

At this stage of the proceeding we are persuaded by Petitioner's arguments. Petitioner provides sufficient support that Whelan maintains indications of power transmit levels by storing determined power level settings for access points in a table. Pet. 72 (citing Ex. 1007 ¶ 223). Petitioner's contentions are supported by credible un rebutted testimony from Dr. Shoemake. Ex. 1003 ¶ 181. Furthermore, Dr. Shoemake credibly testifies that the WNMS knows the transmit power level of the APs and that the new reduced transmit power level of the AP would therefore be responsive to indications of the current transmit power level of other APs. *Id.* ¶ 185.

e) Conclusion – Obviousness over Whelan (Ground 2)

Accordingly, having considered the arguments and evidence, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to claim 1 of the '991 patent as obvious over Whelan.

III. CONCLUSION

Petitioner has demonstrated a reasonable likelihood of prevailing in showing the unpatentability of the challenged claim of the '991 patent. At this stage of the proceeding, however, we have not made a final determination with respect to the patentability of the challenged claims.

IV. ORDER

For the foregoing reasons, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claim 1 of the '991 patent is instituted with respect to all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '991 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

IPR2021-01377
Patent 8,023,991 B2

FOR PETITIONER:

Heath J. Briggs
Elana B. Araj
Leif Olson
GREENBERG TRAURIG, LLP
briggsh@gtlaw.com
araje@gtlaw.com
olsonl@gtlaw.com

FOR PATENT OWNER:

Daniel S. Block
Byron L. Pickard
James R. Hietala
Steven M. Pappas
Todd Thurheimer
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
dblock-PTAB@sternekessler.com
bpickard-PTAB@sternekessler.com
JHietala-PTAB@sternekessler.com
spappas-PTAB@sternekessler.com
tthurheimer-ptab@sternekessler.com

Russell J. Rigby
INTELLECTUAL VENTURES
rrigby@intven.com