

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DRAFTKINGS INC., A DELAWARE CORPORATION,
Petitioner,

v.

INTERACTIVE GAMES LLC,
Patent Owner.

IPR2020-01107
Patent 9,430,901 B2

Before KEN B. BARRETT, GEORGE R. HOSKINS, and
FREDERICK C. LANEY, *Administrative Patent Judges*.

BARRETT, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

ORDER
Denying Patent Owner's Motion to Exclude
37 C.F.R. § 42.64

I. INTRODUCTION

A. Background and Summary

DraftKings Inc., a Delaware corporation (“Petitioner”)¹ filed a Petition requesting *inter partes* review of U.S. Patent No. 9,430,901 B2 (“the ’901 patent,” Ex. 1001). Paper 1 (“Pet.”). The Petition challenges the patentability of claims 1–5, 7–22, and 24–27 of the ’901 patent. We instituted an *inter partes* review of all challenged claims on all proposed grounds of unpatentability. Paper 10 (“Inst. Dec.”). Interactive Games LLC (“Patent Owner”)² filed a Response to the Petition. Paper 20 (“PO Resp.”). Petitioner filed a Reply (Paper 27, “Pet. Reply”) and Patent Owner filed a Sur-reply (Paper 30, “PO Sur-reply”).

Additionally, Petitioner filed a Motion to Exclude Evidence (Paper 32), to which Patent Owner filed an Opposition (Paper 33), and Petitioner filed a Reply (Paper 34).

An oral hearing was held on October 13, 2021, and a transcript of the hearing is included in the record. Paper 38 (“Tr.”).

This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons discussed below, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–5, 7–22, and 24–27 of the ’901 patent are unpatentable. We also *deny* Petitioner’s Motion to Exclude Evidence.

¹ Petitioner identifies itself (DraftKings Inc., a Delaware corporation), DraftKings Inc., a Nevada corporation, and SBTech (Global) Limited as real parties-in-interest. Pet. 86–87.

² Patent Owner identifies itself as the real party-in-interest. Paper 4, 2.

B. Related Proceedings

One or both parties identify, as matters involving or related to the '901 patent, *Interactive Games LLC v. DraftKings Inc.*, Case No. 1:19-cv-01105 (D. Del.), and Patent Trial and Appeal Board cases IPR2020-01108 (U.S. Patent No. 8,974,302), IPR2020-01109 (U.S. Patent No. 8,956,231), and IPR2020-01110 (U.S. Patent No. 8,616,967). Pet. 87; Paper 4, 2.

C. The '901 Patent

The '901 patent “relates generally to the field of gaming and, more particularly to a system and method for wireless gaming with location determination.” Ex. 1001, 1:25–27. The '901 patent explains that, in a casino environment, participation generally was limited by location. *Id.* at 1:42–44. For example, participants had to be present at the gaming machine or table to place a bet. *Id.* at 1:44–46. The '901 patent addresses this with “[a] distributed gaming system [that] enables participants to engage in gaming activities from remote and/or mobile locations.” *Id.* at 3:7–9. The system may be implemented over a communications network such as a cellular or other wireless (*e.g.*, WiFi) network. *Id.* at 3:28–31.

The '901 patent is concerned with determining the position of the gaming communication device within a larger property, such as a casino, to ensure compliance with gaming laws while allowing mobility. *See id.* at 9:31–34.

For example, government regulations may prohibit using the device to gamble from the guest rooms of a casino complex. Therefore, particular embodiments of the present invention may include the ability to determine the location of the device within the property and then disable the gambling functionality of the

device from a guest room, or other area where gambling is prohibited.

Id. at 9:37–43.

The '901 patent describes location determination in a wireless network through the utilization of signal detection devices such as wireless access points, wireless routers, wireless base stations, satellites, or any other suitable signal detection device. *See id.* at 9:59–62. Location of a gaming communication device may be derived “by determining the strength of the signal received by each signal detection device and comparing this set of signal strengths to a reference set of signal strengths determined during calibration.” *Id.* at 12:38–43. As another example, the location may be derived by using the time elapsed between signal transmission from the gaming communication device and its receipt by each signal detection device, with the elapsed times compared to a reference set determined during calibration. *Id.* at 12:43–54.

The duration of activation of the gaming communication device may be controlled according to different parameters. *Id.* at 14:55–58. For example, “[a]ctivation of the gaming communication device may terminate upon the expiration of a predetermined time period” and “an activity may only be permitted until the occurrence of a particular time of day.” *Id.* at 14:60–64. Additionally, “[t]he duration of activation may be dynamically determined based on a period of non-use.” *Id.* at 15:2–3. “The period of time, or amount of time, may be cumulatively determined.” *Id.* at 15:5–6.

D. Illustrative Claims

Of the challenged claims of the '901 patent, claims 1, 26, and 27 are independent claims. The remaining challenged claims depend directly or

indirectly from claim 1. Claims 1 and 27, reproduced below with bracketed annotations³ inserted, are illustrative.

1. A method comprising:

[1a] for each of a plurality of locations covered by a communications network, calculating, by a computing device, a respective set of signal characteristics that describe signals between a calibration device at the location and a set of signal detection devices of the communication network;

[1b] determining, by the computing device, a first location of a mobile device by comparing the calculated sets of signal characteristics with a first set of signal characteristics measured between the signal detection devices and the mobile device;

[1c] based on the first location, enabling, by the computing device, a set of wagering activities through the mobile device that are allowed at the first location if any are allowed at the first location;

[1d] calculating, by the computing device, a cumulative amount of time that a user of the mobile device engages in a wagering activity from a plurality of locations; and

[1e] preventing, by the computing device, the cumulative amount of time from exceeding a threshold amount of time.

27. A method comprising:

[27a] before using a communication device to play games through a wireless communication network, associating, by a computing device, each of a plurality of sets of signal characteristics with a respective location, [27b] each set of signal characteristics including a respective plurality of signal characteristics and each signal characteristic of a respective plurality of signal characteristics corresponding to a signal between a device and a wireless network device;

[27c] determining a location of the communication device by comparing, by the computing device, a set of signal characteristics involving the communication device and a

³ We utilize Petitioner's annotations for claims 1 and 27 but have retained the paragraph formatting from the issued patent.

plurality of wireless network devices to the prior associated sets of signal characteristics;

[27d] wherein a gaming functionality of the communication device is enabled based upon the determined location; and

[27e] disabling the wagering functionality in response to a period of non-use of the communication device.

Ex. 1001, 23:61–24:16, 26:9–28. Independent claim 26 recites an apparatus that includes a computing device and a non-transitory medium storing instructions to perform a method similar to that of independent claim 1.

E. Evidence

Petitioner relies on the following references:

Reference		Dates	Exhibit No.
Wells	US 2003/0064805 A1	Filed Sept. 28, 2001; Published Apr. 3, 2003	1004
Bahl	US 6,799,047 B1	Filed Feb. 25, 2000; Issued Sept. 28, 2004	1005
Harkham	US 2002/0094869 A1	Filed May 29, 2001; Published July 18, 2002	1006
Spirito	WO 02/063329 A1	Filed Feb. 28, 2001; Published Aug. 15, 2002	1009
Joao	US 2003/0224854 A1	Filed May 19, 2003; Published Dec. 4, 2003	1012

Petitioner also relies on the declarations of Mr. David Hilliard Williams (Ex. 1003 and Ex. 1033) in support of its arguments and Patent Owner relies on the declaration of Mr. Nick Farley (Ex. 2005) in support of its arguments. The parties rely on other exhibits as discussed below.

F. Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims are unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis⁴
1–5, 7–22, 26, 27	103(a)	Wells, Bahl
1–5, 7–22, 26	103(a)	Wells, Bahl, Harkham
4	103(a)	Wells, Bahl, Harkham, Spirito
24, 25	103(a)	Wells, Bahl, Harkham, Joao

II. ANALYSIS

A. 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). To prevail, Petitioner must establish by a preponderance of the evidence that the challenged claims are unpatentable. 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2019).

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

⁴ For the third and fourth grounds, Petitioner articulates challenges both with and without Harkham. *See* Pet. 78 (“A POSITA would have found Claim 4 obvious in view of Wells, Bahl, and Spirito alone, or further in view of Harkham.”), 83 (“A POSITA would have found Claims 24 and 25 obvious in view of Wells, Bahl, and Joao alone, or further in view of Harkham.”).

(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.⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. The 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 contends that a person having ordinary skill in the art pertaining to the '901 patent (“POSITA”) “would be a person with a bachelor’s degree in electrical engineering, computer science, or a similar field; at least two years of experience in the development of location-based services or software applications; and at least some coursework or other experience in the wager based gaming industry.” Pet. 9 (citing Ex. 1003 ¶ 27). Further, according to Petitioner, “[a] person with less education but more relevant practical experience may also meet this standard.” *Id.*

In the Preliminary Response, Patent Owner objected to Petitioner’s POSITA formulation, as underestimating the importance of wager based gaming industry experience and as including Electrical Engineering as a possible degree field. *See* Paper 6 (Patent Owner’s Preliminary

⁵ The parties have not directed our attention to any objective evidence of obviousness or non-obviousness.

Response), 2–4. We disagreed with the former, determined that the result of the dispute as to the latter (regarding the fields of the undergraduate degree) would not materially affect our consideration of the issues in the case, and applied Petitioner’s POSITA formulation. *See* Inst. Dec. 19–21. Patent Owner opted not to maintain this dispute in the Patent Owner Response. “Once a trial is instituted, the Board may decline to consider arguments set forth in a preliminary response unless they are raised in the patent owner response.” Consolidated Trial Practice Guide (Nov. 2019) (CTPG)⁶, 52 (citing *In re NuVasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016)).

Thus, Petitioner’s POSITA formulation stands unrebutted. We also determine that it 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 Petitioner’s formulation of the POSITA.

C. Petitioner’s Motion to Exclude Evidence

Petitioner has moved to exclude Mr. Farley’s declaration (Exhibit 2005) providing testimony on behalf of Patent Owner. *See* Papers 32 & 34. Patent Owner has opposed. Paper 33.

The parties disagree as to who bears the burden of persuasion concerning Petitioner’s motion. Petitioner asserts that Patent Owner must demonstrate the admissibility of Mr. Farley’s testimony by a preponderance of the evidence because Patent Owner is the proponent of this testimony. *See* Paper 32, 2–3 (citing *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S.

⁶ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

579, 592 n.10 (1993)); Paper 34, 1. Patent Owner asserts “Petitioner bears the burden to show that it is entitled to the relief requested under 37 C.F.R. § 42.20(c).” Paper 33, 1.

We need not resolve this dispute regarding the party having the burden. We conclude that, even if Patent Owner bears the burden of persuasion, Patent Owner has met that burden. Therefore, we deny Petitioner’s motion. Petitioner asserts three bases for the motion, which we consider in turn.

1. Mr. Farley’s Knowledge and Experience

Petitioner asserts “Mr. Farley’s knowledge and experience is below the level of ordinary skill in the art” that we adopt in this Decision. Paper 32, 1; *see supra* Section II.B (POSITA formulation). Petitioner therefore urges us to exclude Mr. Farley’s testimony under Fed. R. Evid. 702. Paper 32, 1.

Pursuant to Fed. R. Evid. 702:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

“A person may not need to be a person of ordinary skill in the art in order to testify as an expert under Rule 702, but rather must be ‘qualified in the pertinent art.’” CTPG 34 (citing *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363–64 (Fed. Cir. 2008)).

Petitioner asserts Mr. Farley lacks qualifications “in *the location-based field*” of the ’901 patent and the prior art at issue here, as set forth in our POSITA formulation. Paper 32, 4 (emphasis added); *see supra* Section II.B (a POSITA has “at least two years of experience in the development of location-based services or software applications”). According to Petitioner: “Mr. Farley admitted that he does not have *any* experience in the development of location-based services or software applications,” despite claiming that he was “at least a [POSITA].” Paper 32, 4–5 & n.1 (emphasis by Petitioner) (citing Ex. 1031, 275:21–25; Ex. 2005 ¶ 26).

Petitioner contends that, while “Mr. Farley may have experience in ‘testing submitted systems for compliance with established rules and regulations,’” this does not qualify him as an expert “in the location-based service or software application field” of the ’901 patent. *Id.* at 5 (citing Ex. 2005 ¶ 11; *Lebron v. Sec’y of Fla. Dep’t of Children & Families*, 772 F.3d 1352, 1368 (11th Cir. 2014)). In particular, according to Petitioner, “merely *testing* gaming applications is an entirely different endeavor than developing applications that leverage location-based services and applications,” and Mr. Farley testified that his experience with testing game systems does not qualify him as an expert in the field of the ’901 patent. *Id.* at 5–6 (emphasis by Petitioner) (citing Ex. 1031, 54:4–6).

Patent Owner responds that Petitioner’s motion improperly addresses the weight to be given to Mr. Farley’s testimony, rather than its admissibility. *See* Paper 33, 2–4 (citing, *inter alia*, *MindGeek, s.a.r.l. v. Skky Inc.*, IPR2014-01236, Paper 45 at 23 (PTAB Jan. 29, 2016)).

Patent Owner further contends that Mr. Farley’s knowledge and experience qualify him to testify from the perspective of a POSITA. *See id.* at 4–8. Patent Owner describes the ’901 patent as “directed to advances in wager-based gaming,” and contends that “[w]hile a technical understanding of general location-based applications may be valuable, an ordinary artisan in the relevant field would also understand and be familiar with wager-based gaming, including regulations, restrictions, and incentives pertinent to the gaming industry.” *Id.* at 4 (citing Ex. 1001, 1:25–27, 3:40–47, 14:55–15:13). The principal prior art references at issue here (Wells and Harkham) are “wager-based gaming references,” and Petitioner’s obviousness rationales are “rooted directly in wager-based gaming,” according to Patent Owner. *Id.* at 4–5 (citing Pet. 17–18, 73, 84). Our POSITA formulation also incorporates experience with wager-based gaming. *See id.* at 5; *supra* Section II.B (POSITA has “at least some coursework or other experience in the wager based gaming industry”).

Patent Owner also asserts “Mr. Farley’s testimony is based on his technical expertise and specialized knowledge of wager-based gaming systems.” Paper 33, 6 (citing Ex. 2005 ¶¶ 23–26). According to Patent Owner, “Mr. Farley is familiar with location-based services and software applications as applied to mobile gaming devices.” *Id.* at 6–7 (citing Ex. 1031, 41:20–42:25, 243:21–244:14). And Patent Owner contends that “Petitioner’s attempts to twist Mr. Farley’s words against him are misleading and irrelevant.” *Id.* at 7–8 (discussing Ex. 1031, 54:4–6, 40:25–41:12, 55:13–58:4, 243:21–244:14). Patent Owner contends that Mr. Farley has not had experience developing online gaming systems “not because he is unable

to do so,” but “because he is a certified independent compliance evaluator” so it would be unethical for him to do so. *Id.*

Petitioner replies that the motion properly challenges the admissibility of Mr. Farley’s testimony, not merely the weight to be given to it. *See* Paper 34, 3 n.1. Petitioner also insists that Mr. Farley’s experience in testing and evaluating electronic gaming devices that employ location-based services does not qualify him as an expert to testify concerning the development of location-based applications and services. *See id.* at 4–5 (citing Ex. 1031, 275:21–25).

Upon review of the foregoing, we note first that the nature and extent of Mr. Farley’s education and experience pertaining to the field of the ’901 patent are not in dispute. Mr. Farley earned a Bachelor of Engineering degree in Electrical Engineering and Computer Science from Stevens Institute of Technology in 1987. Ex. 2005 ¶ 4, Att. A (pg. 2). Since then, he has accumulated over 33 years of experience in testing and evaluation of electronic gaming devices, pursuant to which he has examined thousands of such devices, including mobile and online gaming systems. *Id.* ¶¶ 6–7, 9, 13, Att. A (pgs. 1–2). In 2000, he founded Eclipse Compliance Testing, “an independent full service regulatory compliance test laboratory and electronic gaming device consulting organization,” where he is the President. *Id.* ¶ 5, Att. A (pg. 1). He tests gaming devices and systems for compliance with “regulatory requirements . . . for variables, such as player location, identity, and age” when using “mobile phone apps,” as well as government classification of gaming systems. *Id.* ¶¶ 7–8, 11. Mr. Farley has “been called upon as an expert witness in dozens of litigations to assist triers of

fact in determining game classification, permissibility and legal status of a variety of gaming devices and systems.” *Id.* ¶ 10, Att. A (pgs. 3–13).

Further, “now that the majority of mobile gaming is conducted on cellular telephones, most of [Mr. Farley’s company’s] testing is focused on the mobile gaming application software.” *Id.* ¶ 12. Thus, his experience includes testing whether mobile gaming systems comply “with geolocation and geofencing requirements to ensure that mobile gaming occurs only where permitted and does not occur where it is prohibited.” *Id.* ¶ 13.

Based on this education and experience, we conclude Mr. Farley is qualified as an expert to testify in the form of opinions concerning a POSITA’s knowledge and understanding in relation to the ’901 patent, Wells, Harkham, and the other prior art references at issue in this proceeding. This is because he possesses technical and other specialized knowledge that will help us, as the trier of fact, to understand the evidence and determine facts in issue. *See* Fed. R. Evid. 702(a). There is “no requirement of a perfect match between the expert’s experience and the relevant field.” CTPG 34 (citing *SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010)).

In particular, Mr. Farley’s extensive experience in testing mobile gaming systems for compliance with regulatory requirements, including player verification and location verification, are directly pertinent to the issues presented here. This is reflected, in part, by our formulation of a POSITA as having “at least some coursework or other experience in the wager based gaming industry.” *See supra* Section II.B. Petitioner instead focuses on another POSITA qualification, “at least two years of experience in the development of location-based services or software applications.” *See*

id. Petitioner is correct that Mr. Farley has no experience in *developing* location based applications and services. *See, e.g.*, Ex. 1031, 53:22–54:6, 275:21–25. Nonetheless, his extensive experience *testing* such systems, in the particular context of mobile gaming devices, provides him with technical and other specialized knowledge that will help us to understand the evidence and determine facts in issue.

The minimal gap here between Mr. Farley’s experience and our POSITA formulation does not justify jettisoning the entirety of Mr. Farley’s testimony, as Petitioner urges us to do. The remainder of Petitioner’s attack on Mr. Farley’s qualifications addresses the weight to be given Mr. Farley’s testimony, as opposed to its admissibility. We have considered his testimony, and assigned the appropriate weight to it in view of his background and the information being offered.

For the foregoing reasons, we deny Petitioner’s motion to exclude the entirety of Mr. Farley’s testimony on the basis that he lacks expert qualifications under Fed. R. Evid. 702.

2. *Evidentiary Support for Mr. Farley’s Opinions*

Petitioner asserts “Mr. Farley’s opinions are entirely unsupported and technically inaccurate,” so we should exclude his opinions under Fed. R. Evid. 702. Paper 32, 1. In support, Petitioner contends Mr. Farley “does not cite to even one document outside of Petitioner’s prior art references that might corroborate his opinions or otherwise demonstrate that they are grounded in ‘sufficient facts or data’ or that they are the ‘product of reliable principles and methods.’” *Id.* at 6–7 (quoting Fed. R. Evid. 702, and citing 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”)).

Petitioner particularly objects to “Mr. Farley’s opinions as to the operation of GPS systems.” Paper 32, 7. According to Petitioner, “Mr. Farley relied on his (incorrect) belief that a GPS system can use ‘bidirectional communication’ (Mr. Farley’s own words) to report back the location of a device outside of the casino in offering his opinions as to the combination of Wells and Bahl.” *Id.* (citing Ex. 1031, 243:23–25; PO Resp. 15–17). Petitioner argues that it submitted testimony of Mr. Williams “to debunk this notion” and that “Mr. Farley’s entire opinion regarding the combination of Wells and Bahl is based on this incorrect understanding of GPS systems.” *Id.* (citing Ex. 2005 ¶¶ 49–53; Ex. 1033 ¶¶ 11–14).

Patent Owner responds that Petitioner’s motion improperly challenges the sufficiency, rather than the admissibility, of Mr. Farley’s testimony. *See* Paper 33, 2 (citing CTPG 79). Patent Owner asserts Petitioner “misses the point” in noting that Mr. Farley did not cite to documents outside of the Petition’s prior art, because “[t]here is no requirement that Mr. Farley cite to documents outside of the references raised by Petitioner in its alleged grounds.” *Id.* at 9. According to Patent Owner: “Mr. Farley’s background and experience in the wager-based gaming industry, including experience with location-based technologies and applications, provides sufficient basis for his opinions.” *Id.* (citing Ex. 2005 ¶ 2; Ex. 1031, 41:20–42:25, 243:21–244:14).

Petitioner replies that the motion properly challenges the admissibility of Mr. Farley’s testimony, not merely the weight to be given to it. *See* Paper 34 n.1. Petitioner also maintains that Patent Owner’s opposition “fail[s] to overcome Mr. Farley’s own admissions showing that he is not qualified to offer expert testimony in this proceeding.” *Id.* at 3.

We first agree with Patent Owner’s position that Mr. Farley’s education and experience qualify him as an expert to testify in the form of opinions concerning what would have been technologically known and available to a POSITA in relation to the ’901 patent, Wells, Harkham, and the other prior art references at issue in this proceeding. *See supra* Section II.C.1. In particular, his testimony concerning the state of relevant technological developments within the field of endeavor that may inform a POSITA’s understanding and application of the prior art at issue here does not need corroboration by other documentary evidence to be admissible under Fed. R. Evid. 702. To the extent Petitioner argues otherwise, Petitioner addresses the weight to be given Mr. Farley’s testimony, as opposed to its admissibility. *See, e.g.*, CTPG 79 (“A motion to exclude . . . may not be used to challenge the sufficiency of the evidence to prove a particular fact” and “is not a vehicle for addressing the weight to be given evidence.”). We have considered his testimony, and assigned the appropriate weight to it in view of his background and the information being offered.

That leaves Mr. Farley’s specific opinion concerning how a GPS system communicates. Patent Owner argues that Mr. Farley understands the operation of GPS systems and, specifically, how such a system was used in Wells. Paper 33, 10. Patent Owner further argues that Petitioner’s request to exclude all of Mr. Farley’s testimony concerning GPS systems mischaracterizes Mr. Farley’s testimony and focuses on one word—“bidirectional”—taken out of context. *See id.*

The subject exchange, made during the cross-examination of Mr. Farley, is as follows.

Q. Well, in your expertise, do you know how GPS communicates or determines location?

A. I know there's some sort of bidirectional communication to make it work through the satellites. After that, it's not my area. I mean, I'm an expert and I understand how it works in the gaming environment. I understand how geolocation, geofencing work and how that needs to be tuned, but how it actually physically gets implemented, it's not part of what we do in testing. But I do understand that there has to be some sort of communications back and forth between a device for it to know where it is because the device has to, you know, they have to ping each other.

Q. What has the ping each other?

A. The satellite and the device.

Ex. 1031, 243:21–244:14. In contrast, Mr. Williams testifies, in a supplemental declaration, that GPS systems use a one-way transmission of satellite position and timing information, from the satellites to the receiver.

Ex. 1033 ¶ 12.

Although Petitioner's criticism of Mr. Farley's testimony on this very specific point about GPS communications may be warranted, we find that the testimony on that point does not merit excluding the entirety of Mr. Farley's opinions regarding the use of GPS in gaming systems or the combination of Wells and Bahl, as Petitioner urges. Thus, we conclude Mr. Farley's testimony should not be excluded under Fed. R. Evid. 702. This rule serves "a 'gatekeeping role,' the objective of which is to ensure that expert testimony admitted into evidence is both reliable and relevant." *Sundance*, 550 F.3d at 1360; *see also Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999) ("Federal Rule of Evidence 702 imposes a special obligation upon a trial judge to 'ensure that any and all scientific testimony . . . is not only relevant, but reliable'" (quoting *Daubert*, 509 U.S. at 589), which is a "basic gatekeeping obligation"). The policy

considerations for excluding expert testimony, such as those implemented by *Daubert*'s gatekeeping framework, are less compelling in bench proceedings such as *inter partes* reviews than in jury trials because, unlike a lay jury, the Board by statutory definition has competent scientific ability (35 U.S.C. § 6) and has significant experience in evaluating expert testimony. *See, e.g., Donnelly Garment Co. v. NLRB*, 123 F.2d 215, 224 (8th Cir. 1941) (“One who is capable of ruling accurately upon the admissibility of evidence is equally capable of sifting it accurately after it has been received . . .”). Accordingly, the danger of prejudice in this proceeding is considerably lower than in a lay jury trial.

The Board acts as both the gatekeeper of evidence and the weigher of evidence. Rather than excluding the GPS-related testimony as lacking expert qualification, we will keep in mind Mr. Farley's statement about bidirectional communications and will give his opinions concerning the use of GPS in gaming systems the appropriate weight in our analysis. We therefore deny Petitioner's motion to exclude this testimony.

3. Relevant Time Frame for Considering Obviousness

Petitioner asserts “Mr. Farley only analyzes Petitioner's asserted prior art references at the time the references were *filed*—not ‘the time the invention was made’ as required under 35 U.S.C. § 103(a).” Paper 32, 1. Petitioner therefore urges us to exclude “Mr. Farley's opinions regarding the asserted references” as being irrelevant to obviousness under Fed. R. Evid. 402. Paper 32, 1.

Pursuant to Fed. R. Evid. 402, relevant evidence is admissible and irrelevant evidence is not admissible. Further, evidence is relevant if “it has any tendency to make a fact more or less probable than it would be without the evidence” and “the fact is of consequence in determining the action.”

Fed. R. Evid. 401. And, the obviousness inquiry asks whether “the subject matter as a whole would have been obvious *at the time the invention was made.*” 35 U.S.C. § 103(a) (emphasis added).

Petitioner asserts “Mr. Farley’s entire opinion is offered from the improper perspective of the time that each one of Petitioner’s asserted prior art references was *filed,*” rather than the time the ’901 patent’s invention was made. Paper 32, 8–10 (emphasis by Petitioner) (citing Ex. 1031, 43:6–15, 151:19–152:6). In Petitioner’s view, Mr. Farley’s deposition testimony “repeatedly and convincingly disavowed” his declaration testimony, which correctly describes the time frame for the obviousness inquiry. *Id.* at 9 n.2 (citing Ex. 2005 ¶ 17). Petitioner concludes “[a]ssessing obviousness from the filing date of the prior art references in conducting an obviousness analysis is improper as a matter of law,” so Mr. Farley’s opinions on obviousness should be excluded as irrelevant. *Id.* at 9–10 (citing *Comcast Cable Commc’ns Corp. v. Finisar Corp.*, 571 F. Supp. 2d 1137, 1145 (N.D. Cal. 2008), *aff’d sub nom. Comcast Cable Commc’ns, LLC v. Finisar Corp.*, 319 F. App’x 916 (Fed. Cir. 2009)).

Patent Owner responds that Petitioner’s motion improperly challenges the sufficiency, rather than the admissibility, of Mr. Farley’s testimony. *See* Paper 33, 2 (citing CTPG 79), 13–14 (discussing Fed. R. Evid. 401 & 402). Patent Owner also asserts that Mr. Farley applies the proper obviousness analysis. *See id.* at 13. Patent Owner accuses Petitioner of mischaracterizing Mr. Farley’s deposition testimony, which, “[w]hen viewed in context . . . shows that he properly considered the teachings of *Wells*, *Bahl*, and *Harkham* at the relevant point in time.” *Id.* (discussing Ex. 1031,

38:1–11). Mr. Farley’s declaration is to the same effect, according to Patent Owner. *See id.* (citing Ex. 2005 ¶¶ 16–22).

Petitioner replies that “Patent Owner strains to salvage Mr. Farley’s opinions . . . but to no avail,” because “Mr. Farley’s testimony speaks for itself” and supports Petitioner’s argument. Paper 34, 1–2 (citing Ex. 1031, 38:25–39:5, 39:20–40:9, 43:6–15, 118:16–23, 151:19–152:6).

Upon review of the foregoing, we conclude Mr. Farley’s declaration reflects the correct legal standard, in stating that “a patent claim is unpatentable as obvious 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 in that field of endeavor.” Ex. 2005 ¶ 16 (emphasis added). Mr. Farley, for purposes of his testimony, assumes that the time of the invention is July 2005. *Id.* ¶ 17; *see also* Pet. 2 (“Petitioner assumes without conceding that the ’901 Patent is entitled to a priority date of July 8, 2005.”); Ex. 1001, code (60), 1:5–13.

Thus, we turn to Mr. Farley’s deposition testimony, to discern whether it supports Petitioner’s contention that Mr. Farley, in fact, evaluated obviousness at the time of Petitioner’s relied-on references. During the deposition, a hypothetical question was presented to Mr. Farley: “I might have a prior art reference from 2000 and another prior art reference from 2005, and I’m applying those prior art references to see if a patent filed in 2010 is obvious. Do you understand that?” Ex. 1031, 36:19–24. Mr. Farley answered “Yes.” *Id.* at 36:25. A short while later, Mr. Farley was asked: “[W]hen I’m evaluating obviousness, what is the timeframe that I’m looking to see *whether the subject patent is obvious?*” *Id.* at 38:2–4 (emphasis

added). He answered: “My understanding . . . is at *the time of the application for the patent*,” which he specified as “[t]he 2000 patent would be 2000” and “[t]he 2005 patent would be 2005.” *Id.* at 38:5–11 (emphasis added). We agree with Patent Owner’s position (Paper 33, 13) that this testimony reflects a correct understanding of the obviousness inquiry as directed to the time when “the subject patent”—that is, the patent being challenged as having been obvious—was filed as an application, and is consistent with his approach of using July 2005 in his analysis regarding the ’901 patent.

Petitioner’s counsel then referred Mr. Farley to “the Nguyen patent” (which is a prior art reference at issue in IPR2020-01109) filed on November 3, 2004, and asked: “[W]hen evaluating obviousness, a person of ordinary skill in the art would consider Nguyen as of what one would know in or on November 3, 2004; is that right?” Ex. 1031, 38:12–39:4. He answered “Yes.” *Id.* at 39:5–8. Petitioner asserts this testimony reflects an incorrect understanding of the obviousness inquiry as directed to the time when the prior art was filed, rather than the time when the challenged patent was filed. *See* Paper 34, 1.

We conclude Mr. Farley’s testimony is equivocal on this issue. The questions asked could very well have been understood to be hypothetical questions concerning the proper time frame applied if “the Nguyen patent” was the patent being challenged, rather than the ’901 patent. Counsel’s reference to “when evaluating obviousness” (Ex. 1031, 38:25–39:2) is too vague to tie the question to obviousness of the ’901 patent, rather than obviousness of the Nguyen patent. The following questions concerning Lewin (another prior art reference at issue in IPR2020-01109) fare no

better—the vague references to “an obviousness analysis” and “in your evaluation of obviousness or in any evaluation of obviousness” do not clearly tie the questions to obviousness of the ’901 patent. *See id.* at 39:9–40:10.

Indeed, Petitioner’s counsel returned to this topic later in the deposition, asking Mr. Farley:

Q. . . . So I recognize that, you know, earlier we were talking about the Nguyen and Lewin patents with respect to the date of your consideration of them. With respect to, I guess, all of the patents, is it true that in your analysis you analyzed all of the references from the perspective of what a person of ordinary skill in the art would understand as of the date of the prior art references’ filing dates?

[Objection]

A. Yes, I did take it from the perspective of a person of ordinary skill in the art at the time of the filings.

Ex. 1031, 43:2–15. Immediately following that exchange, Petitioner’s counsel asked: “And so, in your analysis, you never considered what would one of ordinary skill in the art in 2010, for example, think of the Nguyen reference; is that right?” *Id.* at 43:16–20. Mr. Farley answered:

I think the Nguyen reference—its relevance is at the time that it was filed. I mean, *technology advanced in 2010, so to try and use 2010 technology against a patent that was filed back in 2004 would be displaced.* There’s no way in 2004 you can anticipate what technological advances would be made six years later.

Id. at 43:21–44:4 (emphasis added). Here, Mr. Farley seemed to understand the question to ask whether it would have been appropriate to use 2010 technology to challenge a patent that was filed in 2004 (such as Nguyen) as having been obvious. He correctly answered that question in the negative.

This testimony, again, is equivocal regarding whether Mr. Farley applied the correct time frame in his obviousness analysis of the '901 patent.

Another series of questions was directed to the scope of Nguyen's disclosure. Specifically, Mr. Farley testified concerning the capabilities of mobile phone technology at the time Nguyen was filed in 2004. *See* Ex. 1031, 108:12–118:23. Mr. Farley opined that mobile phone technology in 2004 would not permit a *single* cellular telephone to connect to an internet casino to play games *and* to determine the user's location, so *separate* cellular telephones would have been required to perform both of those functions. *See, e.g., id.* at 108:12–109:19, 117:24–25. Petitioner's counsel asked: "If Nguyen was filed in 2010, and we were looking at it from the context of 2010, wouldn't you say that it would be obvious to have one single device that performs both the gaming functions and the account verification functions?" *Id.* at 118:2–7. Mr. Farley objected to the question as a "hypothetical" and then returned to his focus on mobile phone technology in 2004 and Nguyen's disclosure in 2004. *See id.* at 118:8–15. Petitioner cites the succeeding discussion in which Mr. Farley confirmed his testimony as to what Nguyen disclosed was "looking at Nguyen . . . in 2004." *Id.* at 118:16–23; *see* Paper 34, 1 (citing Ex. 1031, 118:16–23).

This testimony is, again, equivocal regarding whether Mr. Farley applied the correct time frame in his obviousness analysis of the '901 patent. Viewed most favorably to Petitioner, Mr. Farley does appear to have been unwilling to view Nguyen's disclosure outside of the 2004 time frame when Nguyen was filed. But, as with his previous testimony, the questions posed here to Mr. Farley were not clearly tied to obviousness of the '901 patent.

The final question cited in Petitioner’s motion pertained to the three related proceedings in which we instituted review (*see supra* Section I.B) and asked: “[W]ould you say that it’s accurate that in your analysis you considered each of those references from the perspective of what one of ordinary skill in the art would have known at the time that the references themselves were filed?” Ex. 1031, 151:19–152:3. Mr. Farley answered: “That’s the perspective I tried to take, is one of ordinary skill in the art at the time that those patents were filed.” *Id.* at 152:4–6. This testimony is, again, equivocal regarding whether Mr. Farley applied the correct time frame in his obviousness analysis of the ’901 patent.

The central difficulty with all of the deposition testimony cited by Petitioner in support of the motion to exclude is that the questions were too vague and generalized to put them into the context of asking about the time frame Mr. Farley applied when reaching a conclusion as to obviousness of the ’901 patent. This lack of clarity in his deposition testimony makes us unable to conclude that Mr. Farley applied the incorrect time frame, when his declaration states clearly that he applied the correct time frame.

Thus, we deny Petitioner’s motion to exclude the entirety of Mr. Farley’s testimony on the basis that he misapplied the law of obviousness.

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).

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 proposes a construction for “calibration device.” Pet. 9–10. Patent Owner does not dispute Petitioner’s proposed construction or propose a construction for any other term.

On this record, we determine that no claim term requires express construction.

*E. The Alleged Obviousness of 1–5, 7–22, 26, and 27
Over Wells and Bahl (Ground 1)*

Petitioner alleges that claims 1–5, 7–22, 26, and 27 of the ’901 patent would have been obvious over Wells and Bahl. *See* Pet. 17–47 (addressing independent claims 1 and 27). Petitioner contends that Wells discloses the aspects of the challenged claims concerning wagering activity, including the time-related limitations, and the use of GPS-based location determinations. *See, e.g., id.* at 17–20. Petitioner turns to Bahl for teachings concerning location determination through the use of a wireless network, *see, e.g., id.*, and argues, *inter alia*, that the proposed combination of teachings “would have involved simple substitution (or repurposing) of Wells’ existing network infrastructure,” *id.* at 20. Patent Owner argues, *inter alia*, that Petitioner “fails to address” the “cumulative amount of time” limitations of independent claims 1 and 26, PO Resp. 2–3, that Petitioner’s proposed combination is improper because it would eliminate a feature of Wells, and

that Petitioner has provided flawed reasoning why a person of ordinary skill in the art would be motivated to make the proposed combination, *see id.* at 18–25.

1. *Wells (Ex. 1004)*

Wells discloses a wireless game player that may be used anywhere within the legal areas of the casino and that has the capability of identifying who is using the game player. Ex. 1004 ¶ 11. Wells explains that the industry was concerned with ensuring compliance with gaming regulations while allowing game playing opportunities beyond the traditional casino floor. *Id.* ¶¶ 6–7.

Besides regulating gaming hardware and software, a gaming jurisdiction may regulate many other aspects of gaming including where games of chance are played (e.g. casinos, stores, restaurants and other venues), who may participate in game play (e.g. enforcing age restrictions) and where regulated gaming machines may be located (e.g. particular areas of a casino). To obtain an operating license, a casino is required to adhere to the rules and regulations of the gaming jurisdiction in which it is located. Further, a licensed casino that fails to adhere to local gaming regulations may have its operating license revoked.

Id. ¶ 6.

Wells discloses the implementation of certain limitations on game play, some based on location as determined by GPS and others based on time of activity or inactivity.

The gaming machine may terminate a wireless game play session as a result of a number of events. For example, the gaming machine may track the location of the wireless game player using a GPS device located in the game player. When the wireless game player enters an area not authorized for wireless game play, the gaming machine may terminate the wireless game play session. As another example, the gaming

machine may terminate a wireless game play session after a certain [number] of games, after a certain amount of time or after a period of inactivaty [sic].

Id. ¶ 110⁷; *see also id.* ¶ 45 (“Position verification [by GPS] may be used to insure the wireless game player is used only in legal gaming areas of the casino When the gaming machine detects that the wireless game player is in a restricted area, it may discontinue communications with the wireless game player.”). Also, “there may be a non-play time limit.” *Id.* ¶ 46. “Once this time is exceeded, a verification and authentication cycle or process must be performed.” *Id.*

Figure 3 of Wells is reproduced below.

⁷ *See* Tr. 42:3–16 (Petitioner recognizing the omission of the word “number” and the misspelling of “inactivity”), 116:11–19 (Patent Owner recognizing the same).

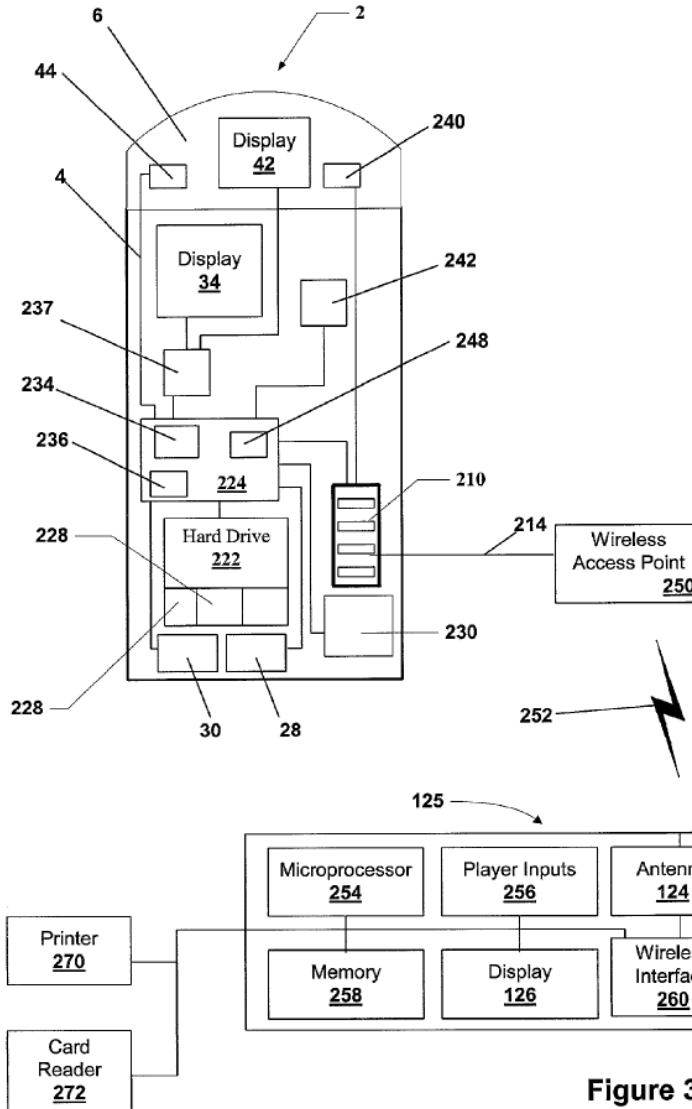


Figure 3

Figure 3 is a block diagram of the internal components of gaming machine 2 and wireless game player 125. *Id.* ¶ 76. “The master gaming controller 224 may communicate with the wireless game player 125 via a wireless communication link 252.” *Id.*

In addition to an embodiment where the wireless game player is an extension of the gaming machine on the casino floor, Wells discloses rack-mounted wireless-only gaming machines 435 connected to a wireless network and that may support game play on wireless game players. *Id.* ¶ 103. “As another example, a wireless game player server 430 with

multiple processors may be used to support simultaneous game play on a plurality of wireless game players.” *Id.* Figure 4 is reproduced below.

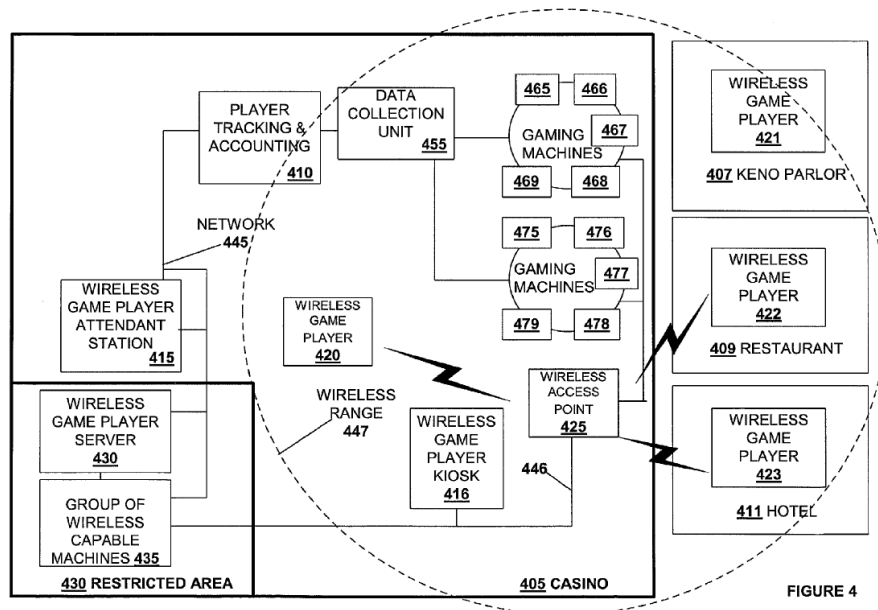


FIGURE 4

“Figure 4 a block diagram of a network of gaming machines and wireless game players.” *Id.* ¶ 31.

2. Bahl (Ex. 1005)

Bahl “relates generally to determining the location of an object and tracking the object and, more particularly, relates to locating and tracking a user of a wireless network.” Ex. 1005, 1:8–11. Bahl explains that GPS systems are “severely limited in an indoor environment” due to the lack of unobstructed view to the satellites. *Id.* at 1:20–26. Additionally, satellite signals for civilian GPS units are purposefully degraded for national security purposes such that “the resolution provided by the system is no more than 100 meter for civilian users.” *Id.* at 1:31–34. According to Bahl, “[t]his coarse resolution is inadequate for many applications and compounds the problem of the ineffectiveness of GPS indoors.” *Id.* at 1:35–37.

Bahl addresses these concerns with a locating and tracking system in a building without specialized infrastructure. *Id.* at 1:66–2:2. Specifically,

Bahl is “directed to a system for locating and tracking a user in a building using the existing Radio-Frequency (RF) Wireless Local Area Network (WLAN) infrastructure.” *Id.* at 2:3–6.

Bahl discloses the use of the signal sensing ability of both the WLAN base station and the mobile device to determine the location of the mobile device. *Id.* at 2:7–14. “The strength of the received signal from several base stations is measured by the mobile device,” which “compares the signal strength from each of the base stations to a pre-computed table containing the base stations’ signal strength at various known locations of the mobile device” and thereby determines the location of the mobile device. *Id.* at 2:14–20. Alternatively, the signal strength from the mobile device can be measured at a number of base stations and compared to a pre-computed table to determine the location of the mobile device. *Id.* at 2:20–27.

3. *The Alleged Obviousness of Independent Claim 27 in View of Wells and Bahl*

a. *[27 pre.] A method comprising:*

The preamble of independent claim 27 recites a method. Petitioner asserts, and we agree, that Wells discloses both a method and an apparatus. Pet. 21–22 (citing Ex. 1004, code (57) (Abstract), ¶ 10; Ex. 1003 ¶ 80).

b. *[27a] before using a communication device to play games through a wireless communication network, associating, by a computing device, each of a plurality of sets of signal characteristics with a respective location,*

Petitioner asserts that Wells discloses wireless game player 125 (mapped to the “communication device”) that can be used throughout a casino through wireless communication network 252. Pet. 22–23 (citing Ex. 1004 ¶¶ 7, 34, 107, Fig. 3; Ex. 1003 ¶¶ 81–82). Petitioner further asserts

that Wells discloses a position verification process that is utilized for compliance with gaming regulatory restrictions while still allowing mobile gaming opportunities, and that the position verification is determined by GPS. *Id.* at 23–25 (citing Ex. 1004 ¶¶ 4, 6, 8, 37, 45–46; Ex. 1003 ¶¶ 83–86). Petitioner contends that a person of ordinary skill in the art would have understood that location determination technology had advanced in the time between that of Wells and the '901 patent. *Id.* at 25 (citing Ex. 1003 ¶ 87).

Petitioner turns to Bahl, asserting that it teaches locating a mobile computer by utilizing a correlation of location to signal strength between base stations and the mobile computer. *Id.* at 25–26 (citing Ex. 1005, 5:48–6:25, Fig. 3; Ex. 1003 ¶¶ 88–89). Petitioner argues that each of the signal-to-noise ratios (“SNR”) of radio-frequency (“RF”) signals, as disclosed in Bahl, is a set of signal characteristics and that a person of ordinary skill in the art “would have understood that each set of SNR measurements for a given location as taught by Bahl (*i.e.*, each row of 3 SNR measurements from Table 1) is also a set of signal characteristics.” *Id.* at 26–27 (citing Ex. 1005, 4:60–63, 6:25, Table 1; Ex. 1003 ¶ 90). Thus, argues Petitioner, Bahl teaches associating each of a plurality of sets of signal characteristics with a respective location, as recited by claim 27. *Id.* at 27 (citing Ex. 1003 ¶ 90); *see also id.* at 29 (“[T]he combination of Wells and Bahl—namely, associating a plurality of sets of signal characteristics with a respective location, as taught by Bahl, before the wireless gaming device is used to play games, as taught by Wells—disclose this limitation.”).

We understand Patent Owner to not dispute Petitioner’s contentions regarding this limitation, other than the reasoning to combine the references’ teachings. *See* PO Resp. 20–25 (Patent Owner’s arguments regarding

Petitioner's reasoning); *id.* at 10–11 (arguing that the “cumulative time” limitation, which is a limitation in independent claims 1 and 26 but not independent claim 27, is not present in Petitioner's proposed combination). We address below Patent Owner's arguments in that regard.

Based on the arguments and evidence presented by Petitioner, summarized above, we find that Petitioner persuasively shows that the combination of Wells and Bahl teaches or suggests the recited step of, “before using a communication device to play games through a wireless communication network, associating, by a computing device, each of a plurality of sets of signal characteristics with a respective location.”

c. [27b] each set of signal characteristics including a respective plurality of signal characteristics and each signal characteristic of a respective plurality of signal characteristics corresponding to a signal between a device and a wireless network device;

Petitioner, relying on the testimony of Mr. Williams, asserts that a person of ordinary skill in the art would have understood that each SNR measurement of Bahl includes a plurality of signal characteristics in that “SNR was a well-known metric that expressed the ratio of at least two individual signal characteristics: (1) the average power of the information signal component and (2) the average power of the noise component.” Pet. 30 (citing Ex. 1005, 4:60–63; Ex. 1011, 4; Ex. 1003 ¶ 95). Petitioner also asserts that Bahl's Table 1 further evidences that each set of SNR measurements includes a plurality of signal characteristics. *Id.* (citing Ex. 1003 ¶ 95). Additionally, Petitioner points to Bahl's Figures 2 and 4 as support for the arguments that Bahl's system includes the several devices recited in claim 27 and that the signal characteristics include those for a signal between a “device” and a wireless network device, as recited in the

claim. *Id.* at 31–33 (citing Ex. 1005, 1:66–2:6, 4:51–53, 5:64–6:2, Figs. 2, 4; Ex. 1003 ¶¶ 96–98). As mentioned above, Petitioner maps Wells’ wireless game player 125 to the recited “communication device.” *See id.* at 32.

We understand Patent Owner to not dispute Petitioner’s contentions regarding this limitation, other than the reasoning to combine the references’ teachings. We address below Patent Owner’s arguments in that regard.

Based on the arguments and evidence presented by Petitioner, summarized above, we find that Petitioner persuasively shows that the combination of Wells and Bahl teaches or suggests the recited, “each set of signal characteristics including a respective plurality of signal characteristics and each signal characteristic of a respective plurality of signal characteristics corresponding to a signal between a device and a wireless network device.”

d. [27c] determining a location of the communication device by comparing, by the computing device, a set of signal characteristics involving the communication device and a plurality of wireless network devices to the prior associated sets of signal characteristics;

Petitioner asserts that “Bahl teaches using a signal strength table to determine the position of a mobile computer.” Pet. 33 (quoting Ex. 1005, 6:52–61). Petitioner argues that Bahl thus teaches comparing signal characteristics of signals between mobile computer 78 (communication device) and base stations 72, 74, 76 against characteristics of signals between mobile computer 20 (the “device” of limitation 27b) and the base stations to determine a location of mobile computer 78. *Id.* (citing Ex. 1003 ¶ 99).

We understand Patent Owner to not dispute Petitioner's contentions regarding this limitation, other than the reasons to combine the references' teachings. We address below Patent Owner's arguments in that regard.

Based on the arguments and evidence presented by Petitioner, summarized above, we find that Petitioner persuasively shows that Bahl teaches or suggests the recited, "determining a location" step.

e. [27d] wherein a gaming functionality of the communication device is enabled based upon the determined location; and

Petitioner asserts that Wells teaches that a wireless game player can be used in various areas of a casino, but that regulations prohibit gaming in certain of those areas. Pet. 34–35 (citing Ex. 1004 ¶¶ 4, 6, 8, Fig. 4; Ex. 1003 ¶ 103). According to Petitioner, "[i]n order to comply with these regulations, Wells teaches that verification processes, including 'position verification' which 'verif[ies] location of the device' and 'insure[s] the wireless game player is used only in legal gaming areas of the casino,' are 'required to start every wireless game play session' on the wireless game player." *Id.* at 35 (citing Ex. 1004 ¶¶ 45–46; Ex. 1003 ¶ 103) (second and third alterations in original).

Patent Owner does not dispute Petitioner's contentions regarding this limitation. We find that, based on the arguments and evidence presented by Petitioner, summarized above, Petitioner persuasively shows that Wells teaches or suggests the recitation that "gaming functionality of the communication device is enabled based upon the determined location."

f. [27e] disabling the wagering functionality in response to a period of non-use of the communication device.

Petitioner asserts that "Wells also teaches that gaming is terminated on the device if the device is 'inactive' or not used for a period of time," and

“a ‘non-play time limit’ that terminates a gaming session and requires ‘a verification and authentication cycle’ in order to restart gaming.” Pet. 36 (citing Ex. 1004 ¶¶ 46, 110; Ex. 1003 ¶¶ 106–107). Wells discloses that “the gaming machine may terminate a wireless game play session . . . after a period of inactivaty [sic].” Ex. 1004 ¶ 110; *see also id.* ¶ 46 (“[T]here may be a non-play time limit. Once this time is exceeded, a verification and authentication cycle or process must be performed. . . . When verification and authentication requirements are not satisfied during a wireless game play session, the game play session will typically be terminated.”).

Patent Owner does not dispute Petitioner’s contentions regarding this limitation. We find that, based on the arguments and evidence presented by Petitioner, summarized above, Petitioner persuasively shows that Wells teaches or suggests the recited step of “disabling the wagering functionality in response to a period of non-use of the communication device.”

g. Reason to Combine Wells and Bahl

As the parties agree, Wells discloses a system that verifies the location of a device to ensure that it is used in areas where it is legal to gamble so as to comply with gaming regulations, and that Wells utilizes GPS for that purpose. *See* Pet. 18; PO Resp. 18; *see also* Ex. 1004 ¶¶ 45, 110.

Petitioner’s proposal is the combination of Wells’ wireless gaming system with “Bahl’s system for locating and tracking a user using numerous access points providing wireless network coverage to mobile devices in a building” and the proposed combination involves the “simple substitution (or repurposing) of Wells’ existing [wireless] network infrastructure.” Pet. 20 (citing Ex. 1003 ¶ 78; Ex. 1004 ¶ 102).

Petitioner argues that Bahl suggests making the proposed combination by expressly teaching that GPS technology had severe limitations,

particularly in indoor environments. *Id.* at 19 (citing Ex. 1003 ¶ 77; Ex. 1005, 1:14–2:6); *see* Ex. 1005, 1:20–21 (Bahl stating that “the GPS system is severely limited in an indoor environment.”). Petitioner reasons that a person of ordinary skill in the art “would have been motivated to combine Wells with Bahl because Bahl expressly teaches advancements in location verification systems with specific advantages over the GPS technology taught by Wells in indoor environments.” *Id.* (emphasis omitted) (citing Ex. 1003 ¶ 77; Ex. 1005, 1:14–2:6). Petitioner also argues that Bahl suggests the modification in teaching the applicability of Bahl’s location determination in a building without the need for specialized infrastructure. *Id.*

According to Petitioner,

A [person of ordinary skill in the art] would have found it obvious to apply Bahl’s location determination teachings “for locating and tracking a user in a building without a specialized infrastructure” to Wells’ position verification process for a wireless mobile game player based on Bahl’s express motivation to improve the accuracy and reliability of Wells’ GPS-based location determination in the primarily indoor regions of a casino property (restaurants, hotel lobby, bars) and to thus facilitate better compliance with casino gaming regulations that limit gambling to only “legal areas” of the casino.

Id. at 17 (citing Ex. 1003 ¶ 74). Petitioner contends that its proposed combination “would have involved mere simple substitution of known elements to achieve the predictable results of increasing compliance with gaming regulations and would not have required any undue experimentation” and that a person of ordinary skill in the art “would have understood that Bahl’s teachings were suitable for implementation on the existing wireless network infrastructure taught by Wells because Bahl

teaches that its system can be implemented ‘without a specialized infrastructure.’” *Id.* at 19–20 (citing Ex. 1003 ¶ 78; Ex. 1005, 1:66–2:6). Petitioner argues that a person of ordinary skill in the art would have both been motivated to make the combination and had a reasonable expectation of success. *Id.* at 20.

[A person of ordinary skill in the art] would have been motivated to combine Wells with Bahl’s system for locating and tracking a user using numerous access points providing wireless network coverage to mobile devices in a building, and would have had a reasonable expectation of success in doing so, because it would have involved simple substitution (or repurposing) of Wells’ existing network infrastructure, including “[m]any [] access points” deployed “throughout the casino and hotel” that provide wireless network coverage to wireless game players “in a wireless game play network.”

Id. (citing Ex. 1003 ¶ 78; Ex. 1004 ¶ 102).

Patent Owner contends that Petitioner’s reasoning as to why there would have been a motivation to combine the references’ teachings is flawed. *See* PO Resp. 20–25. Patent Owner argues that “Petitioner completely fails to explain why an ordinary artisan would have found it advantageous to implement *Bahl’s* alleged teachings to perform the same functionality Petitioner already characterized *Wells* as having.” *Id.* at 21. According to Patent Owner, Wells’ system “already adequately monitors location using GPS” and complies with location-related gaming regulations, “[t]herefore, there is no reason an ordinary artisan would be motivated to substitute a WLAN location determination system for *Wells’* GPS determination.” *Id.* at 20, 23.

Patent Owner’s arguments are unavailing because, even if the assertion of adequacy was correct, a person of ordinary skill in the art would recognize that Wells still was open for improvement through the use of

Bahl's teachings. The purported "adequacy" of Wells does not negate the obviousness of improvements from the perspective of the person of ordinary skill in the art at the time of the invention. We find persuasive Petitioner's argument, supported by Mr. Williams' testimony, that the proposed combination would have "enabled more comprehensive compliance with Wells' stated goal of regulatory compliance by improving the accuracy and reliability of Wells' position verification process." Pet. 19 (citing Ex. 1005, 1:66–2:2; Ex. 1003 ¶ 77); *see* Ex. 1003 ¶¶ 77. Bahl explicitly teaches that "the GPS system is severely limited in an indoor environment," and explains why that is and why use of a WLAN infrastructure for location detection is an improvement over GPS tracking. Ex. 1005, 1:14–2:2. Patent Owner's expert, Mr. Farley, testifies that Wells explains that it can accurately monitor location and, based on that, concludes that GPS is sufficient. Ex. 2005 ¶ 53. Mr. Farley cites nothing further as support for this opinion and does not opine as to whether Bahl's location determination system would be viewed by a person of ordinary skill in the art as more accurate or an improvement. *See id.* We find to be credible Mr. William's opinion that a person of ordinary skill in the art would have found a motivation in Bahl's location determination teachings and would have found it obvious to apply those teachings to Wells' system to improve accuracy and thereby facilitate better compliance with the gaming regulations. *See* Ex. 1003 ¶¶ 74, 77.⁸

⁸ Patent Owner argues that "Mr. Williams has no experience or understanding of the accuracy required for the location determination system to meet regulatory requirements." PO Resp. 24 (citing Ex. 2004, 145:4–25, 148:5–149:6). We do not find the cited testimony to support Patent Owner's proposition. *See, e.g.*, Ex. 2004, 145:22–24 (Mr. Williams, responding, during cross-examination, to the question asking "how precise location

Patent Owner also contends that Petitioner’s obviousness challenge fails because the proposed combination of Wells and Bahl “eliminates an important feature of *Wells*.” PO Resp. 18. According to Patent Owner, “*Wells* states an object of its invention is to ‘verify [the] location of the device’ to ensure the remote device is used in the legal gaming areas and to track lost or stolen devices.” *Id.* (citing Ex. 1004 ¶ 45) (alteration in original). Patent Owner argues that “the proposed substitution would eliminate the necessary GPS functionality in *Wells* that is used to track stolen devices,” PO Sur-reply 9, and that Petitioner “ignores the importance of being able to recover lost or stolen devices,” PO Resp. 18. Patent Owner asserts that “[a] proposed modification to a primary reference is improper if it would eliminate a basic function under which the primary reference was designed to operate.” *Id.* (citing *General Elec. Co. v. United Techs. Corp.*, IPR2016-00531, Paper 42, 15 (PTAB June 26, 2017); *Microsoft Corp. v. Koninklijke Philips N.V.*, IPR2018-00185, Paper 7, 12 (PTAB May 22, 2018)); *see also* PO Sur-reply 13 (citing the same).

The two cited Board cases, in turn, cite *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959). To the extent that Patent Owner relies on *Ratti*, that reliance is misplaced. In *Ratti*, it was determined, based on the specific facts of that case, that the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] Chinnery et al. as well as a change in the basic principles under which the Chinnery et al. construction was designed to operate.” *In re*

determination needed to be to comply with the regulatory requirements that Wells describes,” that the needed precision would vary depending on the particular regulation and the application’s specific use).

Ratti, 270 F.2d at 813. Here, Petitioner’s proposed combination involves the “substitution (or repurposing) of Wells’ existing [wireless] network infrastructure,” Pet. 20, and Patent Owner does not argue that that would require a substantial reconstruction and redesign. We find to be credible and credit Mr. William’s testimony as to why a person of ordinary skill in the art would have had a reasonable expectation of success in making the proposed combination, and we determine that Petitioner has met its burden on this point. *See* Ex. 1003 ¶ 78. And, the proposed combination would not change the basic principles under which Wells operates; it merely adds the ability to determine a device’s location using the wireless network infrastructure.

Patent Owner’s arguments regarding the purported necessary and important functionality are unavailing. Patent Owner greatly exaggerates the importance of tracking and retrieving stolen devices outside of the casino complex of Wells’ system. The referenced paragraph in Wells pertains to security, and begins with the disclosure of the game player having an encrypted serial number. Ex. 1004 ¶ 45. Then, Wells discloses some security features that the wireless game player *may* have. *Id.* In that regard, Wells states that “the wireless game player may have a small GPS (Global Positioning System) device to verify location of the device” and that “[p]osition verification may be used to insure the wireless game player is used only in legal gaming areas of the casino and to track lost or stolen devices.” *Id.* As Petitioner notes (Pet. Reply 15), Wells’ discussion of stolen devices making their way beyond the casino walls is not regarding GPS location determination, but rather is regarding an RF capacitive theft prevention device like those used in retail stores. Ex. 1004 ¶ 45. “When the wireless game player [having an RF capacitive device] is passed through a

protected doorway, an alarm may be sounded even when the power is off to the wireless game player.” *Id.*

Although Wells places importance on device location determination in order to comply with gaming regulations (*see, e.g.*, Ex. 1004 ¶¶ 6, 8, 110), we do not find, as Patent Owner urges and its expert opines, that the ability to track stolen devices outside the casino complex is an “object of the invention” or an “important and meaningful feature” of Wells’ system. PO Resp. 18, 20; *see* Ex. 2005 ¶¶ 50, 53. Even under Patent Owner’s characterization of the proposed combination as eliminating the ability to track stolen devices beyond the casino walls, such a loss does not render Wells inoperable for its intended purpose and would not deter a person of ordinary skill in the art from making the combination in light of the improvement in gaming location determination that flows from Bahl’s teachings.

h. Conclusion as to Independent Claim 27

For the reasons provided above and after having considered the parties’ arguments and evidence, we determine that Petitioner has established that independent claim 27 is unpatentable over the combination of Wells and Bahl.

4. The Alleged Obviousness of Claims 1–5, 7–22, and 26 in View of Wells and Bahl

For reasons discussed below, Petitioner has not demonstrated the unpatentability of independent claim 1 as obvious over Wells and Bahl.

Independent claim 1 is somewhat similar to independent claim 27, discussed above. However, the time aspect of claim 1 pertains to a cumulative amount of time the user engages in a wagering activity, rather than a period of non-use as in claim 27. Specifically, claim 1 recites

[1d] calculating, by the computing device, a cumulative amount of time that a user of the mobile device engages in a wagering activity from a plurality of locations; and

[1e] preventing, by the computing device, the cumulative amount of time from exceeding a threshold amount of time.

Ex. 1001, 24:11–16.

Petitioner contends that Wells teaches tracking the time that a user engages in a wagering activity and terminating the session after a time limit is reached. Pet. 45 (citing Ex. 1004 ¶ 110; Ex. 1003 ¶ 128). Petitioner also contends that Wells teaches that players often move throughout the casino while gaming and thereby teaches game play in a plurality of locations. *Id.* (citing Ex. 1004 ¶ 102; Ex. 1003 ¶ 128). Thus, according to Petitioner, Wells teaches tracking the time a user engages in a wagering activity from a plurality of locations and terminating the session after a time limit is reached. *Id.* For limitation 1d, regarding calculating a cumulative amount of time, Petitioner argues that

A [person of ordinary skill in the art] would have found it obvious to calculate a cumulative amount of time that the user spends gaming from these locations based on this teaching of Wells because calculating the cumulative amount of time would have allowed Wells' gaming machine to enforce its time limits on gaming activity. Ex.1003[¶129]. The time limit taught by Wells would be ineffective for its stated purpose if it was based on something other than a calculated cumulative amount of time spent gaming. Ex.1003[¶129]. Moreover, a POSITA would have found it obvious to perform this cumulative time calculation over the course of numerous sessions at different locations to achieve Wells' teaching of terminating gaming "after a certain amount of time." Ex.1003[¶129].

Id. at 45–46; *see also* Ex. 1003 ¶¶ 128–129 (Mr. Williams' testifying similarly); Pet. Reply 2–12. Thus, Petitioner's contentions regarding this

limitation turn on whether Wells teaches tracking the time that a user engages in a wagering activity.

Wells describes various situations in which the gaming machine may terminate a “game play session.” Ex. 1004 ¶ 110. Petitioner (Pet. 45) specifically relies on Wells’ example that “*the gaming machine may terminate a wireless game play session after a certain [number] of games, after a certain amount of time or after a period of inactivity [sic].*” Ex. 1004 ¶ 110.

Petitioner notes that claim 22 depends from independent claim 1 and recites, “the cumulative amount of time includes a time for a single gaming session,” and asserts that the independent claim encompasses the subject matter of that dependent claim and therefore also must include “a single gaming session” in the cumulative time. Pet. 44–45 (quoting Ex. 1001, 25:26–27). Petitioner argues that “Wells discloses the Cumulative Time limitations through express disclosure of the precise ‘cumulative time’ recited in dependent Claim 22.”⁹ Pet. Reply 4; *see id.* at 12. Petitioner’s contention is that this purported “express disclosure” is because the language of claim 22—“a single gaming session”—and Wells’ term—“a wireless game play session”—“are almost identical.” Tr. 111:17–112:9. This argument is not persuasive because the similarity of language is not dispositive in this case. Petitioner’s argument assumes, without adequate development of the basis for that assumption, that the two phrases have the

⁹ *But see* Pet. 72 (Petitioner conceding that “Wells does not expressly state terminating a session after a ‘cumulative’ time threshold is reached (Wells expressly states that it terminates after ‘a non-play time limit’ and after a general ‘amount of time’”).

same meaning. As will be discussed, the meaning of “game play session” in Wells is a disputed issue.

Patent Owner argues that Wells does not describe determining or calculating a cumulative amount of time that a user is engaged in wagering. PO Resp. 11. Patent Owner notes that Wells explains that the device may be used for activities other than gaming, such as entertainment activities, and Patent Owner argues that Wells’ “game play session” can include those non-gaming activities. *See id.* at 13–14 (citing Ex. 1004 ¶¶ 19, 23); *see also id.* at 6 (citing Ex. 1004 ¶¶ 23, 72–74). According to Patent Owner, this is consistent with Wells’ desire to limit the amount of time that the associated licensed gaming machine on the casino floor (the machine to which the wireless device is “tethered”) is unavailable to other users. *See id.* at 14 (citing Ex. 1003 ¶¶ 7, 15, 19, 34).

Petitioner asserts that “[a] wireless game play session is simply ‘one or more game plays on a wireless game player.’” Pet. Reply 3 n.3 (quoting Ex. 1004 ¶ 41). However, Petitioner’s quotation omits the important phrase “may include” as in “[a] wireless game play session *may include* one or more game plays.” Ex. 1004 ¶ 41 (emphasis added). That is not inconsistent with Patent Owner’s argument that a “game play session” may include gaming as well as entertainment and other non-wagering activities. *See* PO Sur-reply 3–4.

Wells’ paragraph 24, for example, describes a “game play session” and talks of both gaming and receiving entertainment content. Ex. 1004 ¶ 24. The entertainment portion of that paragraph comes at the end and states that

The method may also comprise displaying entertainment content on the wireless game player wherein the entertainment

content is selected from the group consisting of an advertisement, news, stock quotes, electronic mail, a web page, a message service, a locator service or a hotel/casino service, a movie, a musical selection, a casino promotion, a broadcast event, a player tracking service, a drink menu and a snack menu.

Id. “The method” to which that refers is defined in the introductory sentence of the paragraph, which states: “Another aspect of the present invention [provides] a *method of generating a wireless game play session* provides [sic] in a wireless game player in communication with a gaming machine.”

Id. (emphasis added). Thus, this paragraph does support Patent Owner’s argument that entertainment may be included within the “game play session” as Wells uses that phrase. *See also id.* ¶¶ 22–23 (“Another aspect of the present invention provides a method, in a gaming machine, of *generating a wireless game play session* on a wireless game player . . . In particular embodiments, the method may include [gaming related steps]. . . . In addition, the method may comprise sending entertainment content to the wireless game player.” (emphasis added)).

We do not find persuasive Petitioner’s arguments that “calculating the cumulative amount of time would have allowed Wells’ gaming machine to enforce its time limits on gaming activity” and “[t]he time limit taught by Wells would be ineffective for its stated purpose if it was based on something other than a calculated cumulative amount of time spent gaming.” Pet. 46 (citing Ex. 1003 ¶ 129). These arguments are circular in that they are premised on Petitioner’s contention that Wells’ time limit is on gaming activity, which is the issue in dispute.

Petitioner bears the burden of proving unpatentability by a preponderance of the evidence. On the record before us, we cannot find by a

preponderance of the evidence that Wells’ “wireless game play session” is exclusively gaming, and therefore cannot find that Wells discloses or suggests calculating the cumulative time a user is engaged in a wagering activity, as required by independent claim 1. Independent apparatus claim 26 also contains limitations directed to the “cumulative amount of time that a user . . . engages in a wagering activity.” Ex. 1001, 26:5–8. The remaining challenged claims depend from independent claim 1, and therefore also contain the “cumulative amount of time” limitations. Petitioner has not shown that claims 1–5, 7–22, and 26 are unpatentable over Wells and Bahl.

*F. The Alleged Obviousness of Claims 1–5, 7–22, and 26
Over Wells, Bahl, and Harkham (Ground 2)*

Petitioner challenges, in this second ground, the same claims as in the first ground except for independent claim 27. Petitioner argues that, to the extent the proposed combination of Wells and Bahl is deemed to not disclose the cumulative time limitations of independent claims 1 and 26, Harkham discloses those limitations. Pet. 71. Patent Owner argues that Petitioner has failed to set forth an adequate reason why a person of ordinary skill in the art would have combined the references’ teachings. PO Resp. 28–31.

1. Harkham (Ex. 1006)

Harkham discloses central game server 104 connected to game centers, including virtual casino 108 that may have real dealers and game tables or computer-simulated ones, and to which are connected remote players. Ex. 1006 ¶ 26. Harkham further discloses player verification processes and the tracking and storing of player history information to, for example, comply with government reporting requirements. *Id.* ¶¶ 29, 74.

Harkham teaches playing time limit options and that “[t]he playing limit option can be used to prevent excessive gaming and/or excessive gaming loss.” *Id.* ¶ 33.

2. *The Alleged Obviousness of Independent Claim 1 Over Wells, Bahl, and Harkham*

The disputed issues regarding this ground pertain to the “cumulative time” limitation of independent claim 1 and whether a person of ordinary skill in the art would have had a reason to modify Wells’ system to include Harkham’s time-related teachings. Again, claim 1 recites

[1d] calculating, by the computing device, a cumulative amount of time that a user of the mobile device engages in a wagering activity from a plurality of locations; and

[1e] preventing, by the computing device, the cumulative amount of time from exceeding a threshold amount of time.

Ex. 1001, 24:11–16.

Petitioner asserts, and we agree, that Harkham teaches tracking the amount of time a user engages in online gambling and setting limits to prevent excessive gaming or excessive losses. Pet. 72 (citing Ex. 1006 ¶ 33). Harkham states the following:

In one embodiment, the user is optionally prompted to designate a playing limit in terms of playing frequency or playing time. For example, the user can limit his/her playing limit to a maximum of five hours within a seven-day period, or no more than once within a day. When the user’s playing time or playing frequency exceeds the limit, the user is asked to exit the game center. In one implementation, the user is allowed to increase the playing limit when the limit has been reached. The playing limit option can be used to prevent excessive gaming and/or excessive gaming loss.

Ex. 1006 ¶ 33. Harkham also teaches the use of a central server to enforce the playing limit across all game centers so that the player cannot

circumvent the limit. *See id.* (“In one embodiment, the playing limit is enforced by all the game centers hosted by the server, so that the player cannot move to another game center to circumvent the playing limit.”).

Patent Owner makes, in a footnote in the Sur-reply, the belated and conclusory argument that Harkham does not explicitly disclose monitoring wagering activity time and “[m]ore logically, *Harkham*’s system monitors the overall time or logged in time of a user.” PO Sur-reply 16 n.5 (citing Ex. 1006 ¶ 33). Patent Owner’s argument is unavailing. The subject paragraph of Harkham, that pertaining to setting playing limits, begins with the teaching of playing limits based on wager amounts. Ex. 1006 ¶ 33. One of ordinary skill in the art would understand the teachings pertaining to playing frequency and playing time in that same paragraph to also refer to wagering activities. *See* Ex. 1003 ¶ 197 (“Harkham’s server allows remote players to set a ‘playing limit’ that limits the amount of time the user can spend on gaming.” (citing Ex. 1006 ¶ 33)). Additionally, Harkham repeatedly uses the modifier “playing,” as in “a playing limit,” “playing frequency,” and “playing time.” Patent Owner does not explain why it is more logical that Harkham is referring to the overall time or, as implied, that the tracked time includes non-playing time.

As discussed above in the context of the first ground, Wells teaches terminating a game play session based on time—after a period of inactivity or “after a certain amount of time.” Ex. 1004 ¶ 110. Petitioner’s proposed combination involves applying Harkham’s teachings regarding time limits and the use of a player tracking server to Wells’ teaching of terminating gaming upon reaching “a certain amount of time.” *See* Pet. 72–74.

Petitioner reasons that a person of ordinary skill in the art would have

applied Harkham’s teachings to the system of Wells to enforce time limits and terminate game play to combat excessive gaming and gambling addiction. *Id.* (citing Ex. 1006 ¶ 33; Ex. 1003 ¶¶ 197–198; Ex. 1008, 174–175). Petitioner asserts that “[p]reventing ‘excessive gaming’ was a well-known goal for gambling technology and even required by legislation.” *Id.* at 72 (citing Ex. 1008, 175). Petitioner argues that the proposed combination involves the simple substitution of known elements and could have been accomplished with a reasonable expectation of success. *Id.* at 74 (citing Ex. 1004 ¶ 95; Ex. 1006 ¶ 29; Ex. 1003 ¶ 200). Specifically, Petitioner contends that

A [person of ordinary skill in the art] would have found it obvious to combine Harkham’s central game server with Wells’ gaming machine or wireless game player server to enforce Harkham’s time-based wagering limitations on the portable wireless game player of Wells to ensure that all gaming activity of a user (across gaming sessions and at different locations) is captured and counted towards the time limit. Ex.1004[¶0110]; Ex.1003[¶204]. Moreover, a POSITA would have found it obvious to calculate a cumulative amount of time that a user engages in wagering from numerous locations based on Harkham’s teachings that its client devices for remote participants include “mobile phones” and other portable devices that allow remote players to play from a plurality of locations. Ex.1006[¶0025]; Ex.1003[¶204].

Id. at 75–76.

Patent Owner argues that Petitioner’s proposed modification is improper. PO Resp. 28. Patent Owner, noting that Petitioner relies on Wells’ teaching of setting time limits, argues that “*Wells* does not have a goal of limiting gambling On the contrary, *Wells* encourages gambling by providing casino patrons with more opportunities for wagering including increasing the options for where and when they can gamble.” *Id.* at 26

(citing Ex. 2005 ¶¶ 42–47; Ex. 1004 ¶¶ 7, 34, 51); *see also id.* at 29–30 (Patent Owner arguing that the proposed combination is “nonsensical”). Patent Owner additionally argues that the devices of Wells and Harkham serve very different purposes because the former involves gaming in a casino complex and the latter involves gaming from home. *Id.* (citing Ex. 1004 ¶ 34; Ex. 1006 ¶¶ 25–26). According to Patent Owner, there are not the same concerns about excessive gambling at the different venues, impliedly arguing that such concerns only apply to on-line gambling where there are fewer distractions as compared to a casino environment. *See* PO Sur-reply 16–17.

Patent Owner also argues that Harkham only discloses user-set limits which are optional and, therefore, incorporating those into Wells’ system would not prevent problem gambling. PO Resp. 27–28. Patent Owner contends that, if a user’s gaming time on Wells’ wireless device were terminated upon reaching the time limit, the user could simply engage in gaming elsewhere in the casino and, therefore, is not prevented from engaging in excessive gambling. *See id.* at 29–30. Relatedly, Patent Owner argues that Petitioner has failed to show how a system that completely prevents excessive gaming could be implemented. *See id.*; *see also* PO Sur-reply 17 (“And even if [Wells’] system could be modified to monitor the time a user is engaged in wagering activity and modified to add playing limits, such modifications would still fail to prevent excessive gaming.”).

We acknowledge that the system of Wells is designed to increase opportunities for gaming beyond the casino floor and to maximize the gaming play on a given machine. *See* Ex. 1004 ¶¶ 7–9. However, Patent Owner impliedly argues but does not direct our attention to a desire by Wells

to encourage excessive or addictive gaming. *See* PO Resp. 29 (“*Wells* does not have a goal of preventing excessive gambling. . . . In fact, *Wells* discloses the opposite.” (citing Ex. 2005 ¶ 60; Ex. 1004 ¶¶ 7–9)); *see also* Ex. 2005 ¶ 60 (Mr. Farley only going so far as to opine that “*Wells* is not concerned with the prevention of excessive gambling.”). And, even if the concerns about excessive gambling on-line are greater than in a physical casino, we find credible Mr. Williams’ testimony that “the concepts of controlling whether gaming is allowed on a mobile device based on a location of the device and establishing time limits and restricting game play accordingly were well known in the field well-before the relevant time.” Ex. 1003 ¶ 195; *see also id.* ¶¶ 193–194 (citing supporting sources). A person of ordinary skill would recognize that the risks of problem gambling are not unique to on-line gaming and are present in casino environments, too. *See, e.g.,* Ex. 1029 ¶¶ 3, 9¹⁰ (“[T]here is often a social cost associated with gaming in general. While the majority of gamblers using [video lottery terminals] or casinos use gambling strictly as a casual form of entertainment and can afford the time spent gambling and gambling losses, there are a significant number of gamblers that develop addictive or otherwise problematic behaviour from excessive time spent gambling and/or gambling losses. . . . [T]here has been a need for a system which allows both government regulators and gamblers to set time-limits and money losses.”).

Also, we determine that a person of ordinary skill in the art would have been motivated to implement measures, such as Harkham’s, to address

¹⁰ Petitioner notes that Mr. Williams’ declaration refers to Xidos (Ex. 1029) but mistakenly cites to Exhibit 1010. Pet. Reply 21 n.6 (referring to Ex. 1003 ¶¶ 193–195).

the concern about excessive and addictive gaming, even if the resulting improvements do not rise to the level of preventing all excessive gambling. *See In re Fulton*, 391 F.3d 1195, 1201–02 (Fed. Cir. 2004) (“Appellants’ argument is unpersuasive from a legal standpoint because it again relies on the mistaken premise that the prior art must teach that a particular combination is preferred, or ‘optimal,’ for the combination to be obvious.”).

Petitioner has provided adequate reasoning as to why one of ordinary skill in the art would have combined Wells’ wireless gaming device system (as modified by Bahl’s teachings so as to utilize WLAN infrastructure for location determination) and Harkham’s teachings of setting wagering time limits and enforcing those via a central server and that this combination yields the claimed subject matter of claim 1, and Petitioner has provided adequate evidence to show that a person of ordinary skill in the art would have had a reasonable expectation of success in doing so.

We determine that Petitioner has established that independent claim 1 is unpatentable over the combination of Wells, Bahl, and Harkham.

3. The Alleged Obviousness of Claims 2–5, 7–22, and 26 Over Wells, Bahl, and Harkham

Petitioner also contends that claims 2–5, 7–22, and 26 would have been obvious based on the same combination of prior art. Independent claim 26 recites an apparatus that includes a computing device and a non-transitory medium storing instructions to perform a method similar to that of independent claim 1. The remaining challenged claims in this ground all depend directly or indirectly from independent claim 1. Petitioner identifies teachings in the prior art references that teach or suggest the limitations of these claims, and provides persuasive reasoning as to why the claimed subject matter would have been obvious to one of ordinary skill in

the art. Pet. 47–70, 77–78. Petitioner also supports its contentions for these claims with the testimony of Mr. Williams. Ex. 1003 ¶¶ 136–191, 209. Patent Owner does not present any arguments for these claims other than those we have already considered with respect to independent claim 1.

We have considered the evidence and arguments of record and determine that Petitioner has demonstrated by a preponderance of the evidence that claims 2–5, 7–22, and 26 would have been obvious over Wells, Bahl, and Harkham for the reasons discussed in the Petition as supported by the testimony of Mr. Williams.

G. The Alleged Obviousness of Claim 4 Over Wells, Bahl, Harkham and Spirito (Ground 3) and The Alleged Obviousness of Claims 24 and 25 Over Wells, Bahl, Harkham, and Joao (Ground 4)

Dependent claim 4 calls for the set of signal characteristics to include transmission times of a plurality of signals between the mobile device and the signal detection devices. Ex. 1001, 24:24–27. Petitioner contends, relying on the testimony of Mr. Williams, that “Spirito teaches determining a location estimate of a mobile device based on the known location of a base station and ‘propagation delay values’ of signals transmitted between the mobile device and base station,” and storing the results in look-up tables. Pet. 78–79 (citing Ex. 1009, 4:10–25, 7:29–8:8; Ex. 1003 ¶ 211).

Claims 24 and 25 pertain to restrictions on wagering activities based on the time of day. Ex. 1001, 25:33–39. Petitioner relies on Joao for the features of these claims and, relying on the testimony of Mr. Williams, argues that “Joao teaches a server that can be used to ‘limit or restrict a user’s gaming activities or the use of the user’s gaming account or communication device’ including enforcing ‘a time period(s) during which

gaming activities are not allowed.’” Pet. 84 (quoting Ex. 1012 ¶¶ 21–22; citing Ex. 1003 ¶ 222).

Patent Owner does not present any arguments for these claims other than those we have already considered with respect to independent claim 1, asserting that Spirito and Joao do not cure the alleged deficiencies in the underlying grounds. PO Resp. 31–32. For the reasons discussed above, we determine that the Wells, Bahl, and Harkham ground does not contain the alleged deficiencies.

We have considered the evidence and arguments of record and determine that Petitioner has demonstrated by a preponderance of the evidence that claim 4 would have been obvious over Wells, Bahl, Harkham and Spirito, and that claims 24 and 25 would have been obvious over Wells, Bahl, Harkham, and Joao for the reasons discussed in the Petition as supported by the testimony of Mr. Williams.

III. CONCLUSION¹¹

Petitioner has shown by a preponderance of the evidence that claim 27 of the ’901 patent is unpatentable over Wells and Bahl, that claims 1–5, 7–22, and 26 are unpatentable over Wells, Bahl, and Harkham, that claim 4 is unpatentable over Wells, Bahl, Harkham, and Spirito, and that

¹¹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

claims 24 and 25 are unpatentable over Wells, Bahl, Harkham, and Joao. Petitioner has *not* shown by a preponderance of the evidence that claims 1–5, 7–22, and 26 of the '901 patent are unpatentable over Wells and Bahl.

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–5, 7–22, 26, 27	103(a)	Wells, Bahl	27	1–5, 7–22, 26
1–5, 7–22, 26	103(a)	Wells, Bahl, Harkham	1–5, 7–22, 26	
4	103(a)	Wells, Bahl, Harkham, Spirito	4	
24, 25	103(a)	Wells, Bahl, Harkham, Joao	24, 25	
Overall Outcome			1–5, 7–22, 24–27	

IV. ORDER

For the foregoing reasons, it is

ORDERED that claims 1–5, 7–22, and 24–27 of the '901 patent have been proven to be unpatentable;

FURTHER ORDERED Petitioner's Motion to Exclude Evidence is denied; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Patent 9,430,901 B2

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