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571-272-7822

Paper 20
Date: March 19, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VIVINT, INC.,
Petitioner,

v.

SB IP HOLDINGS LLC,
Patent Owner.

IPR2022-01352
Patent 8,154,581 B2

Before JAMESON LEE, KARL D. EASTHOM, and JON M. JURGOVAN, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Vivint, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claims 11, 13, and 14 ("challenged claims") of U.S. Patent No. 8,154,581 B2 (Ex. 1001, "the '581 patent"). Paper 1 ("Pet."). SB IP Holdings LLC ("Patent Owner") filed a Preliminary Response. Paper 7 ("Prelim. Resp."). We instituted *inter partes* review under 35 U.S.C. § 314(a). Paper 9 ("Inst. Dec.").

During the trial, Patent Owner filed a Response (Paper 11, "Resp."), and Petitioner filed a Reply (Paper 12). Pursuant to the parties' requests (Papers 14, 15), the Board held an oral hearing on December 15, 2023, and entered the hearing transcript into the record (Paper 19 ("Tr.")).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). Having reviewed the complete trial record, we determine that Petitioner has shown, by a preponderance of the evidence, that the challenged claims are unpatentable.

B. Real Parties in Interest

Petitioner and Patent Owner identify themselves as real parties in interest. Pet. 1; Paper 3, 2.

C. Related Proceedings

Petitioner and Patent Owner each identify the following related litigations involving the '581 patent:

- *SB IP Holdings LLC v. Vivint Smart Homes, Inc.*, No. 4:21-cv-00912 (E.D. Tex.)
- *Vivint, Inc. v. SB IP Holdings LLC*, No. 8:22-cv-00034 (C.D. Cal.)

- *Vivent, Inc. v. SB IP Holdings LLC*, No. 4:22-cv-00648 (E.D. Tex.)

Pet. 1–2; Paper 3, 2–3; Paper 6, 2.

The following *inter partes* review proceedings involve the '581 patent or patents related to the '581 patent:

- IPR2022-00810 (U.S. Patent No. 8,139,098 B2)
- IPR2022-00811 (U.S. Patent No. 8,144,184 B2)
- IPR2022-00812 (U.S. Patent No. 8,154,581 B2)
- IPR2022-00813 (U.S. Patent No. 8,164,614 B2)
- IPR2022-00814 (U.S. Patent No. 8,144,183 B2)
- IPR2022-01364 (U.S. Patent No. 8,144,184 B2)
- IPR2022-01365 (U.S. Patent No. 8,164,614 B2)
- IPR2022-01449 (U.S. Patent No. 7,193,644 B2)

Pet. 2; Paper 3, 2–3; Paper 6, 2–3.

Patent Owner identifies U.S. Patent Application 17/113,189, filed December 7, 2020, as a related application.

Patent Owner identifies other indirectly related judicial matters before the federal district courts. *Id.* at 3.

D. The '581 Patent (Ex. 1001)

The '581 patent is titled "Audio-Visual Communication System for Receiving Person at Entrance." Ex. 1001, code (54). The '581 patent discloses an "audio-video communication system with a wireless exterior module located proximate an entrance, a computerized controller running a software application, and a remote peripheral device." *Id.* at code (57). "The wireless exterior module includes a proximity sensor for detecting a person at the entrance, a video camera for recording an image of the person

at the entrance, a microphone for recording the person at the entrance, a speaker for playing audio to the person at the entrance, a transmitter for communicating sounds and images of the person at the entrance, and a receiver for receiving communications at the wireless exterior module." *Id.* "The computerized controller is disposed in wireless electronic communication with the wireless exterior module via the transmitter and the receiver of the wireless exterior module." *Id.* "The remote peripheral device is configured to electronically communicate with the computerized controller for viewing an image from the video camera communicated from the wireless exterior module." *Id.*

Additional details of the system are shown in Figure 1 below.

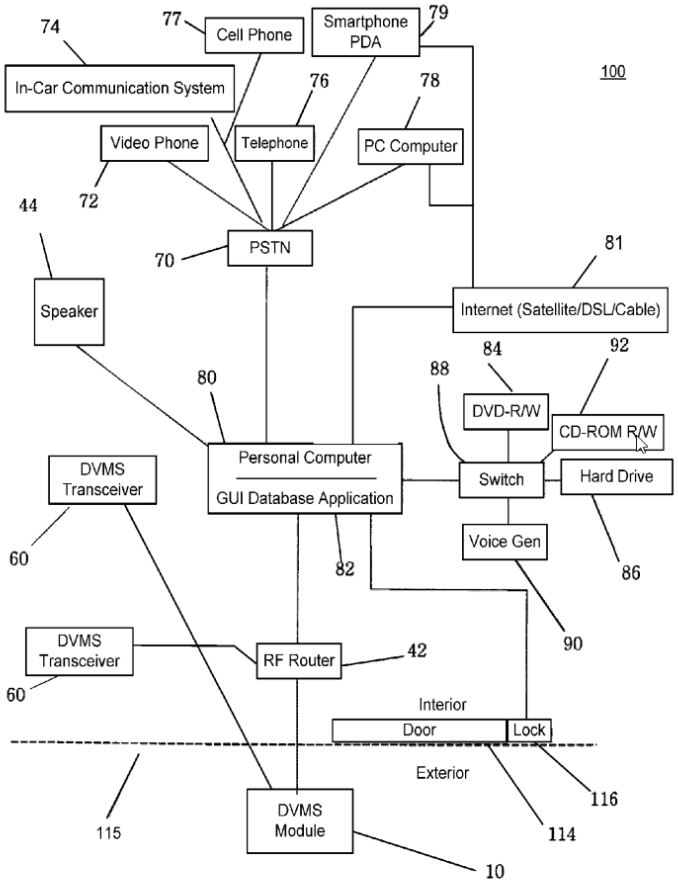


FIG. 1

Specifically, Figure 1 shows system 100 having DVMS[1] module 10 located on the exterior of the home or office proximate to door 114. *Id.* at 7:43–44. Personal computer 80 runs a software application that includes DVMS Database Application 82 and graphic user interfaces (GUIs). *Id.* at 7:28–30. Personal computer 80, in accordance with the software application, controls communication in system 100, coordinates multiple communication devices in system 100, and is used to define responses to prompts and events in system 100. *Id.* at 7:30–34.

System 100 further includes one or more remote peripheral devices. *Id.* at 8:54–55. Such devices generally include video phones 72, in-car communication systems such as the well-known ONSTAR system 74 currently found in GM cars, telephones 76, cell phones 77, personal computers 78, smartphones/personal digital assistants (PDAs) 79, and other similar communication devices. *Id.* at 8:55–60. Each remote peripheral device is configured for electronic communication with personal computer 80 via at least public switching telephone network ("PSTN") connection 70 or broadband connection 81. *Id.* at 8:60–63.

Figure 2 of the '581 patent is reproduced below:

[1] The '581 patent does not define the acronym "DVMS."

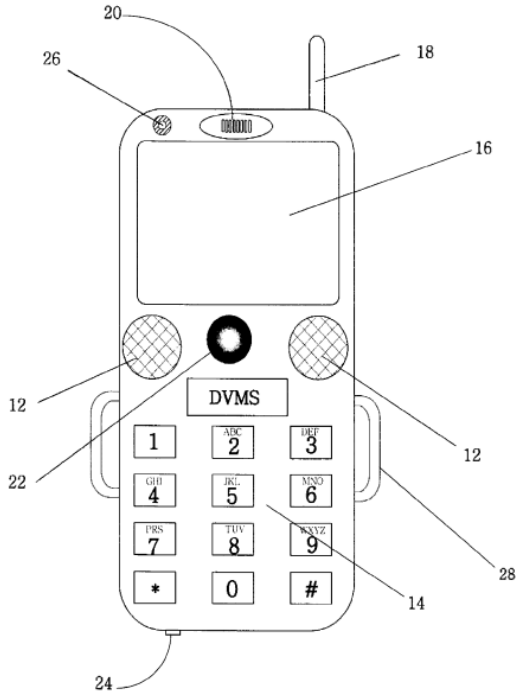


FIG. 2

Figure 2 shows DVMS module 10 having video camera 22, speakers 12, proximity sensor 26, microphone 20, LCD display 16, quick connect electrical receptacle 24, and radio frequency receiver/transmitter represented by antenna 18. *Id.* at 7:51–55. Upon detection of movement, proximity sensor 26 activates camera 22, which in turn relays an image or streaming video to personal computer 80 where it is saved in a database in association with a timestamp. *Id.* at 7:55–59.

The '581 patent discloses two different locking mechanisms. DVMS module 10 may include locking mechanism 28 to securely install the module 10 in a mounting holster or permit it to be moved to another remote location, as desired. *Id.* at 8:7–11. The '581 patent states that the module 10 is thus "portable, much like a cell phone, and can be securely mounted and quickly connected to an electrical source." *Id.* at 8:11–13. The '581 patent also

refers to locking mechanism 2114, which is a code-activated door lock. *Id.* at 18:36–38.

E. Claims

Claim 1 is the only independent claim of the '581 patent, and claims 11, 13, and 14 depend directly from claim 1. These claims are reproduced below:

> 1. An audio-video communication system, comprising:
>
> (a) a wireless exterior module located proximate an entrance, said wireless exterior module having a proximity sensor for detecting a person at the entrance, a video camera for recording an image of the person at the entrance, a microphone for recording sound of the person at the entrance, a speaker for playing audio to the person at the entrance, a transmitter for communicating sounds and images of the person at the entrance, and a receiver for receiving communications at the wireless exterior module;
>
> (b) a computerized controller running a software application and disposed in wireless electronic communication with said wireless exterior module via said transmitter and said receiver of said wireless exterior module, wherein said computerized controller is configured to control recording of communications with said wireless exterior module and playback of such recording, and wherein said software application includes a graphic user interface that enables a user to view images from said video camera communicated from said wireless exterior module; and
>
> (c) a remote peripheral device configured to electronically communicate with said computerized controller for viewing an image from said video camera communicated from said wireless exterior module.

Ex. 1001, 19:36–61.

> 11. The audio-video communication system of claim 1, wherein said wireless exterior module includes a display screen.

Id. at 20:32–34.

> 13. The audio-video communication system of claim 1, wherein said wireless exterior module is portable and includes a locking mechanism and an electrical receptacle for quickly attaching to a source of electricity.

Id. at 20:38–41.

> 14. The audio-video communication system of claim 1, wherein said wireless exterior module has a portable energy source and is secured in a holster.

Id. at 20:42–44.

F. Evidence Relied on by Petitioner

Petitioner relies on the following evidence:[2]

References		Date	Exhibit
Vaios[3]	U.S. Patent No. 6,271,752 B1	Issued August 7, 2001	1003
Menard[4]	International Pat. Pub. No. WO 01/093220 A1	Published Dec. 6, 2001	1004
Klein[5]	U.S. Appl. No. 2004/0080615 A1	Published April 29, 2004; filed August 21, 2003	1006
Schnell[6]	U.S. Patent No. 6,735,387 B1	Issued May 11, 2004; filed Jan. 10, 2001	1031

[2] The '581 patent issued from Application 11/618,615, filed December 29, 2006. Ex. 1001, codes (21, 22). The '581 patent is a continuation-in-part of Application 10/682,185, filed October 9, 2003, now Patent 7,193,644, and also claims priority to Provisional Application 60/418,384, filed October 15, 2002. *Id.* at codes (60, 63).
[3] Petitioner contends that Vaios is prior art under 35 U.S.C. § 102(b).
[4] Petitioner contends that Menard is prior art under at least §§ 102(a) and (b).
[5] Petitioner contends that Klein is prior art under at least § 102(e).
[6] Petitioner contends Schnell is prior art under at least § 102(e).

References		Date	Exhibit
Choi[7]	U.S. Patent No. 5,604,551	Issued Feb. 18, 1997; filed Feb. 2, 1995	1032

Pet. 3.

Petitioner also relies on a Declaration of Bertrand M. Hochwald, Ph.D. Ex. 1034. Patent Owner relies on a Declaration of Robert Akl, Ph.D. Ex. 2012. Petitioner also relies on a Reply Declaration of Dr. Hochwald. Ex. 2013. The parties further rely on deposition testimony of the Declarants. Ex. 2009 (deposition of Dr. Hochwald); Ex. 2011 (deposition of Dr. Akl).

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 11, 13 and 14 of the '581 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. § [8]	Reference(s)/Basis
11, 13, 14	103(a)	Vaios, Schnell
13, 14	103(a)	Vaios, Choi
13	103(a)	Vaios, Menard
11, 13, 14	103(a)	Vaios, Menard, Schnell
13	103(a)	Klein, Menard, Vaios
11, 13, 14	103(a)	Klein, Menard, Vaios, Naidoo

[7] Petitioner contends Choi is prior art under at least § 102(b).
[8] The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. §§ 102, 103. Based on the record before us, the '581 patent has an effective filing date prior to the effective date of the applicable AIA amendments (March 16, 2013). Therefore, we apply the pre-AIA versions of 35 U.S.C. §§ 102, 103.

Pet. 10, 38, 49, 61, 63, 77.

II. ANALYSIS

In this section, we address Petitioner's contentions that the challenged claims are unpatentable and Patent Owner's arguments for patentability.

A. Legal Principles of Obviousness

A claim is unpatentable under 35 U.S.C. § 103 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 to a person having ordinary skill in the art to which said subject matter pertains. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results.[9] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

When evaluating a combination of teachings, we must also "determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). "[T]here must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d at 988.

[9] The parties do not introduce any evidence of secondary considerations of nonobviousness.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art at the time of the alleged invention "is generally one who has a Bachelor's degree in computer science, electrical engineering, or a related field, with two years of experience in audio and/or video processing, networked communication systems, sensor systems, and/or remote monitoring systems." Pet. 9 (citing Ex. 1034 ¶¶ 21–24).

Patent Owner contends that Petitioner's declarant, Dr. Hochwald, provided "a wholly conclusory opinion that is devoid of any analysis or even explanation for how the expert's opinion was reached." Resp. 2. Patent Owner contends that Dr. Hochwald "lists a handful of factors" and "fails to provide any analysis of those factors" such that the Board could determine whether his opinion is based on sufficient facts or data; is the product of reliable principles and methods; and reliably applied the principles and methods to the facts of the case. *Id.* (citing Ex. 1034 ¶¶ 21–24; F.R.E. 702). Patent Owner contends that Dr. Hochwald's conclusory opinion should be given no weight. *Id.* In addition, Patent Owner contends that Dr. Hochwald's opinion is a "black box" such that "each of Petitioner's grounds lack a reliable prerequisite determination of the level of skill of a [person of ordinary skill in the art] and are flawed as a result." *Id.* at 3.

In Reply, Petitioner contends that its expert, Dr. Hochwald, explained the factors that he considered in establishing the proposed level of skill in the art. Reply 3 (citing Ex. 1034 ¶¶ 21–24). Specifically, Dr. Hochwald stated that he considered: (1) the types of problems encountered in the art, (2) prior solutions to those problems, (3) rapidity with which innovations are made, (4) sophistication of technology at the time of the invention, and

(5) educational levels and experience of persons working in the field and capable of understanding the applicable scientific and engineering principles. Ex. 1034 ¶ 22. The factors considered by Dr. Hochwald align with precedent. *Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986) (citing *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 697 (Fed. Cir. 1983), cert. denied, 464 U.S. 1043 (1984)). Dr. Hochwald acknowledges that not all such factors may be present in every case, and one or more of them may predominate. *See id.* at 962–63; Ex. 1034 ¶ 22.

In addition, Petitioner contends that "the prior art itself often establishes the level of skill in the art at the time of the invention." Reply 3. Petitioner contends that "the level of skill in the art . . . proposed by Petitioner and adopted by the Board is [directly] supported by the prior art." *Id.* (citing Pet. 9; Inst. Dec. 16–17).

Petitioner further argues that Patent Owner's "criticisms are undercut by its own expert's adoption of a similar if not higher level of skill in the art, and his admission that his opinions would be the same" under either proposed level. *Id.* (citing Ex. 2012 ¶ 36; Ex. 2011, 12:6–14:21). Specifically, Patent Owner's expert, Dr. Akl, states that

> a [person of ordinary skill in the art] would have had a Bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and two to four years of experience in the design or development of telecommunication systems, including work in the field of video communication systems, or the equivalent. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.

Ex. 2012 ¶ 36.

Petitioner contends that "while either level of skill could be adopted by the Board as consistent with the teachings of the prior art, neither would discernibly affect on the outcome of this proceeding." Reply 3.

We agree with Petitioner and Patent Owner that the two proposed levels of ordinary skill in the art are similar and any differences are immaterial to the outcome of this case. *Id.*; Ex. 2011, 13:4–10; 14:14–21. We apply Patent Owner's proposal, however, because it includes an upper limit of four years of experience, and also provides that graduate education could substitute for professional experience or significant experience in the field could substitute for formal education in addition to similar qualifications as Petitioner proposes. In addition, we find that Patent Owner's statement of the level of ordinary skill in the art is consistent with the content of the applied prior art references. *Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (the applied prior art may reflect an appropriate level of skill).

Accordingly, we apply Patent Owner's proposal for the level of ordinary skill in the art in this decision.

C. Claim Construction

In this section, we address legal principles of claim construction followed by Petitioner's and Patent Owner's contentions and determine to apply the ordinary and customary meaning of the claim language.

1. Legal Principles of Claim Construction

We use the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and

the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b). The claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) is applicable.

Claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

The specification may reveal a special definition given to a claim term by the patentee, or the specification or prosecution history may reveal an intentional disclaimer or disavowal of claim scope by the inventor. *Id.* at 1316. If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). The disavowal, if any, can be effectuated by language in the specification or the prosecution history. *Poly-America, L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016).

Only those claim terms "that are in controversy need to be construed, and only to the extent necessary to resolve the controversy." *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

2. Claim Construction Contentions

"Petitioner does not believe particular constructions differing from the ordinary and customary meaning are required for any claim terms at this time." Pet. 9.

In Response, Patent Owner states

> Patent Owner does not take a position as to the necessity for claim construction at this time. Petitioner argues that no claim constructions are required for any term. Petition at 9. However, Petitioner then goes on to improperly construe certain claim terms in order to argue anticipation and obviousness. . . . The Board should disregard any such improper construction, particularly without the required showing of necessity. *See 02 Micro Intern. Ltd. v. Beyond Innovation Technology Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008).

Resp. 1–2. Patent Owner argues that "Petitioner purports to apply the plain and ordinary meaning of the terms at issue" (citing Pet. 9) but "applies two very different meanings" to "locking mechanism" and that "[s]ecuring the camera in a desired location . . . is not the same as operating a deadbolt." Resp. 31. Patent Owner argues that "both of the above interpretations cannot be the plain and ordinary meaning of the therm [sic]." *Id.*

In the Reply, Petitioner states

> [Patent Owner] complains that the Petitioner "improperly construe[s] certain claim terms in order to argue anticipation and obviousness," but fails to identify any such instances (beyond "locking mechanism" as discussed below). [Resp. 1–2]. Petitioner believes all grounds and corresponding arguments presented in the Petition are consistent with the plain and ordinary meaning of the relevant claim terms, and remains unaware of any terms needing construction.

Reply 1 (second alteration in original). Petitioner contends that the '581 patent uses the term "locking mechanism" in two different examples, and

that "it would be improper to narrow the interpretation of 'locking mechanism'" to exclude either example. *Id.* at 2.

3. Claim Construction Analysis

The '581 patent uses the term "locking mechanism" to refer to (1) a device that locks a door of a home or office (Ex. 1001, 6:44–46, Fig. 1 [116], 18:36–38, Fig. 6 [2114]); and (2) a device included in the DVMS module that enables it to be installed securely wherever holstered (*id.* at 8:7–13, Fig. 2 [28]). Claim 13 is the only challenged claim that recites a "locking mechanism." *Id.* at 20:40.

In light of the specification's treatment of a device that enables secure installment of one member to another as a locking mechanism, we find no fault with Petitioner reading "locking mechanism" to encompass both a deadbolt as well as structures that render the wireless module capable of secure installment. Claim 13 does not require any particular structure or configuration for the "locking mechanism." Nor does claim 13 require any particular level of performance or effectiveness for the "locking mechanism." Patent Owner does not offer any contrary construction or identify any disavowal that would narrow the scope of "locking mechanism" in claim 13 to encompass only one of the two devices identified in the specification (i.e., the deadbolt and the device enabling the DVMS module to be installed securely wherever holstered).

Besides "locking mechanism," Patent Owner does not identify what other claim terms Petitioner has allegedly misconstrued such that we could take cognizance of a dispute regarding the meaning of those terms to be applied in this decision. As such, there are no remaining claim construction

disputes that we need to resolve. We apply the plain and ordinary meaning to the remainder of the claim terms.

D. Priority Date of the '581 Patent

Petitioner contends that the challenged claims of the '581 patent are not entitled to their alleged 2002 priority date due to a lack of written description support under § 112 for the challenged claims. Pet. 3–7. Patent Owner argues that Provisional Application No. 60/418,384 ("the '384 provisional") filed October 15, 2002 provides written description support for the challenged claims and thereby establishes priority for the '581 patent. Resp. 7–18.

Klein was filed as U.S. Application No. 10/644,818 on August 21, 2003. Ex. 1006, codes (21, 22). Klein asserts priority to Canada Application No. 2.399.269 filed August 21, 2002. *Id.* at code (30). Consequently, the written description issue determines whether Klein is prior art. Resp. 13; Tr. 8:25–9:2.

We do not reach the Klein grounds in this decision. Consequently, we do not address the priority issue further in this decision.

E. Petitioner's Expert Testimony

Patent Owner contends that "Petitioner violates 37 C.F.R. § 42.6(a)(3) by [citing Dr. Hochwald's declaration], which includes pages of arguments and evidence that are not in the Petition." Resp. 30. Patent Owner further argues that "all facts . . . that are not specifically discussed in the Petition should be disregarded by the Board." *Id.*

Patent Owner does not identify what arguments, evidence, or facts it alleges to have been incorporated by reference improperly from Dr. Hochwald's declaration into the Petition. Consequently, Patent Owner

has not demonstrated that Petitioner committed the violation it asserts, nor has Patent Owner shown that the circumstances here warrant imposing the severe consequence of disregarding Petitioner's expert's declaration. In other words, Patent Owner's arguments are conclusory because they do not cite to underlying evidence. *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017).

F. Alleged Obviousness of Claims 11, 13, and 14 over Vaios and Schnell (Ground 1)

Claims 11, 13, and 14 depend from claim 1 and thus include its limitations. Claim 1 recites "a wireless exterior module . . . having . . . a speaker for playing audio to the person at the entrance." Ex. 1001, 19:42–43. Petitioner initially contended that Vaios disclosed all limitations of claim 1, including this "speaker" limitation. Pet. 10–38. However, in its Reply, Petitioner conceded that "Vaios does not expressly disclose cameras having a 'speaker,' and thus does not anticipate claim 1." Reply 11. At the hearing, Petitioner further stated that "we concede that Grounds 1 and 2 cannot stand" because Vaios does not disclose a speaker. Tr. 7:3–11.

"An obviousness determination generally requires a finding that 'all claimed limitations are disclosed in the prior art.'" *Univ. of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155, 160 (citing *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1194 (Fed. Cir. 2014); *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1337–38 (Fed. Cir. 2020)). Petitioner concedes that Vaios does not disclose a speaker and that this ground cannot stand. Tr. 7:3–11. Petitioner does not rely on Schnell to teach or suggest the claimed speaker. Consequently, Petitioner fails to show by a preponderance

of the evidence unpatentability under § 103 of any of the claims challenged in this ground.

G. Alleged Obviousness of Claims 13 and 14 over Vaios and Choi Ground 2)

Claims 13 and 14 depend from claim 1. As set forth for the previous ground, Petitioner similarly concedes that Vaios and Choi fail to disclose "a wireless exterior module . . . having . . . a speaker for playing audio to the person at the entrance," as recited in claim 1. Reply 11; Tr. 7:3–11. Consequently, Petitioner fails to show unpatentability of claims 13 and 14 by a preponderance of the evidence under this ground.

H. Alleged Obviousness of Claim 13 over Vaios and Menard (Ground 3)

We now consider Petitioner's contention that claim 13 is unpatentable under § 103 over the combination of Vaios and Menard. Pet. 49–60.

1. Overview of Vaios (Ex. 1003)

Vaios's multi-access remote system is shown in Figure 1, which is reproduced below.

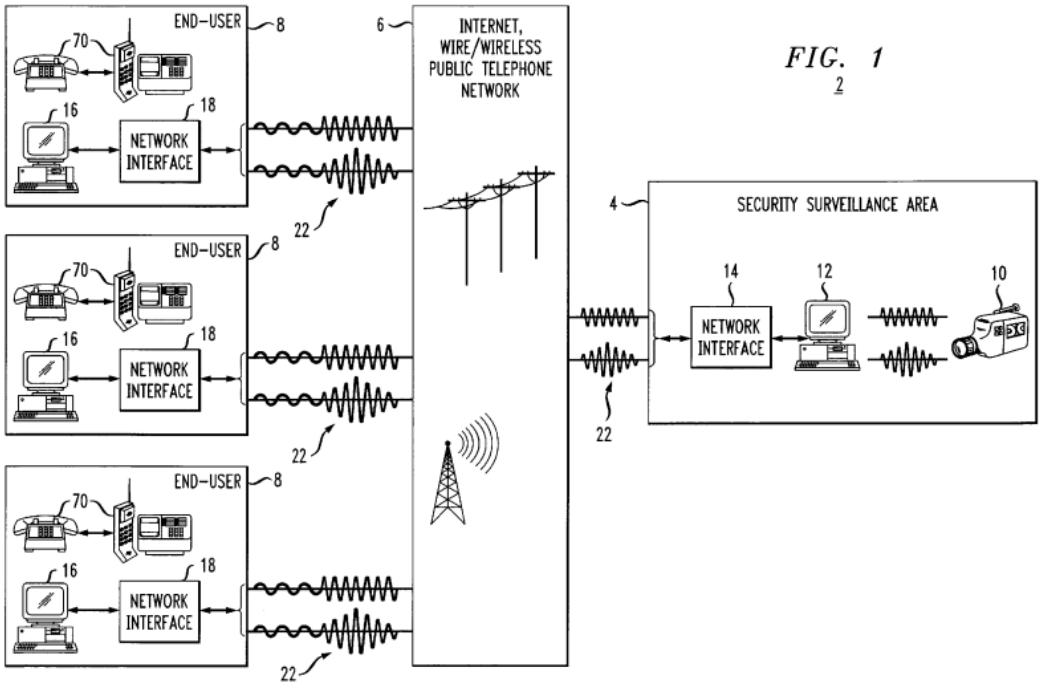


FIG. 1
2

Vaios's Figure 1 shows multi-access remote system 2 with security surveillance area 4, end user locations 8, and communications network 6 for establishing connection 22 with security surveillance area 4 and end user locations 8. Ex. 1003, 3:14–23.

Security surveillance area 4 comprises local computer system 12 coupled to network interface 14 and to video camera 10 having a motion sensor. *Id.* at 3:24–27.

Local computer system 12 is coupled to camera adapter 116 (Fig. 2) to video camera 10 so that video, sound, and motion sensor data can be transmitted from the camera to the local computer system, and instructions or other data can be transmitted from the local computer system to the video camera. *Id.* at 3:27–32. Local computer system 12 is also coupled to network interface 14 to use communication network 6 to establish connection 22 and communicate with one or more end user locations 8. *Id.*

at 3:32–36. Local computer system 12 includes fixed storage means 109, modem 110, operating system software 111, network adapter 112, audio/video coder/decoder 114, application programming interface module 131, and application software 136. *Id.* at 3:37–4:4, 5:36–49.

End user locations 8 comprise remote computer systems 16, network interface 18, and one or more optional communicative devices 20 such as a telephone or wireless device. *Id.* at 4:5–14. Remote computer systems 16 each comprise the same software and hardware computer components as local computer system 12. *Id.* at 4:15–17.

2. Overview of Menard [10] (Ex. 1004)

Menard teaches a wireless communication and control system for a variety of applications, including building maintenance and control, premises security, and personal safety. Ex. 1004, 1:7–10. The system comprises a security sensor and a wireless transceiver communicating using a network protocol. *Id.* at 4:11–13. The sensor may include a motion sensor, a passive infrared motion detector, pressure sensor, position sensor, proximity sensor, glass breakage sensor, or a video camera. *Id.* at 4:16–18.

Figure 1 of Menard is reproduced below:

[10] Citation to the pages of Menard are made with reference to the native page numbers of the patent publication, and not to the six-digit BATES numbering added by Petitioner to Exhibit 1004.

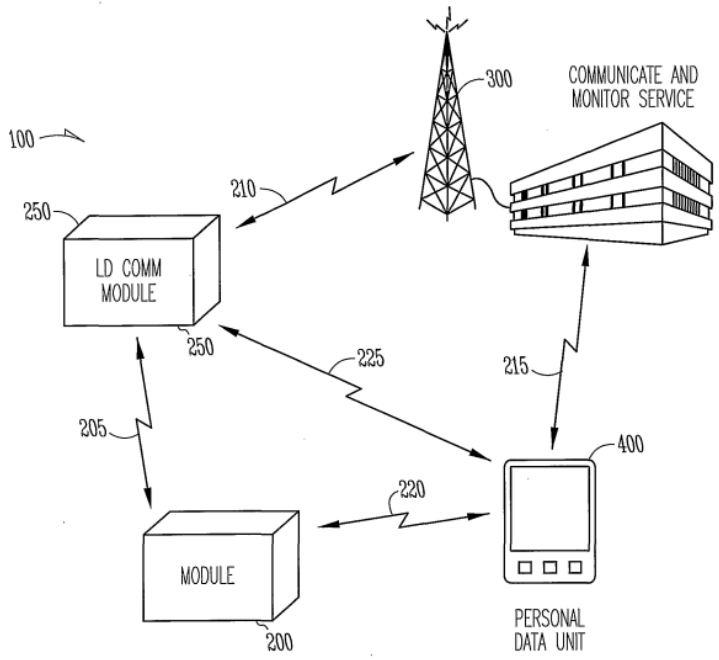


Fig. 1

Figure 1 shows a system 100 that includes "module 200, long distance communication ('LD comm') module 250, communication and monitor service facility ('facility') 300, and personal data unit ('PDU') 400."[11] *Id.* at 12:20–23. Module 200, in response to a sensed or detected condition, generates and wirelessly transmits digital data to LD comm module 250. *Id.* at 12:29–13:4. Additionally, module 200 is also in wireless communication with PDU 400 via link 220. *Id.* at 12:27–28.

LD comm module 250 transmits the received signal to facility 300. *Id.* at 13:8–9. LD comm module 250 is also in communication with PDU 400 via link 225. *Id.* at 13:12–13. After receiving the digital data transmitted by module 200, PDU 400 displays or renders the information in

[11] PDU 400 can be a two-way pager ("400A"), a cellular phone ("400B"), or a personal digital assistant ("PDA 400C"). Ex. 1004, 19:9–15.

a manner useful to a person carrying PDU 400, and provides an audible signal to the user. *Id.* at 13:17–19.

Figure 7 of Menard is reproduced below:

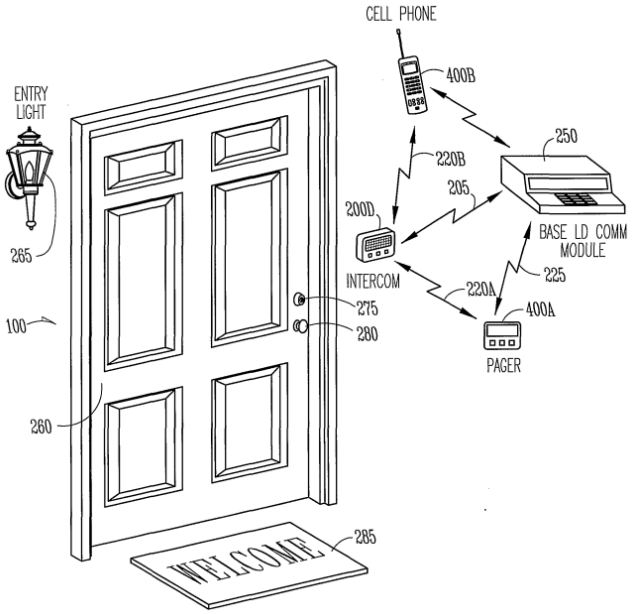


Fig. 7

Figure 7 illustrates an entry door with Menard's system. *Id.* at 10:31–32. Module 200D is mounted on the exterior of the residence and is proximate to entry door 260. *Id.* at 19:32–20:1. Module 200D is in wireless communication with PDU 400B (cellular telephone), PDU 400A (two-way pager), and base 250A that includes LD comm module as well as user operable controls and display to enable programming and operation of system 100. *Id.* at 20:2–8. Menard discloses the following:

> In operation, a caller at entry door 260 can initiate communication with a user via a PDU. For example, in one embodiment, a caller arriving at locked door 260 can operate module 200D in much the same way as a doorbell, that is, by activating a prominent and conspicuous button. Module 200D then encodes and communicates a digital message for

> transmission to PDU 400. The digital message may be communicated directly from module 200 to PDU 400B, for example, either directly (via link 220B), or indirectly, via LD comm module 250A. In one embodiment, the communication to, and from, module 200D involves a BLUETOOTH® channel. In this example, the user receives notification of the presence of the caller by means of PDU 400B. The user, and PDU 400B, may be located inside the residence, in which case a direct connection using link 220B may be possible. Alternatively, the user, and PDU 400B, may be located outside of the residence, in which case, an indirect link, including link 205 coupling the LD comm module 250A may be employed. In either case, the caller is unlikely to perceive the actual location of the user. Furthermore, by way of operating the controls or a numeric keypad on PDU 400B, the user may control the operation of entry light 265 or lock 275 and thereby grant access to the premises for the caller.

Id. at 20:13–31.

Figure 9 of Menard is reproduced below:

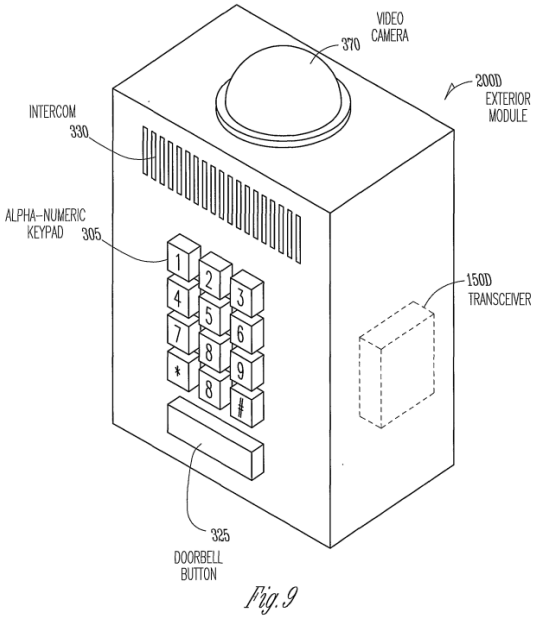


Fig. 9

Figure 9 depicts exterior module 300D having video camera 370 and transceiver 150D. *Id.* at 23:15–17. The arrival of the caller is detected by video camera 370. *Id.* at 21:13–14. In response to actuation of the button,

or detection by camera 370, exterior module 200D transmits a wireless signal. *Id.* at 21:14–15.

Figure 10 of Menard is reproduced below:

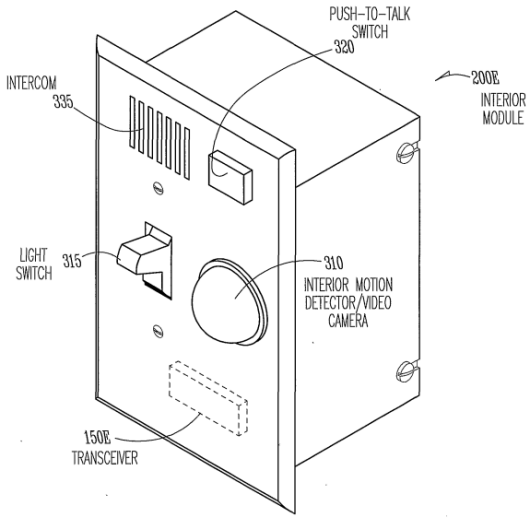


Fig. 10

Figure 10 depicts interior module 200E having intercom 335, push-to-talk ("PTT") switch 320, interior motion detector/video camera 310, transceiver 150E and light switch 315. *Id.* at 22:29–31.

3. Motivation to Combine

We now consider the parties' contentions concerning Petitioner's proposed reasons to combine Vaios and Menard and provide our analysis of these contentions.

a) Petitioner's Contentions

Petitioner contends that it was obvious to use Menard's exterior module 200D in Vaios's system. Pet. 52 (citing Ex. 1002 ¶¶ 200–204). Specifically, Petitioner contends that it would have been obvious "to substitute Menard's exterior module 200D for Vaios' video camera 10," and that this "substitution would have yielded predictable results with a

reasonable expectation of success given that the devices both perform similar function using similar components and communication protocols." *Id.* at 52–53 (citing *KSR*, 550 U.S. at 416).

Petitioner further contends that it was obvious to combine any of Menard's "wireless exterior" features—including its proximity sensor, video camera, microphone, speaker, transmitter, and/or receiver—with Vaios's video camera 10. *Id.* at 53 (citing Ex. 1034 ¶¶ 201–202). According to Petitioner, combining the components/features of Menard's wireless exterior module 200D with Vaios's camera 10 would have been done in a known manner with reasonable expectation of success. *Id.* Petitioner contends that the "combination would have been easily implemented using standard engineering techniques at the time, including incorporation of hardware and/or software components and standard communication protocols at the time that would not have required significant or unpredictable changes in interfaces, complexity, cost, or methodology." *Id.* (citing Ex. 1034 ¶ 202).

Petitioner further contends that the proposed substitution or combination offered advantages such as "providing a single device that collects audio and video data at an entrance, communicates wirelessly with other network components, and enables two-way communication with a remote individual, thereby creating a more user-friendly, convenient, and easily installed monitoring system." *Id.* at 53–54 (citing Ex. 1034 ¶¶ 203–204).

Petitioner contends that claims are obvious where "a [person of ordinary skill in the art] would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success." *Id.* at 54 (citing *DyStar Textilfarben*

GmbH & Co. Deutschland KG v. C.H. Patrick Co., 464 F.3d 1356, 1360 (Fed. Cir. 2006)). Petitioner contends the combination of Vaios and Menard renders the claims obvious. *Id.* (citing Ex. 1034 ¶¶ 192–205).

b) Patent Owner's Contentions

Patent Owner argues that Petitioner failed to provide any evidence that proves that a skilled artisan would have been motivated to combine the teachings of Vaios and Menard with a reasonable expectation of success. Resp. 50–63. Patent Owner argues that Dr. Hochwald's testimony was generic, conclusory, and merely repeated the Petition in stating the combination would "(i) create a portable monitoring device, (ii) make the system cheaper and more convenient to install, and (iii) enable communication with a visitor using a single exterior monitoring device." *Id.* at 53, 55–58.

Patent Owner contends that Petitioner did not explain why the combination would make the system easier or cheaper to install, or why a person of ordinary skill in the art would want to combine the references to enable a user to communicate audibly and visually with a visitor at the doorway and remotely control access using a single exterior monitoring device. *Id.* at 58. Patent Owner contends that Dr. Hochwald's testimony regarding convenience of installation was not thorough and searching, but was unsupported and not explained with sufficient reasoning. *Id.* at 58–60 (citing Ex. 2009, 106:5–16). Patent Owner further argues that Petitioner's motivation to combine "bears no relation to the specific combination of prior art elements" and "also fails to explain why a person of ordinary skill in the art would have combined elements from specific references in the way the claimed invention does." *Id.* at 60 (citing *ActiveVideo Networks, Inc. v.*

Verizon Commc'ns, Inc., 694 F.3d 1312, 1328 (Fed. Cir. 2012); *Xerox Corp., et al. v. Bytemark, Inc.*, IPR2022-00624, Paper 12 at 5) (precedential)).

Patent Owner notes that Dr. Hochwald testifies that a wireless network would be more cost effective when retrofitting an existing structure, and the choice of network would be influenced by the physical size of the area to be monitored. *Id.* at 61 (citing Ex. 1034 ¶ 204). According to Patent Owner, Petitioner states that Menard's Bluetooth wireless network could apply to Vaios's network interfaces if the distances involved permitted it. *Id.* Patent Owner argues that "there is no evidence in the record concerning whether the distances would permit them to be combined." *Id.* (citing *Xerox*, IPR2022-00624, Paper 12 at 5; Paper 9 at 15–16).

Patent Owner further argues that Vaios teaches away from a wireless connection between its exterior module and local computer because of "bandwidth issues associated with sending uncompressed video files wirelessly." *Id.* at 62 (citing Ex. 2012 ¶¶ 76–78). Patent Owner argues that the bandwidth issue would have motivated a person of ordinary skill in the art "to favor a wired—not a wireless—connection" between Vaios's camera and local computer after weighing the benefits and drawbacks of the proposed combination. *Id.* at 62–63 (citing *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019)).

Patent Owner concludes that Petitioner failed to identify any "reason why a [person of ordinary skill in the art] would have been motivated to combine" "various elements of Vaios and Menard . . . to arrive at the claimed invention" which is "fatal to the Petition." Resp. 63 (citing

Hamilton Beach Brands, Inc. v. f'real Foods, LLC, 908 F.3d 1328, 1342 (Fed. Cir. 2018); 37 C.F.R. § 42.65(a)).

c) Discussion of Reasons to Combine Vaios and Menard

Petitioner proposes to combine Vaios and Menard in two ways: (1) substituting Menard's exterior module 200D for Vaios's video camera 100; and (2) combining one or more elements of Menard's exterior module 200D into Vaios's video camera 100 according to known methods yielding predictable results. Pet. 52–54. Simple substitution of one known element for another, that involves no more than the predictable use of prior art elements according to their established functions, and combining known elements by known methods yielding predictable results, are recognized rationales providing reasons to combine prior art references. *See KSR*, 550 U.S. at 416–417. We determine that the evidence shows one of ordinary skill in this art would have had a reason to combine Vaios and Menard under either of these rationales.

Dr. Hochwald testifies that the technologies involved in the combination of Vaios and Menard were known in the art. Ex. 1034 ¶¶ 108, 204, 222 (wired and wireless communications and networks); ¶¶ 110, 143, 165, 177, 200, 229 (wireless video camera); ¶¶ 121, 200 (motion sensor); ¶¶ 193, 205, 229, 263 (proximity sensor, video camera, speaker, microphone, receiver, transmitter); ¶¶ 60, 143 (controller with software); ¶¶ 110, 143, 229 (LCD display screen); ¶¶ 147, 155, 157, 165, 221 (portability); ¶¶ 148, 155–156, 225 (locking mechanism); ¶¶ 155, 157, 177, 221 (electrical receptacle); ¶¶ 110, 160, 165, 177, 222 (portable energy source, battery); ¶¶ 157, 165, 185 (holster); ¶¶ 71, 139, 157, 165, 195 (laptop

computers, cell phones, pagers, personal digital assistants (PDAs)). Patent Owner does not dispute that these technologies were known.

Furthermore, Dr. Hochwald's testimony establishes that it was within the level of ordinary skill in the art to combine and use these technologies. Specifically, he stated that the "combination would have been relatively easily implemented using standard engineering techniques at the time including the optional incorporation of hardware and/or software components and standard communication protocols at the time" and that the combination would not require "significant or unpredictable changes in interfaces, complexity, cost, or methodology." *Id.* ¶ 201. Thus, there is evidence in the record to support Petitioner's contention that the proposed combinations would have been predictable based on what was known in the art, and that one of ordinary skill in the art would have had a reasonable expectation of success in combining the known elements in the manner claimed by the '581 patent.

Patent Owner criticizes Dr. Hochwald for allegedly failing to address issues of cost, engineering hurdles, and unpredictable results from the combination. Resp. 58. However, Dr. Hochwald does address these issues, testifying that

> a [person of ordinary skill in the art] would . . . find it *simple* to modify the teachings of Vaios to incorporate the teachings of Menard, without requiring significant or unpredictable changes in the interfaces, complexity, cost or methodology and would have had a high expectation that the combination would have succeeded.

Ex. 1034 ¶ 201. Patent Owner seems to be arguing that Dr. Hochwald should have specified and addressed every conceivable cost, engineering hurdle, unpredictable result, and hardware and software change. Resp. 58.

But the point of Dr. Hochwald's statement was that it would be "simple" to combine Vaios and Menard, and that these considerations were not obstacles given the level of skill in the art. Ex. 1034 ¶ 201. Thus, Patent Owner's arguments do not undermine Petitioner's proposed reasons to combine Vaios and Menard.

Furthermore, similarities in prior art references may provide support for their combination. *Wyers v. Master Lock Co.*, 616 F.3d. 1231, 1241 (Fed. Cir. 2010). On this consideration, Dr. Hochwald states that the similarities of Vaios's and Menard's technologies would have led a person of ordinary skill in the art to combine them. Ex. 1034 ¶ 200. Both are directed to security systems that use video cameras and motion sensors. *Id.* We agree with Dr. Hochwald that the similarities of Vaios and Menard would have prompted one of ordinary skill in the art to consider them together and combine them for the purposes advanced in the Petition.

A reason to combine may be found in the prior art references themselves. *Dystar*, 464 F.3d at 1365. Vaios describes "a need for an inexpensive multi-access remote system that enables individuals to access remotely a security surveillance or other video system area and appropriately monitor and operate this area as desired." Ex. 1003, 1:60–63. In addition, Vaios states "there is a need to contact the system users at specific times, such as when an alarm triggers, to provide surveillance access when needed, rather than monitoring the area full time." *Id.* at 1:63–67. Vaios also describes a need to eliminate "expensive cables" and a similar "desire [for] a surveillance system that is accessible from any location, not only those that have cabling." *Id.* at 1:57–59. Menard describes as its objectives, and thus the related problems that it solves, to enable portable, modular, bidirectional

communication between a wide variety of devices and that satisfies the demand for security systems and automated building controls. Ex. 1004, 1:26–28. Menard also states that "what is needed in the art is a system enabling both safety and convenience features in an affordable, modular, arrangement that is easy to install and manage." *Id.* at 1:29–31. Thus, Vaios and Menard are directed to improvements in security systems, which further supports the Petition's combination resulting in employing Menard's wireless modular teachings (which includes a video camera) for a security system, in Vaios's similar security system, which employs a video camera, generally teaches wireless communications, and describes a desire for eliminating cabling. *See, e.g.*, Pet. 53–54 (citing Ex. 1034 ¶¶ 203–204).

A reason to combine prior art references may likewise be found when the combination produces an advantage. *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1003–04 (Fed. Cir. 2016) (references teaching the advantages of a technique shows there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue). Dr. Hochwald noted the combination would provide advantages, such as enabling a user to communicate both audibly and visually with a visitor "to better ascertain the nature of a visitor's presence and determine in real-time how to deal with the visitor." Ex. 1034 ¶ 202 (citing Ex. 1003, 2:10–15; Ex. 1004, 5:30–33, 21:13–15). Dr. Hochwald also states that a person of ordinary skill in the art would have recognized the advantages of packaging Vaios's and Menard's technologies into a single device that communicates wirelessly with other devices of the monitoring system to reduce installation costs and increase convenience. *Id.* ¶ 203. Dr. Hochwald further explains that a wireless network would be more cost-effective when retrofitting into

an existing structure as opposed to new construction. *Id.* ¶ 204. He further explained that the choice of network to be used would be influenced by the physical size of the area to be monitored, and that Menard's Bluetooth wireless network "would readily apply to the network interfaces contemplated in Vaios if the distances involved permitted it." *Id.* In other words, Dr. Hochwald indicated several advantages that would result from combining Vaios and Menard under certain circumstances, providing ample reasons to combine the references.

Patent Owner also argues that "Vaios teaches away from these combinations because it teaches that it would be very difficult to transmit uncompressed video files wirelessly given the 'bandwidth limitations.'" Resp. 62 (citing Ex. 2012 ¶¶ 76–78, 99). A reference teaches away if it "criticizes, discredit, or otherwise discourages" investigation into the invention claimed. *General Elec. Co. v. Raytheon Tech. Corp.*, 983 F.3d 1334, 1345 (Fed. Cir. 2020) (citing *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056 (Fed. Cir. 2018); *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009)).

Contrary to Patent Owner's assertion, Vaios does not teach that it would be difficult to transmit uncompressed video files wirelessly given the bandwidth limitations. Instead, Vaios teaches that to avoid difficulties associated with bandwidth limitations, it is desirable to compress, transmit, and download the entire image file to the remote computer before the remote user subsequently plays it. Ex. 1003, 2:34–41. This does not "criticize, discredit or discourage" wireless communications, or say it would be difficult to use them. In fact, Vaios's network 6 connecting security surveillance area 4 to end-user locations 8 is described as "Wire/Wireless"

meaning the transmission could be compressed wireless communications. Ex. 1003, Fig. 1. We address this issue further in Section II.H.4.b.

Considering the foregoing discussion, we do not agree with Patent Owner's argument that Dr. Hochwald's testimony was generic, conclusory, and merely repeated the Petition. Resp. 50–63. With the support of Dr. Hochwald's testimony, Petitioner showed that a person of ordinary skill in the art would have understood the desirability of providing a portable monitoring device with wireless communications to make installation easier and less costly, to enable audible and visual communication with a visitor at the doorway, and remotely control access to a dwelling or building.

d) Conclusion on Motivation to Combine Vaios and Menard

Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art would have had reasons to combine Vaios and Menard with a reasonable expectation of success in arriving at the claims of the '581 patent.

4. Independent Claim 1

a) Preamble

Claim 1 begins with this preamble: "An audio-video communication system, comprising." Ex. 1001, 19:36. Petitioner asserts that Vaios discloses such a system. Pet. 50 (citing *id.* at 10–11; Ex. 1003, code (57), 9:2–4, 9:32–34; Ex. 1034 ¶¶ 92–98). Specifically, Petitioner notes that Vaios discloses "a multi-access remote system having a security surveillance area [and] a plurality of end user locations." *Id.* at 10 (citing Ex. 1003, code (57)). Petitioner states that Vaios further explains that the security surveillance area comprises local computer system 12, camera 10 with a

motion sensor, and network interface 6, and that, when the motion sensor detects an obstruction, the camera starts recording and the local computer system notifies a remote individual. *Id.* at 10–11 (citing Ex. 1003, code (57)). Petitioner further notes that, in addition to video, the system also communicates audio, stating "the remote individual can operate the camera and retrieve additional video [and] sound." *Id.* at 11 (citing Ex. 1003, 9:2–4, 9:32–34) (alteration in original).

We agree with Petitioner that Vaios teaches the subject matter of the preamble of claim 1. Consequently, it is unnecessary to reach the question of whether the preamble is limiting. *See, e.g.*, *Catalina Marketing Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801 (Fed. Cir. 2002) (whether a preamble is limiting depends on various factors).

b) Limitation (a): "Wireless Exterior Module"

Claim 1 of the '581 patent recites limitation (a) as follows:

> (a) a wireless exterior module located proximate an entrance, said wireless exterior module having a proximity sensor for detecting a person at the entrance, a video camera for recording an image of the person at the entrance, a microphone for recording sound of the person at the entrance, a speaker for playing audio to the person at the entrance, a transmitter for communicating sounds and images of the person at the entrance, and a receiver for receiving communications at the wireless exterior module.

Ex. 1001, 19:37–46. Petitioner contends that Vaios teaches this limitation. Pet. 50–54, 12–16. Specifically, Petitioner contends that Vaios discloses a "video camera 10" coupled to "local computer system 12" so that "video, sound, and motion sensor data can be transmitted from the camera to the local computer system." *Id.* at 12 (citing Ex. 1003, 3:24–30, Fig. 1). Petitioner further notes that Vaios discloses that "a monitoring site can be

created to control viewing of . . . a house entrance" and that its cameras provide a "door view." *Id.* at 13 (citing Ex. 1003, 7:62–8:4, 9:49–53) (alteration in original). Petitioner further notes that Vaios discloses that "remotely controllable cameras can be positioned at any location or scenic lookout." *Id.* at 13 (quoting Ex. 1003, 9:59–61 (emphasis omitted); citing Ex. 1034 ¶¶ 101–104). From these excerpts, Petitioner contends that Vaios's "video camera 10" is an exterior module located proximate an entrance. *Id.* at 13–14 (citing Ex. 1034 ¶ 105). Petitioner's evidence is persuasive, and we agree that Vaios's video camera is an exterior module located proximate an entrance, thus teaching the corresponding part of limitation (a) of claim 1.

Petitioner further contends that video camera 10 is also a "wireless" module as demonstrated by Vaios's teaching that video camera 10 and local computer system 12 may communicate via a wireless connection. *Id.* at 14 (citing Ex. 1034 ¶¶ 106–107). Petitioner contends that Vaios's Figure 1 shows a squiggly line graphic for the connection between video camera 10 and local computer system 12 which is identical to connection 22 for communication types known to be wireless (e.g., LAN, WAN, Internet, satellite). *Id.* (citing Ex. 1003, 3:19–23, 4:30–65). Petitioner contends that a person of ordinary skill in the art would have understood that the connections between video camera 10 and local computer system 12 in Vaios's Figure 1 included similar wireless connections as for connection 22, confirming that video camera 10 comprises a "wireless device." *Id.* at 15 (citing Ex. 1034 ¶ 107). Alternatively, Petitioner contends that it was obvious for camera 10 to be a "wireless device" communicatively coupled to a "local computer system 12" because Vaios describes various wireless

connections which were well-known and interchangeable with wired connections. *Id.* at 15 (citing Ex. 1034 ¶¶ 108–110). We are persuaded that Petitioner's evidence shows that Vaios's video camera is a wireless device, thus teaching the "wireless device" part of limitation (a) of claim 1.

Petitioner contends that video camera 10 includes "a video camera for recording an image of the person at the entrance" and a "microphone for recording sounds of the person at the entrance." Pet. 16. Petitioner points to Vaios's disclosure that "when the motion sensor detects an obstruction the camera starts recording" and that "video, sound, and motion sensor data can be transmitted from the camera to the local computer system." *Id.* at 16 (citing Ex. 1003, code (57), 3:24–30, 2:12–17; Ex. 1034 ¶ 111). Petitioner further contends that video camera 10 would include a camera to record images and a microphone to record such sound, or alternatively use of a microphone for this purpose would have been obvious. *Id.* (citing Ex. 1034 ¶ 111). We are persuaded by Petitioner's evidence that Vaios teaches "a video camera for recording an image of the person at the entrance," and "a microphone for recording sound of the person at the entrance," as recited in limitation (a) of claim 1.

Petitioner further contends that Vaios's video camera 10 includes "a proximity sensor for detecting a person at the entrance" as claimed. *Id.* (citing Ex. 1034 ¶ 100). Specifically, Petitioner contends that Vaios's video camera 10 has a motion sensor and that motion sensor data can be transmitted from the camera to the local computer system. *Id.* at 16–17 (citing Ex. 1003, 3:14–30). Petitioner contends that, when the motion sensor detects an obstruction, the camera starts recording. *Id.* at 17 (citing Ex. 1003, code (57), 8:42–49). Petitioner contends that, when monitoring an

entrance, the motion sensor would detect a person at the entrance upon the person's approach. *Id.* (citing Ex. 1034 ¶ 100). Petitioner contends that the '581 patent indicates that a "proximity sensor" includes motion sensing devices, e.g., "proximity sensor 26 activates the camera 22 upon detection of movement." *Id.* (citing Ex. 1001, 7:55–56, 15:22; Ex. 1034 ¶ 100). Thus, Petitioner contends that Vaios's motion sensor satisfies the "proximity sensor" limitation. We are persuaded that Petitioner's evidence shows that Vaios teaches "a proximity sensor for detecting a person at the entrance," as recited in limitation (a) of claim 1.

Petitioner further contends that Vaios's video camera 10 includes "a transmitter for communicating sounds and images of the person at the entrance" and "a receiver for receiving communications at the wireless exterior module." Pet. 17 (citing Ex. 1034 ¶ 112). Specifically, Petitioner contends that Vaios discloses "video, sound, and motion sensor data can be transmitted from the camera to the local computer system" and "instructions or other data can be transmitted from the local computer system to the camera." *Id.* (citing Ex. 1003, 2:12–17, 3:27–36) (emphasis omitted). Petitioner states that to transmit video and sound data and receive instructions or other data, video camera 10 would include a transmitter and a receiver, as claimed, or alternatively such components would have been obvious given their widespread use for such purposes at the time of the alleged invention. *Id.* (citing Ex. 1034 ¶ 112). Petitioner thus contends Vaios discloses or renders obvious the "transmitter" and "receiver" of limitation (a) of claim 1. We are persuaded that Petitioner's evidence shows that Vaios teaches the "transmitter" and "receiver" features of limitation (a) of claim 1.

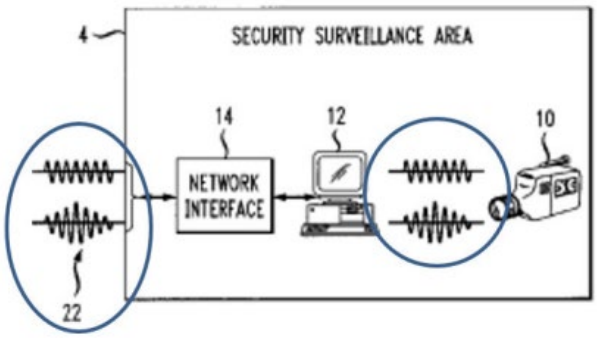
Alternatively, Petitioner relies on Menard to teach the "wireless exterior module." Pet. 50–54. Petitioner contends that it was obvious in view of Menard for Vaios's video camera 10 to include the claimed components and features. *Id.* at 50 (citing Ex. 1034 ¶¶ 189–190, 193–205). Specifically, Petitioner states that, in the context of a "system and method for detecting and monitoring" (Ex. 1004, code (57)), Menard discloses a wireless exterior module (e.g., "exterior module 200D") located proximate an entrance (e.g., "entry door 260") and including a video camera (e.g., "video camera 370"), a proximity sensor (e.g., "proximity detector" such as "video camera 370"), a microphone (e.g., "intercom 330"), a speaker (e.g., "intercom 330"), a transmitter (e.g., "transceiver 150"), and a receiver (e.g., "transceiver 150"). *Id.* at 50–54 (citing Ex. 1034 ¶¶ 194–205; Ex. 1004, 5:31–6:1, 6:14–15, 13:27–29, 19:30–20:6, 20:20–22, 21:6–7, 21:15, 21:11–15, 22:17–23, claim 25, Figs. 7, 8). We are persuaded that Petitioner's evidence shows that Menard as combined with Vaios teaches the "wireless exterior module" of limitation (a) of claim 1.

Patent Owner argues that Vaios does not disclose a "wireless exterior module" because the connection between video camera 10 and local computer 12 is not wireless in Vaios. Resp. 33–38. Specifically, Patent Owner and its expert, Dr. Akl, argue that Vaios's so-called "squiggly lines" represent modulated signals, not wireless ones, which they contend would be represented by "a radiating wave form symbol or a lightning bolt." *Id.* at 35 (citing Ex. 2012 ¶¶ 64–69; Ex. 2006, 14). Patent Owner also argues that Vaios's camera adapter is a specialized cable to download video and images from the camera to the local computer. Ex. 2012 ¶ 75 (citing Ex. 1003, 3:24–26). Patent Owner further argues that the local computer, not the video

camera, compresses the file to transmit it to a remote user, and that bandwidth limitations would prevent wireless transmission from the video camera to the local computer if the data is not compressed until it reaches the local computer. *Id.* at ¶ 76 (citing Ex. 1003, 2:34–41).

In its Reply, Petitioner contends that a person of ordinary skill in the art would recognize that the connection between Vaios's camera and local computer could be wireless because Vaios's Figure 1 uses the same symbol to depict the connection between the camera and local computer as the "connection 22" between other components of Vaios's system described as wireless. Reply 13 (citing Pet. 14–15; Ex. 1034 ¶¶ 106–107; Ex. 1003, 3:19–23, 4:30–65, Fig. 1).

To explain its contention, Petitioner provides the annotated figure shown below:



Ex. 1034 ¶ 106. Petitioner's figure above, which is part of Vaios's Figure 1, shows that the same symbol (circled in blue) is used for connection 22 as that between video camera 10 and local computer system 12. Connection 22 couples to network 6, which can be wireless. Ex. 1003, Fig. 1.

We agree with Petitioner that this symbol implies that the connection between video camera 10 and local computer system 12 may be the same as connection 22, which connects to a network that may be wireless. Vaios,

thus, at least suggests that the connection between video camera 10 and local computer system 12 may be wireless. In the obviousness analysis, one may consider "the inferences and creative steps a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 401.

Vaios states that the "local computer system is electronically connected via camera adapter to the video camera so that video, sound, and motion sensor data can be transmitted from the camera to the local computer system." Ex. 1003, 2:12–15. Patent Owner contends that the camera adapter has a specialized cable, and is thus a *wired* connection. Ex. 2012 ¶ 75. Dr. Hochwald, however, indicates that the '384 provisional to which the '581 patent claims priority similarly mentions an "adapter card" associated with *wireless* communications. Ex. 2013 ¶¶ 44–45. We agree with Dr. Hochwald that Vaios's use of the term "camera adapter" is agnostic to whether the connection is wired or wireless. And Vaios does not mention a specialized cable associated with the camera adapter. Nor is there any statement requiring the connection between the camera and local computer system to be wired.

Patent Owner argues that Vaios teaches that transmitting wirelessly without compression was undesirable because of bandwidth limitations of wireless communications. Resp. 37–38 (citing Ex. 2012 ¶¶ 76–79). Because Vaios's local computer system 12 performs compression (Ex. 1003, 2:34–41), Patent Owner posits that the connection between the local computer system and the video camera 10 must be wired. Resp. 20.

In Reply, Petitioner notes that there were other ways of addressing low-bandwidth connections at the time, including lowering video quality. Reply 14 (citing Ex. 2013 ¶ 55; Ex. 1003, 9:21–26). Petitioner further notes

that the '581 patent does not mention compression as necessary for wireless communications. *Id.* at 14–15 (citing Ex. 2013 ¶ 58). And Patent Owner's expert, Dr. Akl, stated that he did not know whether compression was required to wirelessly transfer video files at the time of the '581 patent. *Id.* at 15 (citing Ex. 2011, 60:21–61:4).

Furthermore, the part of Vaios that Patent Owner cites to as supporting its argument states as follows:

> The local computer system first captures a predetermined length of video, compresses the file, and transmits it to the remote user who *subsequently* plays the downloaded image in high-quality. This method avoids video stream difficulties associated with bandwidth limitations because *the entire image is downloaded to the remote computer before viewing*.

Ex. 1003, 2:34–40. This statement seems to be discussing the connection between the local computer system and the remote computer, not the connection between the video camera and local computer system. And its meaning seems to be that because the video file is pushed over a low-bandwidth connection in advance of viewing, it is already present at the remote computer in its entirety when the remote user seeks to view it.

In any case, Petitioner notes that compression technologies were well known at the time of the '581 patent, and would have been recognized to be options available for use in the combination of Vaios and Menard. Ex. 2013 ¶¶ 56–58 (JPEG, MPEG were known standards). We agree with Petitioner that compression standards were well-known at the time.

Patent Owner contends that Menard also does not disclose a "wireless exterior module" because Menard's exterior module 200D wirelessly communicates with base 250A using Bluetooth technology, which, according to Patent Owner, was incapable of transmitting video.

Resp. 44–48 (citing Ex. 2012 ¶¶ 62–79, 85, 87–89, 91. 93–94; Ex. 1003, 2:34–40; Pet. 50–52; Ex. 1034 ¶¶ 195–196, 200; Ex. 1004, Fig. 7; Ex. 2007, 139, 1007; Ex. 2008, 2; Ex. 2009, 37:3:17–20, 38:11–18; Ex. 2012 ¶¶ 85; 87–89, 91, 93–94; Ex. 2008, 2; Ex. 2009, 37:17–20, 38:11–18).

Dr. Hochwald disagrees, stating that a video camera having an embedded Bluetooth wireless transceiver was described in the art as early as 2001. Ex. 2013 ¶ 32 (citing Ex. 1038; Ex. 1050, 1–2, 7). Although Patent Owner argues that Bluetooth is primarily used for audio streaming (Resp. 46–47 (citing Ex. 2012 ¶ 89; Ex. 2008, 2)), this does not necessarily preclude its use for video and two-way audio. Dr. Hochwald states that standards like 802.11 and Bluetooth are "mostly agnostic" to the type of digital data that can be transmitted. Ex. 2013 ¶ 31. Although Patent Owner may be correct that Bluetooth was not optimal for transmitting video and two-way audio, the best option is not required for obviousness, only a suitable option. *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800 (citing *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014)).

Furthermore, in addition to Bluetooth, Menard mentions the possibility of using IEEE 802.15 WPAN, IEEE 802.11 WiFi, numerous cellular standards (e.g., PCS, CDMA, TDMA, GSM), and others. Ex. 1004, 15:24–16:12, 34:23. And there is no dispute that wireless video cameras were known at the time of the '581 patent, and were used for security surveillance. *See, e.g.*, Ex. 2013 ¶¶ 33–34, 40; Ex. 1039 (U.S. Patent No. 6,970,183 B1 "Monroe"); Ex. 1040 (U.S. Patent No. 6,535,243 B1 "Tullis"); Ex. 1045 (AXCESS wireless streaming video camera for defense and security).

In any case, Menard states unequivocally that "exterior module 200D [] capture[s] an image using exterior video camera 370 and transmit[s] said image to PDU 400" and that "[t]he graphical image may include . . . *real-time video images*." Ex. 1004, 21:19–26. Moreover, Menard's Figures 7 and 9 show connections between exterior module 200D including video camera 370 and other components using the lightning bolts that Patent Owner contends represent wireless connections. Ex. 2012 ¶ 67.

Patent Owner argues that Vaios does not disclose a "speaker" as recited in claim 1. Resp. 39–40, 49. Specifically, Patent Owner asserts that "Vaios does not disclose any speaker—much less any type of two-way audio communication" and notes that the Board held in a previous *inter partes* review involving the '581 patent that "Vaios does not disclose such a speaker." *Id.* at 39–40 (citing IPR 2022-00812, Paper 8 at 21–22, 28–29 (PTAB Nov. 2, 2022)).

In Reply, Petitioner contends that Menard discloses a "speaker" (i.e., "intercom 300") as part of "exterior module 200D." Reply 18–19 (citing Pet. 50–51; Ex. 1034 ¶ 198; Ex. 1004, 21:5, 22:14–23, 13:28–29). Petitioner contends that it was obvious to incorporate features of Menard's "exterior module 200D" including the "speaker" with Vaios' camera and/or to substitute Menard's exterior module 200D for Vaios' camera. *Id.* at 19 (citing Pet. 52–54; Ex. 1034 ¶¶ 200–204). Patent Owner does not dispute that Menard's intercom 300 discloses a "speaker" as claimed. We are persuaded that Petitioner's evidence shows that Menard as combined with Vaios teaches the claimed speaker.

Accordingly, Petitioner has shown that Vaios in combination with Menard discloses the "wireless exterior module" of limitation (a). Patent Owner's arguments do not undermine Petitioner's showing.

c) Limitation (b): "Computerized Controller"

Claim 1 of the '581 patent recites limitation (b) as follows:

> (b) a computerized controller running a software application and disposed in wireless electronic communication with said wireless exterior module via said transmitter and said receiver of said wireless exterior module, wherein said computerized controller is configured to control recording of communications with said wireless exterior module and playback of such recording, and wherein said software application includes a graphic user interface that enables a user to view images from said video camera communicated from said wireless exterior module.

Ex. 1001, 19:47–57. Petitioner contends that Vaios discloses a computerized controller, namely, local computer system 12, in communication with video camera 10. Pet. 54 (citing Ex. 1034 ¶¶ 206–211), 18 (citing Ex. 1003, 3:24–36, Fig. 1; Ex. 1034 ¶¶ 114–122). Petitioner contends that Vaios discloses that local computer system 12 communicates with video camera 10 via a transmitter and receiver, or alternatively, it was obvious to include such a transmitter and receiver with video camera 10 to facilitate such communications. Pet. 18–19 (citing *id.* at 17; Ex. 1003, 3:27–32). We are persuaded that Petitioner's evidence shows that Vaios's local computer system wirelessly communicates with the video camera as modified by Menard as found above via its transmitter and receiver, thus teaching the corresponding part of limitation (b) of claim 1.

Petitioner contends that Vaios's local computer system 12 comprises a "computerized controller" that runs a "software application." *Id.* at 19 (citing Ex. 1034 ¶¶ 115–119). Petitioner notes that Vaios states "local

computer system 12 includes various components, among them . . . are fixed storage means 109, and operating system software 111 to provide basic resource allocation and computational mechanisms." *Id.* (citing Ex. 1003, 3:27–41). Petitioner states that Vaios's claim 1 refers to local control system as a "controller module." *Id.* (citing Ex. 1003, claim 1). Petitioner further contends that Vaios states that the "local computer system . . . comprises application software 136 to handle customized tasks unique to each embodiment of the multi-access system, and browser software 138 for display control and management" and also uses a "Windows operating system," "Winsock (software) components 118–124," "API components 126–132," and "browser software 138." *Id.* (citing Ex. 1003, 3:51–4:4). Petitioner further contends that, as previously discussed, Vaios further discloses that video camera 10 is a "wireless exterior module" in wireless communication with local computer system 12. Pet. 19 (citing *id.* at 13–16). Petitioner contends that Vaios thus teaches the first part of limitation (b) of claim 1. *Id.* (citing Ex. 1034 ¶¶ 114–122). Petitioner's evidence shows that Vaios's local computer system runs a software application and wirelessly communicates with the wireless exterior module as modified by Menard as found above via its transmitter and receiver, thus teaching the corresponding part of limitation (b) of claim 1.

Petitioner further states that limitation (b) of claim 1 recites in part that "said computerized controller is configured to control recording of communications with said wireless exterior module and playback of such recording." Pet. 20. Petitioner contends that Vaios's local computer system 12 controls recordings of communications (e.g., recordings of video and audio) with video cameras 10 and playback of such recordings. *Id.* (citing

Ex. 1034 ¶¶ 123–137). Petitioner notes that Vaios states that "[u]sing an end user location . . ., the remote individual can logon to the local computer system via the communications network and obtain additional information, control the video camera remotely, or view video images." *Id.* (citing Ex. 1003, code (57)) (emphasis omitted). Petitioner further notes that Vaios states "[a]ccess to the security surveillance area, control of the video camera, and viewing of the video data is accomplished advantageously over the Internet with application specific browser software, plugins, APIs, and other protocols." *Id.* In addition, Petitioner notes that Vaios states "local computer system . . . captures a predetermined length of video, compresses the file, and transmits it to the remote user who subsequently plays the downloaded image in high-quality." *Id.* (citing Ex. 1003, 2:35–38). Petitioner further notes that Vaios discloses that the "remote individual can . . . logon with the surveillance system so that he or she may communicate with the local computer system . . . . Employing the browser software . . . , the remote individual can operate the camera and retrieve additional video, sound, or other data via connection 22." *Id.* (citing Ex. 1003, 8:65–9:5). Petitioner contends that the "media observed by the remote individual thus includes recordings of video and audio made using camera 10 and communicated with local computer system 12." *Id.* at 20–21 (citing Ex. 1034 ¶¶ 124–128).

Petitioner contends that the "application specific browser software, plugins, APIs, and other protocols" are provided by local computer system 12. *Id.* at 21 (citing Ex. 1034 ¶¶ 126–136). Petitioner contends that local computer system 12 includes an "interface layer 102 [that] comprises high-level end-user software, such as browser and application software" and "acts

as a display interface for the remote user." *Id.* (citing Ex. 1003, 5:32–33, 6:35–40). Petitioner contends that the video data and associated sound are presented on the devices of end user locations 8 via a graphical user interface provided by the software of local computer system 12, which further enables control of recording playback. *Id.* (citing Ex. 1034 ¶ 130). Petitioner further contends that the user interface is enabled by the browser and software applications, which are components of interface layer 102 of Vaios's local computer system 12. *Id.* (citing Ex. 1003, 6:35–40, 7:39–43, Fig. 2) (emphasis omitted). Petitioner contends that Vaios's local computer system 12 controls recordings of communications (e.g., recordings of video and audio) with the video cameras and playback of such recordings. *Id.* (citing Ex. 1034 ¶¶ 123–136). We are persuaded that Petitioner's evidence shows that Vaios's local computer system controls recording of audio and video by its video camera, and playback of the recording, thus teaching the corresponding part of limitation (b) of claim 1. Limitation (b) of claim 1 further recites "said software application includes a graphic user interface that enables a user to view images from said video camera communicated from said wireless exterior module." Petitioner contends that Vaios discloses this limitation. *Id.* at 21–24 (citing Ex. 1002 ¶¶ 130–137). Specifically, Petitioner contends that video data is provided from video camera 10 to local computer system 12, which further provides the video data to one or more user devices (e.g., the remote computer system or communicative devices) at end user locations 8. Pet. 22 (citing *id.* at 18–20). Petitioner notes that Vaios states that "the remote individual can . . . logon with the surveillance system so that he or she may communicate with the local computer system for additional information." *Id.* Petitioner

contends that, "[e]mploying the browser software . . . , the remote individual can operate the camera and retrieve additional video, sound, or other data." *Id.* (citing Ex. 1003, 8:65–9:5) (emphasis omitted). Petitioner further notes that Vaios states that "a snapshot of video data or other informative content may be attached to the notification [sent to the communicative devices]." *Id.* (citing Ex. 1003, 8:63–64).

In addition, Petitioner contends that the video data is presented on the devices of end user locations 8 via a graphic user interface provided by the software of local computer system 12. Pet. 22 (citing Ex. 1034 ¶¶ 130–136). Petitioner contends that this user interface is presented across the Internet via "browser and application software." *Id.* (citing Ex. 1003, 7:39–43). Petitioner contends that the browser and application software are components of interface layer 102 of local computer system 112. *Id.* (citing Ex. 1003, 6:35–40, Fig. 2). Petitioner contends that Vaios's Figure 3 depicts an example of a graphical user interface provided via "application specific Internet browser 200." *Id.*

Petitioner further notes that Vaios states the following with respect to the user interface:

> an application specific Internet browser 200 (FIG. 3) [serves] as a controller module for visual interface communication between the end-user locations and the surveillance area. [B]rowser 200 can incorporate application specific functions such as video display, and remote operation of video camera 10. FIG. 3 shows the display screen of browser 200 [which comprises] a video display area 232. Video display area 232 is a portion of the browser display screen where all video images and recordings are visibly displayed to the end user.

Id. at 23–24 (citing Ex. 1003, 7:40–59). Petitioner notes that Vaios's Figure 3 shows that the graphical user interface includes graphical

icons with which a user may interact. *Id.* at 24 (citing Ex. 1034 ¶¶ 133–136).

Petitioner further states that Vaios's claims demonstrate that remote individuals access video data using a graphical user interface presented by the device at the end user location, e.g., "said controller module . . . comprises a browser software for interfacing said controller module with an end-user at said end-user location, said browser software further providing, said user interface." *Id.* (citing Ex. 1003, claim 10). Accordingly, Petitioner contends that the combination of Vaios and Menard teaches limitation (b) of claim 1.

We are persuaded by Petitioner's evidence that the combination of Vaios and Menard teaches that the software application includes a graphic user interface enabling a user to view images from the wireless exterior module's video camera, and that this part of limitation (b) of claim 1 is taught by the combination of Vaios and Menard.

Turning to Patent Owner's arguments, for the same reasons stated for limitation (a) of claim 1, Patent Owner contends that Vaios and Menard do not teach "a computerized controller running a software application and disposed in *wireless electronic communication* with said wireless exterior module via said transmitter and said receiver of said wireless exterior module." Resp. 38–39 (citing Ex. 2012 ¶ 80), 48 (citing Ex. 2012 ¶ 101) (emphasis original).

As we explained with respect to limitation (a) of claim 1 (Sect. II.H.4.b), we are persuaded that Petitioner has shown that the combination of Vaios and Menard teaches a wireless exterior module

(Vaios's video camera with Menard's speaker or alternatively Menard's exterior module) in wireless communication with a computerized controller (Vaios's local computer system).

Patent Owner does not otherwise dispute that the combination of Vaios and Menard teaches limitation (b) of claim 1.

Accordingly, we are persuaded that Petitioner has shown that the combination of Vaios and Menard teaches the "computerized controller" of limitation (b) of claim 1 notwithstanding Patent Owner's argument to the contrary.

d) Limitation (c): "Remote Peripheral Device"

Limitation (c) of claim 1 recites

> (c) a remote peripheral device configured to electronically communicate with said computerized controller for viewing an image from said video camera communicated from said wireless exterior module.

Ex. 1001, 19:58–61. Petitioner contends that Vaios discloses a remote peripheral device (e.g., "remote computer system 16" and/or "communicative devices 20" associated with "end user location 8") configured to electronically communicate with the computerized controller (e.g., "local computer system 12") for viewing an image from video camera 10. Pet. 24 (citing Ex. 1003, code (57), 2:26–33, 4:5–20, 8:55–9:9; Ex. 1034 ¶¶ 138–140).

Petitioner further explains that Vaios's system includes a "plurality of end user locations 8" that include a "remote computer system 16" and/or "one or more communicative devices 20" such as "a telephone, beeper, fax, e-mail, or wireless device." Pet. 24–25 (citing Ex. 1003, code (57), 4:5–20). Petitioner notes that Vaios discloses "[u]sing an end user location, having a

remote computer system, a network interface, and one or more communication devices, the remote individual can logon to the local computer system via the communications network and obtain additional information, control the video camera remotely, or view video images." *Id.* at 25 (citing Ex. 1003, code (57)) (emphases omitted). The video images are received by local computer system 12 from video camera 10. *Id.* (citing Ex. 1003, 3:24–30). Petitioner states that the combination of Vaios and Menard thus renders obvious all elements of claim 1. *Id.* at 25.

Patent Owner does not dispute Petitioner's contention that the combination of Vaios and Menard teaches limitation (c) of claim 1.

We are persuaded by Petitioner's evidence that the combination of Vaios and Menard teaches the "remote peripheral device" of limitation (c) of claim 1.

e) Conclusion for Claim 1

Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art would have been motivated to combine Vaios and Menard with a reasonable expectation of success, and that the combination of Vaios and Menard teaches or suggests the preamble and limitations (a) to (c) of claim 1 notwithstanding Patent Owner's arguments to the contrary. Consequently, Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious over the combination of Vaios and Menard.[12]

[12] Our determination here that claim 1 is unpatentable as obvious over Vaios and Menard is consistent with the Final Written Decision in IPR2022-00812, Paper 32 at 61–62. That decision, however, does not have collateral estoppel effect here due to Patent Owner's pending appeal before the Court of Appeals for the Federal Circuit. We find no reason on this record,

5. Dependent Claim 13

Claim 13 depends from claim 1 and recites

> wherein said wireless exterior module is portable and includes a locking mechanism and an electrical receptacle for quickly attaching to a source of electricity.

Ex. 1001, 20:38–41. Petitioner contends that "Menard discloses a wireless exterior module (e.g., exterior module 200D) having each of the additional elements recited in claim 13." Pet. 55 (citing *id.* at 50–53; Ex. 1034 ¶¶ 212–221; Ex. 1004, 21:15, 13:27–29, 22:25–28, 23:6–8).

a) "Portable"

Petitioner notes that the '581 patent states the following concerning the portability of its wireless exterior module:

> The DVMS module 10 optionally includes a small portable energy source, such as a battery that is rechargeable via the quick connect electrical receptacle 24, for portable use….
>
> The DVMS module 10 also includes a locking mechanism 28 for receipt in a mounting holster (not shown). The locking mechanism 28 enables the DVMS module 10 to be installed securely wherever holstered, or to be moved to some other remote location, as desired. The DVMS module 10 thus is portable, much like a cell phone, and can be securely mounted and quickly connected to an electrical source.

Pet. 55 (citing Ex. 1001, 7:61–8:13) (emphases Petitioner's). Petitioner further states that "[i]n its infringement contentions, Patent Owner implies that portability is evidenced by the potential placement of the device in multiple locations and the use of battery power." *Id.* (citing Ex. 1033, 8).

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however, to deviate from the Board's decision in IPR2022-00812 with respect to all of the limitations of claim 1, which are incorporated into claims 11, 13, and 14 by virtue of their dependency from claim 1.

Petitioner contends that Menard's exterior module 200D is similarly "portable." *Id.* at 56 (citing Ex. 1034 ¶¶ 213–216). Petitioner contends that "Menard's exterior module 200D communicates wirelessly with other components of the system" with a "transceiver 150" which includes "a receiver and transmitter to enable wireless communication." Pet. 56 (citing *id.* at 52; Ex. 1004, 20:5–12, 21:15, 13:27–29). Petitioner further contends that Menard's "exterior module 200D is battery powered." *Id.* (citing Ex. 1004, 22:25–28, 23:6–8). Petitioner asserts that these "features make Menard's exterior module 200D portable in that it can be easily moved and connected to a power source (e.g., batteries) and a wireless communication medium for communicating with other components of the system." *Id.* (citing Ex. 1034 ¶ 216).

Alternatively, Petitioner contends that "given the wireless communication and battery power features of Menard's exterior module 200D, it would have been obvious . . . that the exterior module 200D is portable" and "thus may be relocated . . . to other entry ways that a user may desire to monitor." *Id.* Petitioner contends that "such portability could have been easily and predictably achieved with a reasonable expectation of success by simply moving exterior module 200D to another entryway, with minimal reinstallation effort given the wireless communication and battery power supplies already included with Menard's exterior module 200D." *Id.*

Patent Owner does not argue that Menard's exterior module 200D is not "portable" as recited in claim 13.

We are persuaded by Petitioner's evidence that the combination of Vaios and Menard teaches the "portable" feature of claim 13.

b) "Locking Mechanism"

Petitioner contends that, under Patent Owner's interpretation of this term, Menard's exterior module 200D includes a "locking mechanism" at least in the form of its ability to operate "deadbolt lock 275." Pet. 56–57 (citing Ex. 1034 ¶¶ 217–219; Ex. 1004, 22:4–10). Petitioner contends that Patent Owner analogized a remote lock/unlock functionality to the claimed "locking mechanism" in its infringement contentions, and that Menard discloses a similar functionality. *Id.* (citing Ex. 1033, 9–11). Specifically, Petitioner notes that Menard states the following:

> Exterior module 200D includes alpha-numeric keypad 305 for receiving coded information. For example, . . . authorized callers can enter a predetermined code sequence to cause deadbolt lock 275 (Figure 8) to engage or disengage. Also, a user can enter a code sequence in PDU 400, for wireless transmission to exterior module 200D, and operate deadbolt lock 275.

Pet. 57 (citing Ex. 1004, 22:4–10) (emphases omitted). Petitioner contends that, accordingly, "Menard's exterior module 200D is capable of engaging and disengaging a lock, which satisfies the 'locking mechanism' limitation under Patent Owner's interpretation of this term." *Id.* (citing Ex. 1034 ¶¶ 217–219).

Although Patent Owner argues that Petitioner improperly construes "locking mechanism" by applying "two very different meanings," we disagree, as explained above in Sect. II.C.3, that Petitioner improperly applied two different meanings to "locking mechanism." We agree with Petitioner that "locking mechanism" covers the structure and functionality of Menard's exterior module 200D that engages or disengages a deadbolt lock. Pet. 57 (citing Ex. 1004, 22:4–10).

Accordingly, we are persuaded by Petitioner's evidence that the combination of Vaios and Menard teaches the "locking mechanism" of claim 13.

c) "Electrical Receptacle"

Petitioner contends that "Menard's exterior module 200D includes an electrical receptacle for quickly attaching to a source of electricity." Pet. 57–58 (citing Ex. 1034 ¶ 220). Petitioner asserts that Menard teaches that power to "exterior module 200D" is "supplied by a battery" or "derived from the metered electric service." *Id.* at 58 (citing Ex. 1004, 23:6–8, 22:25–28). Petitioner contends that a person of ordinary skill in the art "would recognize that to implement such a battery (as well as hardwired electric service), exterior module 200D would include an electrical receptacle to which the battery contacts are electrically coupled." *Id.* (citing Ex. 1034 ¶ 220). Petitioner asserts that "Patent Owner has acknowledged that such a battery configuration satisfies this 'electrical receptacle' limitation." *Id.* (citing Ex. 1033, 9).

Alternatively, Petitioner contends that "it was obvious for Menard's exterior module 200D to include an electrical receptacle for quickly attaching to a source of electricity given Menard's use of a battery to power exterior module 200D." *Id.* (citing Ex. 1034 ¶ 221). Petitioner asserts that

> given the widespread use of batteries for cameras/monitoring devices as well as innumerable electronic devices at the time of the alleged invention, a [person of ordinary skill in the art] would have found it obvious to use any of a plethora of electrical receptacles for connecting to and/or recharging such batteries, each of which facilitated quick attachment to such batteries.

Id. Petitioner contends that the "[u]se of such receptacles would have been easily achieved with a high expectation of success given the widespread use of batteries and corresponding electrical receptacles at the time." *Id.*

Patent Owner does not contest that Menard discloses the claimed "electrical receptacle."

We agree with Petitioner that a person of ordinary skill in the art considering Menard would understand that its exterior module 200D includes an "electrical receptacle" for quickly attaching to a battery or metered electrical service, or that the feature would be obvious in view of what Menard discloses. Pet. 57–58 (citing Ex. 1004, 23:6–8, 22:25–28; Ex. 1034 ¶¶ 220–221).

d) Conclusion for Ground 3

Petitioner has shown by a preponderance of the evidence that a person of ordinary skill in the art would have been motivated to combine Vaios and Menard with a reasonable expectation of success in arriving at claim 13 (which includes the limitations of claim 1), and that the combination teaches or suggests each limitation of claim 13, notwithstanding Patent Owner's arguments to the contrary. Consequently, claim 13 is unpatentable as obvious under § 103 over the combination of Vaios and Menard.

I. Alleged Obviousness of Claims 11, 13, and 14 over Vaios, Menard, and Schnell (Ground 4)

We now consider Petitioner's contention that claims 11, 13, and 14 are unpatentable as obvious under § 103 over the combination of Vaios, Menard, and Schnell. Pet. 61–63.

1. Overview of Schnell (Ex. 1031)

Schnell is titled "Motion Detector Camera" and includes cameras 100, 400, 700 in Figures 1, 4, and 7, respectively. Camera 100 is shown in Figure 1 below.

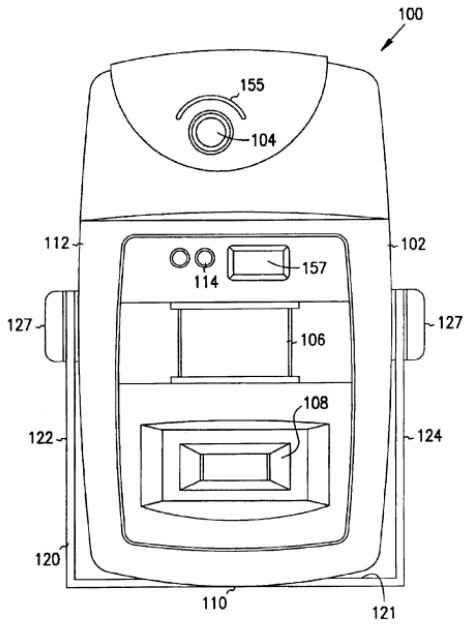


FIG. 1

The camera 100 in Figure 1 includes an LCD display 157. Ex. 1031, code (57), 2:33–37, 3:64–67, Figs. 1–3. LCD display 157 displays the number of exposures taken by the camera, and other information, such as power level and so forth. *Id.* at 3:64–67. Cameras 100, 400, 700 are portable and include one or more mounting members 142, 144, stand 120, housing 102, flexible band 150, mounting holes 126, 128, and bolt 127. *Id.* at 1:28–30, 1:62–63, 2:33–3:23, 5:34–47, 5:61–64, 6:3–28, Figs. 1–3, 7. In addition, the camera includes a DC jack 464 and electrical connections for batteries 468. *Id.* at 5:9–13, Fig. 5B.

2. Motivation to Combine

We now consider the parties' contentions concerning Petitioner's proposed reasons to combine Vaios, Menard, and Schnell and provide our analysis of these contentions.

a) Petitioner's Contentions

We previously addressed the motivation to combine Vaios and Menard and concluded that Petitioner showed that there were several reasons why one of ordinary skill in the art would have made the combination with a reasonable expectation of success. *See* Sect. II.H.3. We now consider Petitioner's contention that a person of ordinary skill in the art also would have combined Vaios and Schnell. Pet. 61 (claim 11), 62 (claim 13), 62–63 (claim 14).

Regarding claim 11, Petitioner contends that "[i]t would have been obvious to use an LCD display screen in the [cameras/]wireless exterior modules . . . of Vaios . . . in order to provide a display for presenting information about the camera in view of the teachings of Schnell for the same reasons discussed for combining Schnell with Vaios." Pet. 61 (citing *id.* at 26–27; Ex. 1034 ¶ 229). Petitioner contends that this is merely a combination of known elements by known methods. *Id.* at 26 (citing *KSR*, 550 U.S. at 416). Petitioner states that the "combination would have been easily implemented using standard engineering techniques at the time, including incorporation of hardware (e.g., an LCD display) and/or software components (e.g., software code to coordinate the display functionality) that were each well-known and widely used by [persons of ordinary skill in the art] at the time of the alleged invention" and "would not have required

significant or unpredictable changes in hardware components, interfaces, complexity, cost, or methodology." *Id.* (citing Ex. 1034 ¶ 143).

Petitioner also contends that "the proposed combination offered advantages that would have motivated a [person of ordinary skill in the art] to make the combination, such as providing a mechanism for presenting information to a user at the camera itself (including, e.g., power level information, camera activity, etc.)." *Id.* at 26–27 (citing Ex. 1034 ¶ 144). Petitioner contends that "the proposed combination would have created a more user-friendly, convenient, and robust monitoring system that would allow a user to observe displayed information at the camera/wireless exterior module itself." *Id.* at 27 (citing Ex. 1034 ¶ 144).

Regarding claim 13, Petitioner contends that "it would have been obvious to include the portability, locking mechanism, and electrical receptacle features of Schnell in the wireless exterior module of Vaios/Menard." Pet. 62 (citing *id.* at 33–34; Ex. 1034 ¶ 233). Specifically, Petitioner contends that it would have been obvious to a person of ordinary skill in the art "to combine the portability, locking mechanism, and electrical receptacle features taught in Schnell with the cameras of Vaios to enable a portable monitoring device that can be easily and securely affixed in a desired location." *Id.* at 33 (citing Ex. 1034 ¶¶ 155–158). Petitioner contends that this "modification would have simply involved the combination of known elements (e.g., Schnell's camera mounting configurations, power supplies, and resulting portability with Vaios' camera and monitoring system) according to known methods to yield predictable results." *Id.* According to Petitioner, the combination "would have . . . had a reasonable expectation of success given the simplicity of the mechanical

design for such mounting mechanisms as detailed in Schnell." *Id.* Specifically, Petitioner contends that "given the drawings and description of such configurations in Schnell, any [person of ordinary skill in the art] could have predictably and successfully included a similar mounting configuration on other cameras, particularly given the ubiquity of hardware camera (and other device) mounts at the time." *Id.* at 33–34. Petitioner further asserts that "the widespread use of batteries and DC power supplies as taught in Schnell would have made the incorporation of such power supplies (and their associated electrical receptacles) in Vaios' cameras a simple, predictable task." *Id.* at 34. Petitioner contends that "[i]ncorporation of both of these features would have thus been easily and predictably achieved and would have enabled the portability of Vaios' camera." *Id.* (citing Ex. 1034 ¶ 157).

Petitioner further contends that a person of ordinary skill in the art "would have been motivated to make the foregoing combination of Vaios and Schnell by the desirability of creating portable cameras/monitoring devices as expressly noted by Schnell." Pet. 34 (citing Ex. 1034 ¶ 158; Ex. 1031, 3:2–24, 1:28–30, 1:62–63). According to Petitioner, a person of ordinary skill in the art "would have readily recognized the benefits associated with being able to quickly and easily relocate a portable monitoring device that may be securely mounted and connected to power in a simple, convenient manner (e.g., using 'hand-turnable knobs' and/or straps and battery/DC power supplies), and just as easily unsecured and disconnected to facilitate desired movement to a different location." *Id.* Regarding claim 14, Petitioner contends that it would have been obvious to include Schnell's battery power supply and holster features with the wireless

exterior module of Vaios/Menard. Pet. 62–63 (citing *id.* at 35–37; Ex. 1034 ¶¶ 235–236). Specifically, Petitioner contends that "[i]t would have been obvious to a [person of ordinary skill in the art] at the time of the alleged invention to similarly include battery power supply and holster features as taught in Schnell with Vaios' cameras to create a portable monitoring device that can be easily and securely affixed in a desired location." Pet. 37 (citing Ex. 1034 ¶¶ 165–166). According to Petitioner, this "modification would have involved the simple combination of known elements (i.e., Schnell's configuration for mounting a camera to stand 120 and its battery power supply with Vaios' camera and monitoring system) according to known methods to yield predictable results." *Id.* at 37–38. Specifically, Petitioner contends that the "combination would have yielded predictable results and had a reasonable expectation of success given the simplicity of the mechanical design for such mounting mechanisms/stands as detailed in Schnell." *Id.* at 38. Petitioner asserts that "given the drawings and description of such configurations in Schnell, any [person of ordinary skill in the art] could have predictably and successfully included a similar mounting configuration on other cameras, particularly given the ubiquity of hardware camera (and other device) mounts at the time." *Id.* Petitioner further contends that "the widespread use of battery power supplies as taught in Schnell would have made the incorporation of such a power supply in Vaios' cameras a simple, predictable task." *Id.* Petitioner asserts that a person of ordinary skill in the art "would have been motivated to make the foregoing combination of Vaios and Schnell to once again enable a portable monitoring device that may be securely mounted and connected to power in a simple, convenient manner (e.g., using stand 120 and batteries), and just as

easily unsecured and disconnected to facilitate desired movement to and secure mounting at a different location." *Id.* (citing Ex. 1034 ¶ 166); *see also* Ex. 1031, 3:2–24, 1:28–30, 1:62–63.

b) Patent Owner's Contentions

Patent Owner argued against the combination of Vaios and Menard (*see* Sect. II.H.3.b, *supra*), but does not argue separately against the combination of Schnell with Vaios and Menard.

c) Discussion of Reasons to Combine Vaios, Menard, and Schnell

After review of the evidence, we determine that Petitioner has shown by a preponderance of the evidence that a person of ordinary skill in the art would have had reason to combine Vaios, Menard, and Schnell with a reasonable expectation of success.

Regarding claim 11, we agree with Petitioner that it would have been obvious to use an LCD display screen in Vaios's cameras/wireless exterior modules to provide a display for presenting information about the camera according to Schnell's teachings. Pet. 61 (citing *id.* at 26–27; Ex. 1034 ¶¶ 228–230). As Petitioner contends, the combination of known elements (Schnell's LCD display with Vaios's camera) by known methods yielding predictable results, is a recognized reason to combine prior art references. *Id.* at 26 (citing *KSR*, 550 U.S. at 416).

Schnell discloses that its camera's LCD display indicates the number of exposures taken, the power level, and other information. Ex. 1031, 3:64–67. We agree with Petitioner that a person of ordinary skill in the art would have seen the advantages of adding these Schnell features to Vaios's cameras. *Id.* at 26–27 (citing Ex. 1034 ¶ 144). When there are advantages

in making a prior art combination, such as providing Vaios's camera with Schnell's LCD display and related software to provide information about the camera, a person of ordinary skill in the art has reason to combine the prior art references. *Unwired Planet*, 841 F.3d at 1003–04.

Furthermore, Petitioner's evidence shows that LCD displays and associated software were well-known and in widespread use, and their combination with Vaios's camera "would not have required significant or unpredictable changes in hardware components, interfaces, complexity, cost, or methodology." Pet. 26 (citing Ex. 1034 ¶ 143). Accordingly, the evidence shows that a person of ordinary skill in the art would have had a reasonable expectation of success in combining Schell's LCD display and software into Vaios's camera.

Regarding claim 13, Petitioner's evidence shows that a person of ordinary skill in the art would have recognized that Schnell's camera portability (expressly disclosed in Schnell), locking mechanism (bolts, holes, stands, flexible bands) to securely affix the camera in a desired location, and electrical receptacle (for power supply with batteries to power the camera), would have been desirable features to incorporate into Vaios's cameras. Pet. 62 (citing *id.* at 27–33; Ex. 1034 ¶¶ 231–233). Specifically, Schnell discloses that its camera is a "compact size that allows for easy portability." Pet. 28 (citing Ex. 1031, 5:61–64; *see also* 1:63, 3:20–23, 3:59–63). Schnell further discloses that its support or stand can be removably attached to its camera with a threaded bolt and holes, and that its mounting members and flexible band, may be used to secure its camera in a desired location. Pet. 28–32 (citing Ex. 1031, 2:61–3:23, Fig. 2B; Ex. 1034 ¶¶ 148–153). Schnell discloses a DC jack and batteries as a power supply. *Id.* at 32–33

(citing Ex. 1031, 4:1–12, 5:12–14, Fig. 5B; Ex. 1034 ¶ 154). The evidence shows that such power supplies and associated electrical receptacles were well-known in the art at the time and would have contributed to device portability. *Id.* at 34 (Ex. 1034 ¶ 157). Accordingly, Schnell and the general knowledge of a person of ordinary skill in the art establishes that camera portability, locking mechanism, and electrical receptacles were known in the prior art. When these known features are combined with Vaios's known camera, the result is simply the combination of known elements by known methods yielding predictable results. *Id.* at 33 (citing *KSR*, 550 U.S. at 416, 418).

As Dr. Hochwald states, Schnell's portability enables the camera to be moved from one location to another. Ex. 1034 ¶ 158 (citing Ex. 1031, 3:3–24, 1:28–30, 1:62–63). Schnell's locking mechanism (bolts, holes, stands, flexible bands) enables the camera to be fixed securely at a desired location. *Id.* ¶ 155; Ex. 1031, 2:61–3:23. Schnell's electrical receptacle (including the DC jack 464 and/or electrical contacts to connect batteries 468) enable the camera to be quickly attached to a source of electricity. Ex. 1034 ¶ 154. As discussed, when there are advantages in making a prior art combination, one of ordinary skill in the art has reason to combine the prior art references. *Unwired Planet*, 841 F.3d at 1003–04. Petitioner's evidence shows that a person of ordinary skill in the art would have combined Schnell's portability, locking mechanism, and electrical receptacle into Vaios to obtain the associated advantages.

Petitioner's evidence further shows a person of ordinary skill in the art considering Vaios, Menard, and Schnell together would have had a reasonable expectation of success in arriving at the claimed invention.

Pet. 33–34 (citing Ex. 1034 ¶¶ 155–158). Schnell shows how to make a camera with a "compact size" that is "portable." *Id.* at 27–28 (citing Ex. 1031, 1:63, 3:20–23, 5:61–64, Figs. 1–3). Schnell details the features of its "locking mechanism" for securing its camera at a desired location, including its stand, threaded bolts and holes, mounting members, and flexible band, showing how they are constructed and used. *Id.* at 28–32 (citing *Id.* at 2:61–3:23, Fig. 2B). Schnell further shows how its power supply is connected to other components of its camera, and indicates that the power supply may be batteries or a DC jack with associated electrical receptacles (connections). *Id.* at 32–33 (citing 4:1–12, 5:12–14, Fig. 5B; *see also* Fig. 3). In addition, Petitioner's evidence establishes that batteries and DC power supplies were in widespread use and contributed to camera portability. Ex. 1034 ¶ 157. Consequently, we agree Petitioner's contention that a person of ordinary skill in the art would have had a reasonable expectation of success in combining Schnell's portability, locking mechanism, and electrical receptacle with Vaios's camera, and that this "would have been easily, predictably, and successfully accomplished." Pet. 33–34 (citing Ex. 1034 ¶¶ 155–158 (quote at ¶ 155)).

Regarding claim 14, Petitioner's evidence shows that it would have been obvious to include Schnell's battery power supply (portable power supply) and camera mounting configurations (holster) in Vaios/Menard's wireless exterior modules "to create a portable monitoring device that can be easily and securely affixed in a desired location." Pet. 62–63 (citing *id.* at 37–38; Ex. 1034 ¶¶ 235–237). Petitioner shows that this is a combination of known elements (Schnell's battery power supply and camera mounting configurations with Vaios's camera) by known methods yielding predictable

results. *Id.* at 37–38 (citing Ex. 1034 ¶¶ 165–166), 32–33 (citing Ex. 1031, 4:1–12, 5:12–14, Fig. 5B, *see also* Fig. 3); *KSR*, 550 U.S. at 416. Petitioner shows that the combination would enable the resulting portable monitoring device to be securely mounted and connected to power in a simple, convenient manner, and just as easily disconnected to facilitate desired movement to and secure a mounting at a different location. Ex. 1034 ¶ 166 (citing Ex. 1031, 3:2–24, 1:28–30, 1:62–63). We agree with Petitioner that these advantages associated with the combination of Vaios, Menard, and Schnell would have given a person of ordinary skill in the art reason to make the combination. *Unwired Planet*, 841 F.3d at 1003–04.

Petitioner also shows that a person of ordinary skill in the art would have had a reasonable expectation of success in making the combination because battery power supplies and camera mounting configurations were in widespread use at the time. Pet. 38 (citing Ex. 1034 ¶ 165). Furthermore, as Petitioner notes, the mounting mechanisms (stand, threaded bolt and holes, mounting members and flexible band) are simple in design, and are detailed in Schnell's description and drawings. *Id.* (citing Ex. 1034 ¶ 165); Ex. 1031, Figs. 1, 2B.

d) Conclusion on Motivation to Combine Vaios, Menard, and Schnell

Accordingly, Petitioner has shown by a preponderance of the evidence that a person of ordinary skill in the art would have had reasons to combine Vaios, Menard, and Schnell with a reasonable expectation of success in arriving at the claimed invention notwithstanding Patent Owner's arguments to the contrary.

3. Independent Claim 1

Petitioner contends that the combination of Vaios and Menard accounts for all of the limitations of claim 1. Pet. 61. Patent Owner does not contend that Schnell undermines the combination of Vaios and Menard. Accordingly, for the reasons already explained above in Section II.H.4, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 is unpatentable as obvious.

4. Dependent Claim 11

Claim 11 depends from claim 1 and recites "wherein said wireless exterior module includes a display screen." Ex. 1001, 20:32–34. Petitioner contends that "Schnell discloses a wireless exterior module (camera 100, 400, 700) that includes a display screen (LCD display 157)." Pet. 61 (citing *id.* at 25; Ex. 1034 ¶¶ 228–230; Ex. 1031, code (57), 2:33–37, 3:64–67, Figs. 1–3).

Patent Owner argues that Schnell is not a "wireless exterior module" because it does not include a video camera proximate a door, among other features. Resp. 40–41. Petitioner replies that Schnell's camera is a "wireless exterior module" regardless of whether it includes a still or video camera. Reply 19 (citing Ex. 1034 ¶ 142). Petitioner further contends that Vaios alone or with Menard discloses a "wireless exterior module" and that Schnell was cited for its disclosure of the additional elements of claims 11, 13, and 14 of the '581 patent. *Id.* at 20.

We agree with Petitioner. Patent Owner's argument attacks Schnell individually, and does not properly consider its combination with Vaios and Menard, which each disclose a video camera proximate a door. Pet. 12–13 (citing Ex. 1003, 3:24–30, 7:62–8:4, 9:49–53, 9:59–61, Fig. 1; Ex. 1034

¶¶ 101–105) (discussing Vaios's video camera); 50–54 (citing Ex. 1034 ¶¶ 194–205; Ex. 1004, 5:31–6:1, 6:14–15, 13:27–29, 19:30–20:6, 20:20–22, 21:6–7, 21:15, 21:11–15, 22:17–23, claim 25, Figs. 7, 8) (discussing Menard's video camera); *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)) ("non-obviousness cannot be established by attacking the references individually").

Accordingly, we are persuaded that Petitioner's evidence that the combination of Vaios, Menard, and Schnell teaches claim 11.

5. Dependent Claim 13

Claim 13 recites "wherein said wireless exterior module is portable and includes a locking mechanism and an electrical receptacle for quickly attaching to a source of electricity." Ex. 1001, 20:38–41. Petitioner contends that

> Schnell discloses a wireless exterior module (camera 100, 400, 700) that is portable and includes a locking mechanism (e.g., one or more of mounting members 142, 144, stand 120, housing 102, flexible band 150, mounting holes 126, 128, and bolt 127) and an electrical receptacle (e.g., DC jack 464 and/or electrical connections for batteries 468) for quickly attaching to a source of electricity.

Pet. 62 (citing *id.* at 27–33; Ex. 1034 ¶¶ 231–234). Petitioner, thus, shows that Schnell discloses a camera that is portable, has a locking mechanism, and an electrical receptacle, as recited in claim 13.

Patent Owner argues that Schnell does not disclose a "wireless exterior module." Resp. 40–41. As explained in Section II.I.4, Patent Owner's argument does not undermine Petitioner's showing that the combination of Vaios, Menard, and Schnell teaches this feature.

Patent Owner also argues that Schnell does not disclose a "locking mechanism" because "[t]here is nothing locking the camera to the stand or the mounting members." Resp. 41–42. To the contrary, Petitioner asserts that Schnell's mechanisms (stand, threaded bolts and housing holes, and mounting members and flexible band) constitute "locking mechanisms" because they "securely attach the camera to stand 120." Reply 20 (citing Pet. 28–31; Ex. 1034 ¶¶ 148–153). Petitioner notes that the '581 patent does not prescribe any specific structure or configuration for the "locking mechanism" beyond stating that "locking mechanism 28 enables the DVMS module 10 to be installed securely wherever holstered." *Id.* (citing Ex. 1001, 8:7–11).

We agree with Petitioner that, as described in the '581 patent, the term "locking mechanism" is sufficiently broad to cover a device that enables a camera to be *installed securely*, and does not require that it be *locked*, as Patent Owner argues. Reply 20 (citing Pet. 28–31; Ex. 1001, 8:7–11; Ex. 1034 ¶¶ 148–153); Resp. 41–42. Thus, we agree with Petitioner that Schnell's mechanisms enable the camera to be securely attached to the stand, thus disclosing the "locking mechanism" recited in claim 11.

6. Dependent Claim 14

Claim 14 depends from claim 1 and recites "wherein said wireless exterior module has a portable energy source and is secured in a holster." Ex. 1001, 20:42–44. Petitioner contends that "Schnell discloses a wireless exterior module (camera 100, 400, 700) having a portable energy source (batteries 468) and that is secured in a holster (e.g., stand 120)." Pet. 62–63 (citing *id.* at 35–38; Ex. 1034 ¶¶ 160–166, 235–238; Ex. 1031, 1:28–30, 1:62–63, 2:33–3:24, 5:34–47, 5:13–14, 5:61–64, 6:3–28, Figs. 1–2B, 5C).

Patent Owner argues that Schnell does not disclose a "wireless exterior module." Resp. 40–41. As explained in Section II.I.4, Patent Owner's argument does not undermine Petitioner's showing. We are persuaded by Petitioner's evidence that the combination of Vaios, Menard, and Schnell teaches the limitations of claim 14.

7. Conclusion for Ground 4

Petitioner has shown by a preponderance of the evidence that a person of ordinary skill in the art would have been motivated to combine Vaios, Menard, and Schnell with a reasonable expectation of success in arriving at claims 11, 13, and 14 (which include the limitations of claim 1), and that the combination teaches or suggests each limitation of claims 11, 13, and 14, notwithstanding Patent Owner's arguments to the contrary. Consequently, claims 11, 13, and 14 are unpatentable as obvious under § 103 over the combination of Vaios, Menard, and Schnell.

J. Alleged Obviousness of Claim 13 over Klein, Menard, and Vaios (Ground 5)

As discussed in Sections II.H and II.I, *supra*, we have decided that these claims are unpatentable. Consequently, we do not reach this challenge ground.

K. Alleged Obviousness of Claims 11, 13, and 14 over Klein, Menard, Vaios, and Schnell (Ground 6)

As we decided previously that these claims are unpatentable in Section II.H and II.I, *supra*, we do not reach this challenge ground.

III. CONCLUSION

We determine that Petitioner has demonstrated by a preponderance of the evidence that claims 11, 13, and 14 of the '581 patent are unpatentable notwithstanding Patent Owner's arguments.

IV. ORDER

For the foregoing reasons, it is

ORDERED that Petitioner establishes by a preponderance of the evidence that challenged claims 11, 13, and 14 of the '581 patent are unpatentable; 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.[13]

[13] 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. 16654 (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).

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
11, 13, 14	103(a)	Vaios, Schnell		11, 13, 14
13, 14	103(a)	Vaios, Choi		13, 14
13	103(a)	Vaios, Menard	13	
11, 13, 14	103(a)	Vaios, Menard, Schnell	11, 13, 14	
13	103(a)	Klein, Menard, Vaios[14]		
11, 13, 14	103(a)	Klein, Menard, Vaios, Schnell[15]		
Overall Outcome			11, 13, 14	

[14] As explained above, because we have decided that the grounds based on Vaios and Menard, and Vaios, Menard, and Schnell, demonstrate obviousness of claims 11, 13, and 14 of the '581 patent, we do not reach the grounds based on Klein.
[15] See previous footnote.

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