

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RESIDEO TECHNOLOGIES, INC. & CENTRAL SECURITY GROUP—
NATIONWIDE, INC.,

Petitioner,

v.

UBIQUITOUS CONNECTIVITY, LP,

Patent Owner.

IPR2021-01355

Patent 10,344,999

Before GEORGIANNA W. BRADEN, ROBERT J. WEINSCHENK, and
KEVIN C. TROCK, *Administrative Patent Judges*.

BRADEN, *Administrative Patent Judge*.

DECISION

Granting Institution of *Inter Partes* Review

35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Resideo Technologies, Inc. and Central Security Group–Nationwide, Inc. (collectively “Petitioner”) filed a Petition requesting *inter partes* review of claims 1–25 (“the challenged claims”) of U.S. Patent No. 10,344,999 (Ex. 1001, “the ’999 patent”). Paper 3 (“Pet.”), 4–5. Ubiquitous Connectivity, LP (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 6.

Patent Owner disclaimed claims 15–24 pursuant to 37 C.F.R. § 1.321(a). Ex. 2001. We do not institute review as to any of the disclaimed claims because “[n]o *inter partes* review will be instituted based on disclaimed claims.” 37 C.F.R. § 42.107(e) (2019). The remaining challenged claims are claims 1–14. Upon consideration of the Petition and Preliminary Response, we are persuaded Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the remaining challenged claims of the ’999 patent. Accordingly, we institute *inter partes* review of all remaining challenged claims on all grounds raised.

B. *Real Parties-in-Interest*

Petitioner identifies Resideo Technologies, Inc., Central Security Group–Nationwide, Inc., the City of San Antonio, Texas, the City Public Service Board of San Antonio, Texas d/b/a CPS Energy, Ademco, Inc., and Honeywell International, Inc. as real parties-in-interest.¹ Pet. 1. Patent Owner identifies itself as the real party-in-interest. Paper 6 (Patent Owner’s Mandatory Notices), 2.

¹ Honeywell disputes its identification as a real party-in-interest. Pet. 1 n.2.

C. Related Matters

Petitioner identifies *Ubiquitous Connectivity, LP v. City of San Antonio d/b/a CPS Energy*, 5:20-cv-00815 (W.D. TX) and *Ubiquitous Connectivity, LP v. Central Security Group–Nationwide, Inc. d/b/a Alert 360*, 4:20-cv-00649 (N.D. OK), as district court proceedings that may affect or be affected by this proceeding. Pet. 1–2 (citing Exs. 1043, 1049). Petitioner also discloses that it previously had filed petitions for *inter partes* review on patents related to the '999 patent. *Id.* at 2. Final Written Decisions have been issued by PTAB and one of the Decisions was appealed to the Federal Circuit as Case Nos. 21-1813 and 21-1814. *Id.*

Patent Owner further identifies

- *Ubiquitous Connectivity, LP v. Central Security Group - Nationwide, Inc.*, N.D. Okla. No. 4:18-cv-00368,
- *Ubiquitous Connectivity, LP v. Central Security Group - Nationwide, Inc.*, N.D. Okla. No. 4:20-cv-00649
- *Ubiquitous Connectivity, LP v. City Of San Antonio, by and through its agent, City Public Service Board Of San Antonio, d/b/a CPS Energy*, W.D. Tex. No. 5:18-cv-00718,
- *Ubiquitous Connectivity, LP v. City Of San Antonio, by and through its agent, City Public Service Board Of San Antonio, d/b/a CPS Energy*, W.D. Tex. No. 5:20-cv-00815
- *Ubiquitous Connectivity, LP v. TXU Energy Retail Company, LLC*, N.D. Tex. No. 3:18-cv-02084, and
- *Ubiquitous Connectivity, LP v. TXU Energy Retail Company, LLC*, N.D. Tex. No. 3:20-cv-03586

as district court proceedings that may affect or be affected by this proceeding. Paper 6, 2–3.

D. The '999 Patent

The '999 patent is titled “Ubiquitous Connectivity and Control System for Remote Locations,” and was issued on July 9, 2019 from a provisional patent application filed on Nov. 18, 2004. Ex. 1001, codes (45), (54), (60). The '999 patent relates to “a remote monitoring and control system for an environment.” Ex. 1001, 1:26–27. Such a system is shown in Figure 1 of the '999 patent, which is reproduced below.

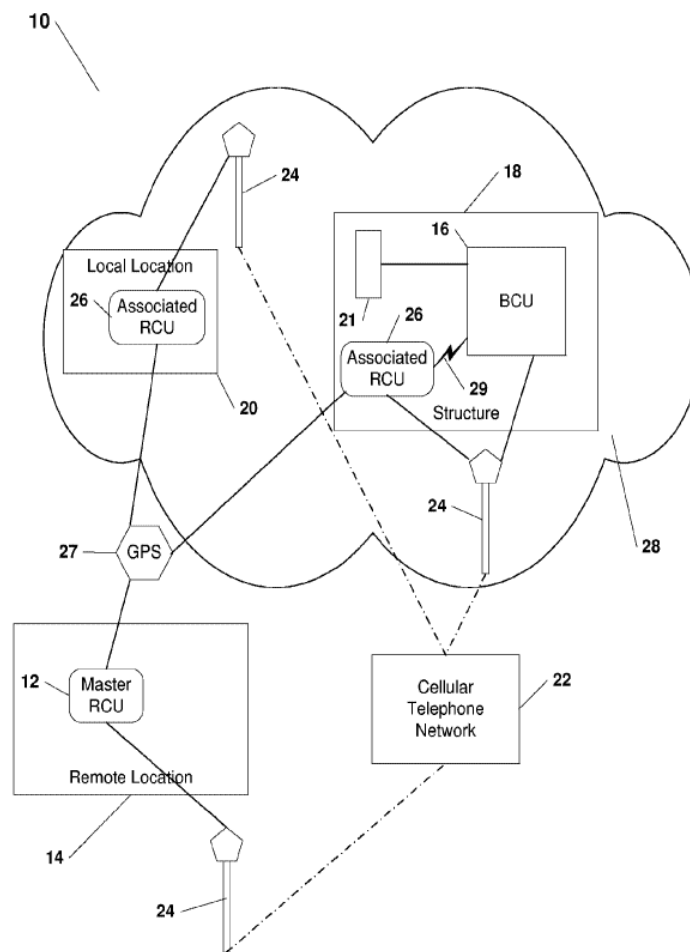


Figure 1 is a block diagram illustrating an environmental connectivity and control system. *Id.* at 3:45–47. The system includes base control unit 16, control associated devices 21, master remote control unit 12, associated remote control units 26, and cellular telephone network 22. *Id.* at 3:60–67,

Fig. 1. Master remote control unit 12 interfaces with base control unit 16 to monitor and control devices 21 via “a short message and/or the data bearer cellular telephone network 22.” *Id.* Associated remote control units 26 also interface with base control unit 16 to monitor and control devices 21 when in proximate area 28. *Id.* at 3:66–4:2.

In certain embodiments, the system provides an on-demand bidirectional communications interface for monitoring, controlling, and securing various environment functions and characteristics attendant the interior and exterior of a building. *Id.* at 11:32–39, 12:6–12. Base control unit 16 “consists [of] a wireless module 70 communicating with a microcontroller 106 for operating a number of separate subsystems” and “communicates status information to the remote control unit on a periodic or event-driven basis.” *Id.* at 4:57–59, 9:17–19. According to the ’999 patent, it can initiate communications based on its aggregated inputs, or it can respond to individual requests and commands received from the remote control unit. *Id.* at 9:19–21. In certain embodiments, events that could cause the base control unit to initiate a communications session with the remote control unit include fire or burglar alarm activation, HVAC (heating, ventilation, and air conditioning) or freezer temperature thresholds exceeded, equipment failures, an air filter change necessary, a change in the home state vector, (occupied, unoccupied) or a geographical boundary condition exceeded by one of the other remote control units. *Id.* at 9:22–29.

The ’999 patent discloses that remote control unit 12 can be a “conventional cellular telephone handset[] . . . equipped with a programming kernel, such as Java or J2ME.” *Id.* at 7:12–18. Remote control unit 12 “communicates with the base control unit 16 to affect the operational aspects thereof and peripheral equipment operatively attached thereto.” *Id.* at 6:64–

66. Remote control unit 12 executes applications that “communicate[] . . . command[s] to the base control unit 16 through the cellular network 22.” *Id.* at 7:5–7. “The data path between the remote control unit and the base control unit is SMS (‘simple message service’).” *Id.* at 7:24–26. SMS messages are “processed within the cellular telephone’s application software” and “by the base control unit applications software.” *Id.* at 7:54–56, 11:25–27.

E. Illustrative Claims

Claims 1, 15, and 23 are independent and are directed generally toward a base unit that is configured to communicate with an environmental device and a remote unit that has a first communication interface, a wireless communication interface, and a microcontroller. *Compare id.* at 13:57–14:23, *with id.* at 15:8–53 and 16:18–52. Claims 2–14, 16–22, 24, and 25 depend directly or indirectly from claims 1, 15, or 23. *Id.* at 14:24–17:19. Claim 1 is illustrative of the challenged claims and is reproduced below.

1. A system configured to communicate with a cellular remote unit, the system comprising:

an environmental device configured to control an environmental characteristic;

a communication interface configured to communicate with the environmental device;

a wireless circuit configured to send a first message to the cellular remote unit via a cellular communications network and to receive a second message from the cellular remote unit via the cellular communications network;

wherein the first message is a first digital communications message including a representation of environmental information, the environmental information being received from

the environmental device via the communication interface and indicative of a measurement of the environmental characteristic;

wherein the second message is a second digital communications message including a command for the environmental device, the command being initiated by a user via the cellular remote unit and indicating to change the environmental characteristic;

a microcontroller configured to generate a control instruction from the command included in the second message and to send the control instruction to the environmental device via the communication interface;

wherein the environmental device is configured to change the environmental characteristic responsive to the control instruction; and

a housing configured to mount to a wall of a building, the housing physically supporting the environmental device, the communication interface, the wireless circuit, and the microcontroller.

Id. at 13:57–14:23.

F. Asserted Challenges to Patentability and the Evidence of Record

Petitioner asserts the challenged claims would have been unpatentable in view of the teachings of the following prior art:

Claims	35 U.S.C. §	References
1, 4–7, 9–12	103(a)	Oinonen, ² Whitley, ³ Tessier ⁴
2, 3, 8, 13, 14	103(a)	Oinonen, Whitley, Tessier, Ehlers ⁵
15–22	103(a)	Oinonen, Whitley, Ehlers, Suzuki ⁶

² US Patent No. 6,275,710 B1, filed Aug. 14, 2001. Ex 1016 (“Oinonen”).

³ WO 99/49680, issued Sept. 30, 1999. Ex. 1023 (“Whitley”).

⁴ US 2005/0194456 A1, filed Mar. 2, 2004. Ex. 1046 (“Tessier”).

⁵ US 2004/0117330 A1, filed July 28, 2003. Ex. 1020 (“Ehlers”). Petitioner relies on the filing date of Ehlers to establish its availability as prior art under 35 U.S.C. § 102(e). *See* Pet. 14.

⁶ JP Application No. 2002-247657, published August 30, 2002. Ex. 1044 (“Suzuki”).

Claims	35 U.S.C. §	References
23, 24	103(a)	Oinonen, Whitley, Menard ⁷
25	103(a)	Oinonen, Whitley, Yamashita ⁸
1, 3–7, 9–12	103(a)	Bielski, ⁹ Wu ¹⁰
2, 8, 13, 14	103(a)	Bielski, Wu, Ehlers
15–22	103(a)	Bielski, Wu, Suzuki
23, 24	103(a)	Bielski, Wu, Menard
25	103(a)	Bielski, Wu, Yamashita

Petitioner also relies upon the Declaration of Kevin Jeffay (Ex.1003) and Rupert Lee (Ex. 1028).

II. PRELIMINARY ISSUES

A. Level of Ordinary Skill in the Art

Petitioner does not identify the level of skill of a person of ordinary skill in the art. *See* Pet. 1–90. Petitioner’s declarant, Dr. Jeffay, identifies a person of skill in the art as someone with “at least a bachelor’s degree in electrical engineering or computer science and at least two years of industry experience in the field of embedded systems and/or process control.”

Ex. 1003 ¶ 10. Dr. Jeffay then states that “for the purpose of this proceeding, I will adopt Patent Owner’s definition.” *Id.* Patent Owner

⁷ U.S. Patent Pub. 2002/0177428, published November 28, 2002. Ex. 1021 (“Menard”).

⁸ U.S. Patent No. 6,909,891, filed December 13, 2001, issued June 21, 2005. Ex. 1045 (“Yamashita”).

⁹ EP 1391861 A2, filed Feb. 25, 2004. Ex. 1017 (“Bielski”). Bielski is a certified translation of a European Patent Application originally published in German. *See* Ex. 1017, 20–39.

¹⁰ Chi-Hsiang Wu and Rong-Hong Jan, *System integration of WAP and SMS for home network system*, 42 Computer Networks 493–502 (July 15, 2003). Ex. 1018 (“Wu”). Petitioner relies upon the Lee and Hall-Ellis Declarations to establish the public availability of Wu on the effective date. *See* Pet. 13–14 (citing Ex. 1028; Ex. 1029, 20). Patent Owner does not dispute the public availability of Wu. *See* PO Resp. 24–29.

provides a similar definition, arguing that such a person would have had “at least a bachelor’s degree in electrical engineering or computer science, and at least two years of industry experience in the field of computers and communications.” Prelim. Resp. 13.

“[T]he level of skill in the art is a prism or lens through which a judge, jury, or the Board views the prior art and the claimed invention.” *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We find Dr. Jeffay’s and Patent Owner’s assessment of the level of skill in the art to be commensurate with the problems and solutions disclosed in the prior art. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Accordingly, at this stage of the proceeding and for purposes of this Decision, we adopt Patent Owner’s definition. *Id.*; *see Resideo Technologies, Inc. v. Ubiquitous Connectivity, LP*, IPR2019-01335, Paper 38 at 8 (PTAB Jan. 26, 2021)).

B. Claim Construction

In *inter partes* reviews, a claim is interpreted “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2019). Under this standard, the claim is construed “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.” *Id.* Only claim terms which are in controversy need to be construed and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Petitioner contends the terms “microcontroller” and “energy conservation mode” should be construed. Pet. 7–10. Petitioner argues the term “microcontroller” should be construed consistent with the construction rendered in related proceedings IPR2019-01336 and IPR2019-01335 to

mean “microcomputer, microprocessor, or other equipment used for process control.” *Id.* at 9. According to Petitioner, “this is the proper construction of ‘microcontroller.’” *Id.* Petitioner also argues the term “energy conservation mode” should be construed consistent with its plain and ordinary meaning to be a “mode of operation that conserves energy.”

Pet. 9–10. Petitioner notes that in related proceeding IPR2019-01355, Patent Owner’s declarant, Mr. Zatkovich, testified that managing a thermostat when no one is occupying a home would “[c]ertainly” be energy conservation. *Id.* at 9 (citing Ex. 1003 ¶¶ 191, 193; Ex. 1041, 9:13–10:11).

Patent Owner does not argue that either of these terms require express construction, does not propose any construction for these terms, and does not dispute Petitioner’s proposed constructions. Prelim. Resp. 13–15. Rather, Patent Owner contends the only term that should be construed is “a housing configured to mount to a wall of a building, the housing physically supporting the environmental device, the communication interface, the wireless circuit, and the microcontroller.” *Id.* According to Patent Owner, this claim element should be given its plain meaning, which requires a housing that both (1) is configured to mount to a wall of a building; and (2) physically supports the environmental device, the communication interface, the wireless circuit, and the microcontroller. *Id.* at 15. Petitioner does not offer a formal construction of this term, but asserts that it does not require a “compact and discrete wall mountable device.” Pet. 31.

At this stage of the proceeding, the parties appear to agree that the terms “microcontroller,” “energy conservation mode,” and “a housing configured to mount to a wall of a building, the housing physically supporting the environmental device, the communication interface, the wireless circuit, and the microcontroller” should be construed to have their

plain and ordinary meaning as understood by one of ordinary skill in the art in view of the patent and its prosecution history. *See* Pet. 7–9; Prelim. Resp. 13–15. Therefore, because there is no apparent controversy as to the meaning of any of these terms, we decline to expressly construe them. *See Nidec Motor*, 868 F.3d at 1017.

C. Disclaimed Claims

A patent owner, in a preliminary response, “may file a statutory disclaimer under 35 U.S.C. § 253(a). . . . disclaiming one or more claims in the patent.” 37 C.F.R. § 42.107(e). Here, challenged claims 15–24 of the ’999 Patent have been statutorily disclaimed by Patent Owner. Ex. 2001. Our rules instruct that “[n]o *inter partes* review will be instituted based on disclaimed claims.” *See* 37 C.F.R. § 42.107(e). Thus, the rule precludes institution of an *inter partes* review on the basis of disclaimed claims 15–24 of the ’999 Patent. Nonetheless, challenged claims 1–14 remain and will be discussed below.

D. Section 325(d)

The Board has discretion under 35 U.S.C. § 325(d) to reject a petition when the same or substantially the same prior art or arguments were presented previously in another proceeding before the Office. The relevant portion of that statute is reproduced below:

In determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.

35 U.S.C. § 325(d). In evaluating whether to deny institution on the basis of 35 U.S.C. § 325(d), the Board has considered certain non-exclusive factors: (a) the similarities and material differences between the asserted art and the

prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination; (d) the extent of the overlap between the arguments made during examination and the manner in which a petitioner relies on the prior art or a patent owner distinguishes the prior art; (e) whether a petitioner has pointed out sufficiently how the Office erred in evaluating the asserted prior art; and (f) the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments. *See Becton Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, slip op. at 17–18 (PTAB Dec. 15, 2017) (Paper 8).

Factors (a), (b), and (d) of the *Becton, Dickinson* factors relate to whether the art or arguments presented in the Petition are the same or substantially the same as those previously presented to the Office. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 10 (PTAB Feb. 13, 2020) (designated precedential Mar. 24, 2020) (“*Advanced Bionics*”). Factors (c), (e), and (f) “relate to whether the petitioner has demonstrated a material error by the Office” in its prior consideration of that art or arguments. *Id.* Under a two-part framework set forth in *Advanced Bionics*, we first determine whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office by considering factors (a), (b), and (d). *Id.* at 8, 10. If “either condition of first part of the framework is satisfied”—that is, if “the same or substantially the same art previously was presented to the Office” or “the same or substantially the same arguments previously were presented to the Office,” we then consider factors (c), (e), and (f) to

determine whether Petitioner has demonstrated a material error by the Office. *Id.* at 8, 10.

Patent Owner contends the Board should exercise its discretion to deny institution under 35 U.S.C. § 325(d). Prelim. Resp. 2–13. Specifically, Patent Owner argues that the same disclosure as Whitley was relied upon by the Examiner during prosecution of the '999 Patent.¹¹ *Id.* at 4. Patent Owner then argues that Oinonen, Bielski, and Wu are cumulative of Whitley. *Id.* at 5–7. Patent Owner also asserts that, contrary to Petitioner's statements, references Yamashita, Tessier, and Ehlers were cited to and considered by the Examiner during prosecution of the '999 patent. *Id.* at 7–10.

Patent Owner further contends that

[b]ecause the Petition relies on references that were before the Office during prosecution or which are cumulative to those before the Office, it was Petitioners' duty to "demonstrate that the Office erred in a manner material to the patentability of challenged claims." *Advanced Bionics*, IPR2019-01469, Paper 6 at 7–8.

Prelim. Resp. 11. According to Patent Owner, "Petitioners made no meaningful attempt to establish any material error by the Examiner" or to "identify any specific new combination that was not cumulative of [was] before the Examiner." *Id.* at 11–12.

¹¹ Petitioner states "[a] family member of Whitley was cited but not relied upon in an action." Pet. 11 n.3. Patent Owner argues, however, that it was not merely a family member of Whitley that was cited during prosecution, but the patent issuing from the application relied upon by Petitioner. Prelim. Resp. 4 (citing Ex. 1001, 2; Ex. 2002, U.S. Patent No. 7,639,157 to Whitley (indicating that it issued from PCT/US99/06429)). Thus, Patent Owner contends it included the same disclosure as Whitley.

We are not persuaded by Patent Owner’s argument because neither the combination of Oinonen with Whitley nor the combination of Bielski with Wu is cumulative of Whitley alone and the other references present during prosecution. Although substantially the same disclosure found in Whitley was before the Office during the prosecution of the ’999 patent, here it is combined with different references and argued in different ways compared to what was made to the Examiner. We also do not find Patent Owner’s arguments that different prior art references are mapped to the same claims in a similar fashion persuasive. Thus, we do not find that the same or substantially the same arguments were presented previously to the Office, nor do we find that the same or substantially the same art was previously presented in the prosecution of the ’999 patent. Thus, the first part of the *Advanced Bionics* framework is not satisfied, and we decline to exercise our discretion under 35 U.S.C. § 325(d) to deny institution of a trial proceeding.

III. ANALYSIS

A. Alleged Obviousness of Claims 1, 4–7, and 9–12 in view of Oinonen, Whitley, and Tessier

Petitioner argues claims 1, 4–7, and 9–12 are unpatentable as obvious over Oinonen, Whitley, and Tessier. Pet. 4, 19–37. Patent Owner disagrees. Prelim. Resp. 15–21. For the reasons discussed below, we find Petitioner has established a reasonable likelihood of showing at least claim 1 would have been obvious in view of Oinonen, Whitley, and Tessier.

1. Oinonen

Oinonen discloses telemetric “applications in which the state of a peripheral device is monitored and the peripheral device is controlled via a telecommunication network, preferably at least partly via a mobile communication network.” Ex. 1016, 3:22–26. Examples of telemetric

applications include “a real estate alarm system for monitoring real estate for fire, leakage, [or] burglary,” and a heating system “in which the heating of an apartment can be set by telephone . . . so that the heating can be switched from a lower output to a higher output, or vice versa, by calling a certain telephone number.” *Id.* at 3:27–29, 3:66–4:3.

Oinonen describes the invention as follows:

The invention is based on the idea that the telecommunication terminal, preferably a mobile station coupled with a peripheral device via a connecting interface, transmits short messages or the like to another telecommunication terminal preferably via a mobile communication network. In a corresponding manner, control signals can be transmitted as short messages from the second telecommunication terminal to the first telecommunication terminal, where the device coupled therewith is controlled on the basis of the short messages via the connection interface.

The present invention gives considerable advantages to the systems and methods of prior art. The method of the invention can be applied by using conventional mobile stations equipped with the option for transmitting short messages or the like, preferably messages to be transmitted in text form. Thus, the state of the peripheral device coupled with the mobile station is monitored on the basis of changes in the state of lines in the connection interface, whereby upon a change in the state, a short message is arranged to be transmitted and received by a second mobile station, possibly informing the user of the mobile station preferably as a message displayed on the display of the mobile station. In a corresponding manner, the control of the peripheral device can be arranged easily by means of short messages, wherein the user selects or writes a message which corresponds to the desired control operation and is transmitted to the mobile station coupled with the peripheral device, whereby the state of the corresponding connection line is changed at the connection interface on the basis of this short message. As a result, the peripheral device conducts the desired operation.

Id. at 4:52–5:15.

Oinonen provides an example of such a system in Figure 4, which is reproduced below.

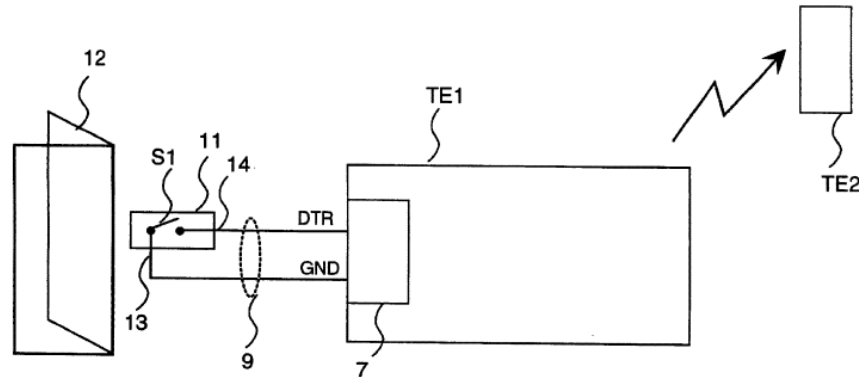


Figure 4 of Oinonen is a block diagram illustrating the monitoring of a peripheral device 11, i.e., switch S1 connected to door 12 to indicate whether door 12 is open or closed. *Id.* at 9:26–28. As shown in Figure 4, mobile terminal TE1 is connected to switch S1 via ground (GND) and data terminal ready (DTR) lines of connection interface 7. *Id.* at 9:28–34. When door 12 is open, 5V appears between DTR and GND, and when door 12 is closed, 0V appears between DTR and GND. *Id.* at 9:38–44.

Mobile terminal TE1 includes microprocessor 1 running application software for “examining the logical states of the input lines of th[e] connection interface 7 and for setting the logical states of the different output lines to the value (0/1) required at the time.” *Id.* at 7:12–26, 9:44–49, Fig. 3.¹² The application software transmits “the states of all input lines at the moment of examination, advantageously as a short message to the second telecommunication terminal TE2.” *Id.* at 10:38–42. The application software includes a message interpreter that allows TE1 and TE2 to interpret received messages. *Id.* at 8:33–37. Thus, TE1 can send standard texts to

¹² Mobile station TE2 has a similar structure. *See* Ex. 1016, 7:52–54.

TE2 such as “door is closed” or “door is open” instead of logical states 0 or 1, respectively. *Id.* at 10:48–54. When a mobile terminal is unable to interpret such a message, it transmits an error message “as a short message to the telecommunication terminal TE1, TE2 that sent the control message.” *Id.* at 8:50–55.

In addition to monitoring the open/closed status of door 12, Oinonen discloses telemetric applications that monitor the status of a real estate alarm system or the luminosity in a room, that lock/unlock a door, and that control the speed posted to a variable speed traffic sign. *Id.* at 10:63–66, 11:12–14, 11:46–57, 12:13–15, Figs. 5–8.

2. *Whitley*

Whitley discloses “a system and method for gathering and sending data over an existing wireless network remotely to control and monitor various gateways and the devices coupled to those gateways.” Ex. 1023, 2:19–21. Such a system is shown in Figure 1 of Whitley, which is reproduced below.

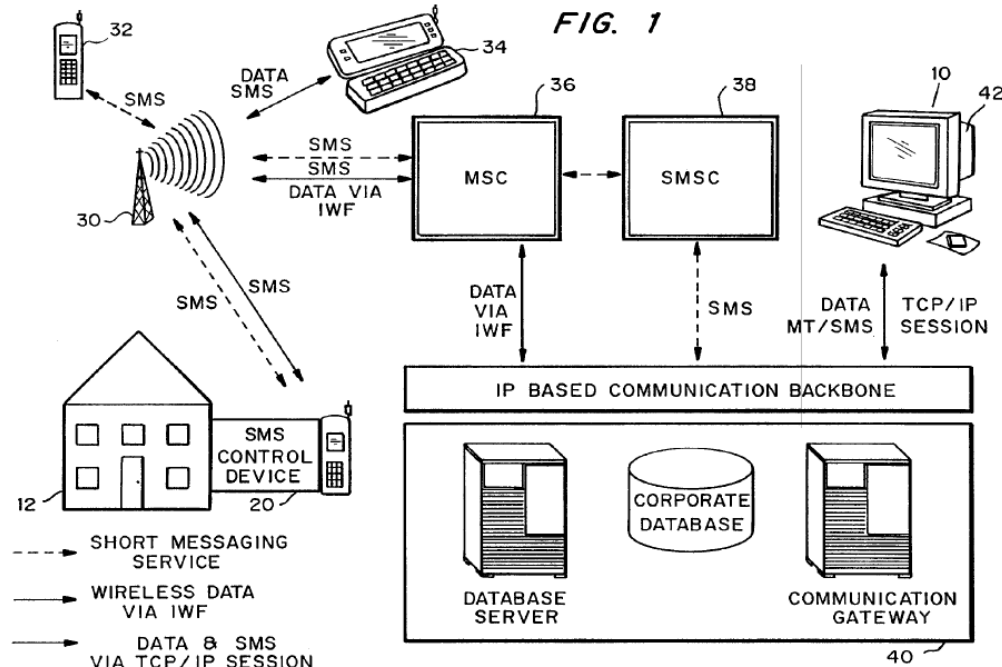


Figure 1 of Whitley is a block diagram of a system that “implements various methods for receiving and sending data from and to a selected gateway.” *Id.* at 7:13–15. System 10 includes facility 12, gateway 20 (e.g., an SMS control device), and cellular handset 32. *Id.* at 7:26–8:10.

Gateway 20 provides a physical interface between devices internal to facility 12 and external networks, and “may monitor, control, or both monitor and control various devices within the facility 12, such as lights, security sensors, an answering machine, [or] a home computer.” *Id.* at 8:27–9:3. Gateway 20 is uniquely addressable, and includes a processor and “a wireless transceiver for sending and receiving communications via a digital wireless network.” *Id.* at 9:3–8. The digital network allows gateway 20 “to send data [to] and receive commands directly from [a] customer, which could own or manage the facility.” *Id.* at 2:23–25. This allows the customer to “control the lights within a facility according to a pre-programmed pattern that the user may change by communicating new commands,” and to have

“remote control over the devices (e.g., home appliances or electronics) with which the gateway may communicate.” *Id.* at 3:8–13.

In one implementation, gateway 20 “formulates messages to other terminals into a short message form at” (i.e., SMS), and “transmit[s] the message . . . to a network element” such as a customer’s mobile terminal. *Id.* at 5:18–28. Because gateway 20 is uniquely addressable (e.g., via its phone number), “the customer can formulate messages or commands that will be routed directly from the customer’s mobile station . . . to the gateway.” *Id.* at 6:10–14. Thus, Whitley “provide[s] a method for allowing customers to remotely monitor and control devices located in the customer’s facility.” *Id.* at 6:19–21. In particular, customers can “receive monitoring information about activities at their facility via a mobile station” and “control the gateway and devices coupled to the gateway from their mobile station.” *Id.* at 6:22–26. For example, customers can “monitor[] facility 12 for energy usage data or alarms indicating a security breach,” and control “various electronic devices, such as an electronic thermostat or lights.” *Id.* at 12:21–25. Other types of devices that can be monitored and controlled include a “refrigerator, water heater, and [a] washer/dryer.” *Id.* at 16:21–23. Monitoring the energy usage of facility 12 allows a remote customer “to adjust the thermostat, or turn off one of the devices (such as the washer/dryer or water heater) coupled to the gateway 20 in order to save energy.” *Id.* at 17:2–4.

3. Tessier

Tessier discloses a “wireless communications device [] configured and arranged to control energy-consuming equipment in response to both local control inputs and wireless control inputs received from a gateway.” Ex. 1046 ¶ 9. Tessier further discloses that “local control inputs are

received, e.g., at the wireless communications device using an input device such as a keypad as is typically used for thermostats.” *Id.* According to Tessier, “[t]he gateway communicates with the utility company using one or more of a variety of types of communications and communications systems” such as “telephone lines, wireless telephony systems, paging systems, power lines and the Internet can all be used by the gateway to generate a wireless control-type signal. *Id.* ¶ 21. In one embodiment, Tessier’s “wireless thermostat 531 includes gateway 510 [that] is adapted to communicate directly to a utility signal source.” *Id.* ¶ 49.

4. Reasons to Combine the Teachings of Oinonen, Whitley, Tessier

Petitioner contends it would have been obvious to a person of ordinary skill in the art to combine the teachings of Oinonen with that of Whitley for several reasons. Pet. 20 (citing Ex. 1003 ¶¶ 235–245). First, Petitioner argues that Whitley discloses “it would be desirable to take advantage of the SMS capability of a deployed GSM network to provide more efficient remote monitoring and control of multiple distributed gateways.” *Id.* (citing Ex. 1003 ¶ 235; Ex. 1023, 7:1–3). Petitioner then argues that Whitley’s gateway is advantageously configured to remotely monitor and control multiple devices. *Id.* at 20–21 (citing Ex. 1003 ¶ 236; Ex. 1023, 6:19–21). Petitioner further argues that a person of ordinary skill in the art would have been motivated to rely on the teachings of Whitley because it allows for monitoring of activities over time, thereby allowing the user to control devices and save energy. *Id.* at 21 (Ex. 1003 ¶ 237; Ex. 1023, 7:4–6, 16:19–26). Lastly, Petitioner argues a person of ordinary skill in the art would have been motivated to combine the teachings of Whitley with that of Oinonen to “provide a method for allowing customers to receive monitoring information about activities at their facility” and to “provide a

method that allows customers to control the gateway and devices coupled to the gateway from their mobile station.” Pet. 21 (citing Ex. 1003 ¶ 238; Ex. 1023, 6:22–26). According to Petitioner, a person of ordinary skill in the art would have had a reasonable expectation of success in the combination given that both references rely on the same protocols. *Id.* (citing Ex. 1003 ¶ 238).

Petitioner argues that Tessier enables a user to remotely control HVAC equipment or other equipment via a gateway. Pet. 21 (citing Ex. 1046 ¶ 37; Ex. 1003 ¶ 242). According to Petitioner, “Tessier advantageously provides a thermostat that includes a gateway which reduces the complexity and simplifies installation by eliminating a stand-alone gateway device, and provides the Oinonen and Whitley system with the ability to communicate directly with a utility company allowing for the system to reduce energy load.” *Id.* at 22 (citing Ex. 1046 ¶¶ 9, 27, 49; Ex. 1003 ¶¶ 243–244). In this way, Petitioner argues that Tessier discloses “combining the functionality of a gateway, such as the gateway of the Oinonen and Whitley combination, with a wall mountable device (e.g., a thermostat).” *Id.* (citing Ex. 1003 ¶ 244). Petitioner concludes that a person of ordinary skill in the art would have understood that: (1) “the integration of a gateway and a thermostat would be beneficial as it reduces complexity and simplifies installation by reducing the number of devices installed on the premises”; (2) “the combined gateway and thermostat system reduces the amount of space used by independent devices, as the combined thermostat and gateway of Tessier is wall mountable”; and (3) “the combined system advantageously reduces installation costs.” *Id.* (citing Ex. 1046 ¶¶ 2, 6, 23, 49; Ex. 1003 ¶ 243).

At this stage of the proceeding, Patent Owner does not address Petitioner's rationale to combine the prior art teachings. *See generally* Prelim. Resp. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

For the reasons that follow, we find Petitioner has set forth, at this stage of the proceeding, sufficient reasoning with rational underpinning to combine the teachings of Oinonen, Whitley, and Tessier. Oinonen teaches monitoring and controlling a single device, and Whitley teaches an improvement to allow monitoring and controlling multiple devices via a gateway. *Compare* Ex. 1016, 4:41–61 (monitoring and controlling a peripheral device), *with* Ex. 1023, 6:19–21 (monitoring and controlling multiple devices via a gateway). Tessier, likewise, teaches improvements that can be made to remote control systems by using proximity based control. *See* Ex. 1003 ¶¶ 213–214.

5. *Independent Claim 1*

The only limitation of claim 1 in dispute at this stage of the proceeding is the requirement for “a housing configured to mount to a wall of a building, the housing physically supporting the environmental device, the communication interface, the wireless circuit, and the microcontroller.” *See* Prelim. Resp. 13–21; Ex. 1001, 14:20–23. Below, we address the party's arguments directed to this limitation. Regarding the other limitations recited in challenged claim 1, we are persuaded at this stage of the proceeding that the Petition with cited support from the references themselves and the testimony of Dr. Jeffay demonstrate a reasonable likelihood that Petitioner would prevail in showing the unpatentability of claim 1 of the '999 patent.

Petitioner contends Oinonen and Whitley's disclosure of environmental devices encompasses wall-mounted devices. Pet. 30 (citing Ex. 1003 ¶ 325). Petitioner specifically cites to Oinonen's disclosure of a home alarm, which Petitioner argues is typically a wall-mounted device. *Id.* (citing Ex. 1016, 10:63–66; Ex. 1003 ¶ 325). Petitioner further argues that Tessier teaches this limitation because it discloses “a thermostat with a wireless HVAC controller, a microcontroller that sends control signals to the HVAC system, a temperature sensor, and a wireless communication circuit.” Pet. 31 (citing Ex. 1046 ¶¶ 25–27, 42–43, Fig. 1; Ex. 1003 ¶¶ 326–327). Petitioner notes that “Tessier discloses an embodiment where the gateway itself is integrated with the thermostat” in a single housing. *Id.* at 32 (citing Ex. 1046 ¶ 49; Ex. 1003 ¶ 328). According to Petitioner, “[i]n addition to controlling HVAC equipment in the location 530, the wireless thermostat 531 also function as the gateway.” *Id.*

Petitioner relies on the testimony of Dr. Jeffay to support its position. Dr. Jeffay specifically testifies that

Given that alarms are generally wall mounted, a [person of ordinary skill in the art] would have expected that a handheld phone, TE1, would be mounted or otherwise installed on the wall proximate to the real estate alarm. As such would have been an obvious design choice. Further, Whitley explicitly describes a personal computer that could be a stand-alone device or could be incorporated in other devices for home control. EX1023, 9:4-6 (“For instance, gateway 20 may be a set-top box, personal computer or other device provided with a processor, such as an Intel 386 or 486 processor, and communicates with various, optionally addressable, devices located throughout the facility”). Either way, each of the devices of Whitley are configurable to be wall mounted. A [person of ordinary skill in the art] would readily understand that the electronic devices disclosed in Oinonen and Whitley were enclosed in a housing of some form, as were virtually all such electronic devices were at that time.

Ex. 1003 ¶ 328.

Patent Owner contends Petitioner's analysis of this limitation is deficient because Petitioner fails to "account for the actual elements of this claim." Prelim. Resp. 16. Based on its proffered claim construction of the term "housing," Patent Owner argues this limitation requires that the housing also physically support the communication interface, the wireless circuit, and the microcontroller recited elsewhere in the claim. *Id.* According to Patent Owner, Petitioner does not attempt to (1) "assert that either Oinonen or Whitley teaches a housing configured to mount to a wall of a building supporting all the required equipment," or (2) explain "how Oinonen or Whitley could supposedly be modified to provide an integrated thermostat and cellular-capable wireless circuit in the relevant timeframe in a wall-mounted housing." *Id.* at 16, 19.

Patent Owner further contends that Petitioner's reliance on Tessier is misplaced because the claim element does not merely require a generic wireless circuit, but the specific wireless circuit recited earlier in claim 1: "a wireless circuit configured to send a first message to the cellular remote unit via a cellular communications network and to receive a second message from the cellular remote unit via the cellular communications network." Prelim. Resp. 17 (citing Ex. 1001, 13:63–67). Patent Owner argues that its reading is consistent with the '999 patent's focus on providing home and business owners with the ability to remotely control environmental devices using a cell phone, even when hundreds of miles away. *Id.* (citing Ex. 1001, 1:34–58, 3:60–4:56; Figs. 2, 3). Patent Owner then asserts that Tessier does not disclose the claimed wireless circuit, because "nothing in Tessier discloses sending a first message to a cellular remote unit via a cellular

communications network or receiving a message from a cellular remote unit via a cellular communications network.” *Id.*

According to Patent Owner, if Tessier’s gateway is not capable of communication with a cellular remote unit over a cellular communications network, then Tessier’s disclosure of an integrated thermostat and gateway cannot carry Petitioner’s burden to establish obviousness. *Id.* at 18.

Therefore, Patent Owner concludes that “Tessier’s disclosure of a non-cellular-capable gateway-thermostat combination does not establish the obviousness of a cellular-capable gateway-thermostat combination” at the relevant timeframe of November 2004. *Id.*

At this stage of the proceeding, we are not persuaded by Patent Owner’s argument. In making our preliminary finding, we note that Petitioner’s challenge to claim 1 is that it would have been obvious to a person of ordinary skill in the art at the time of the invention in view of Oinonen, Whitley, and Tessier.¹³ *See* Pet. 4. “The test for obviousness is not whether . . . the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (citations omitted). “Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *Keller*, 642 F.2d at 425). In determining obviousness, furthermore, a

¹³ We also note that each of these references were filed prior to the filing November 2004 date of the preliminary application to which the ’999 application claims priority. *See* Ex. 1016, codes (22), (30); Ex. 1023, codes (22), (30); Ex. 1046, code (22).

reference “must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole.” *Id.*

Here, Petitioner relies on the combined teaching of Oinonen, Whitley, and Tessier to render the limitation obvious. Petitioner also relies on the supporting testimony of Dr. Jeffay. We credit the currently undisputed testimony of Dr. Jeffay that states a person of ordinary skill in the art “would [have] readily under[stood] that the electronic devices disclosed in Oinonen and Whitley were enclosed in a housing of some form, as were virtually all such electronic devices were at that time.” *See* Ex. 1003 ¶ 325. We further credit Dr. Jeffay’s testimony that Tessier discloses

wall-mounted housings, including wireless thermostat 210 and 212, which is described as “similar to the wireless controller 100” (*Id.* at [0033]–[0037]), thermostat 420 (*Id.* at [0042] – [0043]), wireless thermostats 521, 531, 541, 551, and 561 (*Id.* at [0044]–[0049]), and wireless HVAC controller 610 and wireless thermostat 612 (*Id.* at [0050] – [0051]). Each of those devices are depicted in Figures 1, 2, 4, 5, and 6 as wall-mountable housings.

Ex. 1003 ¶ 327. Dr. Jeffay also testifies that Tessier also specifically discloses an embodiment where the gateway itself is integrated with the thermostat in a single housing. *Id.* ¶ 328 (citing Ex. 1046 ¶ 49).

Based on the current record, we find Petitioner cites sufficient evidence to demonstrate it is likely to be able to show that all the limitations of claim 1 are taught by the combination of Oinonen, Whitley, and Tessier, and that a person skilled in the art would have had a rational reason to combine the teachings of Oinonen, Whitley, and Tessier. Accordingly, Petitioner has demonstrated a reasonable likelihood of showing claim 1 is unpatentable over the combination of Oinonen, Whitley, and Tessier.

6. Dependent Claims 4–7, 9–12

Petitioner further maps the teachings of Oinonen, Whitley, and Tessier to the additional limitations recited in dependent claims 4–7, 9–12. *See* Pet. 32–36. Patent Owner contends Petitioner’s analysis of these claims is deficient for the same reasons as Petitioner’s analysis of claim 1. *See* Prelim. Resp. 21. For the reasons discussed above, at this stage of the proceeding, we are not persuaded by Patent Owner’s arguments. Instead, we find Petitioner has sufficiently mapped the teachings of Oinonen, Whitley, and Tessier to the limitations recited in claims 4–7 and 9–12, and that Petitioner is reasonably likely to show that these claims are unpatentable over Oinonen, Whitley, and Tessier.

B. Alleged Obviousness of Claims 2, 3, 8, 13, and 14 in view of Oinonen, Whitley, Tessier, and Ehlers

Petitioner contends claims 2, 3, 8, 13, and 14 would have been obvious to a person of ordinary skill in the art at the time of the invention in view of the combined teachings of Oinonen, Whitley, Tessier, and Ehlers. Pet. 4, 36–46. Patent Owner disputes this. Prelim. Resp. 21–22. For the reasons discussed below, we find Petitioner has established at this stage of the proceeding a reasonable likelihood of showing claims 2, 3, 8, 13, and 14, are unpatentable as obvious over Oinonen, Whitley, Tessier, and Ehlers.

1. Ehlers

Ehlers discloses “a system and method for managing the delivery and usage of a commodity such as electricity, natural gas, steam, water, chilled or heated water, or potable or recycled water.” Ex. 1020 ¶ 2. Ehlers’ system includes utility 1.06 having control system 1.12 in two-way communications with metered customer device 1.08 (e.g., a power meter) via communication

gateway 1.10, which may be integrated with or separate from customer device 1.08. *Id.* ¶¶ 59–62, 68, Figs. 1A–1B, 2B–2D.

Utility 1.06 can “monitor and control the usage of electricity by controlling the [gateway] nodes 1.10 and/or the devices 1.08.” *Id.* ¶ 78. Utility 1.06 can also “define, modify, implement, and engage one or more Power Supply Program[s] . . . to alleviate or reduce energy demand during peak periods.” *Id.* For example, utility 1.06 can disallow the running of “pool pumps . . . during a set period of the day” by sending a signal from utility control system 1.12 to gateway 1.10 “to disable the pool pump during the first time period.” *Id.* ¶ 81.

Devices 1.08 in Ehler’s system can be controlled via a graphical user interface (GUI) 1.14 incorporated on a device (e.g., a mobile phone) linked to gateway 1.10 via a wireless data network. *Id.* ¶ 69, Fig. 1B. The various windows of GUI 1.14 are shown in Figures 4A–4R of Ehlers. *Id.* ¶¶ 30–47. Figure 4C of Ehlers is reproduced below.

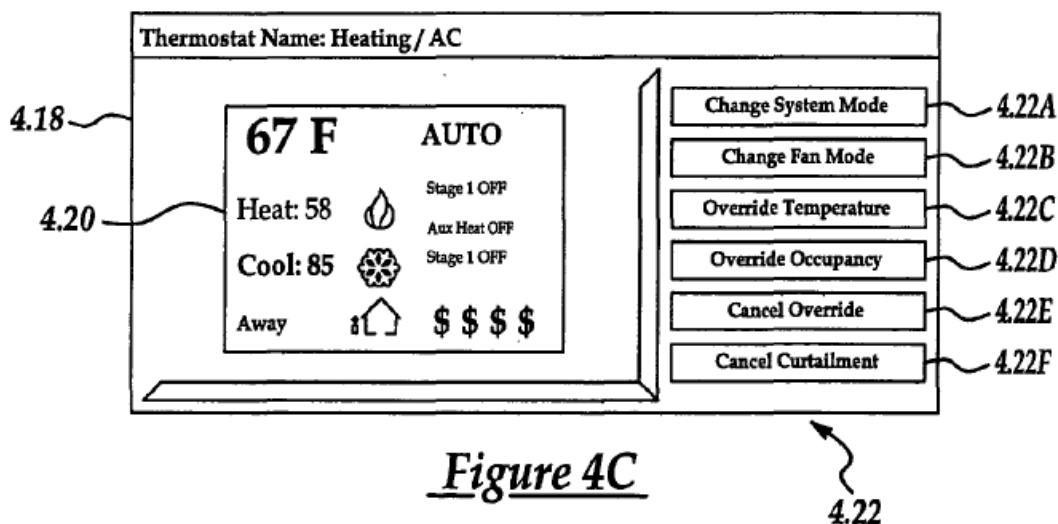


Figure 4C of Ehlers is an illustration of a mobile phone’s GUI used in Ehlers’ utility control system. *Id.* ¶ 311. Figure 4C illustrates virtual thermostat 4.18 containing information section 4.20 and buttons 4.22.

Id. ¶ 316. Information section 4.20 contains current information for a remotely monitored HVAC system, such as the current temperature, heating and cooling set-points, operating mode (auto) and status (off). *Id.* Using buttons 4.22, a customer can change the operating parameters of the HVAC system, such as the heating and cooling set-points. *Id.* Using GUI 1.14, a user can “directly access and control in-home devices 1.08” and can also sign up to participate in a utility defined energy conservation program. *Id.* ¶¶ 78, 116, 336.

Devices 1.08 in Ehler’s system can also utilize externally supplied information, such as forecasted weather information, to determine their operating conditions. *Id.* ¶¶ 88, 187, 230–231.

2. *Reasons to Combine the Teachings of Oinonen, Whitley, Tessier, and Ehlers*

Petitioner argues Ehlers, like Oinonen, Whitley, and Tessier, discloses a system for remotely monitoring and controlling environmental devices via mobile devices. Pet. 36–37. Additionally, Petitioner argues Ehlers teaches several improvements to such systems, including (a) enabling “a user to participate in energy demand reduction programs without requiring users to individually manage the settings of each controlled device because most end use consumers do not have the time, experience, and/or access to data to monitor and track the usage of controlled devices in the home,” (b) an improved user interface (“UI”) that allows a user to precisely control his/her own preferences, disclosing a UI with a rich set of features, (c) use of “occupancy modes to reduce the interactions required by the user and to promote energy efficiency, especially when a user was not home.” *Id.* at 37 (citing Ex. 1020 ¶¶ 6, 13, 17, 69, 115, 244; Ex. 1003 ¶¶ 358–364).

Patent Owner does not dispute Petitioner’s reasoning for combining the teachings of Ehlers with those of Oinonen, Whitley, and Tessier. *See* Prelim. Resp. 21–22. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

At this stage of the proceeding, we are satisfied Petitioner has demonstrated sufficient reasoning to combine the teachings of Oinonen, Whitley, Tessier, and Ehlers. Oinonen, Whitley, and Tessier teach using a remote unit (mobile phone) to monitor and control an environmental device. *See* Ex. 1016, 6:64–7:4; Ex. 1046 ¶ 16; Ex. 1023, 6:22–29. Ehlers teaches using a GUI displayed on a mobile device to remotely monitor and control an environmental device, and to further control the environmental device by joining utility demand reduction programs, using occupancy sensors, and using external data. Ex. 1020 ¶¶ 7, 13, 115–116, 230–231, Fig. 1B. Thus, Petitioner’s proposal combines “familiar elements according to known methods [and] is likely to be obvious when it does no more than yield predictable results.” *KSR* 550 U.S. at 416.

3. *Claims 2, 3, 8, 13, and 14*

Claim 2, 3, 8, 13, and 14 depend from claim 1. *Id.* at 14:24–15:7. Petitioner relies on Ehlers to teach the limitations recited in these dependent claims. Pet. 4, 36–46. Patent Owner contends Petitioner’s analysis of these claims is deficient for the same reasons as Petitioner’s analysis of claim 1. *See* Prelim. Resp. 21–22. For the reasons discussed above, at this stage of the proceeding, we are not persuaded by Patent Owner’s arguments. Instead, we find Petitioner has sufficiently mapped the teachings of Oinonen, Whitley, Tessier, and Ehlers to the limitations recited in claims 2, 3, 8, 13, and 14, and that Petitioner is reasonably likely to show that these claims are unpatentable over Oinonen, Whitley, Tessier, and Ehlers.

C. Alleged Obviousness of Claims 1, 3–7, and 9–12 in view of Bielski and Wu

Petitioner argues claims 1, 3–7, and 9–12 are unpatentable as obvious over Bielski and Wu. Pet. 3, 69–83. Patent Owner disputes this. Prelim. Resp. 24–28. For the reasons discussed below, we find Petitioner has established, at this stage of the proceeding, a reasonable likelihood of showing claims 1, 3–7, and 9–12 are unpatentable as obvious over Bielski and Wu.

1. Bielski

Bielski discloses “a communication system and a method for . . . the monitoring, control and/or regulation of one or more devices.” Ex. 1017 ¶ 1. Bielski allows “the user of a mobile phone[] to monitor devices . . . over long distances, and/or to actively control or regulate them by means of the mobile terminal.” *Id.* ¶ 8. Bielski identifies each of “a stove, a refrigerator, a fuse box, a light, a roller blind, a garage door, [and] an alarm system of a video surveillance system,” as a device that can be remotely monitored and controlled. *Id.* Bielski’s system is illustrated in Figure 1, which is reproduced below.

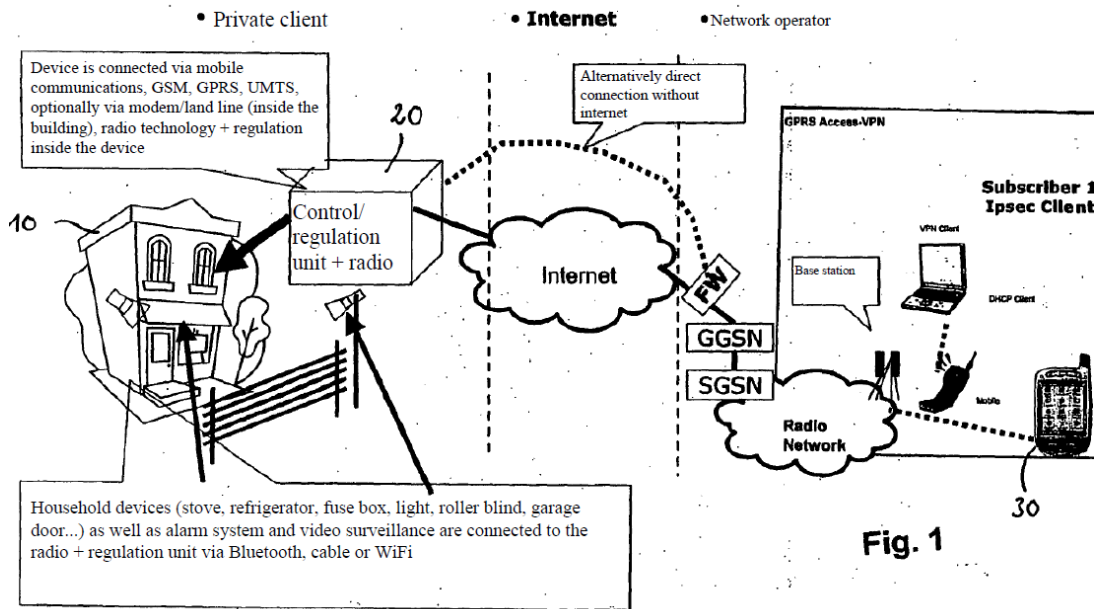


Figure 1 of Bielski is a schematic illustration of a system for “the monitoring, control, or regulation of household devices by means of a mobile terminal.” *Id.* ¶ 53. The system includes monitored/controlled devices 10, check and communication unit 20, and mobile device 30. *Id.* ¶ 54, Fig. 1.

Check and communication unit 20 represents separate check and communication units that are “wired together for purposes of data exchange.” *Id.* ¶ 54. The check unit can be “a monitoring unit which receives data from the device(s),” and also “a control unit which transfers data for the purpose of control to the one or more devices.” *Id.* ¶ 14; *see also id.* ¶¶ 5, 40. The check unit communicates with the controlled devices over a wired or wireless connection. *Id.* ¶¶ 5, 13, 40. The communication unit includes a “sending and/or receiving unit by means of which data can be sent and/or received by mobile communications . . . according to the GSM, GPRS, or UMTS standard.” *Id.* ¶ 57; *see also id.* ¶¶ 5, 21, 22, 26, 40.

Mobile terminal 30 can also operate according to the GSM, GPRS, or UMTS standards. *Id.* ¶ 30. Users of “mobile terminal 30 can be informed

about the operation conditions of the devices . . . or can themselves influence the devices by controlling or regulating them.” *Id.* ¶ 63. For example, users can enter “commands, such as on/off conditions or temperatures . . . into the mobile terminal and send this information. . . . to the control and communication unit 20 via the telecommunication network.” *Id.* From control and communication unit 20, an issued command “is transmitted to the devices inside the building 10 or serves as a nominal value which is required for the regulation of the devices.” *Id.* Mobile terminal 30 can execute “an application with a corresponding user interface with which the user can . . . activate special features using buttons and various control panels . . . for the control/regulation unit” of a controlled device. *Id.* ¶ 81. The application allows, for example, the user “to specify a room temperature with a slider inserted onto the user interface, wherein the exact temperature values would be shown on a separate display, and the user . . . moves the slider to a desired value.” *Id.* A corresponding application on check and communication unit 20 “effect[s] control and regulation processes in the direction of the controlling/regulation devices.” *Id.* ¶ 82.

Bielski’s system includes “means [i] by means of which data can be transferred from the network operator to the mobile terminal on the basis of the data transferred from the communication unit . . . and/or [ii] by means of which data can be transferred from the mobile terminal to the network operator on the basis of which data are transferred to the communication unit.” *Id.* ¶ 5. Bielski further discloses the means by which the mobile terminal can be informed about the status of monitored/controlled devices 10 can “be in the form of an SMS or by means of a voice mail.” *Id.* ¶ 69.

2. *Wu*

Wu discloses “a Home Network System (HNS) architecture integrated with . . . Short Message Service to support the connectivity between the home and Internet/Global System for Mobile Communication (GSM) networks.” Ex. 1018, 493. “The main objective of the integrated system is to remotely monitor and control the devices in the HNS via laptop computer or a GSM mobile terminal.” *Id.* Wu’s HNS is depicted in Figure 1, which is reproduced below.

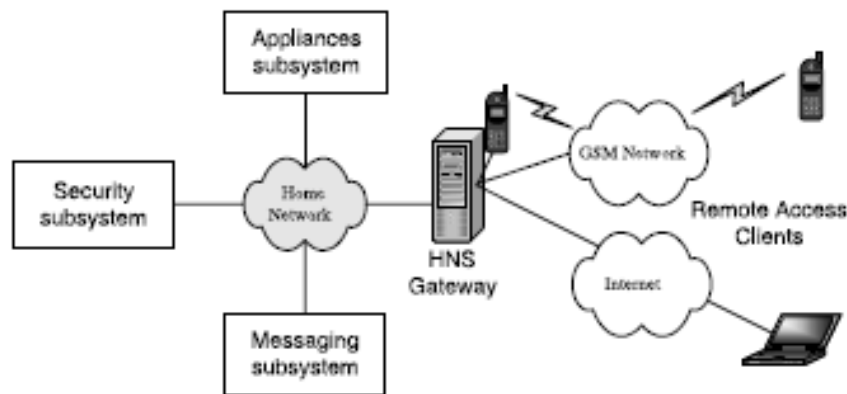


Fig. 1. Home network system architecture.

Figure 1 of Wu is a schematic illustration of a Home Network System. *Id.* at 494–495. The system includes an HNS gateway that “connects to home devices and runs a home automation management application that supervises home devices.” *Id.* at 494. Home network devices, such as refrigerators, air-conditioners, televisions, surveillance systems, burglar alarm systems, fax and answering machines, are organized into appliance, security, and messaging subsystems. *Id.* at 494–495 (Table 1).

Wu’s HNS allows remote users “to monitor home appliances and control them” from either a mobile terminal executing WAP (wireless access) or SMS protocols, or a computer executing HTTP (hypertext

transfer) protocol. *Id.* at 495. This is shown in Figure 2 of Wu, which is reproduced below.

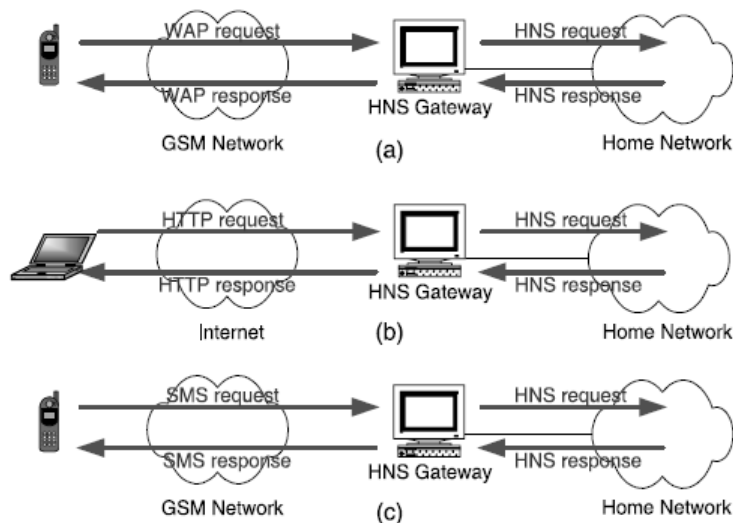


Fig. 2. Communication with the HNS in (a) WAP and (b) HTTP (c) SMS.

Figure 2 of Wu is a schematic illustration of three methods for communicating with home devices from a remote location, including via (a) WAP, (b) HTTP, and (c) SMS. *Id.*

3. *Reasons to Combine the Teachings of Bielski and Wu*

Petitioner argues Bielski teaches a system “that allows users to monitor and control devices such as alarm systems through a cellular remote unit” by receiving status information and responding with appropriate commands. Pet. 69. Petitioner further argues that although “Bielski discloses the use of SMS messages for communication between the base unit [control unit 20] and remote unit [mobile 30],” Bielski “does not further describe the details [of the] communications protocol.” *Id.* at 70. Therefore, Petitioner argues a person skilled in the art would have been motivated “to identify additional implementation details,” including those described in Wu, which teaches “a network system that allows users to monitor and

control appliance systems through communication protocols such as SMS, HTTP, and WAP.” *Id.* Petitioner argues a person skilled in the art would have implemented Wu’s bi-directional use of SMS messaging because Wu teaches SMS is “simple to implement,” “allows for reduced costs,” and “is already widely implemented,” and Bielski “already disclosed that SMS messages can be used to provide the status of devices to the user.” *Id.* at 71–72.

Patent Owner does not dispute Petitioner’s reasoning for combining the teachings of Ehlers with those of Oinonen, Whitley, and Tessier. *See* Prelim. Resp. 21–22. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

At this stage of the proceeding, we are satisfied Petitioner has set forth sufficient reasoning with rational underpinning to combine the teachings of Bielski and Wu. Although Bielski teaches sending messages between a base unit and a remote unit to monitor/control a device, Bielski only expressly teaches sending SMS messages from the base unit to the remote unit. *See* Ex. 1017 ¶ 69 (Disclosing the means that inform the “mobile terminal 30 . . . about the actual status of the corresponding devices” can be “in the form of an SMS” message.). Wu, by contrast, expressly teaches monitoring/controlling a device by sending SMS messages in both directions—from the base unit to the remote unit and from the remote unit to the base unit. Ex. 1018, 495–497, Figs. 1, 2, 6 (showing the bi-directional transfer of SMS message between the mobile terminal and the HNS gateway).

4. *Independent Claim 1*

Again, even for this challenge, the only limitation of claim 1 in dispute at this stage of the proceeding is the requirement for “a housing

configured to mount to a wall of a building, the housing physically supporting the environmental device, the communication interface, the wireless circuit, and the microcontroller.” *See* Prelim. 24–28; Ex. 1001, 14:20–23. Below, we address the party’s arguments directed to this limitation. Regarding the other limitations recited in challenged claim 1, we are persuaded at this stage of the proceeding that the Petition with cited support from the references of Bielski and Wu themselves and the testimony of Dr. Jeffay demonstrate a reasonable likelihood that Petitioner would prevail in showing the unpatentability of claim 1 of the ’999 patent.

Petitioner contends a wall mounted housing supporting the recited components would have been obvious to one of skill in the art at the time of the invention in view of Bielski and Wu. Pet. 78. Petitioner argues “Bielski discloses that the check and communication unit can be integrated with an environmental unit.” *Id.* at 79 (citing Ex. 1017 ¶¶ 5, 20, 54; Ex. 1003 ¶ 593). Petitioner further argues that “[i]n the case of an embodiment which integrates the control the communication unit inside the device, an external control [of] and/or communication unit is not required.” *Id.* (citing Ex. 1017 ¶ 17; Ex. 1003 ¶¶ 594–596). According to Petitioner, “[i]n this way, Bielski discloses that the check unit and a communication unit could be integrated into the housing of wall mountable environmental devices, such as an alarm system, light, or heater.” *Id.* (citing Ex. 1017 ¶¶ 54, 82, Fig. 4; Ex. 1003 ¶ 598). Indeed, Petitioner asserts that “Bielski discloses the integration of the check unit and a communication unit in a stove.” *Id.* (citing Ex. 1017 ¶ 15; Ex. 1003 ¶¶ 597–598).

Petitioner relies on the testimony of Dr. Jeffay to support its position. Dr. Jeffay testifies:

Bielski discloses that both the check unit and the communication units can be integrated into the disclosed devices. EX1017, [0015]- [0016]. Bielski discloses a check unit and a communication unit, which together can form a structural unit within the building, and which is interfaced to environmental devices through a variety of communication media. EX1017, [0005], [0020], [0054]. Bielski further discloses that both the check unit and communication unit can be integrated with the environmental unit. For example, Bielski discloses that “it is also possible that the check unit is integrated into the device” and that “[a]lternatively or in addition, the communication unit can be integrated into the device.” EX1017, [0015]-[0016].

Ex. 1003 ¶ 593.

Bielski discloses that all of the necessary components are internal to the housing within the environmental device.

Id. ¶ 595.

Bielski gives a particular non-limiting example of an environmental device, a stove, which includes the integrated check and communication unit. EX1017, [0015] (“If the device is a stove, for example, the check unit can be provided as a regulation unit which is embodied inside the stove and takes over temperature regulation.”).

Id. ¶ 597.

Patent Owner contends that Petitioner’s analysis of this limitation fails because Bielski’s disclosure of a check-and-communication unit being integrated into a stove (i.e., “a large, freestanding kitchen appliance”) does not suggest a wall-mountable stove. Prelim. Resp. 25 (citing Ex. 1017 ¶¶ 15–17). Patent Owner argues that nothing in Bielski suggests that the check-and-communication unit 20 is incorporated into a wall-mountable housing with an environmental device. *Id.* at 27. Patent Owner further argues that Petitioner fails to explain why a person of ordinary skill in the art

would have been motivated to modify Bielski's teachings to include the recited claim element. *Id.*

At this stage of the proceeding, we are not persuaded by Patent Owner's argument. Rather, we credit the currently undisputed testimony of Dr. Jeffay stating:

A [person of ordinary skill in the art] would understand that a stove has a housing and can be mounted to a wall. Bielski makes clear, however, that the integration of the check and communication units into the stove is an example and that the units can be integrated with other environmental devices, such as those disclosed in Bielski. EX1017, [0015]. Bielski discloses a variety of other environmental devices in addition to the stove, such as an alarm system, garage door, a light, a security camera, and a heater. EX1017, [0054], [0082], FIG. 4. A [person of ordinary skill in the art] would also understand that at least an alarm system and security camera, among other devices, would be enclosed in housings and configurable so that it would be mounted to a wall.

Ex. 1003 ¶ 598. Therefore, at this stage of the proceeding, we find Petitioner cites sufficient evidence to demonstrate it is likely to be able to show that all the limitations of claim 1 are taught by the combination of Bielski and Wu, and that a person skilled in the art would have had a rational reason to combine the teachings of Bielski and Wu. Accordingly, Petitioner has demonstrated a reasonable likelihood of showing claim 1 is unpatentable over the combination of Bielski and Wu.

5. *Dependent Claims 3–7, 9–12*

Petitioner further maps the teachings of Bielski and Wu to the additional limitations recited in dependent claims 3–7, 9–12. *See* Pet. 79–83. Patent Owner contends Petitioner's analysis of these claims is deficient for the same reasons as Petitioner's analysis of claim 1. *See* Prelim.

Resp. 28. For the reasons discussed above, at this stage of the proceeding, we are not persuaded by Patent Owner's arguments. Instead, we find Petitioner has sufficiently mapped the teachings of Bielski and Wu to the limitations recited in claims 3–7, 9–12, and that Petitioner is reasonably likely to show that these claims are unpatentable over Bielski and Wu.

D. Alleged Obviousness of Claims 2, 8, 13, and 14 in view of Bielski, Wu, and Ehlers

Petitioner argues claims 2, 8, 13, and 14 are unpatentable as obvious over Bielski, Wu, and Ehlers. Pet. 5, 83–84. Patent Owner disputes this. Prelim. Resp. 28. For the reasons discussed below, we find Petitioner has established, at this stage of the proceeding, a reasonable likelihood of showing claims 2, 8, 13, and 14 are unpatentable as obvious over Bielski, Wu, and Ehlers.

1. Reasons to Combine

Petitioner argues Ehlers, like Bielski and Wu, discloses a system for remotely monitoring and controlling environmental devices via mobile communications. Pet. 83 (citing Ex. 1020 ¶ 69; Ex. 1003 ¶ 634). Additionally, Petitioner argues Ehlers teaches several improvements to such systems, including the ability to (a) control in home device, such as thermostats, to increase efficiency and reduce costs; (b) enable users to automatically participate in demand reduction programs; and (c) control devices using improved user interface. *Id.* (citing Ex. 1020 ¶¶ 7, 13, 115, 335; Ex. 1003 ¶¶ 633–639). Based on these teachings, Petitioner argues a person of ordinary skill in the art “would have been motivated to implement Ehlers’ occupancy modes to reduce the interactions required by the user and to promote energy efficiency.” *Id.* at 83–84 (citing Ex. 1003 ¶ 636).

Patent Owner does not dispute Petitioner’s reasoning for combining the teachings of Ehlers with those of Bielski, Wu, and Ehlers. *See* Prelim. Resp. 28.

At this stage of the proceeding, Petitioner has demonstrated sufficient reasoning to combine the teachings of Bielski, Wu, and Ehlers. Bielski, Wu, and Ehlers all teach systems that use a mobile phone to monitor and control an environmental device, and Ehlers teaches several features and/or improvements to such systems. *See* Ex. 1017 ¶ 63; Ex. 1018, 494–495; Ex. 1020 ¶¶ 7, 13, 115–116, 230–231, Fig. 1B. Thus, we preliminarily determine that Petitioner’s proposed combination is one of “familiar elements according to known methods [and] is likely to be obvious when it does no more than yield predictable results.” *KSR* 550 U.S. at 416.

2. Claims 2, 8, 13, and 14

Petitioner relies on Ehlers to teach the limitations recited in claims 2, 8, 13, and 14. *See* Pet. 38, 43–46, 84. Patent Owner contends Petitioner’s analysis of these claims is deficient for the same reasons as Petitioner’s analysis of claim 1. *See* Prelim. Resp. 28. For the reasons discussed above, at this stage of the proceeding, we are not persuaded by Patent Owner’s arguments. Instead, we find Petitioner has sufficiently mapped the teachings of Bielski, Wu, and Ehlers to the limitations recited in claims 2, 8, 13, and 14, and that Petitioner is reasonably likely to show that these claims are unpatentable over Bielski, Wu, and Ehlers.

IV. CONCLUSION

We have reviewed the Petition and Preliminary Response and have considered all of the evidence and arguments presented by Petitioner and Patent Owner. We find, on this current record, Petitioner has demonstrated a

reasonable likelihood of showing at least one claim of the '999 patent is unpatentable. Accordingly, we institute *inter partes* review of claims 1–14 on all grounds raised in the Petition.

The Board has not yet made a final determination with respect to any claim construction issue or the patentability of any challenged claim.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted on claims 1–14 on all grounds; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this Decision.

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Patent 10,344,999

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