

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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RING LLC,  
Petitioner,

v.

SKYBELL TECHNOLOGIES, INC.,  
Patent Owner.

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IPR2019-00443  
Patent 9,160,987 B1

Before JEFFREY S. SMITH, DANIEL J. GALLIGAN, and  
KAMRAN JIVANI, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Granting-in-Part and Denying-in-Part  
Patent Owner's Motion to Amend  
*35 U.S.C. § 318(a)*

## I. INTRODUCTION

Ring LLC (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–4, 10–13, 19–25, and 28 of U.S. Patent No. 9,160,987 B1 (“the ’987 patent,” Ex. 1001). Paper 1 (“Pet.”), 1–2. Skybell Technologies, Inc. (“Patent Owner”) did not file a Preliminary Response. On August 5, 2019, we instituted an *inter partes* review of all the challenged claims. Paper 13. Patent Owner did not file a Response to the Petition. Instead, Patent Owner filed a non-contingent Motion to Amend seeking cancellation of claims 1–4, 10–13, 19–25, and 28 and proposing substitute claims 31–46.<sup>1</sup> Paper 20 (“Mot.”). Petitioner filed an Opposition to the Motion to Amend. Paper 23 (“Opp.”). Patent Owner filed a Reply in Support of the Motion to Amend, and Petitioner filed a Sur-Reply in Opposition. Papers 25 (“Reply”), 30 (“Sur-Reply”). A hearing was held on April 16, 2020, and a transcript has been entered into the record. Paper 33 (“Tr.”).

This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons discussed below, Patent Owner’s Motion to Amend is *granted* with respect to cancellation of claims 1–4, 10–13, 19–25, and 28, and *denied* with respect to proposed substitute claims 31–46.

### A. Related Matters

The parties note the following related matter: *SkyBell Technologies, Inc. v. Ring Inc.*, No. 8:18-cv-00014 (C.D. Cal. filed Jan. 5, 2018). Pet. 2; Paper 4, 2.

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<sup>1</sup> Although the Motion to Amend did not explicitly request cancellation of claims 1–4, 10–13, 19–25, and 28, during the hearing, Patent Owner stated that Patent Owner is cancelling the original claims being challenged and replacing the original claims with the substitute claims filed in the Motion to Amend. Tr. 14:20–19:17.

*B. Real Parties in Interest*

Petitioner identifies the following real parties in interest: Ring LLC; Ring of Security Limited; Ring of Security B.V.; Ring of Security Pty. Ltd.; Ring of Security Asia Co., Ltd.; Ring Protect Inc.; Wireless Environment, LLC; Wireless Environment Asia, LLC; Wireless Environment Lighting Co., Ltd.; Wireless Environment UK Ltd.; Wireless Lighting Technologies, LLC; Amazon.com Services, Inc.; and Amazon.com, Inc. Pet. 2. Patent Owner identifies itself as the real party in interest. Paper 4, 1.

*C. The '987 Patent*

The '987 patent is generally directed to a doorbell communication system. Ex. 1001, [57]. The '987 patent specification discloses that doorbell systems can include a doorbell and a chime. *Id.* The specification discloses a doorbell system, comprising:

a doorbell comprising a button configurable to detect a button press to indicate a presence of a visitor, a chime communicatively coupled to the doorbell; a remote computing device communicatively coupled to at least one of the doorbell and the chime; and a sound emitted by a speaker of the chime in response to the doorbell detecting an indication of a presence of a visitor.

*Id.* at 5:3–10.

Figure 36 of the '987 patent is reproduced below.

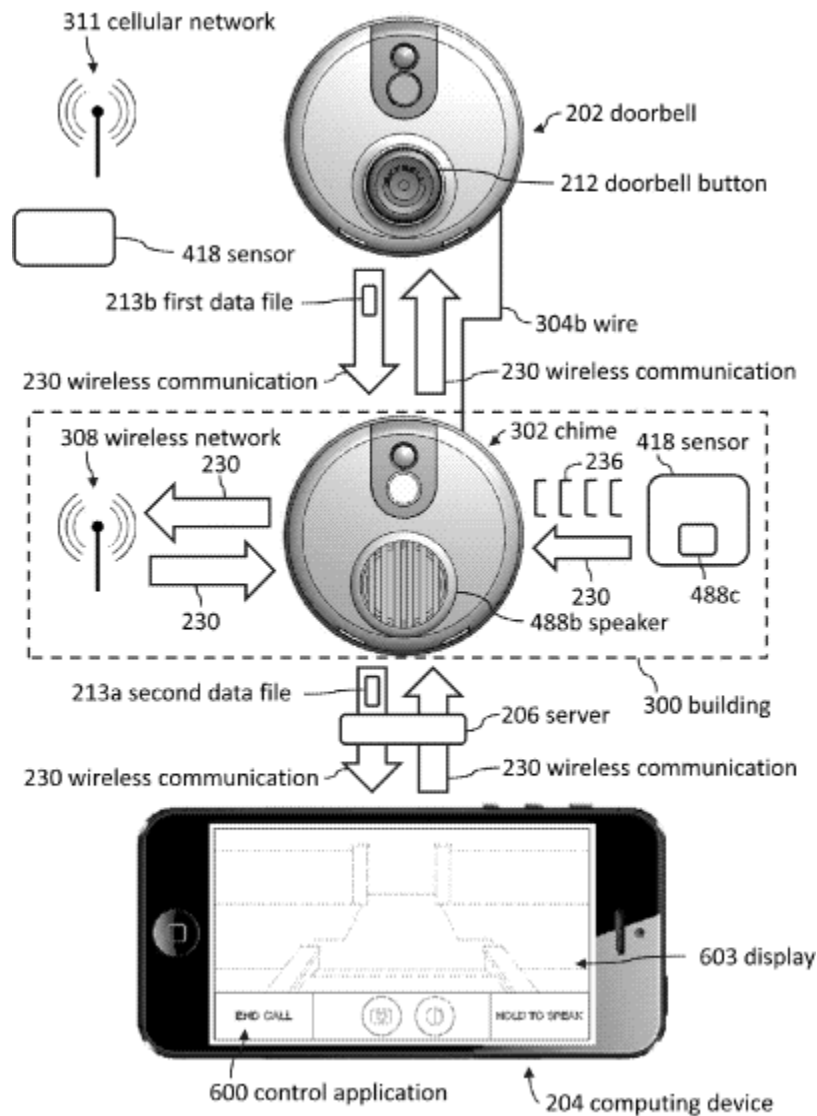


**Figure 36**

Figure 36 illustrates an embodiment of a doorbell system, in which chime 302 is in wireless communication with doorbell 202 and remote computing device 204. *Id.* at 12:3–4.

The patent specification states “chime 302 can serve as a communication bridge between the remote computing device 204 and the doorbell 202.” *Id.* at 37:38–40. According to the patent specification, this arrangement can be especially helpful when doorbell 202 cannot access wireless network 308 of building 300 to which the doorbell is mechanically

and/or electrically coupled. *Id.* at 37:40–43. The specification further explains the following:

The chime 302 can be located inside the building 300, and thus, is more likely to access the wireless network 308 of the building 300 (due to a superior signal strength of the wireless network 308 at the chime 302 compared to the signal strength at the doorbell 202, which can be located much farther from a router of the wireless network 308).

*Id.* at 37:43–49. In certain embodiments, “the doorbell system can be used to detect an indication of a presence of a visitor and thereby transmit the indication from the doorbell 202 to the remote computing device 204 via the chime 302.” *Id.* at 43:28–31. The specification further provides that “methods can also include sending an alert 232a, such as a visitor alert 232a, from the doorbell 202 to the chime 302 and thereby sending the visitor alert 232a from the chime 302 to the remote computing device 204.” *Id.* at 43:35–39.

#### *D. Proposed Substitute Claims 31 and 32*

Proposed substitute claims 31 and 32 are reproduced below, with underlining indicating text inserted into original claims 1 and 19, respectively.

31. A method of using a doorbell system comprising a doorbell and a chime, wherein the doorbell system is configured to be coupled to a building, the method comprising:

coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device;

detecting, by the doorbell, a trigger of a button of the doorbell;

sending a visitor alert from the doorbell to the chime; ~~and~~

sending the visitor alert from the chime to the remote computing device such that the chime communicatively couples

the doorbell to the remote computing device; and  
receiving, by the doorbell system, a do not disturb setting  
that determines whether the chime refrains from emitting sound.

32. A doorbell system comprising:

a chime;

a remote computing device communicatively coupled to  
the chime;

a doorbell communicatively coupled with the remote  
computing device via the chime;

a first communication from the doorbell to the chime,  
wherein the first communication comprises a visitor alert; ~~and~~

a second communication from the chime to the remote  
computing device, wherein the second communication  
comprises the visitor alert; and

a third communication from the remote computing device  
to at least one of the chime and doorbell, wherein the third  
communication comprises a do not disturb setting which  
determines whether the chime refrains from emitting sound.

*E. Asserted Grounds of Unpatentability*

Petitioner asserts the following grounds of unpatentability for the  
proposed substitute claims (Sur-Reply 4):

| <b>Claims Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>                     |
|--------------------------|--------------------|-----------------------------------------------|
| 31, 32                   | § 103              | Hwang <sup>2</sup> , HersHKovitz <sup>3</sup> |
| 31, 32                   | § 103              | Child <sup>4</sup> , HersHKovitz              |

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<sup>2</sup> U.S. Patent Publication No. 2015/0163463 A1, pub. June 11, 2015 (Ex. 1005, “Hwang”).

<sup>3</sup> U.S. Patent No. 7,486,271 B2, issued Feb. 3, 2009 (Ex. 1030, “HersHKovitz”).

<sup>4</sup> U.S. Patent Publication No. 2014/0267716 A1, pub. Sept. 18, 2014 (Ex. 1007, “Child”).

## II. ANALYSIS

### A. Claim Construction

The Petition was accorded a filing date of December 17, 2018. Paper 5, 1. In an *inter partes* review for a petition filed on or after November 13, 2018, a claim “shall be construed 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).” *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)).

We do not find it necessary to construe expressly any claim terms. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (only terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy).

### B. Level of Ordinary Skill in the Art

Petitioner’s declarant, Dr. Vijay Madiseti, testifies that a person of ordinary skill in the art of the ’987 patent would have had

a bachelor’s degree in Electrical Engineering, Computer Engineering, or Computer Science, or equivalent training, as well as at least one year of technical experience in the relevant field. Lack of work experience can be remedied by additional education or training, and vice versa.

Ex. 1003 ¶ 28 (cited at Pet. 9). Patent Owner does not challenge this assessment. We adopt Dr. Madiseti’s articulation of the level of skill in the art, with the exception of the language “at least,” which introduces ambiguity.

*A. Cancellation of Claims 1–4, 10–13, 19–25, and 28*

Patent Owner filed a Motion to Amend, requesting that challenged independent claims 1 and 19 be replaced with proposed substitute independent claims 31 and 32. Mot. 1. Patent Owner also proposes amending challenged dependent claims 2–4, 10–13, 20–25, and 28 to reflect proper claim dependency from their respective parent claim. *Id.* at 2. During the hearing, Patent Owner confirmed that the Motion to Amend canceled challenged claims 1–4, 10–13, 19–25, and 28 and is not contingent on a finding by this Board of unpatentability of these claims. Rather, the non-contingent Motion to Amend seeks to replace the challenged claims with substitute claims 31–46. *See* Tr. 14:20–16:3.

“A motion to amend may cancel a challenged claim . . . .” 37 C.F.R. § 42.121(a)(3); *see also* 35 U.S.C. § 316(d)(1)(A). Accordingly, we grant Patent Owner’s Motion to Amend with respect to the request to cancel challenged claims 1–4, 10–13, 19–25, and 28.

In *Aqua Products, Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017), the Federal Circuit addressed the burden of persuasion that the Board applies when considering the patentability of substitute claims presented in a motion to amend filed under 35 U.S.C. § 316(d) in an *inter partes* review. The lead opinion concludes with the following:

The only legal conclusions that support and define the judgment of the court are: (1) the PTO has not adopted a rule placing the burden of persuasion with respect to the patentability of amended claims on the patent owner that is entitled to deference; and (2) in the absence of anything that might be entitled to deference, the PTO may not place that burden on the patentee.

*Aqua Prods.*, 872 F.3d at 1327.

In accordance with *Aqua Products*, Patent Owner does not bear the burden of persuasion to demonstrate the patentability of substitute claims presented in a motion to amend. Rather, the burden of persuasion ordinarily will lie with Petitioner to show that any proposed substitute claims are unpatentable by a preponderance of the evidence. The Board itself also may justify any finding of unpatentability by reference to evidence of record in the proceeding under limited circumstances, for example, when a Petitioner ceases to participate. *Hunting Titan, Inc. v. DyanEnergetics Europe GmbH*, IPR2018-00600, Paper 67, 25–26 (PTAB July 6, 2020) (precedential) (explaining that the Board may raise grounds of unpatentability not raised, or insufficiently developed by, a petitioner “for example, where the petitioner ceased to participate in the proceeding”). Ultimately, the Board determines whether substitute claims are unpatentable by a preponderance of the evidence based on the entirety of the record, including any opposition made by the Petitioner. *See Lectrosonics, Inc. v. Zaxcom, Inc.*, Case IPR2018-01129, -01130, Paper 15 at 4 (PTAB Feb. 25, 2019) (precedential). Thus, for example, if the entirety of the evidence of record before the Board is in equipoise as to the unpatentability of one or more substitute claims, the Board will grant the motion to amend with respect to such claims, and the Office will issue a certificate incorporating those claims into the patent at issue.

*B. Analysis of Proposed Substitute Claims 31 and 32 as Obvious over the Combination of Hwang and Hershkovitz*

Petitioner, relying on testimony of Dr. Vijay Madiseti, contends that the combination of Hwang and Hershkovitz renders proposed substitute claims 31 and 32 obvious. Opp. 21–25; Ex. 1034; *see also* Ex. 1003 (Dr. Madiseti’s testimony regarding the limitations of claims 1 and 19 incorporated into proposed substitute claims 31 and 32).

*1. Description of Prior Art References*

*Hwang (Ex. 1005)*

Hwang is directed to a computer-implemented method for operating a doorbell camera. Ex. 1005 ¶ 5. Hwang provides that the disclosed system may “include doorbell unit 105, chime unit 110, control unit 120, computer device 125, database 130, and a network 115 that allows a doorbell unit 105, chime unit 110, control unit 120, computing device 125, and database 130 to communication with one another.” *Id.* ¶ 26. Hwang states “a user may desire to receive an alert when someone enters a predefined area.” *Id.* ¶ 25. Hwang further discloses the following:

The present systems and methods may detect when a person approaches a door and/or presses a doorbell button and providing notification messages upon detecting the person at the door. Moreover, the systems and methods described herein may provide a doorbell camera to capture an image of the person that approaches a door and/or presses a doorbell button.

*Id.* Hwang describes one embodiment in which “communication module 310 may receive, at a chime unit, data associated with capturing an image using a camera in a doorbell unit.” *Id.* ¶ 40. Furthermore, “communication module 310 may send, from the chime unit, the requested one or more images to a computing device over a data communication network.” *Id.*

*Herskovitz (Ex. 1030)*

Herskovitz discloses a security system user interface with a video display. Ex. 1030, Title. Figure 1 of Hershovitz is reproduced below.

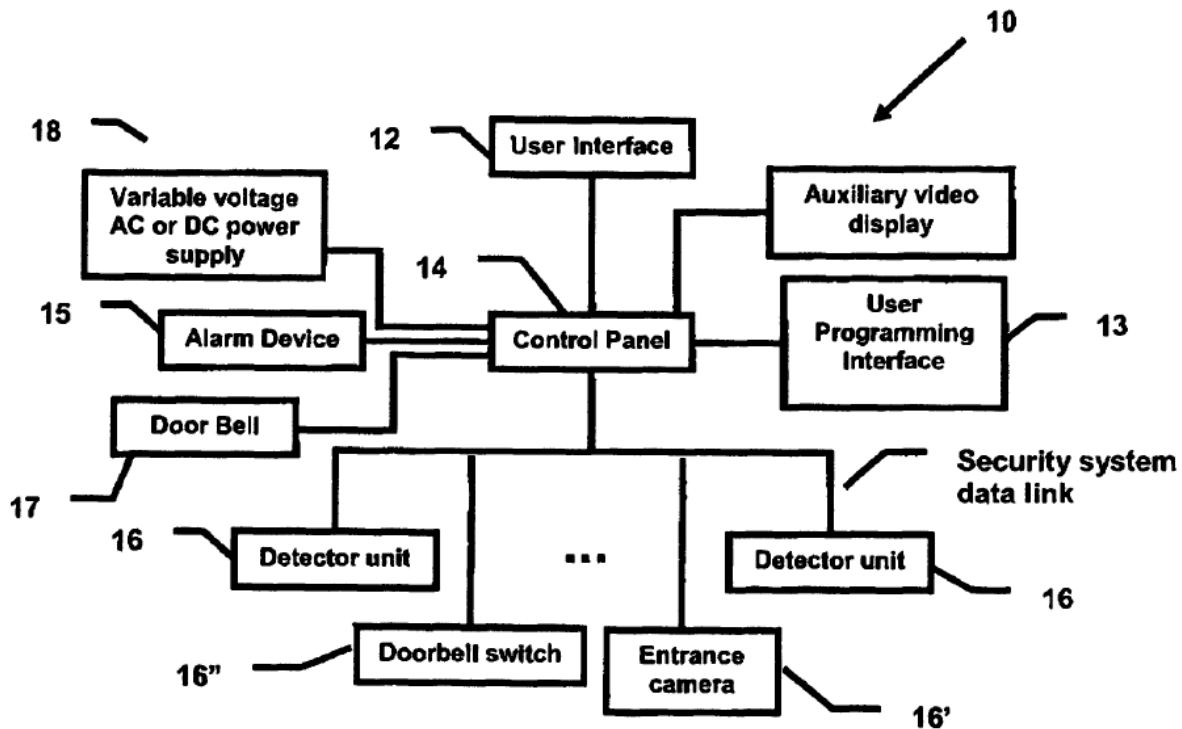


**Figure 1**

Figure 1 of Hershkovitz above shows system 10 with security system control panel 14, user interface device 12, graphical display 20, and external programming device 13, which may be a laptop computer. *Id.* at 3:13–27. System 10 also includes video camera 16', doorbell switch 16'', and doorbell unit 17, which may be a conventional doorbell, such as a bell, chime, or buzzer. *Id.* at 3:29–36, 4:66–67. In one operation mode selected using user programming interface 13, the doorbell unit may be muted so as not to disturb the occupants. *Id.* at 5:54–55. Such a mute function may be set according to a preprogrammed time of day schedule, or manually selected on or off. *Id.* at 5:55–57.

## 2. Analysis of Proposed Substitute Claim 31

Proposed substitute claim 31 recites a “method of using a doorbell system comprising a doorbell and a chime, wherein the doorbell system is

configured to be coupled to a building, the method comprising.” Petitioner contends “Hwang’s method of using a system that includes a doorbell unit and a chime unit, where the doorbell unit and the chime unit are configured to be respectively coupled to exterior and interior walls of a building,” teaches a “method of using a doorbell system comprising a doorbell and a chime, wherein the doorbell system is configured to be coupled to a building” as claimed. Pet. 13 (citing Ex. 1005 ¶¶ 8, 34; Ex. 1003, 27–29).

Hwang discloses a method of using a system that includes a “doorbell unit” and a “chime unit,” both of which are configured to be mounted to walls of a dwelling. Ex. 1005, Abstract, ¶¶ 8, 34. We determine that Hwang teaches “[a] method of using a doorbell system comprising a doorbell and a chime, wherein the doorbell system is configured to be coupled to a building.”

Claim 31 recites “coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device.” Petitioner contends that a skilled artisan “would have considered a local area network that is wireless and utilized by devices inside of a dwelling to be a wireless network of the dwelling.” Pet. 14 (citing Ex. 1003, 30–31). Petitioner also contends that communicatively coupling the chime unit to a wireless local area network via 802.11, to the doorbell unit via doorbell wire, and to a computing device and control unit such as a laptop or smartphone as disclosed by Hwang, teaches “coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device.” Pet. 16 (citing Ex. 1003, 29–34).

Hwang discloses that the chime unit inside the dwelling may be communicatively coupled to a local area network. Ex. 1005 ¶ 32; *see id.* ¶ 39 (disclosing that the chime unit can be coupled to the local area network

via wireless network connections). Hwang also discloses that “[d]oorbell unit 105 may connect to chime unit 110 using doorbell wiring 155.”

Ex. 1005 ¶ 27; *see id.* ¶ 9. Hwang discloses that “network 115” allows “doorbell unit 105, chime unit 110, control unit 120, computing device 125, and database 130” to “communicate with one another.” *Id.* ¶ 26; *see id.*

¶¶ 10, 32 (stating that “data received at the chime unit may be sent to a control unit over a data communication network,” such as “802.11”).

Hwang discloses that “doorbell unit 105 may communicate with control unit 120 . . . via a communication path that includes . . . chime unit 110, and network 115.” Ex. 1005 ¶ 32. We determine that Hwang’s disclosure of the chime unit coupled to the local area network via wireless connections and Hwang’s disclosure of the network allowing the chime unit, the doorbell unit, and the remote device to communicate with one another teach “coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device” as claimed.

Claim 31 recites “detecting, by the doorbell, a trigger of a button of the doorbell.” Petitioner contends “Hwang discloses this limitation because it teaches that a monitoring module of the doorbell unit ‘may detect a press of a button on the doorbell unit (e.g., a press of button 135).’” Pet. 16–17 (quoting Ex. 1005 ¶ 38) (citing Ex. 1003, 34–36). We determine that Hwang’s disclosure of a monitoring module detecting a press of a button on a doorbell unit teaches “detecting, by the doorbell, a trigger of a button of the doorbell” as claimed.

Claim 31 recites “sending a visitor alert from the doorbell to the chime.” Petitioner contends “sending an alert in the form of an image of a visitor who pressed the doorbell button from the doorbell unit to the chime

unit,” as disclosed by Hwang, teaches “sending a visitor alert from the doorbell to the chime.” Pet. 19 (citing Ex. 1003, 36–39).

Hwang discloses that “a user may desire to receive an alert when someone enters a predefined area,” such as the area around “a door of his or her house, office, or place of business.” Ex. 1005 ¶ 25. Hwang further discloses “an image of the person that approaches a door and/or presses a doorbell button” may be captured by a “doorbell camera” and “relayed to one or more devices where a user is able to view the captured image.” *Id.* Hwang also discloses, with respect to Figure 5, that “[a]t block 520, one or more images may be captured using the doorbell camera upon detecting a press of a button on the doorbell” and “[a]t block 530, data associated with capturing one or more images using the doorbell camera may be sent to one or more devices over the doorbell wiring (e.g., sent to a chime unit).” *Id.* ¶ 46; Fig. 5. We determine that Hwang’s disclosure of capturing an image of a person who presses a button on a doorbell and sending the captured image to a chime unit teaches “sending a visitor alert from the doorbell to the chime” as claimed.

Claim 31 recites “sending the visitor alert from the chime to the remote computing device such that the chime communicatively couples the doorbell to the remote computing device.” Petitioner contends Hwang discloses that “the chime unit communicatively couples the doorbell unit to the control unit by relaying the image(s) of the visitor from the doorbell unit to the control unit.” Pet. 21 (citing Ex. 1003, 42). Petitioner further contends “sending the images (visitor alert) captured by the doorbell unit from the chime unit to the control unit (remote computing device) such that the chime unit communicatively couples the doorbell unit to the control unit,” as disclosed by Hwang, teaches “sending the visitor alert from the

chime to the remote computing device such that the chime communicatively couples the doorbell to the remote computing device.” *Id.* at 22 (citing Ex. 1003, 39–43).

Hwang discloses, with respect to Figure 6, that “[a]t block 610, the data received at the chime unit may be sent to a control unit over a data communication network.” Ex. 1005 ¶ 48, Fig. 6. Hwang also discloses that “control unit 120 include[s] a dedicated home automation computing device (e.g., wall-mounted controller), a personal computing device (e.g., laptop, desktop, etc.), a mobile computing device (e.g., tablet computing device, smartphone, etc.), and the like.” *Id.* ¶ 26. Hwang further discloses:

[C]ommunication module 310 may receive, at a chime unit, data associated with capturing an image using a camera in a doorbell unit. The data may be sent over doorbell wiring between the chime unit and the doorbell unit (e.g., doorbell wiring 155). Communication module 310 may send the data received at the chime unit to a control unit over a data communication network. For example, data received at chime unit 110 may be sent to control unit 120 over network 115.

*Id.* ¶ 40. We determine that Hwang’s disclosure of sending captured images from the doorbell unit to the chime unit and then sending the captured images from the chime unit to the control unit teaches “sending the visitor alert from the chime to the remote computing device such that the chime communicatively couples the doorbell to the remote computing device.”

Claim 31 recites “receiving, by the doorbell system, a do not disturb setting that determines whether the chime refrains from emitting sound.” Petitioner contends that this limitation is taught by the combination of Hwang and HersHKovitz. Opp. 21–25.

Petitioner contends that Hwang teaches “receiving, by the doorbell system, a . . . setting that determines” a function of the doorbell system as

claimed in disclosing a doorbell system in which a remote device communicates user settings of a function of the doorbell system, such as a user request to capture an image using the camera in the doorbell unit. Opp. 21–22 (citing Ex. 1005 ¶¶ 26, 32, 35, 40, 49, 50; Ex. 1034, 23–28). Dr. Madisetti testifies that Hwang discloses a doorbell system that includes a doorbell unit, a chime unit, and a control unit (remote device) that communicate via a communication path. Ex. 1034, 23–24 (citing Ex. 1005 ¶ 32, Fig. 1). Dr. Madisetti testifies that the control unit of Hwang allows a user to control a function of the doorbell unit by sending a request from the control unit to the chime unit and the doorbell unit. *Id.* at 25–28 (citing Ex. 1005 ¶¶ 10, 31, 40, 49, 50, Figs. 1, 7).

Hwang discloses a chime unit receiving a request from the control unit to capture an image using the camera in the doorbell unit and sending the request to the doorbell unit, where the control unit is a remote device. Ex. 1005 ¶ 10; *see id.* ¶¶ 31, 40, 49, 50, Figs. 1, 7. We rely on Dr. Madisetti’s testimony and supporting evidence and determine that Hwang’s disclosure of a doorbell system comprising a chime unit and a doorbell unit, in which the chime unit receives a request to capture an image from the remote device and sends the request to the doorbell unit, teaches “receiving, by the doorbell system, a . . . setting that determines” a function of the doorbell system as claimed.

Petitioner contends that Hershkovitz teaches “a do not disturb setting that determines whether the chime refrains from emitting sound” as claimed in disclosing that a user can utilize a laptop to select an operation mode in which the doorbell unit may be muted so as not to disturb occupants. Opp. 23 (citing Ex. 1030, 5:50–58; Ex. 1034, 29–31). Dr. Madisetti testifies that Hershkovitz teaches a system that includes a doorbell switch (i.e., a

pushbutton), a doorbell (i.e., a chime), a control panel, and a user programming interface (i.e., a remote computer device such as a laptop). Ex. 1034, 29–31 (2:1–2, 3:62–64, Fig. 1). Dr. Madisetti testifies that HersHKovitz teaches a user providing input through the remote laptop to select a do not disturb setting that mutes the doorbell (chime). *Id.* at 30–31 (citing Ex. 1030, 5:50–58).

Figure 1 of HersHKovitz shows system 10 including doorbell switch 16” that can be pressed by a user, doorbell unit 17 (which can be a chime), control panel 14, and user programming interface 13 (which can be a laptop). Ex. 1030, 3:56–58, 4:66–67, 3:33–38, 3:25–27. HersHKovitz discloses that “control panel 14 is thus able to control operation of the doorbell. For example, in one operation mode selected using the user programming interface 13, the doorbell unit may be muted so as not to disturb the occupants.” *Id.* at 5:52–55. We rely on Dr. Madisetti’s testimony and supporting evidence and determine that HersHKovitz’s disclosure of selecting an operation mode using a remote laptop to mute the doorbell unit so as not to disturb the occupants teaches a doorbell system receiving a do not disturb setting from a remote laptop that determines whether the chime refrains from emitting sound.

Petitioner contends that Hwang’s teaching of receiving a communication at a chime unit from a remote computing device, where the communication comprises a request that determines the functionality of the chime unit, in view of HersHKovitz’s teaching of receiving from a remote device a do not disturb setting that mutes a chime, amounts to applying a well-known setting to a doorbell system ready for improvement. Opp. 25 (citing *KSR*, 550 U.S. at 417). Dr. Madisetti testifies that a person of ordinary skill in the art would have incorporated the do not disturb setting of

Hershovitz in Hwang’s doorbell system to yield the known and predictable results of preventing visitors from disturbing the occupant when a young child is sleeping, or late at night, or for times when the occupant wants peace and quiet. Ex. 1034 ¶¶ 19–20 (citing Ex. 1030, 5:50–58; Ex. 1032, 4:36–38; Ex. 1033, 1:28–30; Ex. 1024, 1–3).

We rely on Dr. Madisetti’s testimony and supporting evidence in determining that substituting the known request to capture an image in the doorbell system of Hwang with the known do not disturb setting taught by Hershkovitz does no more than yield the predictable result of causing the chime of Hwang’s doorbell system to receive a do not disturb setting from a remote device that causes the chime to refrain from emitting sound as taught by Hershkovitz. Ex. 1034 ¶¶ 19–21 (citing Ex. 1030, 5:50–58; Ex. 1032, 4:36–38; Ex. 1033, 1:28–30; Ex. 1024, 1–3); *KSR*, 550 U.S. at 416 (“[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.”).

Patent Owner contends that Hwang and Hershkovitz are not analogous art because Hwang and Hershkovitz “could not be more different.” Reply 7–8 (citing Ex. 2005 ¶ 13). Petitioner contends that the relevant inquiry is not whether the references are analogous to each other, but whether the references are analogous to the claimed invention. Sur-reply 4–6 (citing *In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011)).

Petitioner contends that the field of endeavor of the ’987 patent is doorbell systems and methods. Opp. 5 (citing Ex. 1001, 3:3–6). Petitioner contends that both Hwang and Hershkovitz are in the same field of endeavor as the ’987 patent. Opp. 5–6 (citing Ex. 1005 ¶ 24; Ex. 1030, 2:61–64). We determine that the field of endeavor of the ’987 patent is doorbell systems

and methods and that Hwang and Hershkovitz are also in the field of endeavor of doorbell systems and methods. *See* Ex. 1001, 3:3–6; Ex. 1005 ¶ 24; Ex. 1030, 2:61–64.

Patent Owner contends that the doorbell of Hershkovitz is different than the doorbell of Hwang because the doorbell and chime of Hwang communicate, but the corresponding devices in Hershkovitz (the doorbell switch and doorbell unit) do not. Reply 8 (citing Ex. 1030, 5:50–52). According to Patent Owner, Hershkovitz teaches that all of the components are separately connected to the user interface and then to the control panel, which controls communications. *Id.* (citing Ex. 1030, 5:59–61). Patent Owner contends that Hershkovitz teaches that all of its standard functionality, including using the mute feature, are performed at the control panel, not the laptop. *Id.* at 8–9 (citing Ex. 1030, 3:13–27). According to Patent Owner, “[g]iven the different problems Hershkovitz and Hwang are focused on solving, a POSITA would not be motivated to combine the references and would have little expectation of success if such a combination were attempted.” *Id.* (citing Ex. 2005 ¶¶ 13–20).

Petitioner contends that the Petition relies on Hwang to teach the structural aspects of the limitation and relies on Hershkovitz to teach a mute function that silences the chime. Sur-reply 7–8 (citing Opp. 21–23). Petitioner contends that a “POSITA would have been specifically motivated to incorporate Hershkovitz’s do not disturb setting into Hwang’s doorbell system.” Opp. 23–24. Petitioner contends that a person of ordinary skill in the art would have had a reasonable expectation of success because such settings were common in doorbell systems, would not change the functionality of either Hwang’s doorbell system or Hershkovitz’s, do not disturb setting, and would utilize standard protocols and components.

Opp. 24–25 (citing Ex. 1034 ¶¶ 21–22; Ex. 1030, 5:50–58; Ex. 1032, 4:36–38, 8:15–17; Ex. 1033, 1:28–30; Ex. 1031, 65:54–63; Ex. 1005 ¶¶ 51–54).

Dr. Madisetti testifies that “combining Hershkovitz and Hwang does not alter the functionality of the do not disturb setting or the doorbell system” and that “using interchangeable components and standardized protocols,” such as known do not disturb settings, wireless techniques, processor, input/output controller, memory, and operating system, “would have been within the technical skill of a POSITA. Thus, there was a reasonable expectation of success in implementing the combination of Hwang and Hershkovitz.” Ex. 1034 ¶ 21 (citing Ex. 1030, 5:50–58; Ex. 1032, 4:36–38, 8:15–17; Ex. 1033, 1:28–30; Ex. 1031, 65:54–63; Ex. 1005 ¶¶ 51–54). We rely on Dr. Madisetti’s testimony and supporting evidence in determining that the known do not disturb function of Hershkovitz and the known doorbell system of Hwang would have been implemented using standardized protocols and interchangeable components and that working with such standardized protocols and interchangeable components would have been within the technical skill of a person of ordinary skill in the art at the time of invention, resulting in a reasonable expectation of success in combining the known do not disturb function with the known doorbell system.

Patent Owner contends that “receiving, by the doorbell system, a do not disturb setting that determines whether the chime refrains from emitting sound” as claimed requires the do not disturb setting to be received by both the doorbell and the chime because the preamble recites the “doorbell system comprising a doorbell and a chime.” Reply 9–11. Patent Owner contends that Hershkovitz sends the do not disturb setting to the doorbell unit, or “chime” as claimed, but not to the doorbell switch, or “doorbell” as

claimed. *Id.* (citing Ex. 1030, 5:50–61; Ex. 2005 ¶¶ 21–25).

Petitioner contends that Patent Owner’s narrow construction, that both the doorbell and the chime must receive the do not disturb setting, is not required by the language of the claim. Sur-reply 9. Petitioner also contends that the specification of the ’987 patent describes doorbell system 200 receiving a communication when only one component of the doorbell system receives such communication. *Id.* at 9–10 (citing Ex. 1001, 31:47–59, 34:31–33, 32:10–12, 34:61–65, 35:56–61, 42:61–64).

We do not agree with Patent Owner’s narrow construction, but, even were we to accept Patent Owner’s narrow construction, we disagree with Patent Owner’s contention that Hershkovitz alone does not teach both the doorbell and the chime receiving the do not disturb setting, because this is not the relevant inquiry. Each reference must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. *See In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). The relevant inquiry is whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the *combined teachings* of those references. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

As discussed above, we determine Hwang teaches “coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device” as claimed. Hwang further teaches sending a request to perform a function from a remote device to a chime, then sending the request from the chime to the doorbell unit. Ex. 1005 ¶¶ 10, 31, 32, 35, 40, 49, 50, Figs. 1, 3, and 7; Ex. 1034, 15–20. Hershkovitz teaches sending a request to perform a do not disturb function from a remote device to a chime. Ex. 1030, 5:50–58, Fig. 1; Ex. 1034, 21–23. Sending a request to perform a function from a remote device to a

chime, and from the chime to a doorbell as taught by Hwang, where the request is a request to perform a do not disturb function as taught by Hershkovitz, teaches sending the do not disturb request to both the doorbell and the chime as claimed, even under Patent Owner's narrower construction.

We determine proposed substitute claim 31 would have been obvious over the combination of Hwang and Hershkovitz. We deny Patent Owner's request to enter proposed substitute claim 31 because claim 31 is unpatentable under 35 U.S.C. § 103.

### *3. Analysis of Proposed Substitute Claim 32*

Proposed substitute claim 32 recites a "doorbell system." Petitioner contends that Hwang's disclosure of a system that includes a doorbell unit teaches the "doorbell system" as claimed. Pet. 25–26 (citing Ex. 1005, Fig. 1, Abstract, ¶ 26; Ex. 1003, 54). Hwang discloses systems for operating a doorbell camera, including a doorbell unit wired to doorbell wiring. Ex. 1005, Title, Abstract. We determine that Hwang's system that includes a doorbell unit teaches a "doorbell system" as claimed.

Claim 32 recites "a chime." Petitioner contends that Hwang's disclosure of a chime unit teaches the "chime" as claimed. Pet. 26 (citing Ex. 1005, Fig. 1, Abstract, ¶ 26; Ex. 1003, 55). Figure 1 of Hwang shows chime unit 110. Ex. 1005, Fig. 1, ¶ 26. We determine that Hwang's chime unit teaches "a chime" as claimed.

Claim 32 recites "a remote computing device communicatively coupled to the chime." Petitioner contends that this limitation is taught by Hwang's disclosure of a chime unit communicatively coupled via a network to a control unit such as a laptop, such that data received at the chime unit may be sent to the control unit over the network. Pet. 27 (citing Ex. 1005, Fig. 1, ¶¶ 10, 26; Ex. 1003, 55–57). Figure 1 of Hwang shows chime unit

110, control unit 120, and network 115 that allows chime unit 110 and control unit 120 to communicate with one another. Ex. 1005, Fig. 1, ¶ 26. Hwang discloses that examples of control unit 120 include a personal computing device such as a laptop and a mobile computing device such as a tablet or a smartphone. *Id.* ¶ 26. We determine that Hwang’s disclosure of a network that allows a chime unit and a laptop to communicate with each other teaches “a remote computing device communicatively coupled to the chime” as claimed.

Claim 32 recites “a doorbell communicatively coupled with the remote computing device via the chime.” Petitioner contends that this limitation is taught by Hwang’s disclosure of a doorbell unit that communicates with the control unit via a communication path that includes the chime unit and the network. Pet. 27–29 (citing Ex. 1005, Fig. 1, ¶¶ 26, 27, 32; Ex. 1003, 57–58). Hwang discloses that “doorbell unit 105 may communicate with control unit 120 . . . via a communication path that includes . . . chime unit 110, and network 115.” Ex. 1005 ¶ 32. We determine that Hwang’s disclosure of doorbell unit communicating with the control unit via a path that includes the chime teaches “a doorbell communicatively coupled with the remote computing device via the chime” as claimed.

Claim 32 recites “a first communication from the doorbell to the chime, wherein the first communication comprises a visitor alert.” Petitioner contends that this limitation is taught by Hwang for the same reasons given in the analysis of “sending a visitor alert from the doorbell to the chime” as recited in claim 31. Pet. 29 (citing Ex. 1003, 58–62). Dr. Madisetti testifies that Hwang teaches this limitation in disclosing capturing images upon detecting a press of a button on a doorbell unit and sending the

captured images from the doorbell unit to the chime unit. Ex. 1003, 58–62 (citing Ex. 1005 Fig. 5, ¶¶ 9, 25, 38, 39, 44–46).

Hwang teaches that “a user may desire to receive an alert when someone enters a predefined area,” such as the area around “a door of his or her house, office, or place of business.” Ex. 1005 ¶ 25. Hwang further explains “an image of the person that approaches a door and/or presses a doorbell button” may be captured by a “doorbell camera” and “relayed to one or more devices where a user is able to view the captured image.” *Id.* We determine that Hwang’s disclosure of capturing images upon detecting a press of a button on a doorbell unit and sending the captured images from the doorbell unit to the chime unit teaches “a first communication from the doorbell to the chime, wherein the first communication comprises a visitor alert” as claimed.

Claim 32 recites “a second communication from the chime to the remote computing device, wherein the second communication comprises the visitor alert.” Petitioner contends that Hwang teaches this limitation in disclosing that the doorbell unit sends the captured images to the chime unit and then the chime unit sends the captured images to the control unit. Pet. 29–30 (citing Ex. 1005, Fig. 6, ¶¶ 40, 48; Ex. 1003, 62–64). Hwang discloses that “data associated with capturing an image using a camera in a doorbell unit may be received, at a chime unit . . . . [T]he data received at the chime unit may be sent to a control unit over a data communication network.” Ex. 1005 ¶ 48, Fig. 6; *see id.* ¶ 40. We determine that Hwang’s disclosure of sending images captured by the camera in the doorbell unit from the chime to the control unit teaches “a second communication from the chime to the remote computing device, wherein the second communication comprises the visitor alert” as claimed.

Claim 32 recites “a third communication from the remote computing device to at least one of the chime and doorbell, wherein the third communication comprises a do not disturb setting which determines whether the chime refrains from emitting sound.” Petitioner relies on Hwang to teach a communication from the remote computing device to the chime and to the doorbell. Opp. 21–22 (citing Ex. 1005 ¶¶ 26, 31, 32, 35, 40, 49, 50, Figs. 1, 7; Ex. 1034, 23–28). Petitioner relies on Hershkovitz to teach a do not disturb setting which determines whether the chime refrains from emitting sound. Opp. 23 (citing Ex. 1030, 5:50–58; Ex. 1034, 29–31). Petitioner contends that sending a communication from the remote communication device to the chime, and from the chime to the doorbell, as taught by Hwang, where the communication is a do not disturb setting which determines whether the chime refrains from emitting sound as taught by Hershkovitz, yields the predictable result of silencing the chime as taught by Hershkovitz. Opp. 23–25.

Hwang discloses control unit 120 includes an application 165 that allows a user to interface with a function of the doorbell unit. Ex. 1005, Fig. 1, ¶ 31. Hwang discloses that a function of the doorbell unit is capturing images. *Id.* ¶¶ 10, 40, 50. Hwang discloses data module 150 of chime unit 110 receiving a request to perform the function of capturing images using a camera in a doorbell unit and sending the request to the doorbell unit. Ex. 1005, Figs. 1–3, 7, ¶¶ 49–50. Hershkovitz discloses that a user-controlled function of a doorbell is a do not disturb setting to mute the doorbell unit, which may be selected by a user in an interface such as a laptop. Ex. 1030, 5:50–58, 3:25–27. We determine that sending a request to perform a function from a control unit to a doorbell unit as taught by Hwang, where the function is a do not disturb setting to mute the doorbell unit as

taught by Hershkovitz, yields the predictable result of silencing the doorbell unit as taught by Hershkovitz.

Patent Owner relies on the same arguments for the patentability of claim 32 as those presented for claim 31, which we find unpersuasive as discussed above in our analysis of claim 31. Reply 7–11. Patent Owner further contends that Hershkovitz does not teach the use of a “remote computing device” as recited in claim 32 to use the mute functionality. Reply 11. According to Patent Owner, the only disclosure of using a laptop in Hershkovitz is for initial security setup of specifying a floor plan and placing detectors, not as a control device. *Id.* at 12 (citing Ex. 1030, 3:13–27; Ex. 2005 ¶¶ 26–30).

Hershkovitz discloses that, “[g]iven the limitations and comfort level when using a small touch screen as a programming interface for specifying a floor plan and placing the detectors therein, an external programming interface 13, such as a laptop computer . . . may be used.” Ex. 1030, 3:23–27. Hershkovitz further discloses that “in one operation mode selected using the programming interface 13, the doorbell unit may be muted so as not to disturb the occupants.” *Id.* at 5:53–55. Patent Owner’s contention that Hershkovitz does not teach using a laptop to select the mute function is inconsistent with Hershkovitz’s disclosure of using interface 13, such as a laptop computer, to select an operation mode for muting the doorbell unit so as not to disturb the occupants.

We determine proposed substitute claim 32 would have been obvious over the combination of Hwang and Hershkovitz. We deny Patent Owner’s request to enter proposed substitute claim 32 because claim 32 is unpatentable under 35 U.S.C. § 103.

*C. Analysis of Proposed Substitute Claims 31 and 32 as Obvious over the Combination of Child and HersHKovitz*

*1. Child (Ex. 1007)*

Child discloses a system including an entry component with a sensor to detect a presence of a person at an entry to a structure, and a camera. Ex. 1007, Abstract. Child discloses that the entry component communicates image and sensor data to a control panel and receives control information from the control panel. *Id.* Child discloses that the control panel sends the image data to a mobile wireless device. *Id.*

*2. Analysis of Proposed Substitute Claim 31*

Proposed substitute claim 31 recites a “method of using a doorbell system comprising a doorbell and a chime, wherein the doorbell system is configured to be coupled to a building.” Petitioner contends Child teaches this limitation in disclosing a doorbell next to a door on the exterior of a structure and a control panel within the structure that plays a chime when the doorbell is depressed. Pet. 48–51 (citing Ex. 1007, Figs. 2, 3, 5, 7, ¶¶ 35, 36, 41, 65, 75, 93, 94; Ex. 1003, 98–104). Child discloses that “control panel 220 may detect when doorbell 212 is depressed. In response, the control panel may play a chime . . . .” Ex. 1007 ¶ 36, Fig. 2. We determine that Child’s disclosure of a control panel that plays a chime when the doorbell is depressed teaches a “method of using a doorbell system comprising a doorbell and a chime, wherein the doorbell system is configured to be coupled to a building” as claimed.

Claim 31 recites “coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device.” Petitioner contends Child teaches this limitation in disclosing a control panel communicatively coupled to a wireless network, to a doorbell, and to remote

electronic devices. Pet. 51–55 (citing Ex. 1007, Figs. 3, 5, ¶¶ 54, 68, 75, 76, 81, 83, 92; Ex. 1003, 104–112). As discussed above, Child discloses a control panel that plays a chime when a doorbell is depressed. Child discloses that “control panel 520 may communicate with [remote] components . . . using network 502 [which] may include a wireless communication system.” Ex. 1007 ¶ 68, Fig. 5. Child discloses that the remote components include electronic devices 504, 506. *Id.* ¶ 76, Fig. 5. We determine that Child’s disclosure of a control panel that plays a chime when a doorbell is depressed and communicates with electronic devices using a network that includes a wireless communication system teaches “coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device” as claimed.

Claim 31 recites “detecting, by the doorbell, a trigger of a button of the doorbell.” Petitioner contends that Child teaches this limitation in disclosing a doorbell that is activated when the doorbell button is depressed. Pet. 55–57 (citing Ex. 1007, Fig. 7, ¶¶ 30, 36, 61, 94–96; Ex. 1003, 112–114). Child discloses “doorbell 412 includes a depressible button 415 that, when depressed, causes a chime . . . to indicate the presence of someone at the door.” Ex. 1007 ¶ 61. We determine Child’s disclosure of a doorbell including a button that, when depressed, causes a chime to play teaches, “detecting, by the doorbell, a trigger of a button of the doorbell” as claimed.

Claim 31 recites “sending a visitor alert from the doorbell to the chime.” Petitioner contends that Child teaches this limitation in disclosing sending images of a person who presses a doorbell to a chime. Pet. 57–59 (citing Ex. 1007, Fig. 7, ¶¶ 6, 7, 26, 36, 44, 95–97, 101, 103; Ex. 1003, 114–119). Child discloses that “a doorbell . . . may be used to determine someone is present.” Ex. 1007 ¶ 95. Child discloses that an “image capture

system may . . . be used to capture one or more images of the location . . . where it is detected that a person is likely present.” *Id.* ¶ 96; *see id.* ¶ 41 (A “camera may be . . . integrated with a . . . doorbell.”). Child discloses that the “images may be sent to an automation system control panel.” *Id.* ¶¶ 97, 36. We determine Child’s disclosure of capturing and sending an image of a person who presses a doorbell to the control panel teaches “sending a visitor alert from the doorbell to the chime” as claimed.

Claim 31 recites “sending the visitor alert from the chime to the remote computing device such that the chime communicatively couples the doorbell to the remote computing device.” Petitioner contends Child teaches this limitation in disclosing the control panel sending the image of the person who presses the doorbell to a remote electronic device. Pet. 59–62 (citing Ex. 1007, Figs. 5, 7, ¶¶ 6, 9, 44, 97–99; Ex. 1003, 119–122). Child discloses that the images “may also be displayed by the control panel” and “may be sent to a remote computing device” such as a mobile phone, tablet computing device, or an office computer. Ex. 1007 ¶ 99. We determine Child’s disclosure of the control panel sending the image to a remote computing device teaches “sending the visitor alert from the chime to the remote computing device such that the chime communicatively couples the doorbell to the remote computing device” as claimed.

Claim 31 recites “receiving, by the doorbell system, a do not disturb setting that determines whether the chime refrains from emitting sound.” Petitioner contends that this limitation is taught by the combination of Child and Hershkovitz. Opp. 14–21.

Petitioner contends that Child teaches receiving, at a control panel, a setting that determines the functionality of a component of the doorbell system in disclosing a remote access module to enable the control panel to

be accessed using remote devices, so that the user could remotely set types of settings including communications and door cameras. Opp. 14–16 (citing Ex. 1007, Figs. 3, 5, ¶¶ 36, 60, 67, 71, 75, 76, 92, 94, 114; Ex. 1034, 35–43). Child discloses that “a remote access module . . . could . . . enable the control panel 620 to be accessed using remote devices . . . . Thus, a user of a remote device could potentially set or view communications, door cameras . . . or other settings remotely . . . .” Ex. 1007 ¶ 92. We determine Child’s disclosure of using a remote device to access the control panel in order to remotely set various settings teaches receiving, by the doorbell system, a setting that determines the functionality of the doorbell system.

Petitioner contends that Hershkovitz teaches that the setting is a do not disturb setting that mutes a chime. Opp. 16–17 (citing Ex. 1030, 3:23–27, 4:66–67, 5:50–58; Ex. 1034, 43–45). Hershkovitz discloses “in one operation mode selected using the user programming interface 13, the doorbell unit may be muted so as not to disturb the occupants.” Ex. 1030, 5:53–55. Hershkovitz discloses that the user programming interface 13 may be a laptop computer. *Id.* at 3:25–27. Hershkovitz discloses that the doorbell unit may be a chime. *Id.* at 4:66–67. We determine that Hershkovitz’s disclosure of a laptop computer used to select an operation mode that mutes a chime teaches “receiving, by the doorbell system, a do not disturb setting that determines whether the chime refrains from emitting sound” as claimed.

Petitioner contends that combining Child’s teaching of receiving, at a control panel, a setting that determines the functionality of a component of the doorbell system, with the do not disturb setting that mutes a chime as taught by Hershkovitz, does no more than yield the predictable result of allowing a user to silence the chime. Opp. 17–21. Dr. Madisetti testifies

that a person of ordinary skill in the art would have incorporated the do not disturb setting of Hershovitz in Child's doorbell system to yield the known and predictable benefits of preventing visitors from disturbing the occupant when a young child is sleeping, or late at night, or for times when the occupant wants peace and quiet. Ex. 1034 ¶¶ 26–27 (citing Ex. 1030, 5:50–58; Ex. 1032, 4:36–38; Ex. 1033, 1:28–30; Ex. 1024, 1–3).

We rely on Dr. Madisetti's testimony and supporting evidence in determining that adding the known do not disturb setting taught by Herskovitz to the settings that can be remotely set as taught by Child does no more than yield the predictable result of allowing a user of Child's doorbell system to set a do not disturb setting that determines whether the chime refrains from emitting sound as taught by Herskovitz, for the benefit of preventing visitors from disturbing the occupant. Ex. 1034 ¶¶ 26–27 (citing Ex. 1030, 5:50–58; Ex. 1032, 4:36–38; Ex. 1033, 1:28–30; Ex. 1024, 3); *KSR*, 550 U.S. at 416 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

Patent Owner contends that a person of ordinary skill in the art would not have been motivated to combine Child and Herskovitz because Child and Herskovitz are not analogous. Reply 13–15. According to Patent Owner, the doorbell of Herskovitz is fundamentally different than the doorbell of Child. *Id.* at 14. Petitioner contends that the relevant inquiry is not whether the references are analogous to each other, but whether the references are analogous to the claimed invention. Sur-reply 4–6 (citing *In re Klein*, 647 F.3d at 1348). Petitioner contends that the field of endeavor of the '987 patent is doorbell systems and methods. Opp. 5 (citing Ex. 1001, 3:3–6). Petitioner contends that both Child and Herskovitz are in the same

field of endeavor as the '987 patent. Opp. 5–6 (citing Ex. 1007 ¶¶ 6, 7, Fig. 2; Ex. 1030, 2:61–64). We agree with Petitioner and determine that the field of endeavor of the '987 patent is doorbell systems and methods and that Child and Hershkovitz are also in the field of endeavor of doorbell systems and methods. *See* Ex. 1001, 3:3–6; Ex. 1007 ¶¶ 6, 7, Fig. 2; Ex. 1030, 2:61–64.

Patent Owner contends that Hershkovitz does not teach using a remote computing device for any of its standard functionality. Reply 14. Patent Owner's contention is inconsistent with Hershkovitz's teaching of using laptop 13 remote from chime 17 to mute the chime. Ex. 1030, 5:53–55, 3:25–27, 4:66–67, Fig. 1.

Patent Owner contends that “receiving, by the doorbell system, a do not disturb setting that determines whether the chime refrains from emitting sound” as claimed requires the do not disturb setting to be received by both the doorbell and the chime, because the preamble recites the “doorbell system comprising a doorbell and a chime.” Reply 15–17. Patent Owner contends that Hershkovitz sends the do not disturb setting to the doorbell unit, or “chime” as claimed, but not to the doorbell switch, or “doorbell” as claimed. *Id.* (citing Ex. 1030, 5:50–61; Ex. 2005 ¶¶ 21–25).

Petitioner contends that Patent Owner's narrow construction, that both the doorbell and the chime must receive the do not disturb setting, is not required by the language of the claim. Sur-reply 9. Petitioner also contends that the specification of the '987 patent describes doorbell system 200 receiving a communication when only one component of the doorbell system receives such communication. *Id.* at 9–10 (citing Ex. 1001, 31:47–59, 34:31–33, 32:10–10, 34:61–65, 35:56–61, 42:61–64).

We do not agree with Patent Owner's narrow construction, but, even

were we to accept Patent Owner's narrow construction, we disagree with Patent Owner's contention that Hershkovitz alone does not teach both the doorbell and the chime receiving the do not disturb setting, because this is not the relevant inquiry. Each reference must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. *See In re Merck & Co., Inc.*, 800 F.2d at 1097. The relevant inquiry is whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the *combined teachings* of those references. *In re Keller*, 642 F.2d at 425.

As discussed above, we determine Child teaches "coupling communicatively the chime to a wireless network of the building, to the doorbell, and to a remote computing device" as claimed. Child further teaches sending a request to perform a function from the remote device to the chime, then sending the request from the chime to the doorbell.

Ex. 1007 ¶ 92 (A remote access module "enable[s] the control panel to be accessed using remote devices . . . [to] set or view . . . door cameras."); *see id.* ¶ 41 (A "camera may be . . . integrated with a . . . doorbell.").

Hershkovitz teaches sending a request to perform a do not disturb function from a remote device to a chime. Ex. 1030, 5:50–58, Fig. 1. Sending a request to perform a function from a remote device to a chime, and from the chime to a doorbell as taught by Child, where the request is a do not disturb request as taught by Hershkovitz, teaches sending the do not disturb request to both the chime and the doorbell even under Patent Owner's narrower construction.

We determine proposed substitute claim 31 would have been obvious over the combination of Child and Hershkovitz. We deny Patent Owner's request to enter proposed substitute claim 31 because claim 31 is

unpatentable under 35 U.S.C. § 103.

### *3. Analysis of Claim 32*

Claim 32 recites a “doorbell system.” Petitioner contends Child teaches this limitation in disclosing a building monitoring system that includes a doorbell integrated with an image capture system. Pet. 72–73 (citing Ex. 1007, Figs. 3, 5, ¶¶ 6, 65, 75, 94; Ex. 1003, 150–154). Child discloses that an image capture system may be positioned in a doorbell. Ex. 1007 ¶ 94. We determine that Child’s disclosure of an image capture system positioned in a doorbell teaches a “doorbell system” as claimed.

Claim 32 recites “a chime.” Petitioner contends Child teaches this limitation in disclosing a control panel that plays a chime when a visitor presses a doorbell. Pet. 74 (citing Ex. 1007, Fig. 5, ¶ 36; Ex. 1003, 154–156). Child discloses a control panel that detects when a doorbell is pressed and responds by playing a chime. Ex. 1007 ¶ 36. We determine that Child’s disclosure of a control panel that plays a chime teaches “a chime” as claimed.

Claim 32 recites “a remote computing device communicatively coupled to the chime.” Petitioner contends Child teaches this limitation in disclosing a control panel that communicates with remote devices. Pet. 75–76 (citing Ex. 1007, Fig. 5, ¶¶ 76, 92; Ex. 1003, 156–157). Child discloses “control panel 620 to be accessed using remote devices (e.g., devices 504, 506 of FIG. 5), and to potentially have communications relayed through the control panel 620 either from or to the remote device.” Ex. 1007 ¶ 92. We determine that Child’s disclosure of a control panel that communicates with remote devices teaches “a remote computing device communicatively coupled to the chime” as claimed.

Claim 32 recites “a doorbell communicatively coupled with the

remote computing device via the chime.” Petitioner contends Child teaches this limitation in disclosing sending images from an image capture system of a doorbell to the control panel and then sending the images from the control panel to a remote device. Pet. 76–78 (citing Ex. 1007, Figs. 3, 5, ¶¶ 41, 44, 54, 75; Ex. 1003, 157–163). Child discloses that a camera is integrated with the doorbell. Ex. 1007 ¶ 41. Child discloses sending “the image data [(from the camera)] . . . to the transmitter . . . . [T]he transmitter 326 may transmit the image data to a control panel . . . . [T]he control panel may send the image data to a remote source (e.g., a mobile device) . . . .” *Id.* ¶ 44. We determine that Child’s disclosure of sending images from a camera integrated with a doorbell to a control panel and then sending the images from the control panel to a remote device teaches “a doorbell communicatively coupled with the remote computing device via the chime” as claimed.

Claim 32 recites “a first communication from the doorbell to the chime, wherein the first communication comprises a visitor alert.” Petitioner contends that Child teaches this limitation in disclosing sending images of a person who presses a doorbell to a chime. Pet. 78–79 (citing Pet. 57–59; Ex. 1003, 163–168). As discussed in our analysis of claim 31, we determine Child’s disclosure of capturing and sending an image of a person who presses a doorbell to the control panel teaches “sending a visitor alert from the doorbell to the chime.” Thus, we determine that Child teaches “a first communication from the doorbell to the chime, wherein the first communication comprises a visitor alert” as recited in claim 32.

Claim 32 recites “a second communication from the chime to the remote computing device, wherein the second communication comprises the visitor alert.” Petitioner contends Child teaches this limitation in disclosing

that the control panel sends the captured image to a remote computing device. Pet. 79–80 (citing Ex. 1007, Fig. 7, ¶¶ 44, 99; Ex. 1003, 168–170). Child discloses that “the captured image(s) may be sent to a remote computing device.” Ex. 1007 ¶ 99. We determine that Child’s disclosure of sending images from the control panel to the remote computing device teaches “a second communication from the chime to the remote computing device, wherein the second communication comprises the visitor alert” as claimed.

Claim 32 recites “a third communication from the remote computing device to at least one of the chime and doorbell, wherein the third communication comprises a do not disturb setting which determines whether the chime refrains from emitting sound.” Petitioner contends that this limitation is taught by the combination of Child and Hershkovitz. Opp. 14–21. As discussed above in our analysis of claim 31, we determine Child’s disclosure of using a remote device to access the control panel in order to remotely set various settings teaches receiving, by the doorbell system, a setting that determines the functionality of the doorbell system and that Hershkovitz’s disclosure of a laptop computer used to select an operation mode that mutes a chime teaches receiving, by the doorbell system, a do not disturb setting that determines whether the chime refrains from emitting sound. We determine that adding the known do not disturb setting taught by Hershkovitz to the settings that can be remotely set as taught by Child does no more than yield the predictable result of allowing a user of Child’s doorbell system to send a communication from the remote computing device to the control panel in order to set a do not disturb setting that determines whether the chime refrains from emitting sound as taught by Hershkovitz, for the benefit of preventing visitors from disturbing the occupant. Ex. 1034

¶¶ 26–27 (citing Ex. 1030, 5:50–58; Ex. 1032, 4:36–38; Ex. 1033, 1:28–30; Ex. 1024, 3); *KSR*, 550 U.S. at 416 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

Patent Owner relies on the same arguments for the patentability of claim 32 as those presented for claim 31, which we find unpersuasive as discussed above in our analysis of claim 31. Reply 12–17. Patent Owner further contends that Hershkovitz does not teach the use of a “remote computing device” as recited in claim 32 to use the mute functionality. Reply 17. According to Patent Owner, the only disclosure of using a laptop in Hershkovitz is for initial security setup of specifying a floor plan and placing detectors, not as a control device. *Id.* at 18–19 (citing Ex. 1030, 3:13–27; Ex. 2005 ¶¶ 45–49).

Hershkovitz discloses that, “[g]iven the limitations and comfort level when using a small touch screen as a programming interface for specifying a floor plan and placing the detectors therein, an external programming interface 13, such as a laptop computer . . . may be used.” Ex. 1030, 3:23–27. Hershkovitz further discloses that “in one operation mode selected using the programming interface 13, the doorbell unit may be muted so as not to disturb the occupants.” *Id.* at 5:53–55. Patent Owner’s contention that Hershkovitz does not teach using a laptop to select the mute function is inconsistent with Hershkovitz’s disclosure of using interface 13, such as a laptop computer, to select an operation mode for muting the doorbell unit so as not to disturb the occupants.

We determine proposed substitute claim 32 would have been obvious over the combination of Child and Hershkovitz. We deny Patent Owner's request to enter proposed substitute claim 32 because claim 32 is unpatentable under 35 U.S.C. § 103.

*D. Analysis of Proposed Substitute Claims 33–46 for Written Description*

In the Motion to Amend, Patent Owner states that the

amendments affect[] only challenged independent Claims 1 and 19. No proposed amendments are made to any dependent claims. It is intended that the antecedent claims referenced in the dependent claims will reflect proper claim dependency if the proposed substitute claims are entered (e.g., if proposed Claim 31 is entered, the dependent claims previously depending from Claim 1 will then depend, instead, from Claim 31, and so forth).

Mot. 2. Petitioner contends that although

the Motion states that “[n]o proposed amendments are made to any dependent claims,” this is not accurate. The very next sentence states: “It is intended that the antecedent claims referenced in the dependent claims will reflect proper claim dependency if the proposed substitute claims are entered.”

Opp. 2 (quoting Mot. 2). Petitioner also contends that “the Motion is required to set forth written description support for each substitute dependent claim ‘even if the only amendment to a dependent claim is in the identification of the claim from which it depends’” and that “[t]he Motion does not provide any indication where support may be found for the proposed substitute claims.” *Id.* at 3 (quoting *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 4 (PTAB Feb. 25, 2019) (precedential)).

Our Rules require that a motion to amend must “set forth: (1) The support in the original disclosure of the patent for each claim that is added or amended; and (2) The support in an earlier-filed disclosure for each claim for which benefit of the filing date of the earlier filed disclosure is sought.”

37 C.F.R. § 42.121(b). During the hearing, Patent Owner confirmed that the Motion to Amend seeks to cancel challenged claims 1–4, 10–13, 19–25, and 28 and replace the challenged claims with substitute claims 31–46. *See* Tr. 14:20–16:3. Patent Owner also confirmed that the Motion to Amend did not set forth written description support for the proposed substitute dependent claims 33–46. Tr. 17:25–19:17. Because Patent Owner’s motion to amend does not set forth written description support for proposed substitute dependent claims as required by 37 C.F.R. § 42.121(b), we deny Patent Owner’s request to enter proposed substitute claims 33–46. *See Lectrosonics*, IPR2018-01129, Paper 15 at 8 (holding that compliance with 37 C.F.R. § 42.121(b) requires a motion to amend to “set forth written description support for each proposed substitute claim as a whole, and not just the features added by the amendment. This applies equally to independent claims and dependent claims, even if the only amendment to a dependent claim is in the identification of the claim from which it depends.”).

### III. CONCLUSION

We grant Patent Owner’s request to cancel claims 1–4, 10–13, 19–25, and 28, and deny Patent Owner’s request to enter proposed substitute claims 31–46, as summarized in the following table:

| <b>Motion to Amend Outcome</b>              | <b>Claim(s)</b>       |
|---------------------------------------------|-----------------------|
| Original Claims Cancelled by Amendment      | 1–4, 10–13, 19–25, 28 |
| Substitute Claims Proposed in the Amendment | 31–46                 |
| Substitute Claims: Motion to Amend Granted  |                       |
| Substitute Claims: Motion to Amend Denied   | 31–46                 |
| Substitute Claims: Not Reached              |                       |

#### IV. ORDER

Accordingly, it is

ORDERED that Patent Owner's Motion to Amend is *granted* as to its request to cancel claims 1–4, 10–13, 19–25, and 28;

FURTHER ORDERED that Patent Owner's Motion to Amend is *denied* as to substitute claims 31–46.

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