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

_____

PETITION FOR *INTER PARTES* REVIEW

OF

U.S. PATENT NO. 9,743,049

TABLE OF CONTENTS

I. INTRODUCTION

U.S. Patent No. 9,743,049 ("the '049 Patent," RING-1001) is generally directed to a doorbell system comprising a remote computing device communicatively coupled to an electronic doorbell with a camera. To reduce power consumption, the doorbell enters a sleep mode in which the camera does not capture images. The claims challenged in this petition recite two different manners of bringing the doorbell out of the sleep mode and into a live view mode—(i) through a mobile application on the remote computing device and (ii) in response to the doorbell detecting motion with a motion sensor. At the time of the '049 Patent, however, doorbell systems that functioned in the same way to reduce power consumption were already well known in the art.

For example, Ring LLC's own patent application by its founder, Jamie Siminoff, teaches a doorbell system comprising a remote computing device communicatively coupled to a video doorbell, where the doorbell includes a hibernation mode in which its components—including the camera—are deactivated to save power. The doorbell is triggered to wake up and begin recording live video in response to several different activation triggers including detection of motion and a signal from a user of the remote computing device. Other patent applications, including U.S. Patent Application Publication No. 2014/0267740 to Almomani, illustrate that it was already well known to selectively

activate a door-based camera with an application on a smartphone so as to receive streaming video of the area around the door.

The evidence in this petition demonstrates that claims 1-4, 7-15, and 18-21 of the '049 Patent are unpatentable under either 35 U.S.C. § 102 or 35 U.S.C. § 103. Accordingly, Ring LLC ("Petitioner") respectfully requests that these claims be held unpatentable and cancelled.

II. MANDATORY NOTICES

A. Real Party-in-Interest

The real parties-in-interest are Ring LLC[1], 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.

B. Related Matters

As of the filing date of this petition, the '049 Patent has been asserted in *SkyBell Technologies, Inc. v. Ring Inc.*, 8:18-cv-00014 (C. D. Cal. 2018).

[1] In April 2018, Ring Inc. converted to a limited liability company and changed its name to Ring LLC.

C. Lead and Back-up Counsel and Service Information

Lead Counsel
Scott T. Jarratt
HAYNES AND BOONE, LLP
2323 Victory Ave. Suite 700
Dallas, TX 75219
Phone: (972) 739-8663
Fax: (214) 200-0853
scott.jarratt.ipr@haynesboone.com
USPTO Reg. No. 70,297

Back-up Counsel
Andrew S. Ehmke
HAYNES AND BOONE, LLP
2323 Victory Ave. Suite 700
Dallas, TX 75219
Phone: (214) 651-5116
Fax: (214) 200-0853
andy.ehmke.ipr@haynesboone.com
USPTO Reg. No. 50,271

Please address all correspondence to lead and back-up counsel. Petitioner consents to electronic service via email.

III. GROUNDS FOR STANDING

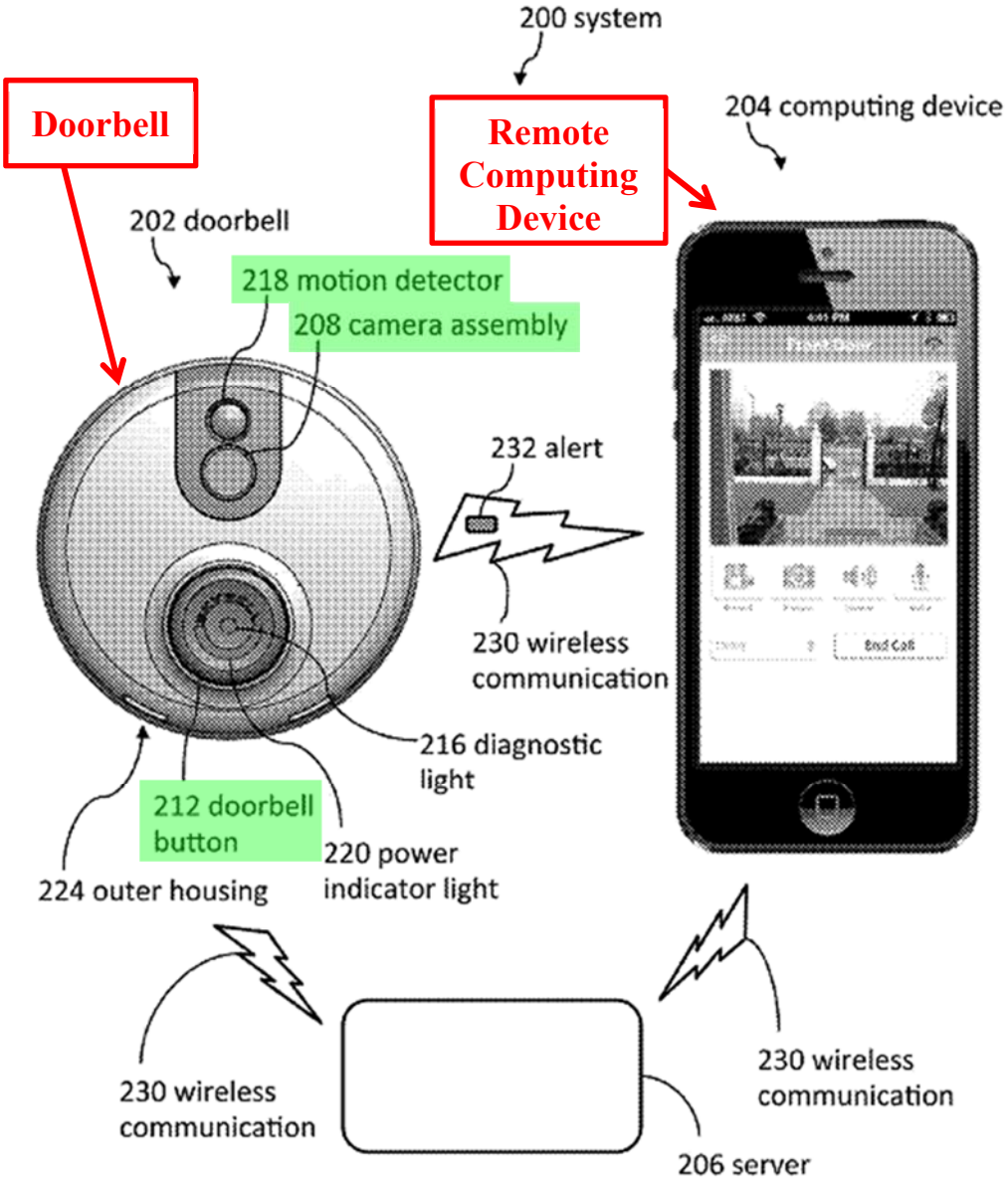
Petitioner certifies that the ’049 Patent is eligible for *inter partes* review and that Petitioner is not barred or estopped from requesting *inter partes* review challenging the patent claims on the grounds identified in this petition. Petitioner was served with a complaint asserting infringement of the ’049 Patent not more than one year before the filing of this Petition. Petitioner has not filed a civil action challenging the validity of any claim of the ’049 Patent.

IV. THE ’049 PATENT

A. Overview of the ’049 Patent

The ’049 Patent is generally directed to a doorbell system. RING-1001, Abstract. As shown in Fig. 1, annotated below, the doorbell system includes an

electronic doorbell and a remote computing device, where the doorbell includes a camera, a motion detector that detects visitors, and a doorbell button. *Id*. at 5:30-38. The '049 Patent explains that the remote computing device can include "a mobile application designed to run on smartphones, tablet computers, and other mobile devices." *Id.* at 6:56-60.



RING-1001, Fig. 1 (annotated); RING-1003, ¶ 35.

The ’049 Patent states that the “doorbell 202 can record video and audio, which can then be sent to a remote computing device 204.” *Id*. at 5:30-35. In some embodiments, the user “may select a button in a software application (e.g., an app), which causes a live or previously recorded video to display on the remote computing device.” *Id*. at 11:46-49.

The ’049 Patent notes, though, that “[l]eaving the camera on all the time just in case the user wants to see a video can waste substantial power.” RING-1001, 11:52-63. “In order to reduce power consumption, the doorbell 202 may be able to enter a camera sleep mode 704,” during which the camera “is configured not to record.” *Id*. at 12:27-29. The ’049 Patent further states that the “remote computing device 204 may send a signal 604 to the doorbell 202 that overrides the sleep mode … to cause the doorbell 202 to ‘wake up,’” where “[w]aking up the doorbell 202 can cause the doorbell 202 to enter a higher-power mode that may enable the camera to record.” *Id*. at 11:52-63. The specification of the ’049 Patent refers to this higher-power mode as a “camera recording mode.” *Id*. at Fig. 5, 12:38-42 (“In some embodiments, the user can cause the remote computing device 204 to override a power setting 702 of the doorbell 202 to, for example, force the doorbell 202 to exit the camera sleep mode 704 and enter a camera recording mode 706.”). The ’049 Patent states that the transition to the camera recording mode “may cause a first video 708 to be sent from the doorbell 202 to the remote computing device

204," where "[t]he first video may be a live video or a pre-recorded video." *Id*. at 12:35-37, 13:22-26.

The '049 Patent further states that "a user can configure a doorbell 202 to alert the user in response to an event" such as "motion." RING-1001, 16:58-61. "For example, when the doorbell receives the communication from the sensor, the doorbell may wake up (e.g., enter a mode that consumes more power), start recording a video, send a communication to a remote computing device…." *Id*. at 17:2-6.

As this Petition establishes, however, not only was it well known before the '049 Patent for a video doorbell to include a lower-power mode in which the camera does not record, but it was also known to wake the doorbell up via either detected motion or a signal from a remote computing device, which displays streaming video from the doorbell.

B. Prosecution History

The '049 Patent issued on August 22, 2017 from U.S. Patent Application No. 15/156,302 ("the '302 application") filed May 16, 2016. The '049 Patent is purportedly a continuation or continuation-in-part of several related applications, the earliest of which was filed May 30, 2015. The '049 Patent also claims priority to several U.S. provisional applications, the earliest of which was filed May 8, 2015. Whether the '049 Patent is entitled to its earliest alleged priority date is

irrelevant for the purpose of this petition, as the prior art relied upon herein pre-dates the earliest alleged priority date.

During a relatively short prosecution, the Applicants amended the claims of the ’302 application several times after a rejection and several Examiner interviews. RING-1002, pp. 77-80, 61-64, 43-45. In the Notice of Allowance, the Examiner indicated that independent claim 1 was allowable based on the limitation beginning with “wherein the doorbell configurable to exit the sleep mode and enter a live view mode….” *Id*. at p. 18. With respect to independent claim 11, the Examiner indicated that the cited prior art did not disclose the limitation beginning with “wherein when the doorbell is in the sleep mode …” and the limitation beginning with “a remote computing device….” *Id*. at p. 19.

The Examiner erred in allowing the claims of the ’049 Patent because the subject matter upon which allowance was based was well known before the earliest alleged priority date, as illustrated below.

C. Claim Construction

In an *inter partes* review, claims “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), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. §

42.100(b); *see also Phillips v. AWH Corp*., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Further, the Board only construes the claims to the extent necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Systems, Inc.*, IPR2015-00633, Paper No. 11, 16 (PTAB August 14, 2015) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc*., 200 F.3d 795, 803 (Fed. Cir.1999)). Petitioner submits that for the purposes of this proceeding, the terms of the challenged claims should be given their plain and ordinary meaning, and no terms require specific construction.[2]

V. RELIEF REQUESTED AND THE REASONS FOR THE REQUESTED RELIEF

Petitioner asks that the Board review the accompanying prior art and analysis, institute a trial for *inter partes* review of claims 1-4, 7-15, and 18-21 of the '049 Patent, and cancel those claims as unpatentable.

As explained below and in the declaration of Petitioner's expert, Dr. Vijay Madisetti, the concepts described and claimed in the '049 Patent were not novel before its earliest alleged priority date. This petition explains where each element

[2] Petitioner does not concede that any term in the challenged claims meets the statutory requirements of 35 U.S.C. § 112, or that the challenged claims recite patentable subject matter under 35 U.S.C. § 101.

of claims 1-4, 7-15, and 18-21 is found in the prior art and why the claims would have been obvious to a person of ordinary skill in the art ("POSITA") before the earliest claimed priority date of the '049 Patent. *See* RING-1003, ¶ 28 (noting the level of ordinary skill in the art as 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).

VI. IDENTIFICATION OF CHALLENGES

This petition challenges the patentability of claims 1-4, 7-15, and 18-21 of the '049 Patent on the following grounds:

Challenge	Claims	Ground
Challenge #1	1-4, 7-10	35 U.S.C. § 103 over U.S. Patent Application Publication No. 2015/0022620 to **Siminoff** ("Siminoff," RING-1005) in view of U.S. Patent Application Publication No. 2014/0267740 to **Almomani** ("Almomani," RING-1006)
Challenge #2	11-13, 15, 18-21	35 U.S.C. § 103 over **Siminoff**
Challenge #3	14	35 U.S.C. § 103 over **Siminoff** in view of archived web pages from **Ring.com** ("Ring.com," RING-1007)

Prior Art Status

The '049 Patent is governed by post-AIA 35 U.S.C. §§ 102 and 103 based on its earliest alleged priority date of May 8, 2015.

Siminoff (RING-1005) was filed on September 29, 2014 and published

January 22, 2015, and is thus prior art at least under 35 U.S.C. § 102(a)(1).

Almomani (RING-1006) was filed February 19, 2014 and published September 18, 2014, and is thus prior art at least under 35 U.S.C. § 102(a)(1).

Ring.com (RING-1007) contains web pages captured from https://ring.com by the Internet Archive in March 2015[3], as follows:

- https://web.archive.org/web/20150320182145/https://ring.com/, archived March 20, 1015; prior art under 35 U.S.C. § 102(a)(1);
- https://web.archive.org/web/20150317112534/https://ring.com/help, archived March 17, 2015; prior art under 35 U.S.C. § 102(a)(1); and
- https://web.archive.org/web/20150317173259/https://ring.com/about#team, archived March 17, 2015; prior art under 35 U.S.C. § 102(a)(1).

A. The Challenges Presented in This Petition are Not Cumulative to Prosecution of the '049 Patent

The challenges presented in this petition are neither cumulative nor redundant to the prosecution of the '049 Patent. During the brief prosecution of the '049 Patent, Siminoff was one of 297 references listed across two Information

[3] Exhibit RING-1011 contains an Affidavit from Christopher Butler, the Office Manager at the Internet Archive, and corresponding official copies of the archived webpages included in RING-1007.

Disclosure Statements submitted by Patent Owner. RING-1002, pp. 170-182, 195-211). Siminoff, however, was never the basis for a rejection of the claims; nor is there evidence it was ever discussed in an Examiner interview.

Specifically, in the only Office Action issued during the course of prosecution, the Examiner rejected the claims of the '049 Patent over several references, but never over Siminoff. *See* RING-1002, pp. 110-125. Additionally, there is no evidence that Siminoff was ever considered during any of the Examiner Interviews held during prosecution—as the only reference listed in any of the interview summaries (Examiner's or Applicants') is "Matsuoka US 20150061859." *See id*. at pp. 22, 46, 54, 105. Accordingly, the file history contains no indication that the Examiner ever substantively evaluated Siminoff or attempted to apply it to the claims of the '049 Patent. *See Becton, Dickinson, & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017).

Thus, while Siminoff was technically before the Examiner during prosecution, it was never the basis for a rejection and never discussed in an Examiner interview. As such, the arguments, analysis, and evidence regarding Siminoff contained in this petition and accompanying expert declaration have never been before the Office and warrant consideration. Petitioner therefore respectfully requests that the Board refrain from exercising its discretion under 35 U.S.C. § 325(d) and institute the Siminoff challenges so that the Office can fully

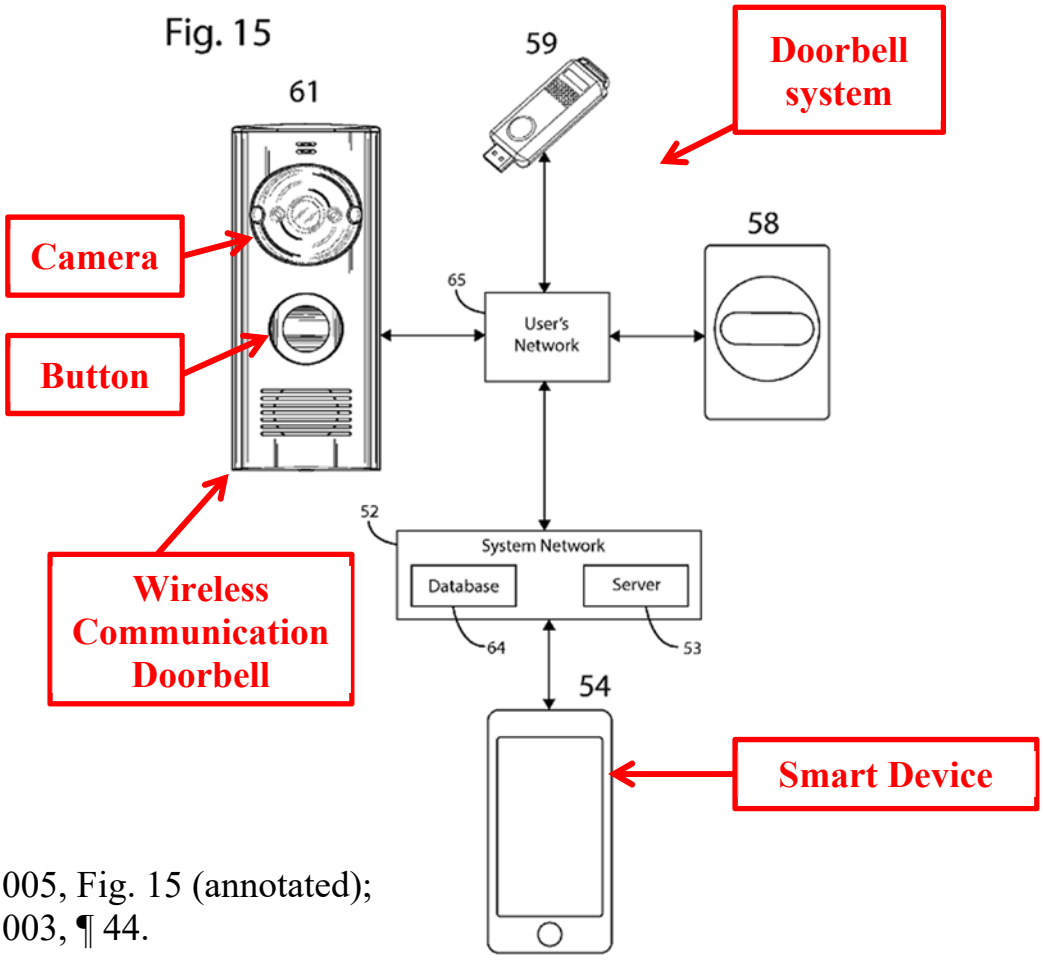
consider its teaching in view of the claims of the ’049 Patent.

VII. IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE

A. Challenge: Claims 1-4 and 7-10 are invalid under 35 U.S.C § 103 over Siminoff in view of Almomani

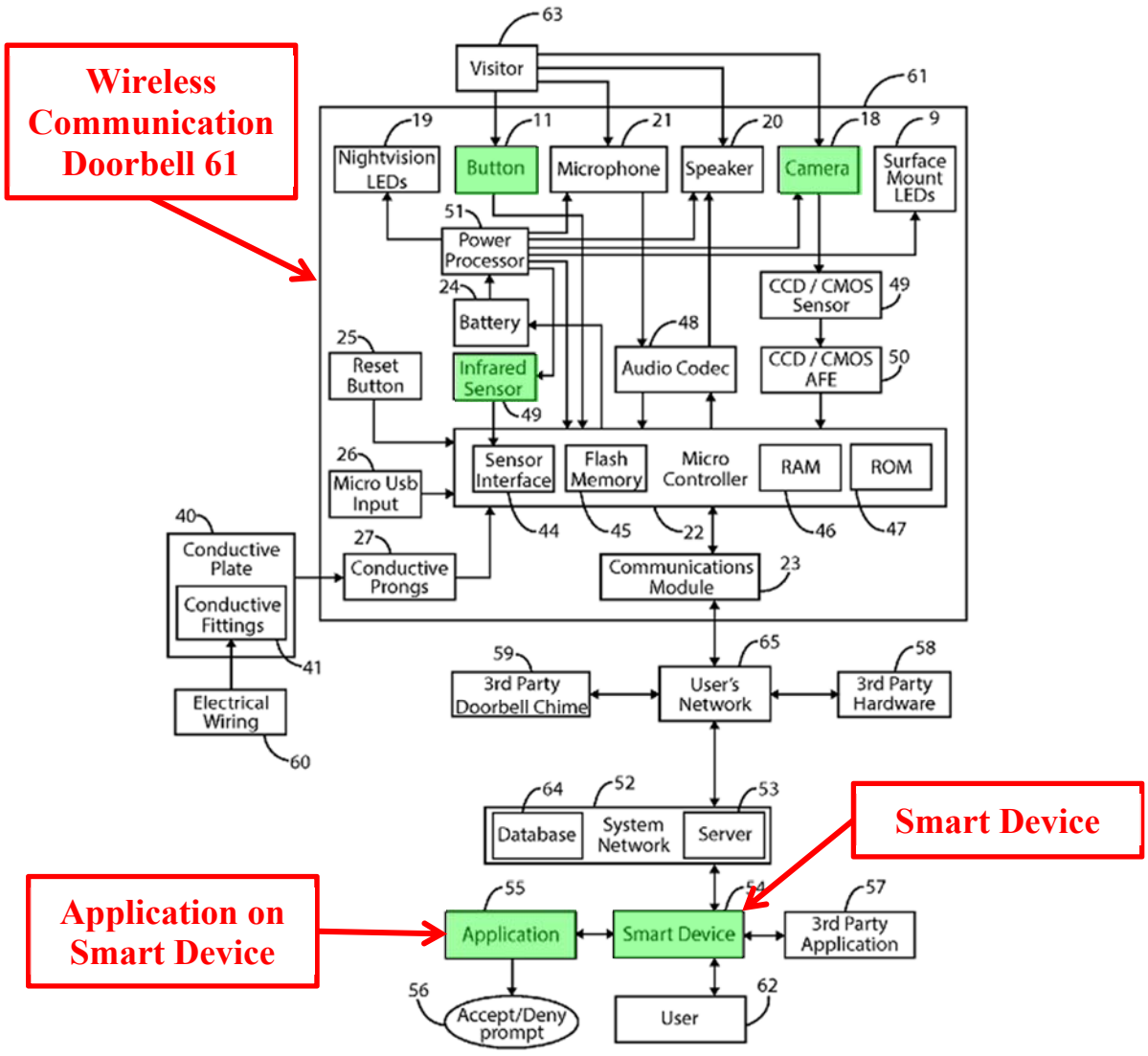
1. Summary of Siminoff

Like the ’049 Patent, Siminoff is directed to a doorbell system. As shown in Fig. 15, annotated below, Siminoff’s system includes a Smart Device such as a smartphone and a Wireless Communication Doorbell, where the Wireless Communication Doorbell includes a camera and a doorbell button. RING-1005, ¶ [0074].



RING-1005, Fig. 15 (annotated);
RING-1003, ¶ 44.

Siminoff's Fig. 12, annotated below, shows the doorbell system in more detail and illustrates that the Wireless Communication Doorbell also includes an infrared sensor that is triggered by a visitor crossing in front of the sensor and that the Smart Device includes an application that "provide[s] an interface for User 62 to communicate and interact with Wireless Communication Doorbell 61." RING-1005, ¶¶ [0046], [0080].



RING-1005, Fig. 12 (annotated); RING-1003, ¶ 45.

Siminoff explains that the camera is configured to "to record live video or still images of Visitor 63," which are "sent to Smart Device 54." RING-1005, ¶¶ [0046], [0066]. The application on the Smart Device displays "videos and still images recorded by Camera 18." *Id*. ¶ [0080].

Notably, Siminoff solves the same problem as the '049 Patent—unnecessary power usage in a video doorbell—in the same way—by powering down the

components of the doorbell when not in use. RING-1003, ¶ 46. In particular, Siminoff teaches that "all hardware components within Wireless Communication Doorbell 61 may live in a state of hibernation" until activated. RING-1005, ¶ [0090]. Siminoff calls this state of hibernation "a low power consumption mode." *Id*. ¶ [0087], Abstract. Siminoff explains that the purpose of this low power consumption mode is to ensure that "components that draw power from Battery 24, such as … Camera 18 do not waste battery power when not in use." *Id*. ¶ [0090]. Specifically, Siminoff teaches that the camera is inactive and without power until activated by an activation trigger. RING-1005, ¶ [0076] ("In reference to FIG. 12, after Button 11 is pressed, Power Processor 51 may *provide the power to activate Camera 18* and Night Vision LEDs 19." (emphasis added)).

Siminoff teaches that several different activation triggers can switch the Wireless Communication Doorbell "from low-power mode to active mode." RING-1005, Abstract, ¶¶ [0076], [0086]. For example, "Wireless Communication Doorbell 61 may be triggered to wake through Infrared Sensor 42," where "Infrared Sensor 42 may trigger Camera 18 to record live video or still images of Visitor 63 when Visitor 63 crosses the path of the Infrared Sensor 42." RING-1005, ¶ [0046]. As another example, Siminoff recites in the context of its claim 1 that an activation trigger may be "a signal from the user at the remote communication device." *Id*. at 15:3-5 ("wherein the activation trigger comprises

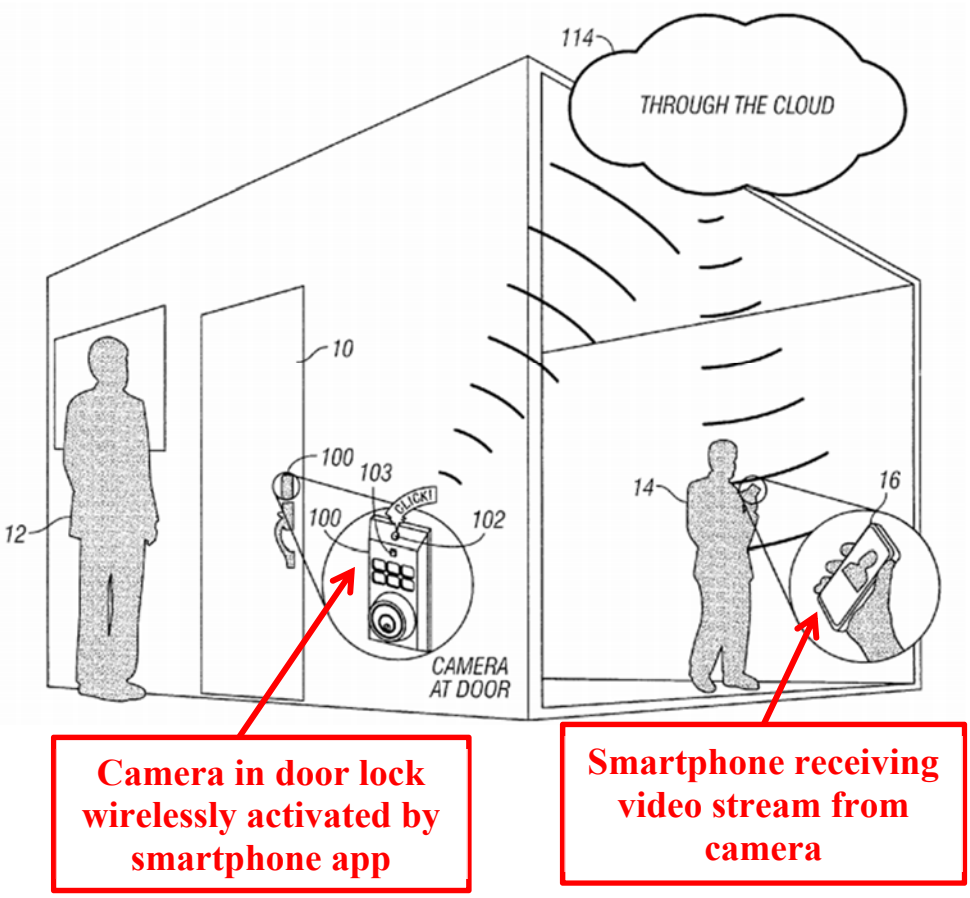
one or more of a button signal, a sensor signal, and a signal from the user at the remote communication device"). After the doorbell is triggered to wake up, Siminoff's doorbell system "may stream live video or still images to Smart Device 54." *Id*. ¶ [0081]; *see also id*. ¶ [0086] (teaching that a "trigger may cause Camera 18 of Wireless Communication Doorbell 61 to record a static or continuous video image, which is sent to User 62 along with notification at Smart Device 54").

To the extent Siminoff does not explicitly teach that its signal-based activation trigger originates from the application on the Smart Device and that the camera in the doorbell begins recording live images when the activation signal is received, it was well known before 2015 to remotely activate a door-based camera using an app in order to stream video, as illustrated by Almomani below. RING-1003, ¶ 48.

2. Summary of Almomani

Almomani "relates to an electronic lock with an integral camera that allows remote monitoring." RING-1006, ¶ [0005]. Like Siminoff's doorbell, Almomani's electronic lock "allows the user to remotely see who is at the door," for example by "stream[ing] video taken by the camera to remote electronic devices." *Id*. ¶¶ [0005], [0020]. In particular, Almomani teaches that "the camera could be selectively activated remotely by a user," where activation is "independent" of detection of motion by a sensor in the lock. *Id*. ¶¶ [0021], [0008]. Almomani

further explains that the user can use a "dedicated app on a mobile device" "to activate a remote monitoring mode." *Id*. ¶ [0021]. "In this mode, the electronic lock could be configured to continuously stream video, regardless of whether the motion sensor 103 is activated or not." *Id*. "This provides the user with peace of mind to remotely see the area surrounding the electronic lock." *Id*. Fig. 4 of Almomani illustrates its electronic lock streaming video to a user's smartphone:



RING-1006, Fig. 4 (annotated); RING-1003, ¶ 49.

3. Reasons to Combine Siminoff and Almomani

For the reasons set forth below, a POSITA would have been motivated to combine the teachings of Siminoff and Almomani. RING-1003, ¶¶ 50-58. Specifically, at the time of the '049 Patent, it would have been obvious, beneficial, and predictable to implement Almomani's method of remotely activating a door-based camera in the context of Siminoff's video doorbell system. *Id*.

As an initial matter, one of ordinary skill in the art when considering the teachings of Siminoff would have also considered the teachings of Almomani, as they are both directed to door-based, home monitoring systems controllable with applications on a mobile device. RING-1003, ¶ 51. In particular, both references have the same goal of allowing a user to remotely see who is near an entrance at any given time. *See* RING-1005, ¶ [0079] (allowing users to "see who is within view of Wireless Communication Doorbell 61 at any given time"); RING-1006, ¶ [0005] (teaching that its "electronic lock allows the user to remotely see who is at the door"). A person of ordinary skill in the art looking to implement and improve upon Siminoff's system would naturally refer to literature describing similar devices with the same purpose in the same field, and would thus naturally look to Almomani. RING-1003, ¶ 51.

With respect to implementing and improving Siminoff, Siminoff teaches that its Wireless Communication Doorbell may be switched from the low-power

hibernation mode to an active mode with "a signal from the user at the remote communication device." RING-1005, claim 1. Siminoff lacks express details as to whether this activation signal also causes the camera to begin recording. Almomani, however, teaches that a user of an application on a mobile device may selectively activate a door-based camera and receive streaming video. RING-1006, ¶ [0021]. For the reasons below, a POSITA would have been motivated to apply Almomani's known camera activation technique to Siminoff's Wireless Communication Doorbell to yield the predictable result of Siminoff's activation trigger signal originating from the application on the Smart Device, and for the camera in the doorbell to begin recording live video when the signal is received and the doorbell is activated. RING-1003, ¶ 52.

First, a POSITA would have been motivated to pursue such a combination because it would have furthered Siminoff's goal of allowing users to "see who is within view of Wireless Communication Doorbell 61 at any given time." RING-1005, ¶ [0079]; RING-1003, ¶ 53. Specifically, Almomani teaches that its "camera may be activated independent of detection by the motion sensor" so that a user can access a video stream of the front door area at any time. RING-1006, ¶ [0008]. Almomani notes that this on-demand camera activation feature "provides convenience when at home and peace of mind when away from home." RING-1006, ¶ [0005]. A POSITA would have sought to modify Siminoff's Wireless

Communication Doorbell to gain the same advantage—for example, by allowing the camera in Wireless Communication Doorbell to be selectively activated by the application on the Smart Device regardless of whether the doorbell's infrared sensor detected motion. RING-1003, ¶ 53. Doing so would allow a user to view streaming video of the area around the Wireless Communication Doorbell "at any given time"—explicitly advancing one of Siminoff's stated goals. RING-1005, ¶ [0079]; RING-1003, ¶ 53; *see also KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 417 (2007) (explaining that "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious….").

Second, as discussed above, another stated goal of Siminoff's disclosure is reduced power consumption of video doorbells. *See* RING-1005, ¶ [0090] (teaching that in hibernation mode "components that draw power from Battery 24 … do not waste battery power when not in use."). In that regard, modifying Siminoff to include Almomani's remote camera activation technique would allow the doorbell to stay in the hibernation mode and to save power when not in use, but, at the same time, allow a user to selectively request a video stream of the area around the doorbell. RING-1003, ¶ 54. A hybrid doorbell solution that provides both a low power mode and on-demand streaming would consume less power than,

for example, doorbell systems that remain fully-powered at all times in order to provide on-demand streaming. *Id*.

A POSITA would find this modification to Siminoff predictable and likely to result in success because Siminoff already teaches (i) that its Wireless Communication Doorbell may be activated by a signal from a remote communication device, and (ii) that the other activation triggers in Siminoff—pressing the doorbell button and detecting motion—similarly result in the camera turning on and recording live video, which is sent to the Smart Device. RING-1005, ¶¶ [0066], [0086]; RING-1003, ¶ 55. Even ignoring this express disclosure in Siminoff itself, a POSITA would have had a reasonable expectation of success because, before the '049 Patent, home security companies had already successfully implemented and commercialized video doorbell systems in which a user could selectively access a live video feed from a doorbell camera with a mobile application. RING-1003, ¶ 55 (citing RING-1009 (touting that "you can view live video feed directly from your Doorbell Camera right to your app" by "[p]ress[ing] the Play icon" in your app)).

Any modifications to Siminoff's system needed to implement Almomani's features would be within the skill of a person of ordinary skill in the art because Siminoff's Wireless Communication Doorbell utilizes "off the shelf" internal components and standardized transmission protocols such as "Wi-Fi" or

"Bluetooth," and the Smart Device is "any electronic device capable of receiving and transmitting data via the internet." RING-1005, ¶¶ [0064], [0077], [0079]; RING-1003, ¶ 56. For example, to the extent Siminoff does not provide implementation details about the Wireless Communication Doorbell receiving activation signals while in hibernation mode, methods of listening for incoming communications in a low-power sleep state were well-described in related patent literature, as Dr. Madisetti explains in his declaration. *See* RING-1003, ¶ 57 (citing RING-1008).

Accordingly, a person of ordinary skill in the art would have found it obvious to apply Almomani's known technique of remotely activating a camera with a smartphone app to Siminoff's doorbell system to yield the predictable and beneficial result of a user being able to the selectively activate the camera in the Wireless Communication Doorbell by the application on the Smart Device. RING-1003, ¶ 58.

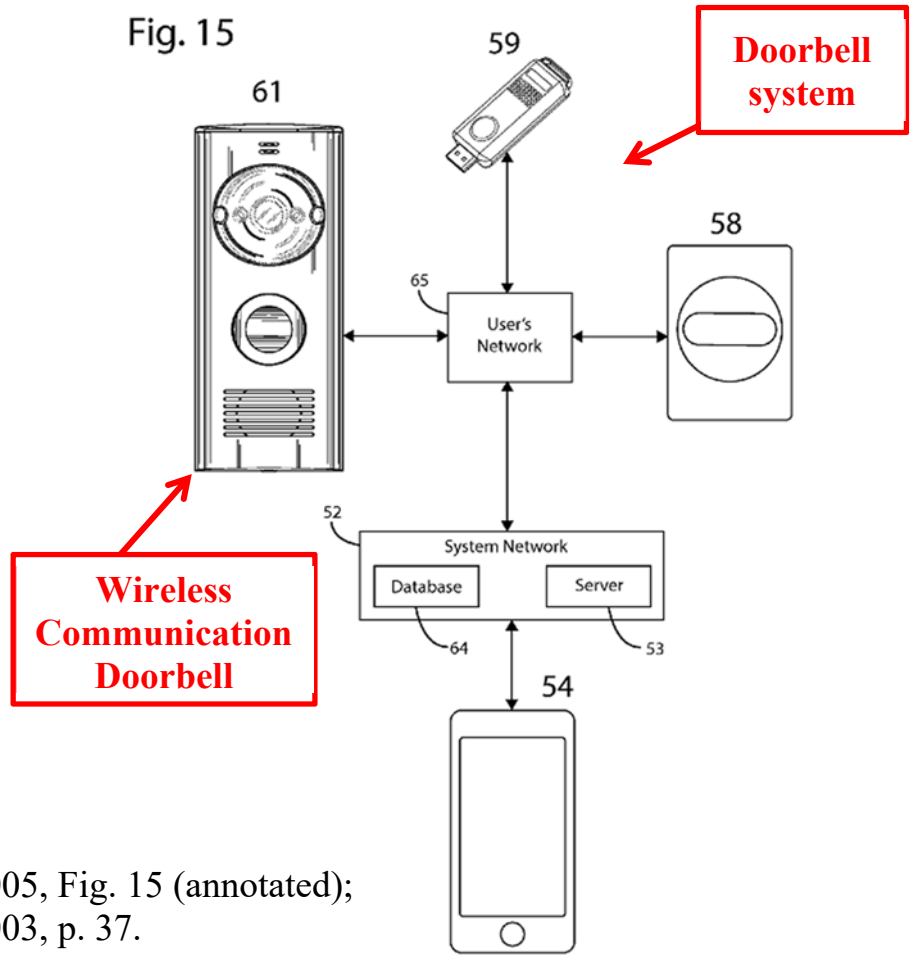
4. Detailed Analysis

The following describes how Siminoff in view of Almomani renders obvious each and every element of claims 1-4 and 7-10 of the '049 Patent. A corresponding claim chart is contained in Dr. Madisetti's declaration. *See* RING-1003, pp. 37-67.

Claim 1

[1.0] ***"A doorbell system, comprising:"***

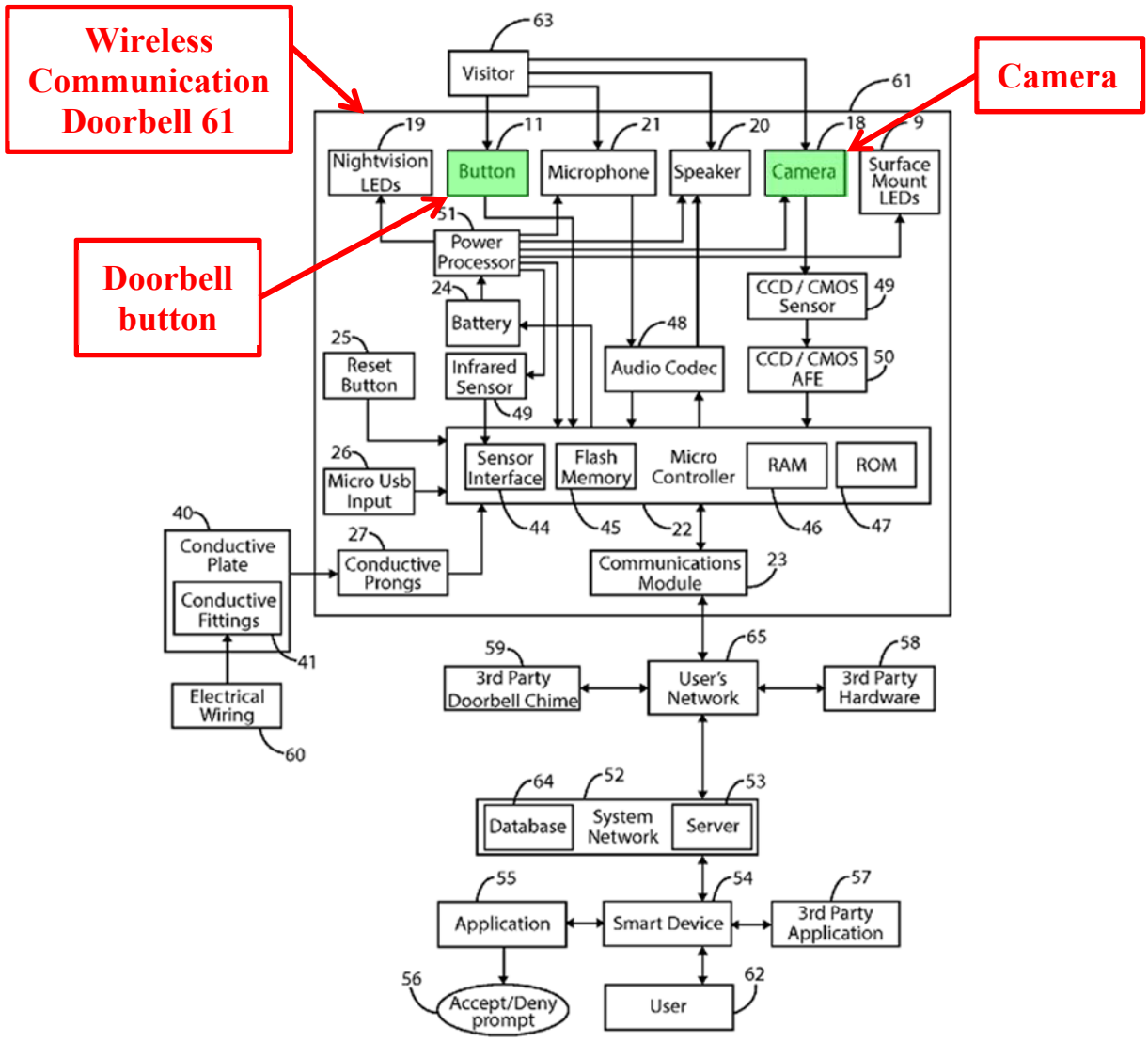
Siminoff teaches a doorbell system that includes a "Wireless Communication Doorbell 61," as shown in Fig. 15:



RING-1005, Fig. 15 (annotated);
RING-1003, p. 37.

[1.1] ***"a doorbell comprising a camera and a button, the camera configurable to capture images and the button configurable to enable a visitor to sound a chime"***

Siminoff discloses this limitation because it teaches that the Wireless Communication Doorbell includes a "camera 18" and "button 11," as illustrated in Fig. 12 (annotated below). RING-1005, ¶ [0074].



RING-1005, Fig. 12 (annotated); RING-1003, p. 39.

Siminoff explains that "[c]amera 18 may record still or moving video" in response to a visitor "pressing Button 8 [sic, 11], or triggering Infrared Sensor 42)." RING-1005, ¶¶ [0066], [0046]; *see also id.* ¶ [0053] (teaching that "User 62 may be able to manually rotate Camera 18 in the direction of their choice prior to mounting Wireless Communication Doorbell 61 to Mounting Plate 35"). Siminoff further explains that the Wireless Communication Doorbell is in communication

with a third party doorbell chime and "when Button 11 is pressed on Wireless Communication Doorbell 61" the chime "may emit an audio chime or message." *Id*. ¶ [0083]. Siminoff further teaches that the button may be configured to "protrude through Housing 5, and make contact with Button Actuator 12 when pressed by Visitor." *Id*. ¶ [0063]. Thus, the Wireless Communication Doorbell with a camera and a button, where the camera is configurable to record images and video and the button, when pressed, is configurable to enable a visitor to sound an audio chime, as taught by Siminoff, discloses "a doorbell comprising a camera and a button, the camera configurable to capture images and the button configurable to enable a visitor to sound a chime." *See* RING-1003, pp. 38-42.

[1.2] ***"the doorbell configurable to enter a sleep mode whereby the camera does not capture images"***

Siminoff discloses this limitation because it teaches that "all hardware components within Wireless Communication Doorbell 61 may live in a state of hibernation" until activated. RING-1005, ¶ [0090]. Siminoff calls this state of hibernation "a low power consumption mode." *Id*. ¶ [0087], Abstract. Siminoff explains that the purpose of this low power consumption mode is to ensure that "components that draw power from Battery 24, such as … ***Camera 18*** do not waste battery power when not in use." *Id*. ¶ [0090] (emphasis added).

With respect to the state of the camera during low power consumption mode, Siminoff teaches that the camera is inactive and without power until activated by

an activation trigger. *See* RING-1005, ¶ [0076] ("In reference to FIG. 12, after Button 11 is pressed, Power Processor 51 may *provide the power to activate Camera 18* and Night Vision LEDs 19. Camera 18 records any visuals of Visitor 63 and processes the visuals using CCD/CMOS Sensor 49." (emphasis added)); *see also id*. ¶ [0046] ("Still referencing FIG. 1, *Wireless Communication Doorbell 61 may be triggered to wake* through Infrared Sensor 42, installed within Housing 5. Infrared Sensor 42 may *trigger Camera 18 to record live video or still images of Visitor* 63…." (emphasis added)).

Accordingly, when Siminoff's Wireless Communication Doorbell is in hibernation mode/low-power mode, the camera is inactive and does not capture images, because, in order for it to record an image, it must first be activated and provided power, for example, in response to an activation trigger. RING-1003, p. 44.

Thus, the Wireless Communication Doorbell that is configurable to enter a hibernation/low-power consumption mode wherein the camera is without power, inactive, and does not record images, as taught by Siminoff, discloses "the doorbell configurable to enter a sleep mode whereby the camera does not capture images." *See* RING-1003, pp. 42-44.

[1.3] ***"wherein the doorbell configurable to exit the sleep mode and enter a live view mode in response to a mobile application on a remote computing device and the doorbell receiving a wireless communication from the remote computing device."***

Siminoff in view of Almomani renders obvious this limitation. First, Siminoff teaches that several different activation triggers—including a user signal from a remote device, a visitor pushing the doorbell button, and an infrared sensor detecting motion—can bring the Wireless Communication Doorbell out of low power hibernation mode. RING-1005, Claim 1, ¶¶ [0046], [0066], [0076]. In particular, Siminoff recites in the context of its claim 1, as filed, that "a signal from the user at the remote communication device" is one of the activation triggers that switches the Wireless Communication Doorbell from "low-power mode to active mode":

> 1. A device for communicating, mounted externally near a user's door, comprising:
>
> a housing including a camera, a microphone, a speaker, a button, a battery, a sensor, non-volatile memory, a processor, and a wireless communications module,
>
> wherein the non-volatile memory stores code operable by the processor for:
>
> ***switching the processor from low-power mode to active mode in response to an activation trigger***;
>
> …
>
> ***wherein the activation trigger comprises*** one or more of a button signal, a sensor signal, and ***a signal from the user at the remote communication device***."

RING-1005, Claim 1 (emphasis added).

Further, Siminoff teaches that at least some of the activation triggers that wake the Wireless Communication Doorbell also cause the doorbell to begin providing power to the camera and cause the camera to record video and/or images that are sent to the Smart Device (*i.e.*, exit a sleep mode and enter a live view mode):

> In one aspect, ***upon depressing Button 11 or another trigger*** may cause Camera 18 of Wireless Communication Doorbell 61 ***to record a static or continuous video image, which is sent to User 62*** along with notification at Smart Device 54.

RING-1005, ¶ [0086] (emphasis added).

> Still referencing FIG. 1, ***Wireless Communication Doorbell 61 may be triggered to wake through Infrared Sensor 42***, installed within Housing 5. ***Infrared Sensor 42 may trigger Camera 18 to record live video or still images of Visitor 63 when Visitor 63 crosses the path of the Infrared Sensor 42***.

RING-1005, ¶ [0046] (emphasis added).

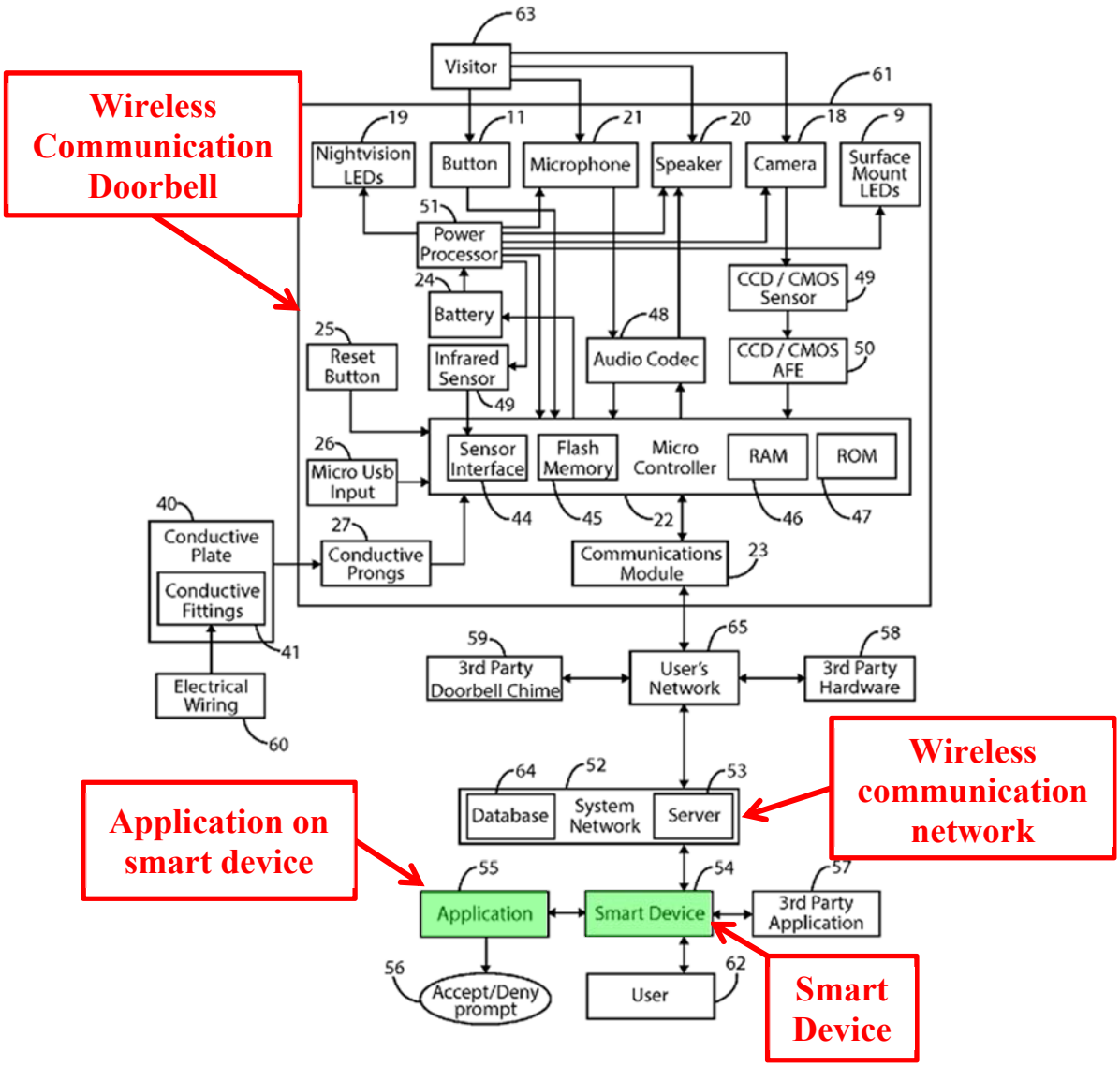
> ***Camera 18 may record still or moving video, (e.g. anyone who activates Wireless Communication Doorbell 61 by pressing Button 8, or triggering Infrared Sensor 42).*** Camera 18 may send the recorded video or images to Microcontroller 22, to be sent to Smart Device 54 and Database 64 via Communications Module 23.

RING-1005, ¶ [0066] (emphasis added).

> ***In reference to FIG. 12, after Button 11 is pressed, Power Processor 51 may <u>provide the power to activate Camera 18</u>*** and Night Vision LEDs 19. ***Camera 18 records any visuals of Visitor 63*** and processes the visuals using CCD/CMOS Sensor 49.

RING-1005, ¶ [0076] (emphasis added); *see also id*. at Abstract.

With respect to the "remote communication device" from which the activation signal recited in claim 1 originates, Siminoff teaches that its doorbell system includes a "Smart Device" that "may be any electronic device capable of receiving and transmitting data via the internet" such as "smartphones, tablets, laptops," etc. RING-1005, ¶ [0079]. As shown in Fig. 12 (annotated below), the Smart Device is communicatively coupled to the Wireless Communication Doorbell via a "wireless telecommunications network" (labeled as System Network 52). *Id*. ¶ [0088], Fig. 12. Siminoff further teaches that "[a]pplication 55 may be installed on Smart Device 54 and provide an interface for User 62 to communicate and interact with Wireless Communication Doorbell 61." *Id*. ¶ [0080]. For example, a user may, via the application installed on the Smart Device, "view still images or video taken by Wireless Communication Doorbell 61." *Id*. ¶ [0076].

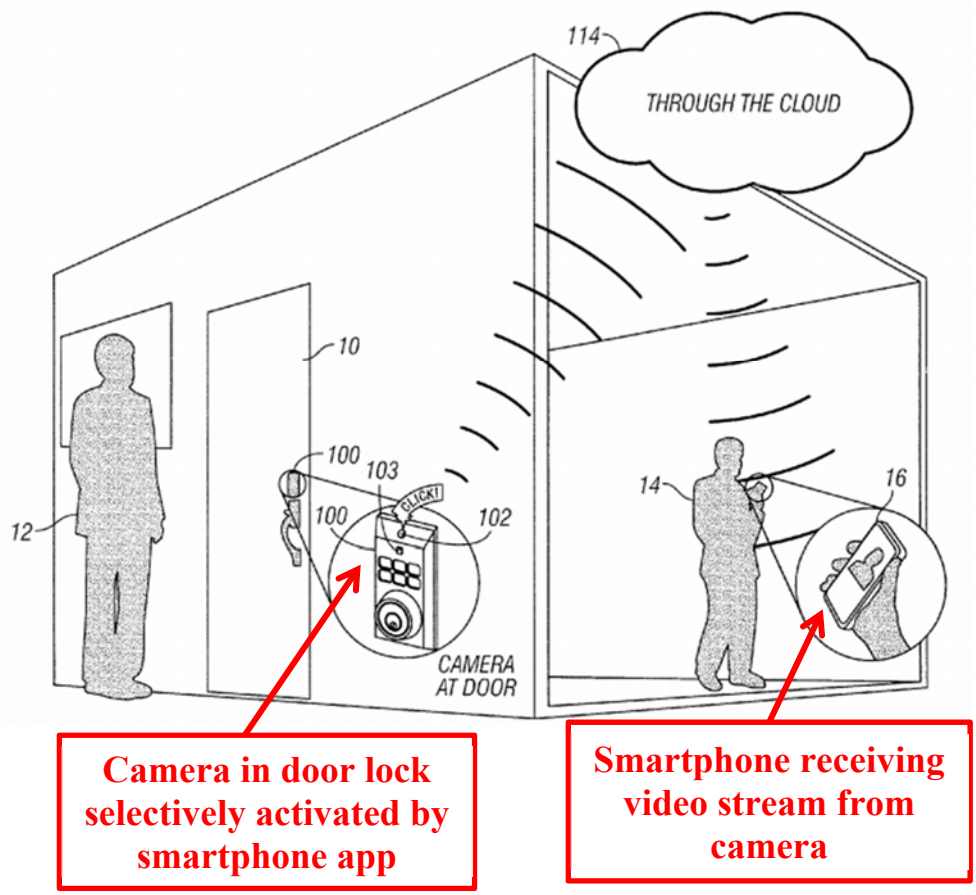


RING-1005, Fig. 12 (annotated); RING-1003, p. 46.

To the extent Siminoff does not explicitly teach that its signal-based activation trigger recited in claim 1—"a signal from the user at the remote communication device"—(i) originates from the application on the Smart Device in the doorbell system and (ii) that when the signal is received by the doorbell the camera begins recording live images, it was well known before the '049 Patent to

remotely activate a door-based camera using a mobile device application in order to stream video from the camera. RING-1003, p. 49.

For example, Almomani teaches "an electronic lock with an integral camera that allows remote monitoring." RING-1006, ¶ [0005]. Like Siminoff's doorbell, Almomani's electronic lock "allows the user to remotely see who is at the door," for example, by "stream[ing] video taken by the camera to remote electronic devices" such as a "mobile phone." *Id*. ¶¶ [0005], [0020]. In particular, Almomani teaches that "the camera could be selectively activated remotely by a user," where activation is "independent" of detection of motion by a sensor in the lock. *Id*. ¶¶ [0021], [0008]. Almomani further explains that the user can use a "dedicated app on a mobile device" "to activate a remote monitoring mode." *Id*. ¶ [0021]. "In this mode, the electronic lock could be configured to continuously stream video, regardless of whether the motion sensor 103 is activated or not." *Id*. "This provides the user with peace of mind to remotely see the area surrounding the electronic lock." *Id*.



RING-1006, Fig. 4 (annotated); RING-1003, p. 51.

As discussed above, a POSITA would have found it predictable and obvious to combine Almomani's method of using a smart phone app to selectively activate a remote camera with Siminoff's doorbell system so that a user of the application on the Smart Device could remotely wake up the Wireless Communication Doorbell and activate the camera such that it begins recording live video. *See* RING-1003, p. 51.

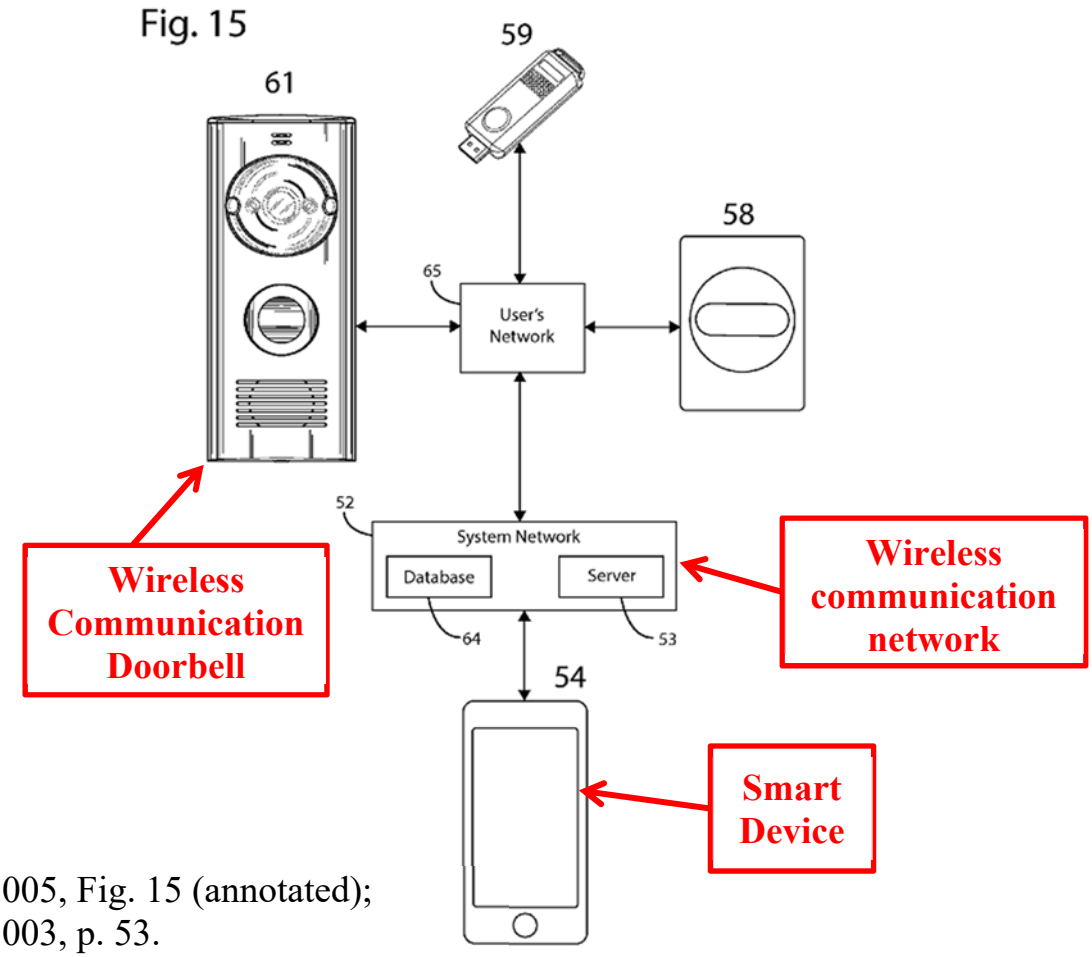
Thus, the Wireless Communication Doorbell that is configurable to exit a low power mode in response to an activation trigger that includes a signal from a

user of a remote communication device, as taught by Siminoff, in view of the wireless camera that is activated and begins streaming live video in response to a mobile application on a smartphone, as taught by Almomani, renders obvious "wherein the doorbell configurable to exit the sleep mode and enter a live view mode in response to a mobile application on a remote computing device and the doorbell receiving a wireless communication from the remote computing device." *See* RING-1003, pp. 44-52.

Claim 2

[2.1] ***"The system of claim 1, further comprising the remote computing device communicatively coupled to the doorbell"***

Siminoff discloses this limitation because, as discussed in association with [1.3], it teaches that its doorbell system includes a Smart Device, such as a smartphone or tablet, that is communicatively coupled to the Wireless Communication Doorbell via a "wireless telecommunications network" (labeled as System Network 52), as shown in Fig. 15 (annotated below). RING-1005, ¶ [0088]; *see also id*. ¶ [0079] ("The infrastructure described above allows User 62 to ***connect*** multiple Smart Devices 54, within the parameters just mentioned, to Wireless Communication Doorbell 61." (emphasis added)). Siminoff further explains that an "Application 55 may be installed on Smart Device 54 and provide an interface for User 62 to ***communicate and interact with*** Wireless Communication Doorbell 61." RING-1005, ¶ [0080] (emphasis added).



RING-1005, Fig. 15 (annotated);
RING-1003, p. 53.

Siminoff further teaches that the Wireless Communication Doorbell 61 and Smart Device 54 communicate via messages "routed" through the network by Server 53, shown above in Fig. 15. RING-1005, ¶ [0078]. Accordingly, the Smart Device is communicatively coupled to the doorbell, as claimed. RING-1003, pp. 54-55.

Thus, the Smart Device that is communicatively coupled to the Wireless Communication Doorbell, as taught by Siminoff, discloses "further comprising the

remote computing device communicatively coupled to the doorbell." *See* RING-1003, pp. 52-55.

[2.2] ***"the remote computing device configurable to display a first image while the doorbell is in the live view mode."***

Siminoff in view of Almomani renders obvious this limitation. First, Siminoff teaches that one of the functions of the application on the Smart Device is to "display … videos and still images recorded by Camera 18." RING-1005, ¶ [0080]. Siminoff further teaches when the Wireless Communication Doorbell is triggered to wake up (activated), the camera records continuous video, which is sent to the user at the Smart Device:

> In one aspect, upon depressing Button 11 or another trigger may cause Camera 18 of Wireless Communication Doorbell 61 ***to record a static or continuous video image, which is sent to User 62 along with notification at Smart Device 54***.

RING-1005, ¶ [0086] (emphasis added).

With reference to Fig. 12, Siminoff teaches that when the camera has been powered up and activated—for example, in response to button 11 on Wireless Communication Doorbell being pressed—the application on the Smart Device generates an "Accept/Deny Prompt 56" and, "[i]f the request is accepted, System Network 52 may stream live video or still images to Smart Device 54." RING-1005, ¶¶ [0076], [0081], Fig. 12. In other words, the Smart Device is configurable to display live images and video when the camera in the Wireless Communication

Doorbell is active and recording continuous video. RING-1003, p. 57. Siminoff explains that, as a result of this feature, users of the Smart Device "may see who is within view of Wireless Communication Doorbell 61 at any given time." *Id*. ¶ [0079].

Second, as discussed above in association with [1.3], Almomani teaches that its "electronic lock allows the user to remotely see who is at the door via any medium that can present media content (e.g., digital "still image" or "streaming video [sic]) such as a smart phone." RING-1006, ¶ [0005]. For example, "[i]f the user wanted to remotely monitor the electronic lock 100, the user could … use an app[] to activate a remote monitoring mode," where "[i]n this mode, the electronic lock could be configured to continuously stream video." *Id*. ¶ [0021]. "This provides the user with peace of mind to remotely see the area surrounding the electronic lock." *Id*.

Accordingly, when Almomani's remote camera activation method is used in conjunction with Siminoff's doorbell system (as discussed above), the Smart Device would display a live video stream (comprised of many images, any one of which may be the recited "first image"[4]) of the area surrounding the Wireless

[4] Claim 4 of the '049 Patent, discussed below, confirms that the claimed "first image" may be an image in a video.

Communication Doorbell when the camera is remotely activated by the user via the application on the Smart Device. RING-1003, pp. 58-59.

Thus, the Smart Device that is configurable, via an application, to display images or continuous live video when the Wireless Communication Doorbell is woken up and the camera is activated, as taught by Siminoff, in view of Almomani's smartphone displaying a video stream when the user remotely activates the camera via the app on the mobile device, renders obvious "the remote computing device configurable to display a first image while the doorbell is in the live view mode." *See* RING-1003, pp. 55-59.

Claim 3

"The system of claim 2, wherein the remote computing device comprises at least one of a smartphone and a tablet, and wherein the first image is visually displayed by the remote computing device."

Siminoff in view of Almomani renders obvious this limitation. First, as discussed in association with [2.1], Siminoff teaches that its Smart Device may be a smartphone or tablet. *See* RING-1005, ¶ [0079]. Second, as discussed in association with [2.2], Siminoff teaches that the Smart Device displays images and videos captured by the camera in the Wireless Communication Doorbell when the camera is active and recording. *Id*. ¶¶ [0066], [0076], [0079]-[0081]. And, Almomani teaches that when the user remotely activates the camera via the app, the smartphone displays a video stream of the area surrounding the lock. RING-1006, ¶¶ [0005], [0021].

Thus, the Smart Device that is a smartphone or tablet and displays images and video captured by the camera in the Wireless Communication Doorbell when the camera is active and recording, as taught by Siminoff, in view of Almomani's smartphone that displays a video stream from an electronic lock when the user remotely activates the camera via the app, renders obvious "wherein the remote computing device comprises at least one of a smartphone and a tablet, and wherein the first image is visually displayed by the remote computing device." *See* RING-1003, pp. 59-60.

Claim 4

"The system of claim 3, wherein in the live mode the camera captures a first video comprising the first image."

Siminoff in view of Almomani renders obvious this limitation. First, as discussed in association with [2.2], Siminoff teaches that when the Wireless Communication Doorbell is triggered to wake up and the camera begins recording live continuous video (comprised of many images, any one of which may be the recited "first image"), the video is sent to the Smart Device for display. *See* RING-1005, ¶¶ [0046], [0066], [0076], [0079]-[0081], [0086].

Second, as also discussed in association with [2.2], Almomani teaches that when the user remotely activates the camera via the app, the camera captures a live video stream that is displayed with the smartphone. *See* RING-1006, ¶¶ [0005], [0021].

Thus, the Wireless Communication Doorbell waking up and activating the camera to record live video, as taught by Siminoff, in view of Almomani's teaching of remotely activating a camera and recording a live video stream, renders obvious "wherein in the live mode the camera captures a first video comprising the first image." *See* RING-1003, p. 60.

Claim 7

"The system of claim 1, wherein the live view mode consumes more power than the sleep mode."

Siminoff discloses this limitation because it teaches that when the components of the Wireless Communication Doorbell are in a "state of hibernation" and inactive, the doorbell is in a "low power consumption mode" (*i.e.*, a mode that consumes less power) as compared to the doorbell's "active mode." RING-1005, ¶¶ [0090], [0087], Abstract. In the hibernation mode "all components that draw power from Battery 24 … ***do not waste battery power when not in use***." RING-1005, ¶ [0090] (emphasis added). In contrast, when the Wireless Communication Doorbell exits the hibernation mode, "it may activate all components", which may include "***provid[ing] the power to activate Camera 18*** and Night Vision LEDs 19." *Id.* ¶¶ [0090], [0076] (emphasis added); *see also id.* ¶¶ [0046], [0066], [0086]-[0087], Abstract.

Accordingly, the active mode of the Wireless Communication Doorbell in which the camera is provided power and records live video consumes more power

than the low-power mode because, in that mode, hardware components such as the camera are in a state of hibernation and are not provided power. RING-1003, p. 62.

Thus, Siminoff's teaching that the Wireless Communication Doorbell's active mode—in which the camera records live video—consumes more power than the doorbell's hibernation/low-power consumption mode—in which the camera is inactive because it is not provided power, discloses "wherein the live view mode consumes more power than the sleep mode." *See* RING-1003, pp. 60-62.

Claim 8

"The system of claim 1, wherein the doorbell is configurable to attach to a building and be powered by a battery power source."

Siminoff discloses this limitation. First, it teaches that its Wireless Communication Doorbell is configurable to be mounted to an "exterior surface" of a "building" via a mounting plate, where the "the exterior surface that Mounting Plate 35 is mounted to may be adjacent to an exterior door of a building." RING-1005, ¶ [0056] ("Mounting Plate 35 may have multiple Mounting Plate Screw Ports 36, to allow user 62 to securely mount Mounting Plate 35 to an exterior surface using fasteners such as screws, bolts or nails."); *see also id*. ¶ [0065] ("Battery 24 may also be charged from drawing power from Electrical Wiring 60, derived from *the building that Wireless Communication Doorbell 61 may be mounted to*." (emphasis added)).

Second, Siminoff teaches that a "Battery 24 may be mounted within

Housing 5 and provide power to any components needing power within Wireless Communication Doorbell 61." RING-1005, ¶ [0065]; *see also id*. ¶ [0074] ("Battery 24 holds the power that Power Processor 51 used to distribute to all components within Wireless Communication Device 61.").

Thus, the Wireless Communication Doorbell that is configured to be mounted to a building and be powered by a battery, as taught by Siminoff, discloses "wherein the doorbell is configurable to attach to a building and be powered by a battery power source." *See* RING-1003, pp. 62-64.

Claim 9

"The system of claim 1, wherein the doorbell is configurable to attach to a building and be powered by an AC power source."

Siminoff discloses this limitation. First, as discussed in association with claim 8, Siminoff teaches that the Wireless Communication Doorbell is configurable to be mounted to a building. *See* RING-1005, ¶¶ [0056], [0065]. Second, Siminoff teaches that the "Wireless Communication Doorbell 61 may be continually powered or charged by hard-wiring Wireless Communication Doorbell 61 directly to Electrical Wiring 60, such as to an AC or DC electrical circuit." *Id*. ¶ [0055].

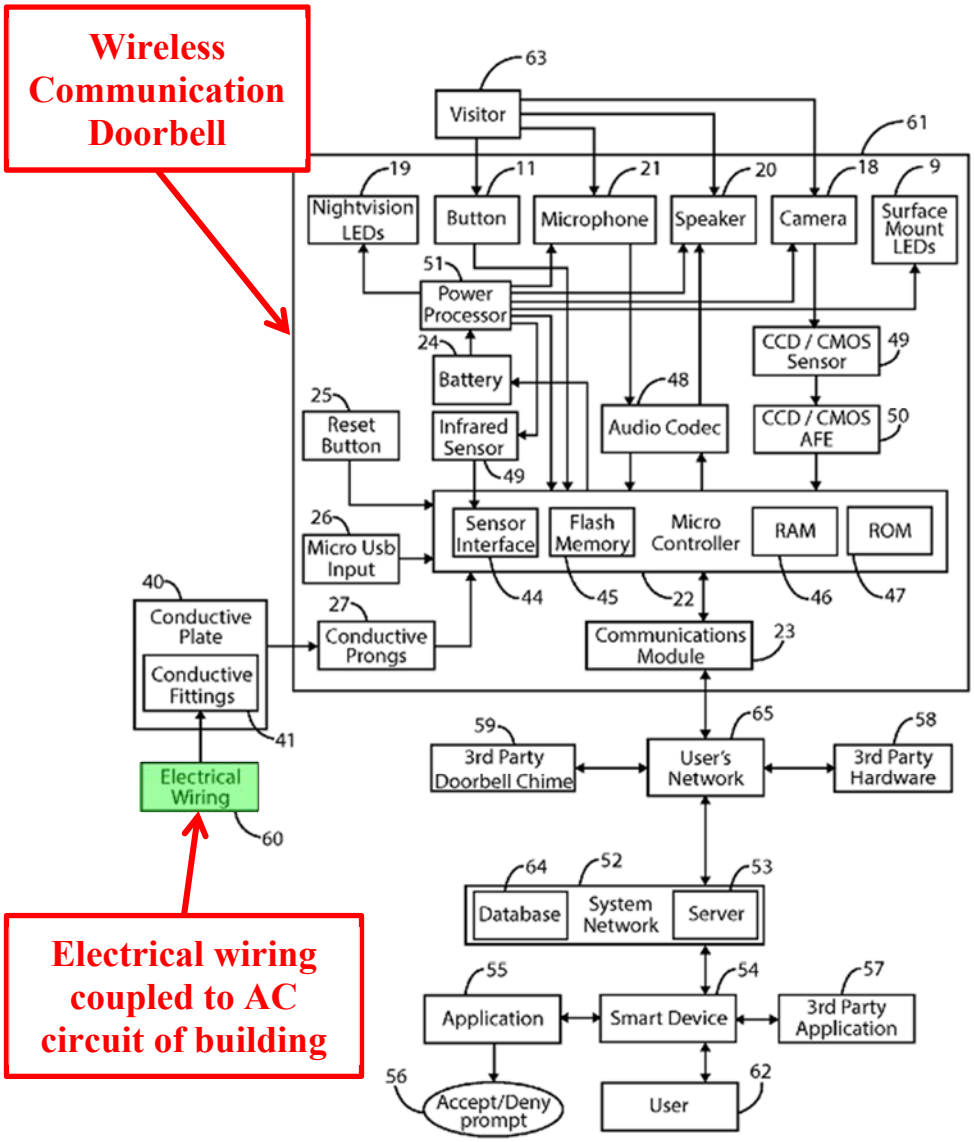
Thus, the Wireless Communication Doorbell that is configurable to be mounted to a building and be powered by an AC electrical circuit of the building,

as taught by Siminoff, discloses "wherein the doorbell is configurable to attach to a building and be powered by an AC power source." *See* RING-1003, pp. 64-65.

Claim 10

"The system of claim 1, wherein the doorbell is configurable to attach to a building and be electrically coupled, via electrical wires, to a building power source whereby the doorbell receives power from the building power source."

Siminoff discloses this limitation. First, as discussed in association with claim 8, Siminoff teaches that the Wireless Communication Doorbell is configurable to be mounted to a building. *See* RING-1005, ¶¶ [0056], [0065]. Second, Siminoff teaches that "Wireless Communication Doorbell 61 may be continually powered or charged by hard-wiring Wireless Communication Doorbell 61 directly to Electrical Wiring 60, such as to an AC or DC electrical circuit." *Id*. ¶ [0055]. The Electrical Wiring 60 "draw[s] power from the building that Wireless Communication Doorbell 61 may be mounted to," as illustrated below in Fig. 12. *Id*.



RING-1005, Fig. 12 (annotated); RING-1003, p. 67.

Thus, the Wireless Communication Doorbell that is configurable to be mounted to a building and electrically coupled, via electrical wiring, to an AC electrical circuit of the building from which it draws power, as taught by Siminoff, discloses "wherein the doorbell is configurable to attach to a building and be electrically coupled, via electrical wires, to a building power source whereby the

doorbell receives power from the building power source." *See* RING-1003, pp. 65-67.

B. Challenge #2: Claims 11-13, 15, and 18-21 are invalid under 35 U.S.C § 103 over Siminoff

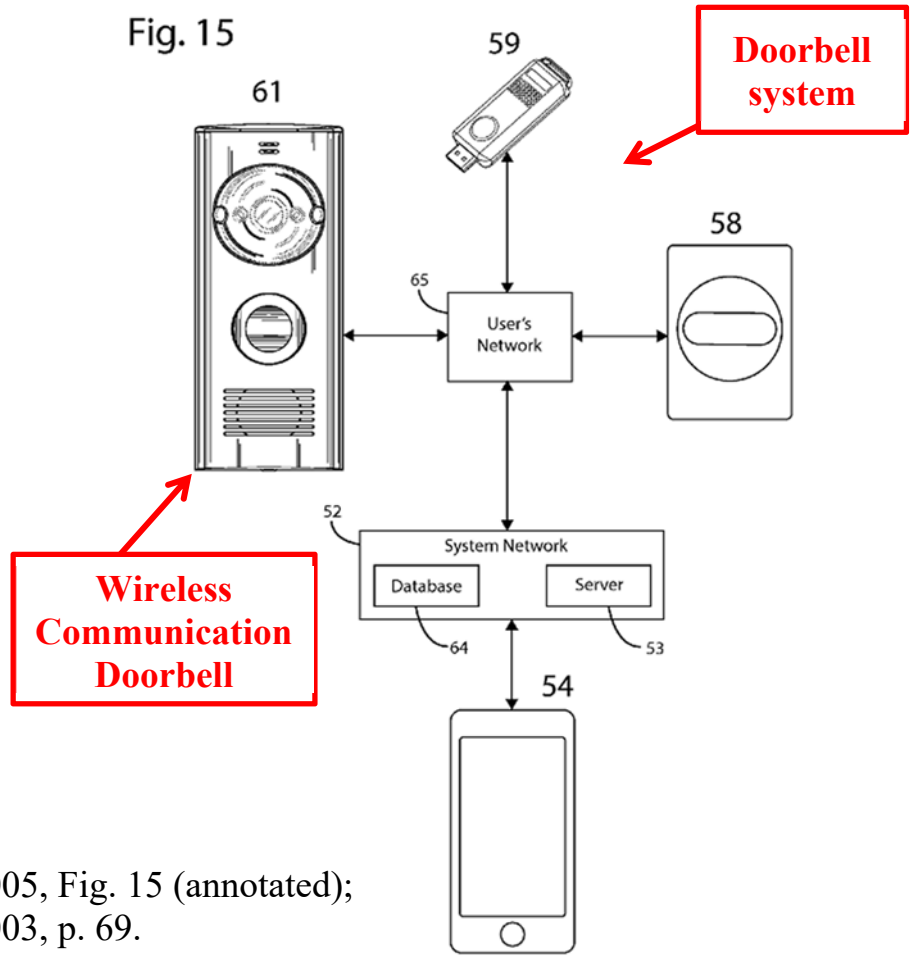
1. Detailed Analysis

The following describes how Siminoff renders obvious claims 11-13, 15, and 18-21 of the '049 Patent. A corresponding claim chart is contained in Dr. Madisetti's declaration. *See* RING-1003, pp. 68-94.

Claim 11

[11.0] ***"A doorbell system, comprising:"***

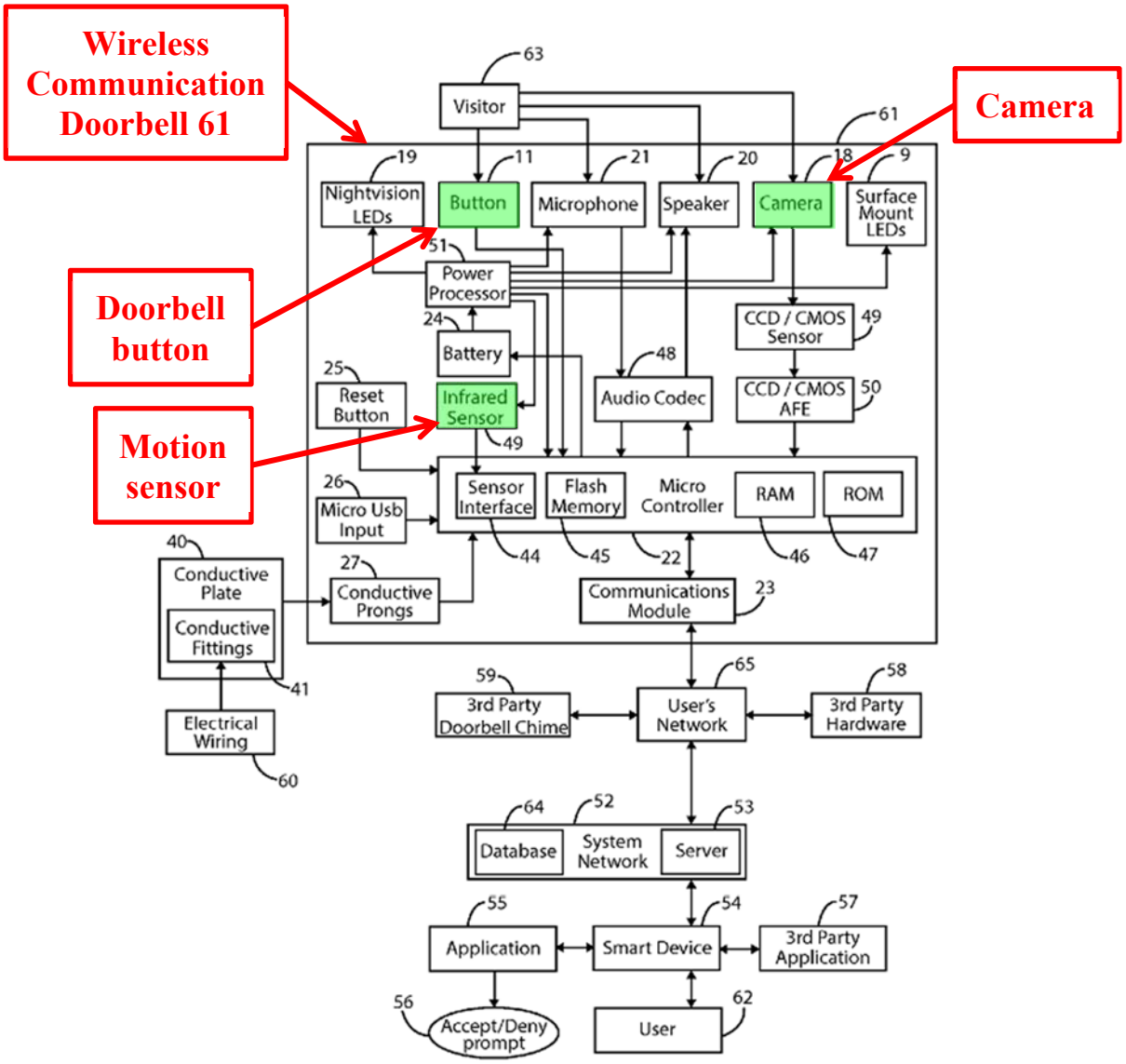
Siminoff teaches a doorbell system that includes a "Wireless Communication Doorbell 61," as shown in Fig. 15:



RING-1005, Fig. 15 (annotated);
RING-1003, p. 69.

[11.1] ***"a doorbell comprising a camera, a button, and a motion sensor, the camera configurable to capture images"***

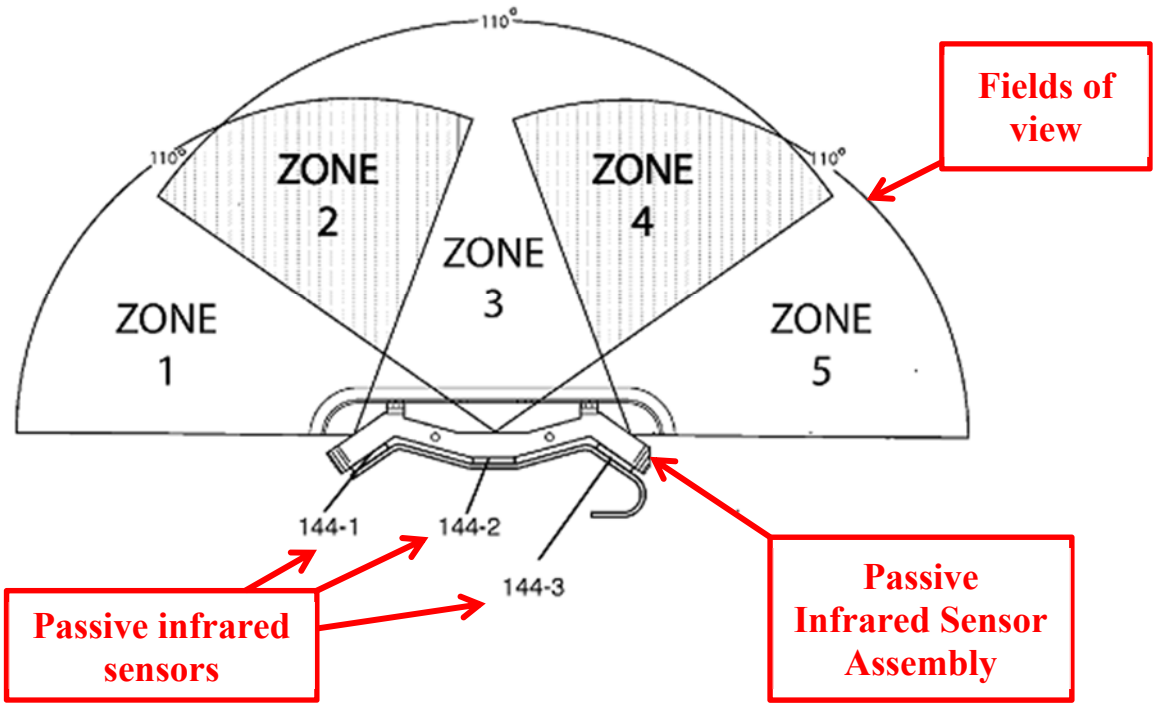
Siminoff discloses this limitation because it teaches that the Wireless Communication Doorbell includes a "camera 18," a "button 11," and an "infrared sensor 49," as illustrated in Fig. 12 (annotated below). RING-1005, ¶ [0074].



RING-1005, Fig. 12 (annotated); RING-1003, p. 70.

Siminoff explains that "[c]amera 18 may record still or moving video" in response to a visitor "pressing Button 8 [sic, 11], or triggering Infrared Sensor 42)." RING-1005, ¶ [0066], [0046]; *see also id.* ¶ [0053] (teaching that "User 62 may be able to manually rotate Camera 18 in the direction of their choice prior to mounting Wireless Communication Doorbell 61 to Mounting Plate 35.").

Siminoff further explains that the infrared sensor detects when a "Visitor 63 crosses the path of the Infrared Sensor 42." *Id*. ¶ [0046] ("Infrared Sensor 42 may trigger Camera 18 to record live video or still images of Visitor 63 when Visitor 63 crosses the path of the Infrared Sensor 42."). To the extent this disclosure does not explicitly teach that the Infrared Sensor 42 detects motion, Siminoff also teaches a second Wireless Communication Doorbell 130, illustrated in association with Figs. 20-33, that includes three passive infrared sensors that, together, are configurable to detect motion. RING-1005, Fig. 29, ¶¶ [0121]-[0123]. Specifically, Fig. 29 of Siminoff (annotated below) illustrates a Passive Infrared Sensor Assembly with three infrared sensors (144-1, 144-2, 144-3) each "capable of detecting and communicating the presence of a heat source within its field of view." *Id*. ¶¶ [0123], [0113].



RING-1005, Fig. 29 (annotated); RING-1003, p. 74.

Siminoff explains that this multi-sensor configuration allows the detection of motion and a determination of the direction of the motion: "The Wireless Communication Doorbell 130 may be capable of determining the direction that an object is moving based upon which zones are triggered in a time sequence." RING-1005, ¶ [0123].

A person of ordinary skill in the art reading Siminoff would have naturally combined these teachings in the context of Siminoff's second embodiment with the teachings in Siminoff's first embodiment regarding the use of infrared sensors to detect visitors, discussed above. RING-1003, p. 74; *see also Boston Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed. Cir. 2009) ("Combining two

embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness."). Specifically, it would have been predictable and advantageous to utilize the three-sensor assembly in the context of Siminoff's Wireless Communication Doorbell 61, described in the first embodiment, in order to not only detect when a visitor crosses in front of the doorbell, but also to detect which direction the visitor is moving. RING-1003, p. 74. A person of ordinary skill in the art would have a reasonable expectation of success because both the single infrared sensor in the first embodiment and the three-sensor assembly in the second embodiment are utilized for the same purpose—detecting a visitor and triggering the Wireless Communication Doorbell to send a notification to the user of the mobile device. RING-1003, pp. 74-76; RING-1005, ¶¶ [0046], [0066], [0131]. Moreover, it was generally known in the art before the '049 Patent that multi-sensor motion detectors perform better outdoors than a detector employing a single sensor. RING-1003, pp. 76-77 (citing RING-1010, ¶ [0019]). For example, as described in related patent literature, a motion detector that includes multiple sensors with only partially overlapping fields-of-view (as shown in Fig. 15 of Siminoff) "enables enhanced signal processing which analyses and distinguishes more clearly between signals produced by movement of a person across the field-of-view of the detector and signals resulting from various types of interference." RING-1010, ¶ [0236]; RING-1003, p. 77.

Thus, the Wireless Communication Doorbell that includes a camera configurable to record images, a button, and an infrared sensor that detects when a visitor crosses its path, as taught by Siminoff, in view of the three infrared sensor assembly that is configurable to detect motion (and the direction of the motion) also taught by Siminoff, renders obvious "a doorbell comprising a camera, a button, and a motion sensor, the camera configurable to capture images." *See* RING-1003, pp. 70-77.

[11.2] ***"the button configurable to enable a visitor to sound a chime,"***

Siminoff discloses this limitation because it teaches that the Wireless Communication Doorbell is in communication with a third party doorbell chime and "when Button 11 is pressed on Wireless Communication Doorbell 61" the chime "may emit an audio chime or message." RING-1005, ¶ [0083]. Siminoff further teaches that the button may be configured to "protrude through Housing 5, and make contact with Button Actuator 12 when pressed by Visitor." *Id*. ¶ [0063].

[11.3] ***"the motion sensor configurable to detect motion"***

Siminoff renders obvious this limitation. First, it teaches that the infrared sensor in the Wireless Communication Doorbell detects when a "Visitor 63 crosses the path of the Infrared Sensor 42." RING-1005, ¶ [0046] ("Infrared Sensor 42 may trigger Camera 18 to record live video or still images of Visitor 63 when Visitor 63 crosses the path of the Infrared Sensor 42."). And, as discussed above,

to the extent this disclosure does not explicitly teach that the Infrared Sensor 42 detects motion, a person of ordinary skill in the art would have naturally combined these teachings with the teachings in Siminoff's second embodiment of a three infrared sensor assembly "capable of determining the direction that an object is moving." RING-1003, pp. 78-79; RING-1005 ¶¶ [0121]-[0123], Fig. 29.

Thus, the infrared sensor in the Wireless Communication Doorbell that is configurable to detect when a visitor crosses the path of the sensor, as taught by Siminoff, in view of the three infrared sensor assembly that is configurable to detect motion (and the direction of the motion), also taught by Siminoff, renders obvious "the motion sensor configurable to detect motion." *See* RING-1003, pp. 78-79.

[11.4] ***"the doorbell configurable to enter a sleep mode whereby the camera does not capture images"***

Siminoff discloses this limitation because it teaches that "all hardware components within Wireless Communication Doorbell 61 may live in a state of hibernation" until activated. RING-1005, ¶ [0090]. Siminoff calls this state of hibernation "a low power consumption mode." *Id*. ¶ [0087]. Siminoff explains that the purpose of this low power consumption mode is to ensure that "components that draw power from Battery 24, such as … *Camera 18* do not waste battery power when not in use." *Id*. ¶ [0090] (emphasis added).

With respect to the functionality of the camera during low power

consumption mode, Siminoff teaches that the camera is inactive and without power until activated by an activation trigger. *See* RING-1005, ¶ [0076]. ("In reference to FIG. 12, after Button 11 is pressed, Power Processor 51 may *provide the power to activate Camera 18* and Night Vision LEDs 19. Camera 18 records any visuals of Visitor 63 and processes the visuals using CCD/CMOS Sensor 49." (emphasis added)); *see also id*. ¶ [0046] ("Still referencing FIG. 1, *Wireless Communication Doorbell 61 may be triggered to wake* through Infrared Sensor 42, installed within Housing 5. Infrared Sensor 42 may *trigger Camera 18 to record live video or still images of Visitor* 63…." (emphasis added)).

Accordingly, when Siminoff's Wireless Communication Doorbell is in hibernation mode/low-power mode, the camera is inactive and does not record images, because, in order for it to record an image, it must first be activated and provided power, for example, in response to an activation trigger. RING-1003, p. 81.

Thus, the Wireless Communication Doorbell that is configurable to enter a hibernation/low-power consumption mode wherein the camera is without power, inactive, and does not record images, as taught by Siminoff, discloses "the doorbell configurable to enter a sleep mode whereby the camera does not capture images." *See* RING-1003, pp. 79-81.

[11.5] ***"wherein when the doorbell is in the sleep mode the doorbell is configurable to detect motion and thereby enter a live view mode in response to***

detecting motion"

Siminoff renders obvious this limitation because it teaches that when the Wireless Communication Doorbell is in hibernation mode/low power mode and the infrared sensor detects a visitor crossing its path, the doorbell will wake and the camera will begin recording live video:

> Still referencing FIG. 1, Wireless Communication Doorbell 61 may be triggered to wake through Infrared Sensor 42, installed within Housing 5. Infrared Sensor 42 may trigger Camera 18 to record live video or still images of Visitor 63 when Visitor 63 crosses the path of the Infrared Sensor 42.

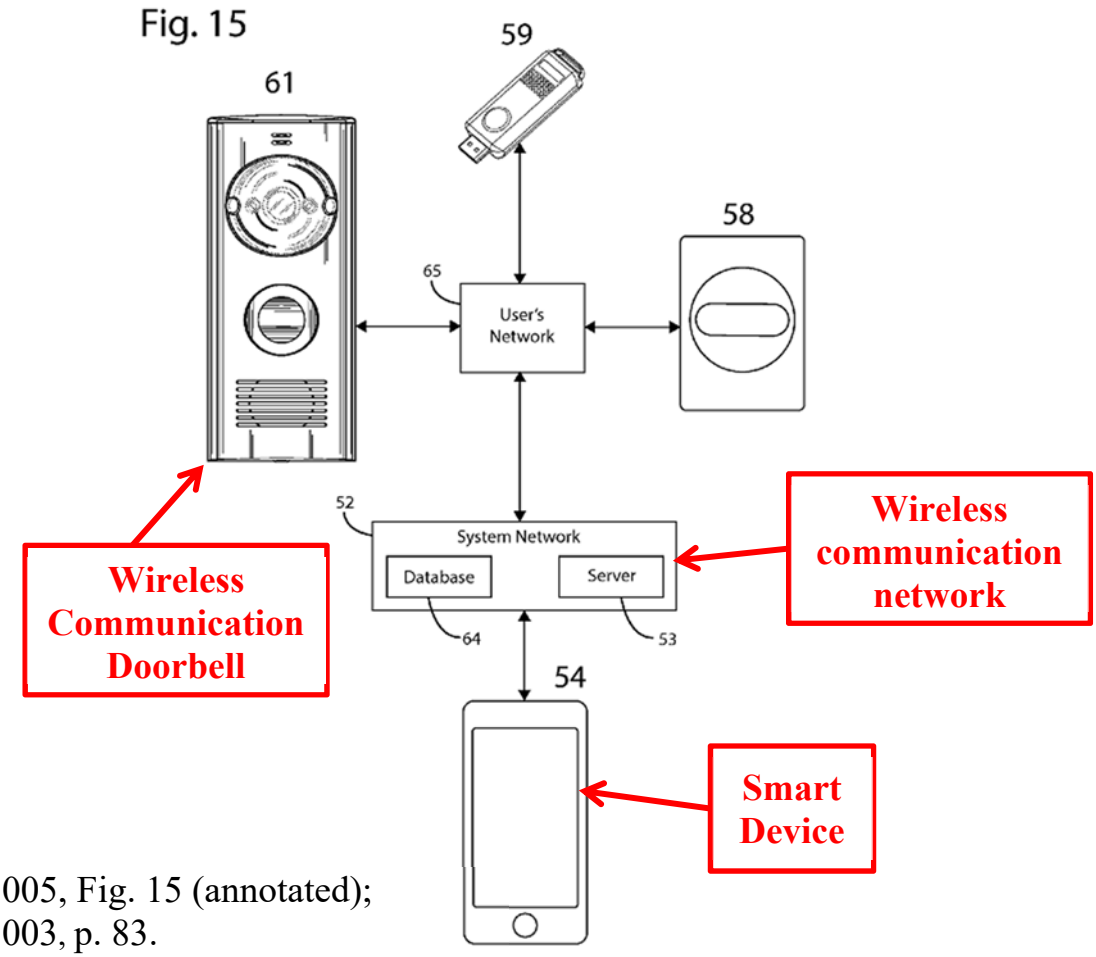
RING-1005, ¶ [0046]; *see also id*. ¶ [0066] ("Camera 18 may record still or moving video, (e.g. anyone who ***activates*** Wireless Communication Doorbell 61 by pressing Button 8, or ***triggering Infrared Sensor 42***)." (emphasis added)). And, as discussed above, to the extent this disclosure does not explicitly teach that the Infrared Sensor 42 detects motion, a person of ordinary skill in the art would have naturally combined these teachings with the teachings in Siminoff's second embodiment of a three infrared sensor assembly "capable of determining the direction that an object is moving." RING-1003, p. 82; RING-1005 ¶¶ [0121]-[0123], Fig. 29.

Thus, Siminoff's teaching that when the Wireless Communication Doorbell is in hibernation/low-power mode and the infrared sensor detects a visitor crossing

its path, it wakes and the camera begins recording live video in response to the motion, in view of the three infrared sensor assembly that is configurable to detect motion (and the direction of the motion) also taught by Siminoff, renders obvious "wherein when the doorbell is in the sleep mode the doorbell is configurable to detect motion and thereby enter a live view mode in response to detecting motion." *See* RING-1003, pp. 81-82.

[11.6] ***"a remote computing device communicatively coupled to the doorbell"***

Siminoff discloses this limitation because it teaches that its doorbell system includes a "Smart Device" that "may be any electronic device capable of receiving and transmitting data via the internet" such as "smartphones, tablets, laptops," etc. RING-1005, ¶ [0079]. As shown in Fig. 15 (annotated below), the Smart Device is communicatively coupled to the Wireless Communication Doorbell via a "wireless telecommunications network" (labeled as System Network 52). *Id*. ¶ [0088]; *see also id*. ¶ [0079] ("The infrastructure described above allows User 62 to connect multiple Smart Devices 54, within the parameters just mentioned, to Wireless Communication Doorbell 61.").



RING-1005, Fig. 15 (annotated);
RING-1003, p. 83.

Siminoff further explains that an "Application 55 may be installed on Smart Device 54 and provide an interface for User 62 to communicate and interact with Wireless Communication Doorbell 61." RING-1005, ¶ [0080].

Thus, the Smart Device, such as a smartphone, that is communicatively coupled to the Wireless Communication Doorbell, as disclosed by Siminoff, teaches "a remote computing device communicatively coupled to the doorbell" as claimed.

[11.7] ***"the remote computing device configurable to display an image captured by the camera when the doorbell is in the live view mode."***

Siminoff discloses this limitation. First, Siminoff teaches that one of the functions of the application on the Smart Device is to "display … videos and still images recorded by Camera 18." RING-1005, ¶ [0080]. Siminoff further teaches when the Wireless Communication Doorbell is triggered to wake up via the infrared sensor or another trigger, the camera records continuous video, which is sent to the user at the Smart Device:

> In one aspect, upon depressing Button 11 or *another trigger may cause Camera 18 of Wireless Communication Doorbell 61 to record a static or continuous video image, which is sent to User 62 along with notification at Smart Device 54.*

Id. ¶ [0086] (emphasis added).

> Camera 18 may record still or moving video, (e.g. anyone who activates Wireless Communication Doorbell 61 by pressing Button 8, or *triggering Infrared Sensor 42*). *Camera 18 may send the recorded video or images to Microcontroller 22, to be sent to Smart Device 54* and Database 64 via Communications Module 23."

Id. ¶ [0066] (emphasis added).

Further, with reference to Fig. 12, Siminoff teaches that when the camera has been powered up and activated by an activation trigger the application on the Smart device generates an "Accept/Deny Prompt 56" and, "[i]f the request is accepted, System Network 52 *may stream live video or still images to Smart*

Device 54." RING-1005, ¶¶ [0076], [0081] (emphasis added), Fig. 12. In other words, the Smart Device is configured to display live images and video when the camera in the Wireless Communication Doorbell is active and recording continuous video with the camera. RING-1003, p. 86. Siminoff explains that, as a result of this feature, users of the Smart Device "may see who is within view of Wireless Communication Doorbell 61 at any given time." *Id*. ¶ [0079].

Thus, the Smart Device that is configured to display images or continuous live video when the Wireless Communication Doorbell is woken up and the camera is activated, as taught by Siminoff, discloses "the remote computing device configurable to display an image captured by the camera when the doorbell is in the live view mode." *See* RING-1003, pp. 84-86.

Claim 12

"The system of claim 11, wherein the remote computing device comprises at least one of a smartphone and a tablet."

Siminoff discloses this limitation because, as discussed in association with [11.6], it teaches that its Smart Device may be a smartphone or tablet. *See* RING-1005, ¶ [0079].

Claim 13

"The system of claim 12, wherein the remote computing device is configurable to display a video of the motion detected by the motion sensor."

Siminoff renders obvious this limitation. First, as discussed in association with [11.5], Siminoff teaches that the infrared sensor in the Wireless Communication Doorbell triggers "Camera 18 to record live video or still images

of Visitor 63 when Visitor 63 crosses the path of the Infrared Sensor 42." RING-1005, ¶ [0046]. Siminoff also teaches that when the camera records "still or moving video" in response to someone "triggering Infrared Sensor 42," the "recorded video or images … [are] sent to Smart Device 54." *Id*. ¶ [0066]; *see also id*. ¶ [0086] ("another trigger may cause Camera 18 of Wireless Communication Doorbell 61 to record a static or continuous video image, which is sent to User 62 along with notification at Smart Device 54"). And, as discussed above, to the extent Siminoff does not explicitly teach that the Infrared Sensor 42 detects motion, a person of ordinary skill in the art would have naturally combined these teachings with the teachings in Siminoff's second embodiment of a three infrared sensor assembly "capable of determining the direction that an object is moving." RING-1003, pp. 72-22; RING-1005 ¶¶ [0121]-[0123], Fig. 29.

Second, as discussed in association with [11.6], Siminoff teaches that that one of the functions of the application on the Smart Device is to "display … videos and still images recorded by Camera 18." *Id*. ¶ [0080].

Thus, the smart device that is configured to display a video of a visitor that crosses the path of the infrared sensor and triggers the camera to record, as taught by Siminoff, in view of the three infrared sensor assembly that is configurable to detect motion (and the direction of the motion) also taught by Siminoff, renders

obvious "wherein the remote computing device is configurable to display a video of the motion detected by the motion sensor." *See* RING-1003, pp. 88-90.

Claim 15

"The system of claim 11, wherein the motion detected by the motion sensor automatically causes the camera to record an image of the motion."

Siminoff discloses this limitation because it teaches, as discussed in association with [11.5], that the infrared sensor in the Wireless Communication Doorbell triggers "Camera 18 to record live video or still images of Visitor 63 when Visitor 63 crosses the path of the Infrared Sensor 42." RING-1005, ¶ [0046]; *see also id*. ¶ [0066] ("Camera 18 may record still or moving video, (e.g. anyone who activates Wireless Communication Doorbell 61 by pressing Button 8, or triggering Infrared Sensor 42)."). And, as discussed above, to the extent Siminoff does not explicitly teach that the Infrared Sensor 42 detects motion, a person of ordinary skill in the art would have naturally combined these teachings with the teachings in Siminoff's second embodiment of a three infrared sensor assembly "capable of determining the direction that an object is moving." RING-1003, p. 91; RING-1005 ¶¶ [0121]-[0123], Fig. 29.

Thus, the infrared sensor detecting the visitor crossing its path and automatically triggering the camera to record an image of the moving visitor, as taught by Siminoff, in view of the three infrared sensor assembly that is configurable to detect motion (and the direction of the motion) also taught by

Siminoff, renders obvious "wherein the motion detected by the motion sensor automatically causes the camera to record an image of the motion." *See* RING-1003, pp. 90-91.

Claim 18

"The system of claim 11, wherein the doorbell is configurable to attach to a building and be powered by a battery power source."

Siminoff discloses this limitation. First, it teaches that its Wireless Communication Doorbell is configured to be mounted to an "exterior surface" of a "building" via a mounting plate, where the "the exterior surface that Mounting Plate 35 is mounted to may be adjacent to an exterior door of a building." RING-1005, ¶ [0056]; *see also id*. ¶ [0065] ("Battery 24 may also be charged from drawing power from Electrical Wiring 60, derived from *the building that Wireless Communication Doorbell 61 may be mounted to*." (emphasis added)).

Second, Siminoff teaches that a "Battery 24 may be mounted within Housing 5 and provide power to any components needing power within Wireless Communication Doorbell 61." RING-1005, ¶ [0065]; *see also id*. ¶ [0074] ("Battery 24 holds the power that Power Processor 51 used to distribute to all components within Wireless Communication Device 61.").

Thus, the Wireless Communication Doorbell that is configured to be mounted to a building and be powered by a battery, as taught by Siminoff,

discloses "wherein the doorbell is configurable to attach to a building and be powered by a battery power source." *See* RING-1003, pp. 91-92.

Claim 19

"The system of claim 11, wherein the doorbell is configurable to attach to a building and be powered by an AC power source."

Siminoff discloses this limitation. First, as discussed in association with claim 18, Siminoff teaches that the Wireless Communication Doorbell is configured to be mounted to a building. *See* RING-1005, ¶¶ [0056], [0065]. Second, Siminoff teaches that the "Wireless Communication Doorbell 61 may be continually powered or charged by hard-wiring Wireless Communication Doorbell 61 directly to Electrical Wiring 60, such as to an AC or DC electrical circuit." *Id*. ¶ [0055].

Thus, the Wireless Communication Doorbell that is configured to be mounted to a building and be powered by an AC electrical circuit of the building, as taught by Siminoff, discloses "wherein the doorbell is configurable to attach to a building and be powered by an AC power source." *See* RING-1003, p. 92.

Claim 20

"The system of claim 11, wherein the doorbell is configurable to attach to a building and be electrically coupled, via electrical wires, to a building power source whereby the doorbell receives power from the building power source."

Claim 20 is substantially similar to claim 10. As such, for the reasons discussed in association with claim 10 above, Siminoff discloses claim 10. *See* RING-1003, p. 92.

Claim 21

"The system of claim 11, wherein the doorbell receives constant power when the doorbell is in the sleep mode and the live view mode."

Siminoff discloses this limitation because it teaches that when the Wireless Communication Doorbell is wired directly to the AC electrical circuit of the building, as discussed above in association with claim 19, the doorbell is "continually powered." RING-1005, ¶ [0055] ("Wireless Communication Doorbell 61 may be *continually powered* or charged by hard-wiring Wireless Communication Doorbell 61 directly to Electrical Wiring 60, such as to an AC or DC electrical circuit." (emphasis added)).

Thus, the Wireless Communication Doorbell that is configured to be continually powered by the AC electrical circuit of the building to which its mounted, as taught by Siminoff, discloses "wherein the doorbell receives constant power when the doorbell is in the sleep mode and the live view mode." *See* RING-1003, pp. 93-94.

C. Challenge #3: Claim 14 is invalid under 35 U.S.C § 103 over Siminoff in view of Ring.com

1. Summary of Siminoff

As discussed above, Siminoff teaches that when "Visitor 63 crosses the path of the Infrared Sensor 42" the camera is triggered to "record live video or still images of Visitor 63." RING-1005, ¶ [0046]. The recorded images and video are

sent to the Smart Device along with a "notification." *Id*. ¶ [0086]. Siminoff teaches that when the Smart Device receives the notification, the Smart Device presents a "Accept/Deny Prompt" and accepts responsive user input. *Id*. "If the request is accepted by User 62, (Yes, Step 206), Visitor 63 and User 62 communicate via video and audio transmitted sent to and from Wireless Communication Doorbell 61 and Smart Device 54." *Id*. ¶ [0087].

To the extent Siminoff does not explicitly teach that the user input to the Smart Device *opens* the application that displays the motion-triggered images, a person of ordinary skill in the art would have found such a feature obvious and predictable, as video doorbell systems closely related to the Siminoff application included such functionality before the '049 Patent, as illustrated below. RING-1003, ¶ 64.

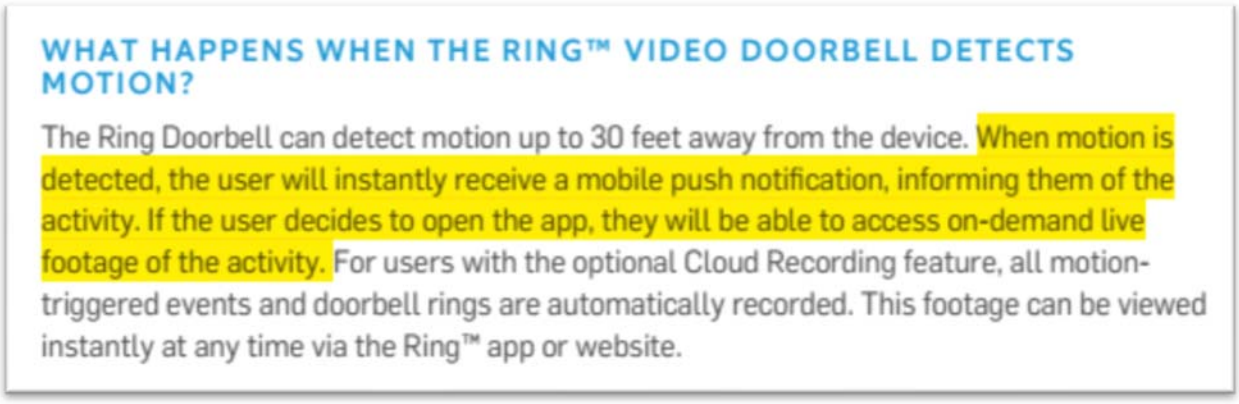
2. Summary of Ring.com

Exhibit RING-1007 ("Ring.com") contains captures of several web pages on the Ring.com web site, as it existed in March 2015 before the earliest filing date of the '049 Patent. Ring.com describes the features and functionality of the Ring Video Doorbell, which includes "Built-in motion sensors" and an "HD CAMERA," as illustrated below. RING-1007, pp. 3, 6.

RING-1007, p. 6.

Ring.com teaches that a user can "[r]eceive instant alerts when someone rings your doorbell or motion is detected, via the free Ring™ app (iOS® and Android™)." *Id*. at p. 5. Specifically, Ring.com explains that when motion is detected and a push notification is received at smartphone, the user can open the

app to view video of the detected activity:



WHAT HAPPENS WHEN THE RING™ VIDEO DOORBELL DETECTS MOTION?

The Ring Doorbell can detect motion up to 30 feet away from the device. When motion is detected, the user will instantly receive a mobile push notification, informing them of the activity. If the user decides to open the app, they will be able to access on-demand live footage of the activity. For users with the optional Cloud Recording feature, all motion-triggered events and doorbell rings are automatically recorded. This footage can be viewed instantly at any time via the Ring™ app or website.

RING-1007, p. 17 (highlighting added); RING-1003, ¶ 66.

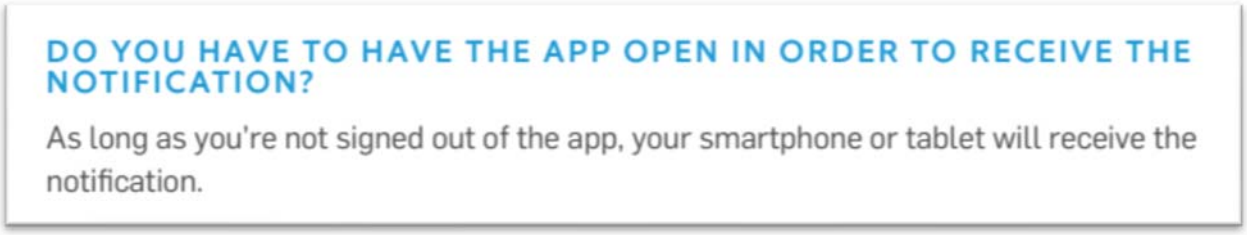
3. Reasons to Combine Siminoff and Ring.com

For the reasons set forth below, a POSITA would have been motivated to combine the teachings of Siminoff and Ring.com. RING-1003, ¶ 67. In particular, before the '049 Patent, it would have been obvious, beneficial, and predictable to modify Siminoff's Smart Device to include Ring.com's notification feature that allows a user, upon receiving a push notification at a mobile device, to open the Ring app and view video of detected motion, as discussed below. *Id*.

As an initial matter, one of ordinary skill in the art when considering the teachings of Siminoff before the earliest priority date of the '049 Patent would have naturally considered the teachings of Ring.com. RING-1003, ¶ 68. Not only are both directed to video doorbell systems, but the named inventor of the Siminoff application, Jamie Siminoff, was (and still is) the "Chief Inventor/CEO" of Ring LLC, according to Ring.com. RING-1007, p. 20. Further, the Siminoff application

was (and still is) assigned to Ring LLC (formerly known as Bot Home Automation, Inc.). RING-1005, p. 1. Persons of ordinary skill in the art implementing Siminoff's doorbell system before the '049 Patent would have had—and actually did have—the teachings of Ring.com available to them, and would have naturally associated these teachings with those of the Siminoff application. RING-1003, ¶ 68.

In light of the teachings of Ring.com, it would have been obvious to a POSITA to include Ring.com's notification feature in Siminoff's Smart Device so that when the Smart Device receives a push notification alerting a user to detected motion (as is already taught by Siminoff), the user could open the application and view the motion. RING-1003, ¶ 69. Doing so would be advantageous because it would allow a user of Siminoff's Smart Device to receive notifications and selectively view detected motion regardless of whether the doorbell app was open at the time of the notification, as taught by Ring.com:



RING-1007, p. 15; RING-1003, ¶ 69.

A POSITA would find the above modification to Siminoff predictable and likely to be successful because Siminoff teaches that its Smart Device already

receives notifications of motion and accepts user inputs to an "Accept/Deny Prompt," and, "[i]f the request is accepted, System Network 52 may stream live video or still images to Smart Device 54." RING-1005, ¶¶ [0076], [0081]; RING-1003, ¶ 70. Further, because Siminoff's Smart Device is "any electronic device capable of receiving and transmitting data via the internet," it may be implemented as an iOS® or Android™ device—the same types of devices utilized with the Ring Video Doorbell, as taught by Ring.com. RING-1005, ¶ [0079]; RING-1003, ¶ 70.

Moreover, as explained in more detail in Dr. Madisetti's declaration, a POSITA would have had a reasonable expectation of success implementing the modification because the proposed process (*i.e.*, receiving a notification and opening an associated app) was already expressly described in the home security arts. RING-1003, ¶ 70. For example, as described in related patent literature, it was already well known in the art to use iOS® and Android™ push notifications to alert a user to activity detected by a motion sensor, where the user could select the push notification and automatically open an application to view a video of the detected motion. *See* RING-1003 ¶ 71 (citing RING-1008 ¶¶ [0128], [0141], [0142], [0144], Fig. 6F (describing a home security system in which "a smartphone push notification *automatically opens a system 100 application on the smartphone upon selection of the notification*" and the user is "automatically directed " to videos of detected motion) (emphasis added)). As such, any modifications to

Siminoff's system needed to implement Ring.com's notification feature would be within the skill of a person of ordinary skill in the art. RING-1003, ¶ 72.

Accordingly, a person of ordinary skill in the art would have found it obvious to apply Ring.com's known notification and app opening technique to Siminoff's conventional Smart Device to yield the predictable and beneficial result of allowing a user, upon receiving a push notification at the Smart Device, to open the app and view video of motion detected by the Wireless Communication Doorbell. RING-1003, ¶ 73.

4. Detailed Analysis

The following describes how Siminoff in view of Ring.com render obvious each and every element of claim 14 of the '049 Patent. A corresponding claim chart is contained in Dr. Madisetti's declaration. *See* RING-1003, pp. 102-106.

Claim 14

"The system of claim 11, wherein the remote computing device is configurable to receive an input from the user, and the input causes the remote computing device to open a mobile application that visually displays an image of the motion detected by the motion sensor."

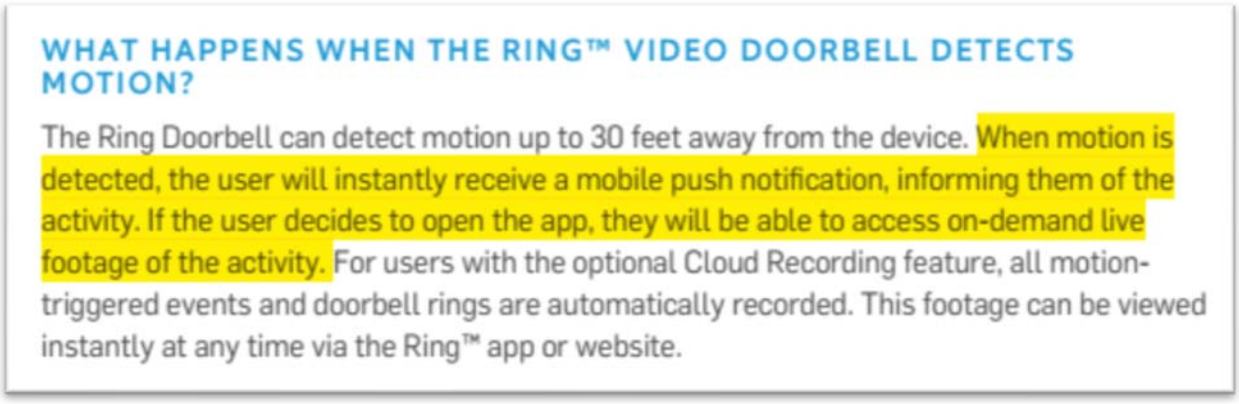
Siminoff in view of Ring.com renders obvious this limitation. First, as discussed in association with claim 11, Siminoff teaches that "Application 55 may be installed on Smart Device 54 and provide an interface for User 62 to communicate and interact with Wireless Communication Doorbell." RING-1005, ¶ [0080]. One of the functions of the application on the Smart Device is to "display

… videos and still images recorded by Camera 18." *Id*. For example, Siminoff teaches that when the camera "record[s] a static or continuous video image" in response to a "trigger" (such as the infrared sensor detecting a visitor), the images are "sent to User 62 along with notification at Smart Device 54." *Id*. ¶¶ [0086], [0066], [0076]; *see also id*. ¶¶ [0121]-[0123] (teaching the detection of motion and its direction by a three-infrared sensor assembly). Siminoff also teaches that the Smart Device accepts user input in the form of a "Accept/Deny Prompt" presented when the Smart Device receives the notification. *Id*. ¶ [0086]. "If the request is accepted by User 62, (Yes, Step 206), Visitor 63 and User 62 communicate via video and audio transmitted sent to and from Wireless Communication Doorbell 61 and Smart Device 54." *Id*. ¶ [0087].

Accordingly, Siminoff's Smart Device (i) includes an application, (ii) is configured to receive an input from a user, and (iii) receives notifications and images of motion captured by the camera in the Wireless Communication Doorbell, which are displayed by the application. RING-1003, p. 104. To the extent Siminoff does not explicitly teach that the user input to the Smart Device *opens* the application that displays the motion-triggered images, a person of ordinary skill in the art would have found it obvious and predictable, as discussed above. *See* RING-1003, pp. 104-105 (explaining that it was already well known in the art to use iOS® and Android™ push notifications to alert a user to activity

detected by a motion sensor, where the user could select the push notification and automatically open an application to view a video of the detected motion.)

For example, Ring.com describes the features and functionality of the Ring Video Doorbell, which includes "Built-in motion sensors" and an "HD CAMERA," as illustrated below. RING-1007, pp. 3, 6. Ring.com teaches that a user can "[r]eceive instant alerts when someone rings your doorbell or motion is detected, via the free Ring™ app (iOS® and Android™)." *Id*. at p. 5. Specifically, in describing this motion detection functionality of the Ring Doorbell, Ring.com explains that when motion is detected and a push notification is received at smartphone, the user can open the app to view video of the activity:



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RING-1007, p. 17 (highlighting added); RING-1003, p. 105.

Thus, Siminoff's Smart Device that receives notifications regarding motion detected by the Wireless Communication Doorbell and also receives a user input to an Accept/Deny prompt that results in images of the detected motion being displayed by an application on the Smart Device, as taught by Siminoff, in view of

Ring.com's notification feature that allows users, upon receiving a push notification at a mobile device, to open the Ring app and view video of detected motion, renders obvious "wherein the remote computing device is configurable to receive an input from the user, and the input causes the remote computing device to open a mobile application that visually displays an image of the motion detected by the motion sensor." *See* RING-1003, pp. 102-106.

VIII. CONCLUSION

For the reasons set forth above, Petitioner has established a reasonable likelihood that claims 1-4, 7-15, and 18-21 of the '049 Patent are unpatentable. Petitioner requests institution of an *inter partes* review and cancellation of these claims.

Respectfully submitted,

Dated: December 17, 2018

/Scott T. Jarratt/

Scott T. Jarratt
Lead Counsel for Petitioner
Registration No. 70,297

HAYNES AND BOONE, LLP
2323 Victory Avenue, Suite 700
Dallas, Texas 75219
Customer No. 27683
Telephone: 972-739-8663
Facsimile: 214-200-0853

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this petition, that the number of words in this paper is 13,008. Pursuant to 37 C.F.R. §42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under §42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

Dated: December 17, 2018

/Scott T. Jarratt/
Scott T. Jarratt
Lead Counsel for Petitioner
Registration No. 70,297

PETITIONER'S EXHIBIT LIST

December 17, 2018

RING-1001	U.S. Patent No. 9,743,049
RING-1002	Prosecution History of U.S. Patent No. 9,743,049
RING-1003	Declaration of Vijay Madisetti, Ph.D., Under 37 C.F.R. § 1.68
RING-1004	Curriculum Vitae of Vijay Madisetti, Ph.D.
RING-1005	U.S. Patent Application Publication No. 2015/0022620 to Siminoff ("Siminoff")
RING-1006	U.S. Patent Application Publication No. 2014/0267740 to Almomani ("Almomani")
RING-1007	Collection of Wayback Machine Archive Pages from Ring.com: • Wayback Machine Archive Page, "Ring Video Doorbell for your Smartphone|Ring," archived March 20, 2015, https://web.archive.org/web/20150320182145/https://ring.com/ • Wayback Machine Archive Page, "Help|Customer Support|FAQ|Installation Guide|Ring," archived March 17, 2015, https://web.archive.org/web/20150317112534/https://ring.com/help • Wayback Machine Archive Page, "About|Story|Team|Contact Us|Ring," archived March 17, 2015, https://web.archive.org/web/20150317173259/https://ring.com/about#team
RING-1008	WIPO Publication No. 2014/144628 to Smith *et al.* ("Smith")
RING-1009	Collection of Wayback Machine Archive Pages from Vivint.com: • Wayback Machine Archive Page, "Vivint|Doorbell Camera," archived May 1, 2015, https://web.archive.org/web/20150501150057/http:/support.

	vivint.com:80/product/doorbell-camera • Wayback Machine Archive Page, "How to view doorbell camera video feed from Vivint mobile app," archived May 4, 2015, https://web.archive.org/web/20150504082945/http://support.vivint.com:80/how-to/view-video-feed
RING-1010	U.S. Patent Application Publication No. 2007/0029486 ("Zhevelev")
RING-1011	Affidavit of Christopher Butler and archived pages from Ring.com corresponding to exhibit RING-1007: • Wayback Machine Archive Page, "Ring Video Doorbell for your Smartphone|Ring," archived March 20, 2015, https://web.archive.org/web/20150320182145/https://ring.com/ • Wayback Machine Archive Page, "Help|Customer Support|FAQ|Installation Guide|Ring," archived March 17, 2015, https://web.archive.org/web/20150317112534/https://ring.com/help • Wayback Machine Archive Page, "About|Story|Team|Contact Us|Ring," archived March 17, 2015, https://web.archive.org/web/20150317173259/https://ring.com/about#team
RING-1012	Affidavit of Christopher Butler and archived pages from vivint.com corresponding to exhibit RING-1009

CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.105, service was made on Patent Owner as detailed below.

Date of service	December 17, 2018
Manner of service	FEDERAL EXPRESS
Documents served	Petition for *Inter Partes* Review of U.S. Patent No. 9,743,049 Certificate of Word Count Petitioner's Exhibit List Exhibits RING-1001 through RING-1012
Persons served	Schwie Law, LLC 445 Minnesota St Suite 1500 St. Paul MN 55101

/Scott T. Jarratt/
Scott T. Jarratt
Lead Counsel for Petitioner
Registration No. 70,297