

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RPX CORPORATION and
PROTECTION ONE, INC.,
Petitioner,

v.

MD SECURITY SOLUTIONS, LLC,
Patent Owner.

Case IPR2016-00285¹
Patent 7,864,983 B2

Before SALLY C. MEDLEY, KARL D. EASTHOM, and
WILLIAM M. FINK, *Administrative Patent Judges*.

FINK, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

¹ Protection One, Inc., who filed a Petition in IPR2016-01235, has been joined as a party to the petitioner in this proceeding.

I. INTRODUCTION

On December 4, 2015, RPX Corporation (collectively with Protection One, Inc., “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 7,864,983 B2 (Ex. 1001, “the ’983 patent”). Paper 1 (“Pet.”). On March 14, 2016, MD Security Solutions LLC (“Patent Owner”), filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). On June 6, 2016, we instituted trial as to claims 1–20 of the ’983 patent. Paper 9 (“Decision to Institute” or “Inst. Dec.”).

After institution, Patent Owner filed a Request for Rehearing, which we denied. Paper 11; Paper 12 (“Decision on Rehearing” or “Dec. Reh’g”). Patent Owner filed a Patent Owner Response. Paper 13 (“PO Resp.”). Petitioner filed a Reply to the Patent Owner Response. Paper 18 (“Pet. Reply”). An oral hearing was held on February 15, 2017. A transcript of the hearing has been entered into the record. Paper 28 (“Tr.”).

This Final Written Decision (“Decision”) is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we conclude Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–20 of the ’983 patent are unpatentable.

A. Related Matters

Petitioner and Patent Owner identify the following pending judicial matters as relating to the ’983 patent: *MD Security Solutions, LLC v. Bright House Networks, LLC*, No. 6:15-cv-00777 (M.D. Fl.), *MD Security Solutions LLC v. CenturyLink, Inc.*, No. 6:15-cv-01967 (M.D. Fl.), and *MD Security Solutions LLC v. Protection 1, Inc.*, No. 6:15-cv-01968 (M.D. Fl.). Pet. 2–3; Paper 7, 1.

B. The '983 Patent

The '983 patent relates to a “[s]ecurity alarm system for protecting a structure [that] includes motion detectors connected to cameras.” Ex. 1001, Abstract. At least one of the motion detectors has an external field of view of the protected structure in order to detect an approaching intruder, and a camera arranged such that the camera has a field of view encompassing at least part of the field of view of the associated motion detector. *Id.* at 2:31–35, 6:66–7:1. The system also includes a handheld telecommunications unit that allows a user to activate, deactivate, and make adjustments to the alarm system. *Id.* at 11:31–34. Figure 1 of the '983 patent is reproduced below:

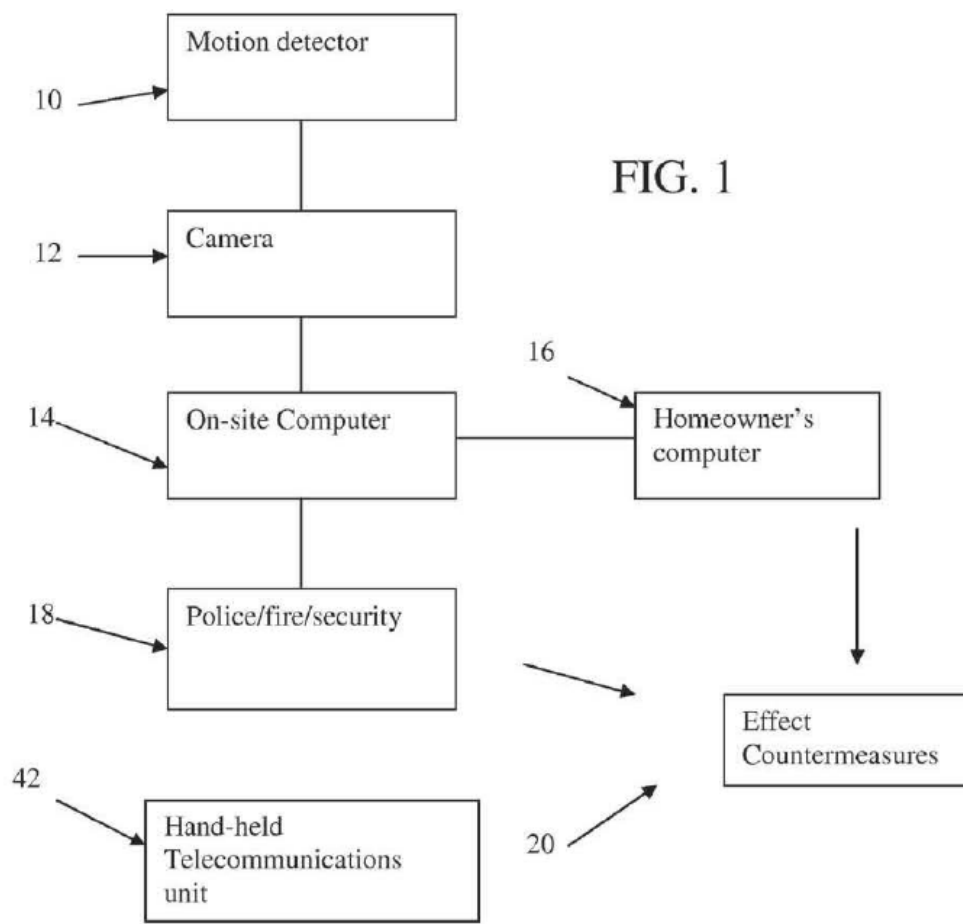


Figure 1 illustrates a schematic embodiment of an alarm system in accordance with the invention. *Id.* at 6:36–37. The schematic of Figure 1 includes motion detector 10, camera 12, on-site computer 14, and hand-held telecommunications unit 42. *Id.* at 6:48–53, 11:1–3. “[E]ach camera 12 is triggered to obtain an image only when its associated motion detector 10 detects motion in the field of view of the motion detector 10.” *Id.* at 7:37–40. On-site computer 14 will receive these images from these cameras 12. *Id.* at 8:51–58. A processor sends these images via a telecommunications module to hand-held telecommunication unit 42. *Id.* at 2:40–45. Additionally, hand-held telecommunications unit 42 may send a command causing the cameras 12 to obtain and transmit images to the telecommunications unit. *Id.* at 2:46–50.

C. Illustrative Claim

Claims 1 and 11 are independent claims. Claims 2–10 depend directly or indirectly from claim 1, and claims 12–20 depend directly or indirectly from claim 11. Claim 1 is reproduced below:

1. An alarm system for protecting a structure, comprising:
 - at least one motion detector arranged to have a field of view external of the structure and including an area proximate the structure;
 - at least one camera associated with and coupled to each of said at least one motion detector, each of said at least one camera being arranged relative to the associated one of said at least one motion detector such that said camera has a field of view encompassing at least part of the field of view of the associated one of said at least one motion detector, each of said at least one camera having a dormant state in which images are not obtained and an active state in which images are obtained and being activated into the active state when the associated one of said at least one motion detector detects motion;

a processor coupled to said at least one camera and arranged to control said at least one camera and receive the image obtained by said at least one camera;
a telecommunications module coupled to said processor, said telecommunications module being capable of communications over a telecommunications network; and
a handheld telecommunications unit for transmitting commands for said processor via said telecommunications module to cause said processor to provide images to said telecommunications module to be transmitted to the telecommunications unit.

Ex. 1001, 13:53–14:11.

D. Pending Grounds of Unpatentability

The first pending ground of unpatentability challenges independent claims 1 and 11 and dependent claims 2–8 and 18–20, as directed to obvious subject matter, under 35 U.S.C. § 103(a), over the teachings of Milinusic² and Osann.³ The second pending ground of unpatentability challenges dependent claims 9, 10, and 12–17 as directed to obvious subject matter, under 35 U.S.C. § 103(a), over the teachings of Milinusic, Osann, and Ozer.⁴

II. DISCUSSION

A. Level of Ordinary Skill in the Art

Citing its declarant, Dr. Lavian, Petitioner opines that a person of ordinary skill in the art would “have had at least a B.S. in Electrical Engineering, Computer Engineering or Computer Science or the equivalent, along with 2 years of working experience in image processing and/or

²U.S. Patent No. 7,106,333 B1, issued September 12, 2006 (Ex. 1003) (“Milinusic”)

³U.S. Patent No. 7,253,732 B2, issued August 7, 2007 (Ex. 1004) (“Osann”)

⁴U.S. Patent Application Publication No. 2004/0120581 A1, published June 24, 2004 (Ex. 1005) (“Ozer”)

developing telecommunications systems such as networked computer systems.” Pet. 5–6 (citing Ex. 1010 ¶¶ 13–14).

Patent Owner’s declarant, Mr. Parker, “generally agree[s] with [Dr. Lavian’s] opinion about the level of ordinary skill in the art,” except that, in this field, “professional experience is more valuable than education.” Ex. 2001 ¶ 13. In Mr. Parker’s opinion, therefore, “a person of ordinary skill in the art in the timeframe of 2006 would have had a Bachelor of Science degree in Electrical Engineering, Computer Engineering or Computer Science or the equivalent, along with 2 years of working experience in image processing and/or developing telecommunications systems such as networked computer systems, or less education and 5-10 years of industry experience in electronic security systems.” *Id.*

We agree with Mr. Parker’s proposed definition, which is the same as Dr. Lavian’s, but also includes artisans with more industry experience and less educational experience. We note that our analysis would be the same under either definition.

B. Claim Interpretation

In an *inter partes* review, claim terms in an unexpired patent are given their “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131, 2144–46 (2016). Under the broadest reasonable construction standard, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. “receive the image”

Neither party proposes an explicit construction for this term.

However, in the context of its arguments regarding Milinusic, Patent Owner contends “[t]o a person having ordinary skill in the art, ‘receive’ describes a general act of setting up the conditions necessary to bring a video stream into memory.” PO Resp. 19. Patent Owner bases this definition on Mr. Parker’s declaration that “[r]eceive . . . describes a general capability of accepting data and writing into memory.” Ex. 2001 ¶ 20. Patent Owner also cites the Microsoft Computer Dictionary, which defines “receive” as “[t]o accept data from an external communications system . . . and store the data as a file.” Ex. 2004, 376. We determine that this interpretation is not supported by the evidence.

In the first place, according to the ’983 specification, the processor “receives the image,” “derive[s] a silhouette of any objects in the image, [and] compare[s] the silhouette[] to a library of stored silhouettes.” Ex. 1001, 3:52–56, 5:8–11. In other words, the processor receives an image, performs image processing (i.e., derives a silhouette) and compares to a library of stored silhouettes. Patent Owner does not direct us to specification evidence that the image data *must* be stored, on the processor or anywhere else. Thus, while receiving an image suggests that the processor “accepts data”—as the first part of Mr. Parker’s definition and the dictionary require, the second part of the definition requiring the data to be stored in memory is not supported.

Mr. Parker ultimately conceded as much in his deposition. There, Mr. Parker acknowledged that his declaration testimony requiring received data to be stored in processor memory is not supported. See Ex. 1013, 36:11–16.

Moreover, Mr. Parker stated that he did not agree with that aspect of the Microsoft Computer Dictionary definition:

I would have stopped [the definition] after “to accept data from an external communications system, such as a local area network or telephone line.”

I do not consider “and store the data as filed -- as a file” to be necessary to meet the definition of receive, in my opinion, or the opinion of a person of ordinary skill in the art.

Ex. 1013, 40:4–40:13 (emphasis added). Thus, consistent with the intrinsic evidence, Mr. Parker’s view is that receiving means “accepting data,” but not necessarily storing it. Accordingly, we determine that the broadest reasonable construction of “receive the image,” in light of the specification, is “accept the image.”

*D. Unpatentability of Claims 1–8, 11, and 18–20
over Milinusic and Osann*

Petitioner contends claims 1–8, 11, and 18–20 are unpatentable over the combination of Milinusic and Osann. Pet. 37–55. We have reviewed the arguments in the Petition, Patent Owner’s Response, Petitioner’s Reply, as well as the relevant evidence discussed in those papers and other record papers. We are persuaded Petitioner sufficiently establishes that the subject matter of claims 1–8, 11, and 18–20 of the ’983 patent would have been obvious over the combination of Milinusic and Osann.

1. Milinusic (Ex. 1003)

Milinusic relates to “a surveillance system . . . for collection, analysis, and distribution of surveillance data.” Ex. 1003, 1:16–19. The surveillance system includes sensors to detect movement in a predefined area and cameras configured to capture an image of the area. *Id.* at 5:52–59. Figure 4 of Milinusic is reproduced below:

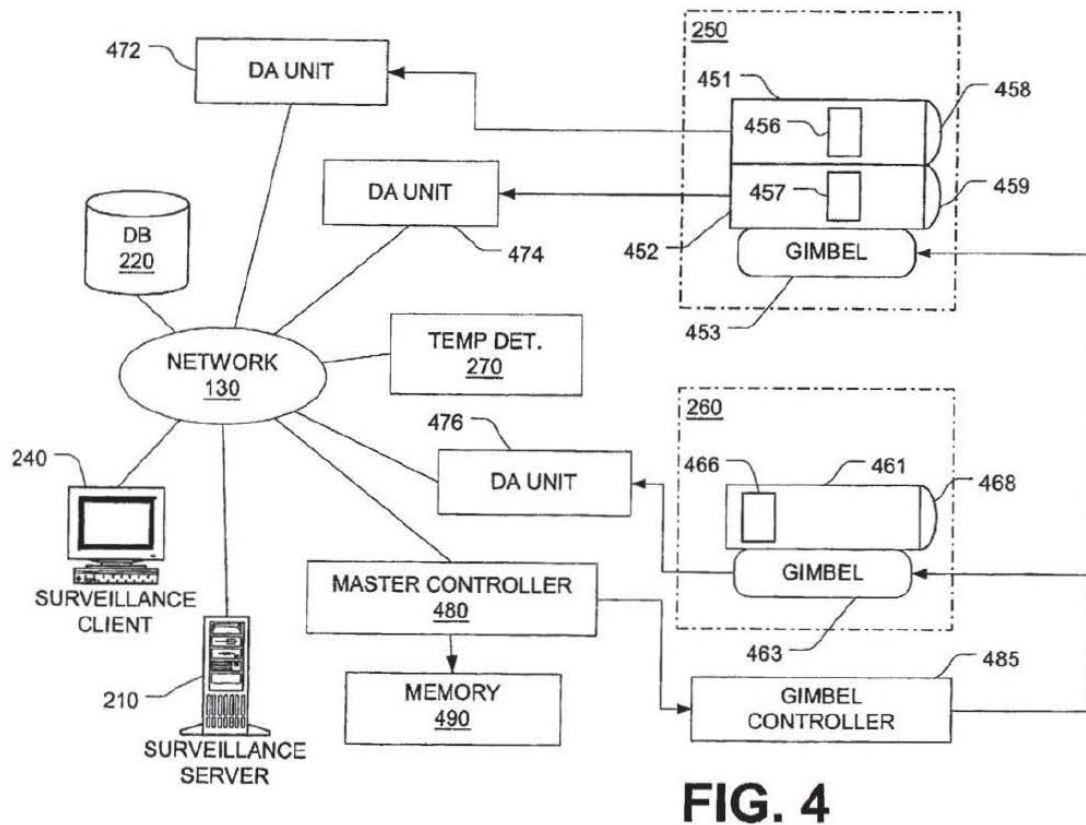


Figure 4 depicts an embodiment of the surveillance system. *Id.* at 2:12–14. The system includes sensors (250 and 260), cameras (451, 452, and 461), surveillance server 210, and surveillance client 240. *Id.* at 5:23–30, 2:61–65.

The cameras are configured to capture an image of an area upon the occurrence of predetermined events, such as the detection of movement within the area being monitored by the sensor units. *Id.* at 5:55–59. The surveillance server 210 receives surveillance data from the various sensor units and incorporates the data into the surveillance database 220. *Id.* at 4:14–15, 4:25–29. The surveillance system also includes a surveillance client that may be implemented as a personal digital assistance (PDA) that is configured to control or adjust specified sensor units. *Id.* at 3:33–39.

2. *Osann (Ex. 1004)*

Osann relates to a “home security/surveillance system.” Ex. 1004, 1:21–24. The surveillance system includes Energy Monitoring and Control (EMAC) points to enable communication with an exterior camera and motion sensor. *Id.* at 9:22–30. Figure 28 of Osann is reproduced below:

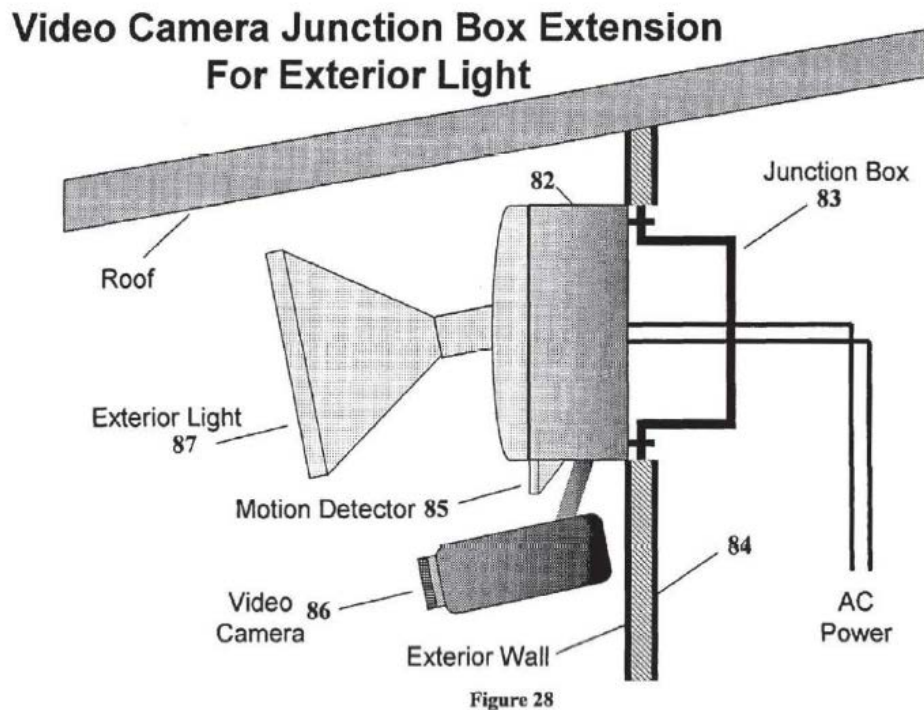


Figure 28 depicts a video camera and motion detector. *Id.* at 8:51–54. Motion detector 85 and video camera 86 are “mounted on the exterior wall 84 of a home or building.” *Id.* at 25:55–60. Using these elements, the detection of a possible intruder can set off an alarm. *Id.* at 14:4–12. When motion is detected, the video information from that area of the home or building can be recorded and buffered. *Id.* at 14:24–26.

3. Independent Claims 1 and 11

Petitioner presents a proposed mapping of Milinusic and Osann to the limitations of claims 1 and 11. Pet. 37–55. Patent Owner disputes Petitioner’s contentions with respect to the “processor” limitation of claims 1 and 11. PO Resp. 11–21. Before turning to the disputed limitation, we address the limitations not in dispute.

a. Undisputed limitations

With respect to the preamble of claim 1, Petitioner contends surveillance system 100 of Milinusic discloses the recited “alarm system for protecting a structure,” such as a warehouse. *Id.* at 43–44 (citing, e.g., Ex. 1003, 6:59–67). Petitioner relies on both Milinusic and Osann as disclosing the recited “at least one motion detector arranged to have a field of view external to the structure and including an area proximate the structure.” *Id.* at 44. Specifically, Petitioner relies on Milinusic as teaching motion detectors (*e.g.*, Ex. 1003, 3:51–55 (“sensor units 250, 260, and 270 may also be configured as position sensing devices, such as . . . [a] motion detector”)) and Osann as teaching motion detectors that monitor the exterior of a structure (*e.g.*, Ex. 1004, Ex. 1004, 25:55–60, Fig. 28 (reproduced above) (depicting motion sensor 85 and video camera 86 attached to exterior wall 84)).

Claim 1 further recites “at least one camera associated with and coupled to each of said at least one motion detector” Ex. 1001, 13:57–58. Petitioner contends Milinusic’s system teaches sensor units 250 and 260 that include cameras 451, 452, and 461 coupled to motion detectors. Pet. 44 (citing Ex. 1003, 3:47–51, 5:24–43, 5:51–59, Figs. 2 and 4).

Claim 1 requires each camera to be “arranged relative to the associated one of said at least one motion detector such that said camera has a field of view encompassing at least part of the field of view of the associated one of said at least one motion detector” Ex. 1001, 13:59–63. Petitioner contends “Milinusic’s sensor units 250 and 260 are arranged to monitor a predetermined area, with cameras 451, 452, and 461 being arranged to capture an image of the area upon detection of movement within the area being monitored.” Pet. 44 (citing Ex. 1003, 5:51–59).

Claim 1 also requires each camera to “hav[e] a dormant state in which images are not obtained and an active state in which images are obtained and being activated into the active state when the associated one of said at least one motion detector detects motion.” Ex. 1001, 13:63–67. Petitioner contends Milinusic’s description of setting image capture to occur upon the detection of movement in an area being monitored teaches an “active state” in which images are obtained upon the detection of motion by an associated motion sensor and a “dormant state” in which images are not obtained. Pet. 45 (citing Ex. 1003, 5:51–59).

Claim 1 recites “a telecommunications module coupled to said processor, said telecommunications module being capable of communications over a telecommunications network.” Ex. 1001, 14:4–7. Petitioner contends Milinusic’s I/O processor 375 is coupled to CPU 360 and provides an interface to a network such as the Internet. Pet. 45 (citing Ex. 1003, 3:18–19, 4:16–23, Fig. 3).

Finally, claim 1 recites “a handheld telecommunications unit for transmitting commands for said processor via said telecommunications module to cause said processor to provide images to said

telecommunications module to be transmitted to the telecommunications unit.” Ex. 1001, 14:7–11. Petitioner contends the telecommunications unit is taught by Milinusic’s surveillance client 240, which may be a PDA, configured to request surveillance data, which includes image data, from surveillance server 210. Pet 46 (citing Ex. 1003, 3:31–37). Petitioner further contends CPU 360 controls the server so that image data may be received from the camera. *Id.* (citing Ex. 1003, 3:12–15, 4:25–30); Ex. 1010 ¶ 131.

As noted above, Patent Owner does not address these limitations or the foregoing contentions. Claim 11 recites substantially similar limitations with minor differences. *See* Ex. 1001, 15:21–42. Petitioner addresses these differences (e.g., a plurality of motion detectors as opposed to at least one motion detector) and relies on substantially the same mapping to that discussed above for claim 1. *See* Pet. 52–54. We determine the record supports Petitioner’s contentions with respect to the undisputed limitations of claims 1 and 11 and, therefore, adopt them as our findings and conclusions.

b. The disputed “processor” limitation

Claim 1 recites “a processor coupled to said at least one camera and arranged to control said at least one camera and receive the image obtained by said at least one camera” (the “processor limitation”). Ex. 1001, 14:1–3. Claim 11 recites a similar processor limitation. Petitioner contends that the processor limitation is taught or suggested by Milinusic’s description of a central processing unit, CPU 360, configured to control the operation of server 210 so that images may be received from a camera. Pet. 42, 45 (citing Ex. 1003, 3:12–15, 4:14–16, 4:25–30); Ex. 1010 ¶ 128. For purposes

of the Decision to Institute and Decision on Rehearing, we agreed that Milinusic teaches a processor receiving image data, because Milinusic specifically states that CPU 360 “*retrieves and distributes* surveillance data to a requesting surveillance client 240.” *See* Dec. Reh’g 3–4 (quoting Ex. 1003, 4:30–32).

Patent Owner contends Milinusic does not disclose a “processor that *receives* the image” as recited by claim 1 and a similar limitation of claim 11. PO Resp. 12 (emphasis added). Patent Owner concedes that CPU 360 *retrieves* the image and distributes the data to a surveillance client, but contends that a person of ordinary skill would not understand this to mean that CPU 360 receives the image because “‘retrieve’ and ‘receive’ have different meanings.” *Id.* at 13, 17–21. According to Patent Owner, Milinusic uses the term “receive” to bring a video stream into memory, while “retrieve” is used in the context of “getting a specific video clip from memory.” *Id.* at 19 (citing, e.g., Ex. 1003, 3:58–59 (retrieving), 5:39–40 (receiving), 8:49, 8:55). In other words, according to Patent Owner and its declarant, Mr. Parker, when the CPU in Milinusic retrieves the image data, it does not receive the data, but directs the sensors to store the data in database 368. *Id.* at 16 (citing Ex. 2001 ¶ 19).

We agree with Petitioner that Patent Owner’s arguments are based on its construction of “receive the image,” which requires storing a video clip or image in memory. *See supra* § II.B.1. Instead, for the reasons discussed above, we determined that the requirement that the processor “receive the image” merely requires the processor to “accept the image” for any reason including further processing. *Id.* The question before us, therefore, is not whether “retrieve” and “receive” necessarily have the same meaning, as

Patent Owner contends, but whether Milinusic’s description of CPU 360 *retrieving* the image teaches or suggests accepting the image, as the claim term “receive the image” requires. *See* PO Resp. 13 (“‘retrieve’ and ‘receive’ have different meanings”).

As Patent Owner notes, one common definition of retrieve, in the context of computers generally, is to “obtain a specific requested item.” *Id.* at 19 n. 7 (citing Ex. 2004, 376). This is consistent with how Milinusic generally uses the term. For example, “[s]urveillance client 240 is preferably configured to allow a user to retrieve surveillance data or specified reports.” Ex. 1003, 3:34–37. “[Surveillance server 210] is also preferably configured to retrieve and distribute surveillance data to a requesting surveillance client.” *Id.* at 3:64–66. In both cases, the retrieving device obtains or accepts the data, and, in the server case, distributes it further. Similarly, the fact that Milinusic provides that CPU retrieves the image data and distributes it to the client (*see* Ex. 1003, 4:29–32) sufficiently suggests that CPU 360 obtains or accepts the image data even if not storing that data locally.

In any event, in its Reply, Petitioner cites evidence of a combined CPU and graphics processor in Milinusic that conclusively teaches the required processor that receives the image.⁵ According to Petitioner, Mr. Parker testified that, within the server, CPU 360 directs I/O processor 375 to pass the image to graphics processor 385 for further processing of the image. Pet. Reply 10 (citing Ex. 2001 ¶ 18). Thus, Petitioner contends, at least

⁵ In view of Patent Owner’s hearing argument that these contentions are unsupported by expert testimony and, therefore, lack evidence of motivation to combine (*e.g.*, Tr. 33:2–12), we address this reply-argument separately.

graphics processor 385 *receives the image*. *Id.* at 10–11. In addition, Petitioner contends that Milinusic discloses that CPU 360 may perform the functions of the graphics processor 385. Pet. Reply 10–11 (Ex. 1003, 4:57–60; Ex. 1013, 157:11–13). Consequently, Petitioner contends, CPU 360 receives the image because it may perform the functions of the graphics processor 385, which receives the image. *Id.* at 10–11. Petitioner contends Mr. Parker conceded as much in his deposition. *Id.* at 11 (Ex. 1013, 155:15–158:14, 105:11–15). We agree.

As Mr. Parker and Patent Owner conceded, the graphics processor “has received the data.” Ex. 1013, 104:23–105:9 (“The graphics processor has received data from the I/O – ultimately the source of the data was the data store memory, the database.”); Tr. 28:1–7 (“[T]here is a graphics processor . . . that receives the data.”); Ex. 2001 ¶ 18 (“CPU 360 would instruct the I/O Processor 375 to receive the video data from the network and pass it off to the Graphics Processor 385.”). Furthermore, when asked whether because “CPU 360 implements the functionality of the graphics processor 385, *you would agree that the CPU 360 receives image data*,” Mr. Parker admitted it would. Ex. 1013, 105:11–15 (emphasis added). This is consistent with the cited portions of Milinusic, which state that a “graphics processor 385 is provided for processing graphical data,” Ex. 1003, 4:20–21, and that “CPU 360 may also be configured to incorporate or otherwise carry out the functions of [graphics] processor 385,” *id.* at 4:58–60. Accordingly, we determine these disclosures confirm the determination above that Milinusic teaches a processor (i.e., CPU 360 carrying out functions of graphics processor 385) receiving the image data, as claim 1 requires.

In the hearing, Patent Owner argued that the embodiment where CPU 360 and graphics processor 385 were the same was not raised until Petitioner's Reply, and there is no testimony from Dr. Lavian that a person of ordinary skill in the art would have combined this embodiment with the embodiment relied upon for the rest of claim 1. Tr. 28:15–22, 29:15–19, 31:4–14, 33:2–12. Patent Owner cites the Board's decision in *Jackel Int'l Ltd. v. Admar Int'l Ltd.*, Case IPR2015-00979 (PTAB May 20, 2016) (Paper 21), as supporting this argument.

Petitioner responded in the hearing that it is not relying on separate embodiments, but, essentially, on different “species” of the same embodiment of server 210, based on two different ways of implementing the graphics processor. Tr. 35:24–36:13. We agree with Petitioner.

It is true that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). However, motivation may be expressly taught by the references themselves. *Pro-Mold & Tool Co. v. Great Lakes Plastics*, 75 F.3d 1568, 1573 (Fed. Cir. 1996).

Here, Petitioner relies generally on server 210 in its Petition and, as an initial matter, contends CPU 360 receives the data (which we agree with for the reasons discussed above). See Pet. 43–46 (citing, e.g., Ex. 1003, 4:14–16, 4:25–30). Moreover, in response to Patent Owner's arguments and its cross-examination of Mr. Parker, Petitioner also relies on the fact that server 210 is *expressly described* in terms of at least two species—one with separate CPU and graphics processor and one in which the graphics

processor function is combined with the CPU.⁶ See Ex. 1003, 4:58–60 (“CPU 360 may also be configured to incorporate or otherwise carry out the functions of [graphics] processor 385.”). As such, it is unlike the situation in *Jackel*, where the petitioner relied on a separate embodiment (i.e., Fig. 6) for teaching dependent claim 2, without explaining why the embodiment would have been combined with the embodiment relied upon for claim 1 (i.e., Figs. 1–5). *Jackel*, slip op. 4–5. Because the single-processor (i.e., combined CPU and graphics processor) embodiment is expressly disclosed within the context of server 210, we determine that the teaching is provided by the reference itself. Accordingly, for these additional reasons, we find that Petitioner has demonstrated that the combination of Milinusic and Osann teaches or suggests the disputed processor limitation of claims 1 and 11.

c. Motivation to combine Milinusic and Osann

As explained above, Petitioner relies on Osann as teaching an externally mounted video camera and motion sensor. See Pet. 39–40. Petitioner contends a person of ordinary skill in the art would have understood a primary use of Milinusic’s system was to protect a home or building against an intruder. *Id.* at 38–39 (citing Ex. 1003, 1:37–44; Ex. 1010 ¶ 118). Petitioner further contends that “Osann explicitly teaches generating an alarm upon the occurrence of an event such as detecting an

⁶ Although not argued as such by Patent Owner, we also do not find that Patent Owner lacked notice and opportunity to respond. Once Patent Owner was aware of Mr. Parker’s deposition testimony, which Petitioner relied on in its Reply, Patent Owner did not make an effort to “avail[] itself of the procedures for filing a sur-reply, a motion to strike, or a conference call to challenge” the propriety of Petitioner’s Reply argument. *Securus Techs., Inc. v. Global Tel*Link Corp.*, No. 2016-1992, -1993, 2017 WL 1458867, at *4 (Fed. Cir. April 25, 2017).

intruder.” *Id.* at 39 (citing Ex. 1004, 14:4–20; Ex. 1010 ¶ 119). Thus, Petitioner contends, a person of ordinary skill in the art would have modified Milinusic to notify its surveillance client 240 of a condition such as detection of an intruder outside of a structure by arranging the motion sensors *external to the structure’s access points* (i.e., doors and windows), as taught by Osann. *Id.* at 39–40 (citing Ex. 1010 ¶¶ 119–121).

We agree with these contentions, which are not disputed. *See generally* PO Resp. The cited portion of *Osann* teaches detecting an intruder, including allowing the police to view inside of *or around a home or building*, using elements of its invention (*see* Ex. 1004, 14:4–14 (“could allow a Security Company or even the Police to view inside and around the home or building in the case of an alarm being set off”)), which includes an externally mounted security camera and motion sensor (*id.* at 25:54–56). Milinusic’s objective is to identify intruders in a monitored area. *See* Ex. 1003, 1:39–43. Given these explicit teachings and suggestions, relied upon by Petitioner and Dr. Lavian, the conclusion that a person of ordinary skill in the art would have been motivated to combine Milinusic’s security system with Osann’s externally mounted security camera and motion sensor to protect against intruders is supported by the record. *See KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

For the foregoing reasons, we are persuaded that Petitioner has established by a preponderance of the evidence that the subject matter of claims 1 and 11 would have been obvious over the combination of Milinusic and Osann.

4. Dependent Claims 2 and 18

Claim 2 recites “said processor is coupled to said at least one motion detector and said telecommunications unit is also arranged to transmit commands for said processor to activate and deactivate said at least one motion detector.” Ex. 1001, 14:12–16. Claim 18 recites a similar limitation. Petitioner contends CPU 360 in Milinusic is coupled to motion detectors in sensor units 250, 260, or 270 and that surveillance client 240 can be used to control or adjust sensor units. Pet. 46 (citing Ex. 1003, 2:61–67, 3:37–40, 3:51–55). Although Milinusic does not explicitly describe commands used to activate or deactivate a motion detector, Petitioner contends that Milinusic teaches that the sensor units can be set to capture images either at predetermined number of times or upon detecting movement in a monitored area. *Id.* (citing Ex. 1003, 5:55–60).

Petitioner contends it would have been obvious to modify Milinusic to provide a way for surveillance client 240 (i.e., the “telecommunications unit”) to send a command to deactivate the motion detector monitoring an area when the associated camera is set to capture images at predetermined times rather than upon motion detection to save power. *Id.* at 46–47 (citing Ex. 1010 ¶ 133). Petitioner also contends it was well known to provide the ability to remotely turn on or off a security system and, therefore, would have been obvious to modify the combined system to allow a user to remotely disable the system by sending commands from surveillance client 240 to server 210. *Id.* at 47 (citing Ex. 1010 ¶ 133).

Patent Owner responds a person of ordinary skill in the art would understand that deactivating motion detectors to save power is not practical, because “Passive Infra-Red (‘PIR’) motion detection . . . , the only practical

technology for detecting motion in combination with a surveillance camera,” uses virtually no power when compared to a surveillance camera.” PO Resp. 23 (citing Ex. 2001 ¶¶ 24–25). In addition, Patent Owner contends that adding more circuits to deactivate and activate the motion sensor would increase costs and energy requirements. *Id.* (citing Ex. 2001 ¶ 26). Finally, Patent Owner contends the warm-up time for PIR detector would make activating and deactivating such a detector impractical. *Id.* at 23–24 (citing Ex. 2001 ¶ 27).

We determine that Petitioner’s stated rationale for modifying Milinusic is persuasive and supported by the evidence. In the first place, as Petitioner points out, even if it was the logical choice, the claims are not limited to PIR motion sensors, which Mr. Goodrich relies on for his opinion that it would not have made sense to deactivate the sensors to save power. *See* Pet. Reply 23. In any event, Patent Owner’s Response and Mr. Goodrich’s testimony do not address Petitioner’s alternative rationale for deactivating the motion sensor. *See* Pet. 47. According to Dr. Lavian, a person of ordinary skill in the art would have recognized that such a capability would have provided the benefit of allowing a user to remotely disable the system so as to allow authorized persons (e.g., “cleaning people”) to enter the monitored building. Ex. 1010 ¶ 133. We find this un rebutted testimony to be credible and entitled to substantial weight. Accordingly, for the foregoing reasons, we are persuaded that Petitioner has established by a preponderance of the evidence that the subject matter of claims 2 and 18 would have been obvious over the combination of Milinusic and Osann.

5. Claims 3–8, 19, and 20

Claim 3 recites “in said dormant state of each of said at least one camera, imaging by said camera is not performed and images are not obtained, each of said at least one camera being automatically activated from the dormant state into the active state when the associated one of said at least one motion detector detects motion in its field of view.” Ex. 1001, 14:17–23. Petitioner contends Milinusic’s description of setting image capture to occur upon detection of movement (Ex. 1003, 5:55–59), would have suggested to a person of ordinary skill a dormant state in which imaging is not performed and images not obtained and an active state in which images are obtained. Pet. 47; Ex. 1010 ¶ 134.

Claim 4 recites “said telecommunications unit is one of a camera telephone, a cellular telephone, and an Internet-enabled picture and/or video display device.” Ex. 1001, 14:24–27. Petitioner relies on Milinusic’s surveillance client 240, which is described as a personal computer or PDA, which can request surveillance data over a network, as teaching the required telecommunications unit. Pet. 48 (citing Ex. 1003, 3:12–19, 3:31–35, 3:64–66, Fig. 4; Ex. 1010 ¶ 136).

Claim 5 requires the processor to be “arranged to receive, via said telecommunications module, one of a plurality of different code numbers from said telecommunications unit and control said at least one camera and said at least one motion detector in accordance with the received code number.” Ex. 1001, 5:28–33. Claim 19 recites a similar limitation. *Id.* at 16:38–43. Petitioner contends that controlling the sensor units, as taught by Milinusic, would have included the ability to control the motion detectors and cameras, such as to have the camera capture images at predetermined

times or upon detection of movement. Pet. 48–49 (citing, e.g., Ex. 1003, 3:18–19, 3:37–40, 3:51–55, 5:51–60; Ex. 1010 ¶¶ 137–138). Petitioner further contends that CPU 360 would have been configured to receive commands from client 240 as numbers and/or text so that CPU 360 could understand what command the user selected to control the camera or motion detector. Pet. 49 (citing Ex. 1010 ¶¶ 137–139).

Claim 6 recites “wherein one of the code numbers is to cause said processor to cause images to be provided by said processor to said telecommunications module and transmitted to the telecommunications unit.” Ex. 1001, 14:34–37. Claim 20 recites a similar limitation. *Id.* at 16:44–48. Petitioner contends this limitation is suggested for the reasons discussed above with respect to the telecommunications unit limitation of claim 1. Pet. 50. Specifically, Petitioner relies on surveillance client 240 transmitting commands (implemented as code numbers) to CPU 360 to cause the server to provide images to the telecommunications module to be transmitted to the telecommunications unit. *Id.* (citing Ex. 1010 ¶ 140).

Claim 7 recites “wherein one of the code numbers is to cause said processor to direct said at least one camera to provide images to said processor and then cause the provided images to be forwarded by said processor to said telecommunications module and transmitted to the telecommunications unit.” Ex. 1001, 14:38–43. Petitioner relies on Milinusic’s surveillance client 240 requesting video in streaming format (Ex. 1003, 2:56–57) as teaching a command to provide streaming video to be forwarded to the telecommunications module and then transmitted to client 240. Pet. 50–51 (citing Ex. 1010 ¶ 141).

Claim 8 recites “wherein said at least one motion detector comprises a

plurality of motion detectors, said at least one camera associated with said at least one motion detector being arranged to have a field of view overlapping a field of view of a plurality of said motion detectors.” Ex. 1001, 14:44–48. According to Petitioner, a person of ordinary skill in the art would have understood that cameras may have a wider field of view (see Ex. 1003, 5:27–37) and, therefore, that it would be advantageous to use multiple motion detectors with overlapping narrower fields of view to detect motion within the camera’s wider field of view. Pet. 51–52 (citing Ex. 1010 ¶ 142).

Patent Owner does not dispute Petitioner’s contentions with respect to the additional requirements of claims 3–8, 19, and 20. We determine the record supports Petitioner’s contentions with respect to the undisputed limitations of claims 3–8, 19, and 20 and, therefore, adopt them as our findings and conclusions. Accordingly, for the foregoing reasons, we are persuaded that Petitioner has established by a preponderance of the evidence that the subject matter of claims 3–8, 19, and 20 would have been obvious over the combination of Milinusic and Osann.

*E. Unpatentability of Claims 9, 10, and 12–17
over Milinusic, Osann, and Ozer*

Petitioner contends claims 9, 10, and 12–17 are unpatentable over the combination of Milinusic, Osann, and Ozer. Pet. 55–60. We have reviewed the arguments in the Petition, Patent Owner’s Response, Petitioner’s Reply, as well as the relevant evidence discussed in those papers and other record papers. We are persuaded Petitioner sufficiently establishes that the subject matter of claims 9, 10, and 12–17 of the ’983 patent would have been obvious over the combination of Milinusic, Osann, and Ozer.

1. Ozer (Ex. 1005)

Ozer discloses an invention that utilizes a multiple camera system to detect the presence of objects (e.g., people) and identify their activities in real-time. Ex. 1005 ¶ 3. Figure 1 of Ozer is reproduced below:

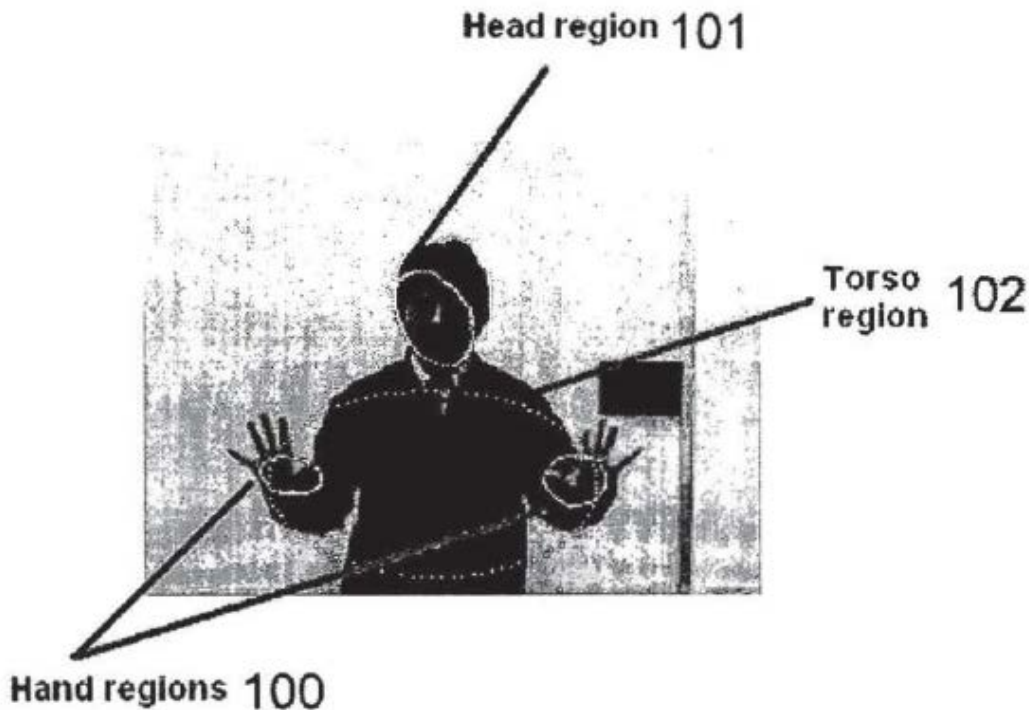


Figure 1 depicts identification of a human object after comparing attributes with a model database. *Id.* at ¶ 52. The system in Ozer builds a model of the object for each video frame and only tracks objects that fit the model, such as a human. *Id.* at ¶ 54. The tracking of objects occurs over multiple frames to calculate probabilities of activities for security purposes. *Id.* at Abstract, ¶ 66.

2. Dependent Claims 9 and 12

Claim 9 recites

said processor [of claim 1] is further arranged to derive a silhouette of any objects in the image, compare the silhouettes to a library of stored silhouettes having associated object

identification to determine an exact or closest match of the derived silhouette to one of the stored silhouettes and retrieve the object identification associated with the exact or closest match, said processor being arranged to react to the detection of motion by said at least one motion detector based on the object identification.

Ex. 1001, 14:49–57. Claim 12 recites a similar limitation and further provides that the reaction of claim 9 include “generating a countermeasure . . . when the object is identified as a potential threat to the structure.” *Id.* at 15:43–16:3.

For these claims, Petitioner relies on Ozer’s description of generating a silhouette of an object such as a human, dog, unattended bag, or any rigid object. Pet. 55–56; Ex. 1010 ¶ 164; Ex. 1005 ¶¶ 26, 52, and 54. The system also compares the silhouettes to a set of stored silhouettes, called reference models, to obtain a match. Ex. 1005 ¶¶ 34, 64; Ex. 1010 ¶ 164. In addition, the system tracks movement (or “activities”) of the desired object to identify, for example, intrusion or other suspicious activities, and generates an alarm. Ex. 1005 ¶¶ 52–54, 64–67. Petitioner contends that generating an alert and distributing an image (i.e., a countermeasure) are taught by Milinusic and Osann. Pet. 56 (citing, e.g., Ex. 1004, 14:4–20; Ex. 1001, 3:30–38; Ex. 1010 ¶ 171). According to Petitioner, a person would have implemented the identification techniques of Ozer in CPU 360 in surveillance server 210 of Milinusic:

to analyze captured images and identify an object (e.g., as human or not) detected as moving by the motion detector, and react to the detected motion based on the object identification by generating the countermeasure only when the object is determined to be a threat (e.g., human) to reduce false alarms as taught by Ozer.

Pet. 57 (citing Ex. 1010 ¶ 166).

We agree with Petitioner's contentions, which Patent Owner does not dispute, including Petitioner's rationale for combining Ozer with Milinusic and Osann. We, therefore, adopt Petitioner's contentions as our findings and conclusions. For the foregoing reasons, we are persuaded that Petitioner has established by a preponderance of the evidence that the subject matter of claims 9 and 12 would have been obvious over the combination of Milinusic, Osann, and Ozer.

3. *Dependent Claims 10 and 13–17*

Claim 10 recites three alternative ways of arranging a plurality of cameras and motion detectors. *See* Ex. 1001, 14:58–15:20. Claim 13 similarly recites three ways of arranging a plurality of cameras and motion detectors. *See id.* at 16:4–13. Petitioner contends that the first alternative, in which there is a “1:1 correspondence between motion detectors and cameras,” is an obvious design choice in view of Milinusic's cameras 451, 452, and 451 that may each be coupled to a motion detector to capture images when motion is detected within the area the camera monitors. Pet. 57 (citing Ex. 1003, 3:51–55, 5:24–43, 5:52–60; Ex. 1010 ¶ 169. Petitioner contends that Osann explicitly shows an example of an integrated camera and motion sensor, as shown in Figure 28 (reproduced above), which would have been obvious to arrange in a 1:1 correspondence to trigger image

capture in an area monitored by the motion sensor and within the camera's field of view.⁷ Pet. 57–58 (citing Ex. 1004, Fig. 28; Ex. 1010 ¶ 169).

Claim 14 recites “assigning a classification of ‘no threat’ or ‘hostile’ based on the object identification and/or the size of the object, the countermeasure being generated only when the classification is hostile.” Ex. 1001, 16:14–17. For claim 14, Petitioner relies on its contentions regarding claim 12, whereby an object would be analyzed using Ozer's silhouette-based identification technique to determine if it was a threat or not, and, if a threat, a countermeasure (e.g., alarm and image capture) would be generated. Pet. 58–59 (citing Lavian ¶ 176).

Claim 15 recites “wherein the step of generating a countermeasure includes generate an audible and/or visual alarm in proximity to the structure or generating at least one communication about the condition of the structure based on the object identification and forwarding the communication to a remote destination.” Ex. 1001, 16:18–23. Claim 16 recites “wherein the remote destination is a police station, a fire station, a terminal monitored by an owner of the structure, or a private security station.” *Id.* at 16:24–26. Claim 17 recites “including one or more images obtained from the cameras

⁷ Petitioner contends that additional limitations of claims 10 and 13 relating to other camera/sensor arrangements are alternative ways of satisfying the claim and need not be shown in the prior art as long as the first arrangement (i.e., the 1:1 correspondence of cameras and motion sensors) is shown. Pet. 57. Petitioner also contends that the limitations relating to determining depth information are not required for the first recited arrangement of cameras. Pet. 58. We agree and note that Patent Owner has not provided an alternative construction. Both claims use the disjunctive “or” when describing the three arrangements of cameras and, therefore, it is only necessary to identify a teaching of one of the three arrangements to prove unpatentability. *See In re Gaubert*, 524 F.2d 1222 (CCPA 1975).

or one or more images derived from the images obtained from the cameras in the communication being forwarded to the remote destination.” *Id.* at 16:27–31. Petitioner contends that the system of Milinusic, Osann, and Ozer would have generated countermeasures including capturing an image and sending it to surveillance client 240 at a remote destination (i.e., “a communication”) as taught by Milinusic, or by communicating with a security company or the police as taught by Osann. Pet. 58–60 (citing Ex. 1003, 3:64–4:1, 4:30–34; Ex. 1004, 14:6–14; Ex. 1010 ¶¶ 177–179).

We agree with Petitioner’s contentions, which Patent Owner does not dispute and, therefore, adopt Petitioner’s contentions as our findings and conclusions. For the foregoing reasons, we are persuaded that Petitioner has established by a preponderance of the evidence that the subject matter of claims 10 and 13–17 would have been obvious over the combination of Milinusic, Osann, and Ozer.

V. CONCLUSION

For the foregoing reasons, Petitioner has demonstrated by a preponderance of the evidence that claims 1–8, 11, and 18–20 of the ’983 patent are unpatentable as directed to obvious subject matter over the combination of Milinusic and Osann, and that claims 9, 10, and 12–17 of the ’983 patent are unpatentable as directed to obvious subject matter over the combination of Milinusic, Osann, and Ozer.

IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–20 of the ’983 patent have been shown to be *unpatentable*; and

IPR2016-00285
Patent 7,864,983 B2

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

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