

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COPELAND COMFORT CONTROL LP,

Petitioner,

v.

OLLNOVA TECHNOLOGIES LTD.,

Patent Owner.

Case IPR2023-00624

Patent 8,224,282

PATENT OWNER'S RESPONSE TO PETITION

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<i>Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.</i> , 200 F.3d 795 (Fed. Cir. 1999)	6

PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	Fourth Amended Docket Control Order, <i>Ollnova Technologies Limited v. ecobee Technologies ULC</i> , No. 2:22-cv-00072-JRG, Dkt. No. 119 (E.D. Tex. May 22, 2023)
2002	Claim Construction Memorandum Opinion and Order, <i>Ollnova Technologies Limited v. ecobee Technologies ULC</i> , No. 2:22-cv-00072-JRG, Dkt. No. 105 (E.D. Tex. Apr. 10, 2023)
2003	Docket Sheet, <i>Ollnova Technologies Limited v. ecobee Technologies ULC</i> , No. 2:22-cv-00072-JRG, (E.D. Tex. Jul. 5, 2023)
2004	Ollnova Technologies Ltd.'s Notice Regarding Claim Reduction, <i>Ollnova Technologies Limited v. ecobee Technologies ULC</i> , No. 2:22-cv-00072-JRG, Dkt. No. 103 (E.D. Tex. Mar. 27, 2023)
2005	Expert Report of Dr. John Martens Regarding Invalidity of US Patents 8,224,282, 7,746,887, 7,860,495, and 8,264,371, dated April 24, 2023
2006	Webster's II New College Dictionary 1267-8 (2001)
2007	U.S. Patent No. 6,437,692 to Petite et al.
2008	Declaration of Erik de la Iglesia in Support of Patent Owner's Response
2009	Curriculum Vitae of Erik de la Iglesia

CHALLENGED CLAIMS

Claim	Text
[1.pre]	An automation component configured for wireless communication within a building automation system, the automation component comprising:
[1.a]	a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable;
[1.b]	a wireless communications component;
[1.c]	a processor in communication with the wireless communications component and the sensor package;
[1.d]	a memory in communication with the processor, the memory configured to store sensor data provided by the sensor package and computer readable instructions which are executable by the processor;
[1.e]	wherein the computer readable instructions are programmed to: receive sensor control information related to sensor data in control at a second automation component in communication with the building automation system; and
[1.f]	communicate a portion of the stored sensor data corresponding to the received sensor control information to the second automation component.
[2]	The automation component of claim 1, wherein the sensor package includes one or more sensors selected from the group consisting of a temperature sensor, a humidity sensor; a carbon monoxide sensor; a carbon dioxide sensor and a volatile organic compound sensor.
[3]	The automation component of claim 1, wherein the computer readable instructions are further programmed to: identify sensor values within the sensor data that exceed a corresponding change- of-value threshold.

Claim	Text
[4]	The automation component of claim 1, wherein the computer readable instructions are further programmed to: set an identification flag for each identified sensor value.
[5]	The automation component of claim 1, wherein the computer readable instructions are further programmed to: communicate all of the stored sensor data corresponding to the received sensor control information to the second automation component.
[7.pre]	An automation component configured for wireless communication within a building automation system, the automation component comprising:
[7.a]	a multi-sensor package configured to generate a plurality of sensor data for each sensor within the multi-sensor package;
[7.b]	a wireless communications component;
[7.c]	a processor in communication with the wireless communications component and the sensor package;
[7.d]	a memory in communication with the processor, the memory configured to store sensor data provided by the sensor package and computer readable instructions which are executable by the processor;
[7.e]	wherein the computer readable instructions are programmed to: receive status data related to sensor data in control at a second automation component in communication with the building automation system;
[7.f]	determine the sensor data in control at the second automation component based on the received status data; and
[7.g]	communicate the stored sensor data corresponding the sensor data in control to the second automation component.
[8]	The automation component of claim 7, wherein the sensor package includes one or more sensors selected from the group consisting of a temperature sensor, a humidity sensor; a carbon monoxide sensor; a carbon dioxide sensor and a volatile organic compound sensor.

Claim	Text
[9]	The automation component of claim 7, wherein the computer readable instructions are further programmed to: identify sensor values within the sensor data that exceed a corresponding change- of-value threshold.
[10]	The automation component of claim 7, wherein the computer readable instructions are further programmed to: set an identification flag for each identified sensor value.
[11]	The automation component of claim 7, wherein the computer readable instructions are further programmed to: communicate all of the stored sensor data corresponding to the received status information to the second automation component.
[13.pre]	An automation component configured for wireless communication within a building automation system, the automation component comprising:
[13.a]	a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable;
[13.b]	a wireless communications component;
[13.c]	a processor in communication with the wireless communications component and the sensor package;
[13.d]	a memory in communication with the processor, the memory configured to store sensor data provided by the sensor package and computer readable instructions which are executable by the processor;
[13.e]	wherein the computer readable instructions are programmed to: receive a wake-up command from a second automation component;
[13.f]	communicate stored sensor data related to the sensor data in control at a second automation component; and
[13.g]	receive a power-down command from the second automation component.

Claim	Text
[14]	The automation component of claim 13, wherein the sensor package includes one or more sensors selected from the group consisting of a temperature sensor, a humidity sensor; a carbon monoxide sensor; a carbon dioxide sensor and a volatile organic compound sensor.
[15]	The automation component of claim 13, wherein the computer readable instructions are further programmed to: identify sensor values within the sensor data that exceed a corresponding change- of-value threshold.
[16]	The automation component of claim 13, wherein the computer readable instructions are further programmed to: set an identification flag for each identified sensor value.
[20.pre]	A method for providing power saving wireless communication within a building automation system, the method comprising:
[20.a]	scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package of a first automation component;
[20.b]	identifying changed sensor values within the sensor data;
[20.c]	receiving a first communication from a second automation component in communication with the first automation component and the building automation system; and
[20.d]	communicating a portion of the identified changed sensor values associated with the first communication received from the second automation component.
[21]	The method of claim 20, wherein identifying changed sensor values includes identifying changed sensor values as a function of a change-of-value threshold.

I. INTRODUCTION

Patent Owner Ollnova Technologies Ltd. (“Patent Owner”) submits this response to Petitioner Copeland Comfort Control LP’s (“Petitioner”) Petition for *inter partes* review of U.S. Patent No. 8,224,282 (“the ’282 Patent”). The Petition fails to establish that the challenged claims of the ’282 Patent are unpatentable because the prior art does not teach or disclose the claimed multi-sensor packages, sensor control information, or a second automation component in communication with the building automation system.

The prior art does not teach or disclose “a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable” (claims 1, 7 and 13) or “a plurality of sensors contained within a multi-sensor package of a first automation component” (claim 20) because the prior art, even when it discloses multiple sensors, does not disclose or teach detecting a plurality of variables or values and generating sensor data for each detected variable or changed sensor value. The prior art does not teach or disclose “receiv[ing] sensor control information related to sensor data in control at a second automation component” (claim 1) because there is no disclosure or teaching of which sensor or sensor value is driving or controlling a second automation component. The prior art does not disclose or teach “a second automation component in communication with the building automation system” because there is no disclosure or teaching of a second

automation component that is not within a building automation system but is nevertheless in communication with “the building automation system” (claims 1 and 7) or “the first automation component and the building automation system (claim 20).

Because the prior art does not teach or disclose limitations of each of the independent claims, it does not anticipate or render obvious any of the claims of the '282 patent. *Synqor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1375 (Fed. Cir. 2013) (“Th[e] court need not consider Defendants’ arguments that certain dependent claim limitations would have been obvious where the base claim has not been proven invalid.”); *see also Callaway Golf Co. v. Acushnet Co.*, 576 F.3d 1331, 1344 (Fed. Cir. 2009) (holding verdict irreconcilably inconsistent where jury found dependent claim obvious and found independent claim nonobvious).

II. THE '282 PATENT

The '282 Patent is directed to a system with automation components that may “include[] a multi-sensor package, a wireless communications component, a processor in communication with the wireless communications component and the sensor package, and a memory in communication with the processor.” '282 Patent, 2:31-35. An automation component may be within a building automation system (BAS), *id.*, 2:29-31, or it may be in communication with the building automation system. *Id.*, 2:40-41, 55-57. Ex. 2008, Declaration of Erik de la Iglesia in Support

of Patent Owner's Response, ¶ 27. "Wireless communication between [the] individual ... automation components 112, 116 and/or the subnets 118*a*, 118*b* may be conducted in a direct or point-to-point manner, or in an indirect or routed manner through the nodes or devices comprising the nodes or networks 102, 108, 114 and 118." '282 Patent, 5:44-49.

"The automation component 200 may be a multi-sensor wireless device that includes a sensor package 220 in communication with the sub-components 202, 204 and 210 via the communication bus 218. The sensor package 220 may be configured to sense or detect a variety of variables such as, for example, temperature, humidity, carbon dioxide, carbon monoxide, volatile organic compounds, etc." *Id.*, 6:22-28. Notably, "the exemplary multi-sensor automation component 200 scans each of the sensors operating within the sensor package 220," *id.*, 8:65-67, and "a receiving device such as, for example, the field panel 120 may communicate sensor usage or control information to the automation component that identifies which sensor and sensor data is currently being analyzed and/or is primary or controlling the field panel 120." *Id.*, 9:9-13.¹

¹ The claims of the '282 Patent do not require that all automation components comprise a "multi-sensor package." Thus, for example, the second automation component in claim 7 could be a field panel or "a reduced function device (RFD) implemented as a wireless room temperature sensor." *See, e.g.*, '282 Patent, 3:51-4:4.

Because the '282 Patent claims are generally directed to multi-sensor packages, it is necessary to indicate which of the available sensors is in control, *i.e.*, sensor data in control. Ex. 2008, ¶ 30. “In other words, during any given scan cycle, one of the sensor values and/or a corresponding sensor control routine is executed by the receiving device (e.g., the field panel 120). The communicated sensor control information provided by the receiving device identifies for the automation component 200 which sensor and/or sensor value is driving or controlling the receiving device during the scan cycle.” '282 Patent, 9:16-22.

III. CLAIM CONSTRUCTION

Patent Owner contends that the Board should construe the terms of the '282 consistent with the claim construction from the District Court in *Ollnova Technologies Limited v. ecobee Technologies ULC*, No. 2:22-cv-00072-JRG (E.D. Tex.) as set forth in Ex. 2002, Claim Construction Memorandum Opinion and Order, *Ollnova Technologies Limited v. ecobee Technologies ULC*, No. 2:22-cv-00072-JRG, Dkt. No. 105 (E.D. Tex. Apr. 10, 2023).

When construing claims, “[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aventis Pharm. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc)). Courts must therefore “look to the words of the claims themselves to define the scope of the patented invention.”

Id. (citations omitted). The “ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313. This “person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

Intrinsic evidence is the primary resource for claim construction. *See Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips*, 415 F.3d at 1312). For certain claim terms, “the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314; *see also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) (“We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”). But for claim terms with less-apparent meanings, courts consider “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean . . . [including] the words of the claims themselves, the remainder of the

specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Id.*

Claim terms that are in dispute and for which resolution of such dispute is “necessary to resolve the controversy” must be construed. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). This threshold for construing claim terms is applicable in IPR proceedings. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Patent Owner contends that the following terms should be construed by the Board. First, “a multi-sensor package,” which appears in claims 1, 7, 13, and 20. Second, “receive sensor control information related to sensor data in control,” which appears in claim 1. Third, “second automation system in communication with the building automation system,” which appears in claims 1, 7, 13, and 20.

A. A “multi-sensor package” is properly construed as “a single packaged sensor device with multiple operational sensors.”

Patent Owner agrees with Petitioner that “a multi-sensor package” is not a group of individual sensors. Paper 2, Petition (“Pet.”) at 12. However, “a multi-sensor package” is more than “a single packaged sensor device.” As disclosed and claimed in the ’282 Patent, the multi-sensor package must be configurable such that a plurality of variables can be detected and sensor data generated for each detected

variable. Ex. 2008, ¶ 32. Accordingly, the multi-sensor package must have multiple operational sensors.

The '282 Patent specification teaches that “[t]he sensor package 220 may be configured to sense or detect a variety of variables such as, for example, temperature, humidity, carbon dioxide, carbon monoxide, volatile organic compounds, etc.” ’282 Patent, 6:25-28. The '282 Patent specification is plainly directed to multiple operating sensors within the sensor package. Ex. 2008, ¶ 32. For example, the specification contemplates that “some of the sensors within the sensor package 220 may require a great deal of power to operate. In order to increase the life of the battery 222, the high power requirement sensors within the sensor package 220 may be configured to operate periodically or on a set schedule.” *Id.*, 6:47-51. While describing a power saving communication algorithm for the automation component, the specification teaches that “the exemplary multi-sensor automation component 200 scans each of the sensors operating within the sensor package 220,” *id.*, 8:65-67, and “a receiving device such as, for example, the field panel 120 may communicate sensor usage or control information to the automation component that identifies which sensor and sensor data is currently being analyzed and/or is primary or controlling the field panel 120.” *Id.*, 9:9-13. This is also described with respect to an alternate power saving communication algorithm, wherein “the exemplary

multi-sensor automation component 200 scans each of the sensors operating within the sensor package 220...” *Id.*, 9:43-46.

The prosecution history of the ’282 Patent further establishes that the claimed multi-sensor package includes multiple operating sensors. The Patent Examiner initially rejected the pending claims “under 35 U.S.C. 102(b) as being anticipated by Petite et al. (US 6,437,692 B1, hereinafter ‘Petite’).” Ex. 1003 at 78. The Patent Examiner asserted that Petite disclosed a multi-sensor package and directed the applicants to 310 and column 10, lines 35+ of Petite. *Id.* See, e.g., Ex. 2007, Petite, at Figure 3D and 10:35-48.

In their response to the office action of September 14, 2011, the applicants noted that “it is clear that a multi-sensor package is configured to detect values and variables related to multiple sensed properties.” Ex. 1003 at 90 (emphasis original). The applicants further noted that “[t]he amendments to claims 1, 7, 13 and 20 highlight that the recited multi-sensor package contains and includes multiple sensors configured to detect a variety of sensor data.” *Id.*, 90-91. Those amendments were to add “configured to detect a plurality of variables and generate sensor data for each detected variable.” *id.*, 83, 86, “configured to generate a plurality of sensor data for each sensor within the multi-sensor package,” *id.*, 85, and “each of a plurality of sensors contained within [a multi-sensor package].” *Id.*, 88.

In their response to the final office action of December 22, 2011, the applicants further reiterated the inapplicability of individual sensors to the claims, noting that “any construction or interpretation of the claimed multi-sensor package that includes a group of individual sensors such as ... [those] described by *Petite* would be inconsistent [with] Applicants’ specification.” *Id.*, 110 (noting that *Petite* discloses utilizing one or more individual sensors to provide data signals and not a multi-sensor package).

The plain and ordinary meaning of the term “multi-sensor package” to a person of ordinary skill in the art is a single packaged sensor device with multiple operable sensors. Ex. 2008, ¶ 31. Accordingly, the term “multi-sensor package” in claim limitations [1.a], [7.a], [13.a], and [20.a] should be construed as “a single packaged sensor device with multiple operational sensors.”

B. “Receive sensor control information related to sensor data in control” is properly construed as receive information that identifies which sensor or sensor value is driving or controlling a receiving device in communication with the building automation system.

Because the ’282 Patent claims are generally directed to multi-sensor packages, it is necessary to indicate which of the available sensors is in control, *i.e.*, sensor data in control. “In other words, during any given scan cycle, one of the sensor values and/or a corresponding sensor control routine is executed by the receiving device (e.g., the field panel 120). The communicated sensor control

information provided by the receiving device identifies for the automation component 200 which sensor and/or sensor value is driving or controlling the receiving device during the scan cycle.” *Id.*, 9:16-22. Ex. 2008, ¶ 34. A person of ordinary skill in the art would understand that the claim term “receive sensor control information related to sensor data in control” means to receive information that identifies which sensor or sensor value is driving or controlling a receiving device in communication with the building automation system. *Id.*, ¶ 33.

The district court noted that the discussion of Figure 6 in the ’282 Patent specification is relevant to this limitation, specifically the explanation that a receiving device (e.g., field panel) “may communicate sensor usage or control information to the automation component that identifies which sensor and sensor data is currently being analyzed and/or is primary or controlling the field panel 120. The sensor usage or control information relates to or identifies the sensor values and routines that are controlling and driving the receiving device.” ’282 Patent, 9:10-16. As the court further noted, “looking to the claim language, the ‘receive’ and ‘communicate’ readable instructions, when executed, inform the claimed automation component of which sensor data is ‘in control’ at the ‘second automation component.’” Ex. 2002 at 14 (citing ’282 Patent, 10:57-62). The court further noted that this aligns with “[t]he communicated sensor control information provided by the receiving device identifies for the automation component . . . which sensor and/or

sensor value is driving or controlling the receiving [device] during the scan cycle.” *Id.* (citing ’282 Patent, 9:19-22). The court therefore construed this term as “receive information that identifies which sensor or sensor value is driving or controlling a second automation component in communication with the building system.” *Id.*

The district court correctly understood that the “sensor control information” “identifies ... which sensor and/or sensor value *is driving or controlling* the receiving device.” Accordingly, the term “receive sensor control information related to sensor data in control” in claim limitation [1.e] is properly construed as “receive information that identifies which sensor or sensor value is driving or controlling a receiving device in communication with the building automation system.”

C. “A second automation component in communication with the building automation system” is properly construed as an automation component that communicates with, but is not within, the building automation system.

The ’282 Patent specification consistently uses the words “within” and “with” to mean different things, which is in accordance with their respective dictionary definitions. The preposition “with,” in its most apposite senses, is defined as “in the performance, use or operation of,” “to : ONTO,” or “in relationship to.” Ex. 2006, Webster’s II New College Dictionary 1267-8 (2001). In contrast, the preposition

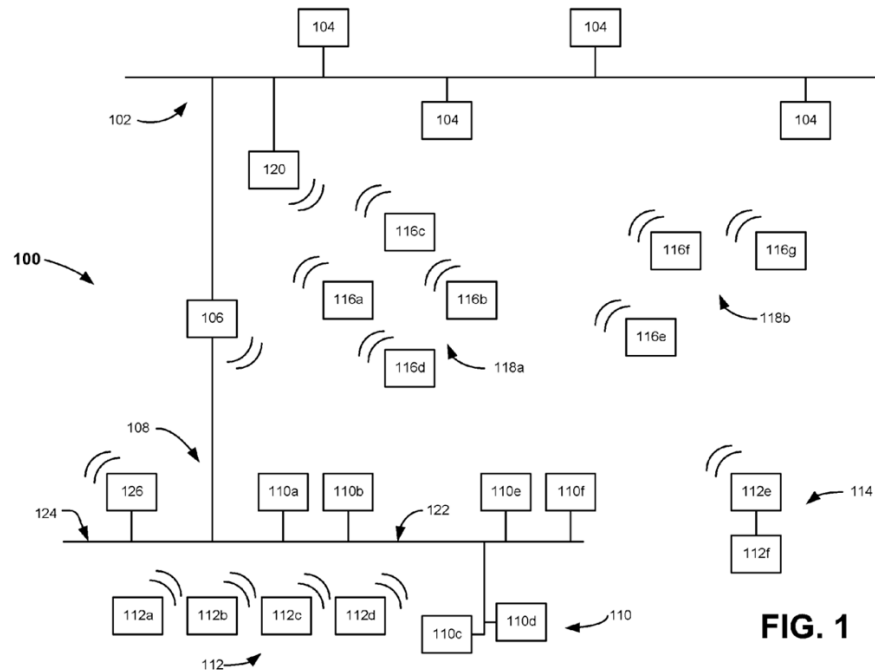
“within” is defined as “in the inner part or parts of : INSIDE” or “inside the fixed limits of : not beyond.” *Id.*, 1268.²

The Summary of the '282 Patent specification repeatedly describes an automation component configured for wireless communication within a building automation system while also disclosing a second automation component in communication with the building automation system. *See, e.g.*, '282 Patent, 2:29-31 and 40-41, 45-47 and 54-57; *see also* '282 Patent, 3:15-17 (“a second automation component in communication with the first automation component and the building automation system, ...”) (emphasis added). The '282 Patent specification uses “within” in the same way in other contexts. For example, “[s]ensed values, signals and other data may be stored within the memory 204,” *id.*, 6:28-29, and “the exemplary multi-sensor automation component 200 scans each of the sensors operating within the sensor package 220.” *Id.*, 8:65-67 (emphasis added).

The '282 Patent specification discloses a broad range of wireless communications that enable communications with devices that are not within the building automation system. “Wireless communication between individual ... automation components 112, 116 and/or the subnets 118 *a*, 118 *b* may be conducted in a direct or point-to-point manner, or in an indirect or routed manner through the

² Synonymous terms in the dictionary definitions are in Small Caps.

nodes or devices comprising the nodes or networks 102, 108, 114 and 118.” *Id.*, 5:44-49.



‘282 Patent, Figure 1.

It should also be noted that “automation components” encompass a broad range of devices, “such as: a personal area network (PAN) coordinator which may be implemented as a field panel transceiver (FPX); a full function device (FFD) implemented as a floor level device transceiver (FLNX); and a reduced function device (RFD) implemented as a wireless room temperature sensor (WRTS) that may be utilized in a building automation system (BAS).” *Id.*, 3:54-60. The ’282 Patent further discloses that an automation component could be “a configurable terminal equipment controller (TEC),” *id.*, 5:18-19, or “a TEC, FLNX, a Full function or

reduced function device, a wireless actuator or any other wired or wireless device operable within the BAS 100.” *Id.*, 6:63-65.

A person of ordinary skill in the art would understand that an automation component can be a device that is not within the building automation system and wirelessly communicates using direct, indirect or routed wireless communications. Ex. 2008, ¶ 35. The ’282 Patent teaches that an automation component can be a device that is not within the building automation system and wirelessly communicates using direct, indirect or routed wireless communications.

Furthermore, the ’282 Patent specification does not use the terms “with” and “within” interchangeably. Nor do the ’282 Patent claims. When the claim is directed to an automation component within a building automation system, it is explicitly claimed as such. And, when a claim limitation is directed to an element that is in communication with, but not part of, a different claim element, that is explicitly claimed. *Compare* [1.pre] (“automation component configured for wireless communication within a building automation system”) *with* [1.c] (“processor in communication with the wireless communications component”), [1.d] (“memory in communication with the processor”), [1.e] (“a second automation component in communication with the building automation system”); *compare also* [7.pre] (“automation component configured for wireless communication within a building automation system”) *and* [7.a] (“each sensor within the multi-sensor package”) *with*

[7.c] (“processor in communication with the wireless communications component”), [7.d] (“memory in communication with the processor”), [7.e] (“a second automation component in communication with the building automation system”); *compare also* [20.a] (“each sensor contained within a multi-sensor package”) *with* [20.c] (“a second automation component in communication with the first automation component and the building automation system”). ’282 Patent, 10:43-12:45.

Accordingly, the claim term “second automation component in communication with ... the building automation system” in claim limitations [1.e], [7.e], and [20.c] should be construed as “an automation component that communicates with, but is not within, the building automation system.”

IV. THE PRIOR ART

Petitioner asserted nine grounds for unpatentability based on the four references: (1) U.S. Patent Application Publication No. 2007/0242688 (“McFarland”), (2) U.S. Patent Application Publication No. 2006/0071089 (“Kates-089”), (3) U.S. Patent No. 8,276,829 (“Stoner”), and (4) U.S. Patent Application Publication No. 2005/0268629 (“Ahmed-629”). As discussed below, these prior art references, either alone or in the asserted combinations, do not render the challenged claims unpatentable.

A. U.S. Patent Application Publication No. 2007/0242688 (“McFarland”).

U.S. Patent Application Publication No. 2007/0242688 (“McFarland”) is the primary reference relied upon by Petitioner. *See, e.g.*, Pet. 2. McFarland is particularly directed to “wirelessly reporting a sensed condition over a wireless communication network.” Ex. 1027, ¶ 1 (emphasis added). McFarland, recognizing that wireless networks are limited by the amount of available bandwidth, addresses a need for reducing an amount of communication over a wireless automated system. *Id.*, ¶¶ 4-5. In McFarland, “[t]he amount of wireless traffic in the system may be reduced, and/or the number of devices communicating over a wireless network increased, by minimizing or reducing the amount of information reported by a sensor.” *Id.*, ¶ 6.

McFarland, like the Petite reference distinguished during the prosecution of the '282 Patent, does not disclose, teach or suggest “a multi-sensor package.” *Compare* Ex. 1027 *and* Ex. 2007, U.S. Patent No. 6,437,692 to Petite et al. McFarland, as shown in Figure 2, reproduced below, discloses a sensor, not multiple sensors.

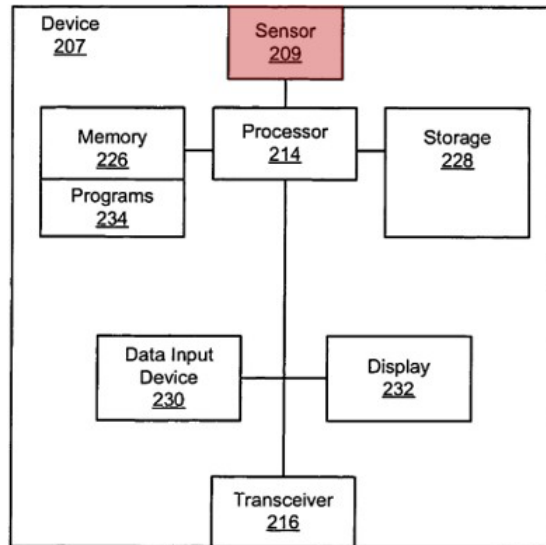


Figure 2

Ex. 1027, 3 (Figure 2) (highlighted). McFarland consistently describes the operation of its disclosed devices in the context of a single operational sensor. “A sensing device monitors a condition and/or status of an event. The sensing device may report appropriate sensor information, such as a current value or indicator of the condition, timing of a reading, prior measurements, status of the sensor and/or a comparison of a measured value to a desired limit, range or a previous measurement.” *Id.*, ¶ 23. Referring to Figure 2 above, “[t]he automation device 207 may be a sensor that monitors a condition and/or event, such as a building environment.” *Id.*, ¶ 37. Although McFarland does admittedly suggest that different components may be provided for device 207, including a plurality of different or the same type of sensors, *id.*, ¶ 38], it does not suggest that those would be part of the same sensor

(i.e., not a multi-sensor package). McFarland discusses “a plurality of different or of the same type of sensors” in the context of additional, different components.

Additional, different or fewer components may be provided, such as providing a plurality of different or the same types of sensors. For example, the device may also have a memory **226**, a storage device **228**, a data input device **230**, and a data output **232**.

Id. McFarland, like Petite, discloses “a device or a collection of devices that sense conditions, parameters and/or events such as an environmental condition in a building.” *Id.*, ¶ 43.

Moreover, McFarland discusses the operation of the sensor in terms of a single sensed or monitored condition. “The sensor 209 generates information or data related to the sensed or monitored condition. The information may be provided an output as one or more signals that may be read by the processor 214.” *Id.* (emphasis added). McFarland does not teach or disclose how multiple operational sensors would be distinguished and processed. To the extent that McFarland contemplates multiple sensor signals, it is in the context of dynamic value reporting of the same condition over time. “A device that uses dynamic value reporting senses, samples and/or measures a condition during a period of a sampling or polling interval.” *Id.*, ¶ 17. Furthermore, adding additional sensor identification information would be

inimical to solving the problem identified by McFarland – “a need for reducing an amount of communication over a wireless automated system” *Id.*, ¶ 5.

McFarland discloses communications over a building automation network by devices that are within the building automation network. “The devices of the system 100 communicate information, data and commands according to an assigned binding association. That is, devices may be commissioned as an operating pair or group according to a binding association. Even though devices may be commissioned as an operating pair or group, communications between devices may be routed, or hopped, via one or more other devices of the network. That is, the communication of information between and among devices includes transmitting, routing, and/or information hopping using low-power wireless RF communications across a network defined by the devices.” *Id.*, ¶ 22.

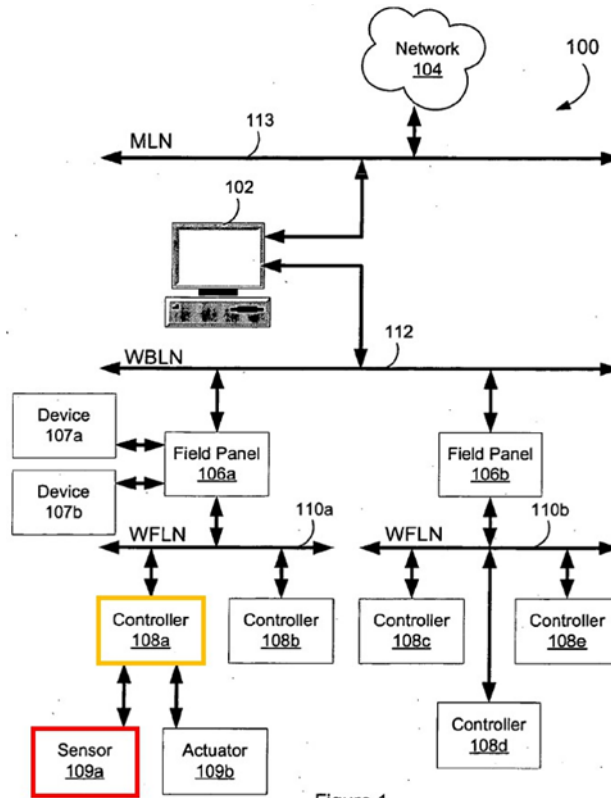


Figure 1

Id., Figure 1 (emphasis added by Petitioner). The Controller 108a (erroneously identified by Petitioner as a second automation component (Pet., 26-27)) is within the building automation system—identified as “100” in Figure 1. As such, it is not communicating with the building automation system. Although McFarland does disclose a Network 104, that is disclosed as providing communications for computer workstation 102 and the Management Level Network (MLN).

The workstation 102 may be communicatively coupled to a web server. For example, the workstation 102 may be coupled to communicate with a web server via the MLN 113 through a network 104 such as an Ethernet network, a LAN, WLAN, or the Internet. The workstation 102 uses

the MLN 113 to communicate building control system data to and from other elements on the MLN 113. The MLN 113 is connected to other supervisory computers, servers, or gateways through the network 104.

Id., ¶ 35. “The workstation 102 provides overall control and monitoring of the building *automation* system 100 and includes a user interface.” *Id.*, ¶ 36.

B. U.S. Patent Application Publication No. 2006/0071089 (“Kates-089”).

Petitioner points to U.S. Patent Application Publication No. 2006/0071089 (“Kates-089”) for its alleged disclosure that a “report instruction” such as is allegedly disclosed in MacFarland comprises a “wake-up” command and that a control system issues a “standby mode” instruction to “power down” an Electronically Controlled Register Vent or ECRV. Pet., 46-51.

Petitioner also argues that Kates-089 discloses elements of a method for providing power saving wireless communications within a building automation system, even though Kates-089 just discloses sensor data associated with each of a plurality of sensors like the Petite reference that was distinguished over during the prosecution of the ’282 Patent. *See, e.g.*, Pet., 73.

C. U.S. Patent No. 8,276,829 (“Stoner”).

Petitioner points to U.S. Patent No. 8,276,829 (“Stoner”) solely for its alleged disclosure of a remote controller and an HVAC controller. Pet., 51-67. In particular,

Petitioner asserts that Stoner's HVAC controller discloses a second automation component. Pet., 59 ("This information from the HVAC controller is the claimed status data related to sensor data in control at a second automation component (the HVAC Controller).").

D. U.S. Patent Application Publication No. 2005/0268629 ("Ahmed-629").

Petitioner points to U.S. Patent Application Publication No. 2005/0268629 ("Ahmed-629") for its disclosure of a sensor module. Petitioner argues that the sensor module includes "a 'MEMS sensor suite' that is 'a collection of MEMS sensors,' including, e.g., 'temperature and humidity' sensors, 'incorporated into a single substrate.'" Pet., 69 (citing Ahmed-629, ¶¶ 47-48). Petitioner further alleges that "[t]he sensor suite is used on a 'sensor module' used for, e.g., 'HVAC sensing' and 'building control systems.'" *Id.* (citing Ahmed-629, Fig. 2, ¶¶ 2, 11-14, 38, 44-47).

Ahmed-629, like the McFarland and Petite references, does not disclose, teach or suggest multiple operational sensors in a single package in a sensor module or automation component. Ahmed-629 teaches that each sensor module is used for a specific purpose which is defined by the configuration information. "The programmable non-volatile memory 38, which may be embodied as a flash programmable EEPROM, stores configuration information for the sensor module

28.” *Id.*, ¶ 51. “The memory 38 further includes set-up configuration information related to the type of sensor or sensors being used.” *Id.*, ¶ 52.

In Ahmed-629, “[t]he first sensor module 28 represents a temperature sensor module and is preferably embodied as a wireless integrated network sensor that incorporates micro electromechanical system (‘MEMS’) technology.” Ex. 1036, ¶ 47. In Ahmed-629, only one sensor functionality is enabled in a particular sensor module. *Id.*, ¶ 52 (“if the sensor suite 42 is implemented as a number of sensor devices, the memory 38 includes the information that identifies which sensor functionality to enable.”). *See, e.g.*, sensor modules 28 and 30 in Figure 2, reproduced below.

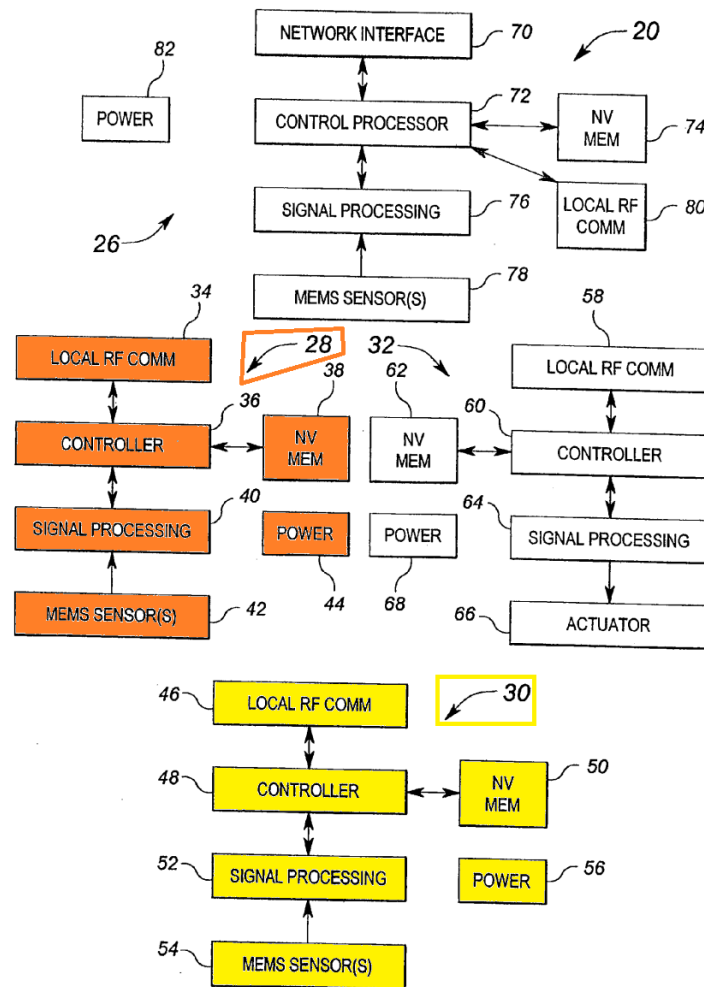


FIG. 2

Ex. 1036, Fig. 2 (Highlighting added). “The sensor module 28 may be programmed upon shipment from the factory, or upon installation into the building control system. The microcontroller 36, responsive to the configuration information, causes the signal processing circuit 40 to process signals only from the temperature sensor, ignoring output from other sensors of the sensor suite 42.” *Id.*, ¶ 56.

“The sensor module 30 is configured to operate as a flow sensor in the embodiment described herein. The sensor module 30 may suitably have the same

physical construction as the sensor module 28. ... In contrast to the sensor module 28, however, the memory 50 of the sensor module 30 contains configuration information identifying that the sensor module 54 is to function as a flow sensor.”
Id., ¶57.

V. ASSERTED GROUNDS OF ALLEGED UNPATENTABILITY

Grounds 1, 3, 5 and 7 assert that claims 1-5, 7-11, and 20-21 are unpatentable over McFarland (1) alone under §102/§103, (3) in view of Stoner, (5) in view of Ahmed-629, and (7) in view of Stoner and Ahmed-629. These grounds fail because the prior art does not disclose, teach, or suggest limitations of claims 1-5, 7-11, and 20-21, specifically [1.a], [1.e], [5], [7.a], [7.e], [20.a], and [20.c].

Grounds 2, 4, 6 and 8 assert that claims 13-16 are unpatentable over McFarland (2) in view of Kates-089, (3) in view of Stoner and Kates-089, (6) in view of Kates-089 and Ahmed-629, and (8) in view of Stoner, Kates-089 and Ahmed-629. These grounds fail because the prior art does not disclose, teach, or suggest limitations of independent claim 13 and dependent claims 14-16, specifically [13.a].

Ground 9 asserts that claims 20-21 are unpatentable over Kates-089 in view of Ahmed-629. This ground fails because the prior art does not disclose, teach or suggest limitations of independent claim 20 and dependent claim 21, specifically [20.a] and [20.c].

A. Ground 1: McFarland (Claims 1-5, 7-11, 20-21) (§§102/103)

The McFarland reference neither discloses nor teaches or suggests several limitations of the independent claims of the '282 Patent when those terms are properly construed. It therefore neither anticipates nor renders obvious claims 1-5, 7-11, or 20-21.

1. McFarland does not disclose or teach “a multi-sensor package” as recited in claims 1-5, 7-11, or 20-21.

The first limitation that is neither disclosed nor suggested in McFarland is [1.a], “a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable,” [7.a], “a multi-sensor package configured to generate a plurality of sensor data for each sensor within the multi-sensor package,” and [20.a], “scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package.” As discussed above, the term “multi-sensor package” in claim limitations [1.a], [7.a]. and [20.a] should be construed as “a single packaged sensor device with multiple operational sensors.”

McFarland is particularly directed to “wirelessly reporting a sensed condition over a wireless communication network.” Ex. 1027, ¶ 1 (emphasis added). McFarland, recognizing that wireless networks are limited by the amount of available bandwidth, addresses a need for reducing an amount of communication over a wireless automated system. *Id.*, ¶¶ 4-5. In McFarland, “[t]he amount of wireless traffic in the system may be reduced, and/or the number of devices

communicating over a wireless network increased, by minimizing or reducing the amount of information reported by a sensor.” *Id.*, ¶ 6.

McFarland, like the Petite reference distinguished during the prosecution of the '282 Patent, does not disclose, teach or suggest “a multi-sensor package.” McFarland, as shown in Figure 2, reproduced below, discloses a sensor, not multiple sensors.

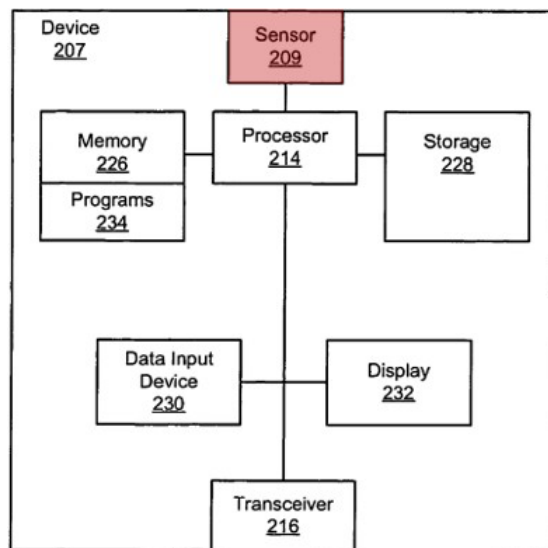


Figure 2

Ex. 1027, 3 (Figure 2) (highlighted). McFarland consistently describes the operation of its disclosed devices in the context of a single operational sensor. “A sensing device monitors a condition and/or status of an event. The sensing device may report appropriate sensor information, such as a current value or indicator of the condition, timing of a reading, prior measurements, status of the sensor and/or a comparison of a measured value to a desired limit, range or a previous measurement.” *Id.*, ¶ 23.

Referring to Figure 2 above, “[t]he automation device 207 may be a sensor that monitors a condition and/or event, such as a building environment.” *Id.*, ¶ 37. Although McFarland does admittedly suggest that different components may be provided for device 207, including a plurality of different or the same type of sensors, *id.*, ¶ 38], it does not suggest that those would be part of the same sensor (i.e., not a multi-sensor package). McFarland discusses “a plurality of different or of the same type of sensors” in the context of additional, different components.

Additional, different or fewer components may be provided, such as providing a plurality of different or the same types of sensors. For example, the device may also have a memory **226**, a storage device **228**, a data input device **230**, and a data output **232**.

Id. McFarland, like Petite, discloses “a device or a collection of devices that sense conditions, parameters and/or events such as an environmental condition in a building.” *Id.*, ¶ 43.

Moreover, McFarland discusses the operation of the sensor in terms of a single sensed or monitored condition. “The sensor 209 generates information or data related to the sensed or monitored condition. The information may be provided an output as one or more signals that may be read by the processor 214.” *Id.* (emphasis added). McFarland does not teach or disclose how multiple operational sensors would be distinguished and processed. To the extent that McFarland contemplates

multiple sensor signals, it is in the context of dynamic value reporting of the same condition over time. “A device that uses dynamic value reporting senses, samples and/or measures a condition during a period of a sampling or polling interval.” *Id.*, ¶ 17. Furthermore, adding additional sensor identification information would be inimical to solving the problem identified by McFarland – “a need for reducing an amount of communication over a wireless automated system” *Id.*, ¶ 5.

With respect to claim 1, there must be multiple operational sensors before the multi-sensor package can be configured to generate a plurality of sensor data for each sensor (*e.g.*, detect a plurality of variables and generate sensor data for each detected variable). McFarland does not disclose this because, in McFarland, “[t]he sensor 209 generates information or data related to the sensed or monitored condition.” Ex. 1027, ¶ 43 (emphasis added). McFarland just discloses a singular sensed or monitored condition in the identified automation component. Ex. 2008, ¶ 38.

In contrast, the ’282 Patent addresses multiple functioning sensors. *See, e.g.*, ’282 Patent, 6:46-51 (“Moreover, some of the sensors within the sensor package 220 may require a great deal of power to operate. In order to increase the life of the battery 222, the high power requirement sensors within the sensor package 220 may be configured to operate periodically or on a set schedule.”); *see also, id.*, 8:65-67, 9:44-46 (“the exemplary multi-sensor automation component 200 scans each of the sensors operating within the sensor package 220....”).

The same arguments apply with respect to the limitation in claim 7 of “a multi-sensor package configured to generate a plurality of sensor data for each sensor within the multi-sensor package.” Neither Petitioner nor Petitioner’s Declarant proffered different arguments for [1.a] and [7.a]. *See* Pet., 35. The same arguments apply with respect to the limitation in claim 20 of “scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package.” Neither Petitioner nor Petitioner’s Declarant proffered different arguments for [1.a], [7.a] or [20.a]. *See* Pet., 42.

Petitioner erroneously conflates “‘poll[ing] the sensor’ during a ‘recurring polling period’” with scanning sensor data associated with each of a plurality of sensors. *Id.* The polling identified by Petitioner is for just one sensor, not for each of a plurality of sensors as claimed. Since McFarland does not disclose these multi-sensor package limitations, it cannot anticipate claims 1-5, 7-11, or 20-21 of the ’282 Patent. Nor is there any evidence that McFarland would have rendered these claims obvious. Petitioner does not present any arguments that it would have been obvious to modify McFarland alone to include a single packaged sensor device with multiple operational sensors that each generate sensor data.

2. McFarland does not disclose or teach “receive sensor control information related to sensor data in control” as recited in claims 1-5.

The second limitation that is neither disclosed nor suggested in McFarland is “receive sensor control information related to sensor data in control,” in claim 1 (and therefore in challenged dependent claims 2-5). This limitation appears in [1.e], “wherein the computer readable instructions are programmed to: receive sensor control information related to sensor data in control at a second automation component in communication with the building automation system; and” Ex. 2008, ¶ 40.

As discussed above, the '282 Patent claims are generally directed to multi-sensor packages and it is therefore necessary to indicate which of the available sensors is in control, *i.e.*, the sensor whose sensor data is driving or controlling. As explained in the '282 Patent, “one of the sensor values and/or a corresponding sensor control routine is executed by the receiving device The communicated sensor control information provided by the receiving device identifies for the automation component 200 which sensor and/or sensor value is driving or controlling the receiving device during the scan cycle.” '282 Patent, 9:17-22. As also discussed above, the “sensor control information” “identifies ... which sensor and/or sensor value *is driving or controlling* the receiving device” and the term “receive sensor control information related to sensor data in control” in claim limitation [1.e] is

properly construed as “receive information that identifies which sensor or sensor value is driving or controlling a receiving device in communication with the building automation system.” Ex. 2008, ¶ 41.

Because McFarland does not disclose or suggest multiple operable sensors, there is no reason to identify which sensor and sensor data is currently being analyzed and/or is primary or controlling. Petitioner sidesteps this problem by essentially arguing that the data received is self-identifying as the driving or controlling information because it was received. Pet., 25-26. Petitioner’s circular logic vitiates the separate claim requirement for information that identifies which sensor or sensor value is *driving or controlling a receiving device* in communication with the building automation system.

Nor does Petitioner’s apparent effort to conflate any information communicated in the system with the claimed sensor control information demonstrate that this limitation is disclosed or suggested by McFarland. See Pet., 26-29. The claim limitation, when properly construed, does not encompass any information that may be communicated in a building automation system. Nor is it simply the sensor data that is used by the second automation device. Rather, it is instead directed to specific information that identifies which sensor or sensor value is driving or controlling a second automation component in communication with the

building system. And, as discussed above, this is not disclosed, suggested or taught by McFarland.

3. McFarland does not disclose or teach “a second automation component in communication with the building automation system” as recited in claims 1-5, 7-11, or 20-21.

The third limitation that is neither disclosed nor suggested in McFarland is “second automation component in communication with the building automation system,” that appears in independent claims 1, 7 and 20. This limitation is recited in [1.e] (“a second automation component in communication with the building automation system”), [7.e] (“a second automation component in communication with the building automation system”), and [20.c] (“a second automation component in communication with the first automation component and the building automation system.”). And, as the second automation component is recited in claim limitations [1.f], [7.g], and [20.c], those limitations are neither disclosed nor taught by McFarland as well. Ex. 2008, ¶¶ 42-43.

As discussed above, the claim term “second automation component in communication with ... the building automation system” in claim limitations [1.e], [7.e], and [20.c] should be construed as “an automation component that communicates with, but is not within, the building automation system.”

As also discussed above, McFarland discloses communications over a building automation network by devices that are within the building automation

network. “The devices of the system 100 communicate information, data and commands according to an assigned binding association. That is, devices may be commissioned as an operating pair or group according to a binding association. Even though devices may be commissioned as an operating pair or group, communications between devices may be routed, or hopped, via one or more other devices of the network. That is, the communication of information between and among devices includes transmitting, routing, and/or information hopping using low-power wireless RF communications across a network defined by the devices.” Ex. 1027, ¶ 22.

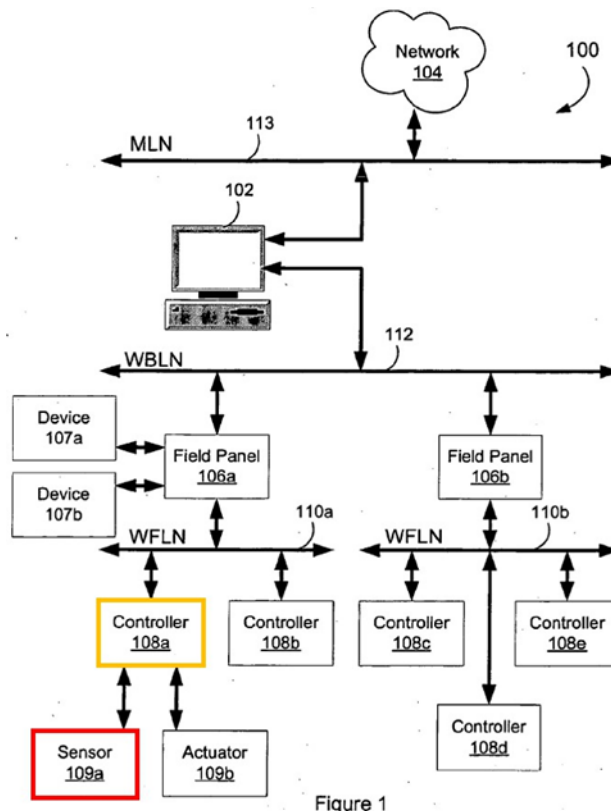


Figure 1

Id., Figure 1 (emphasis added by Petitioner). The Controller 108a (erroneously identified by Petitioner as a second automation component (Pet., 26-27)) is within

the building automation system—identified as “100” in Figure 1. As such, it is not communicating with the building automation system. And McFarland’s disclosure of a Network 104 does not disclose, teach or suggest an automation component communicating with the building automation system because McFarland teaches that the Network 104 provides communications for computer workstation 102 and the Management Level Network (MLN) that communicates with other supervisory computers, servers, or gateways through the network 104. Ex. 1027, ¶ 35.

Petitioner does not argue that the devices identified as the second automation device, either controller 508 or controller 108a, are not within the building automation system. Nor can they. Accordingly, when this limitation is properly construed as “an automation component that communicates with, but is not within, the building automation system” it is neither disclosed nor suggested or taught by McFarland.

Because none of the aforementioned limitations are disclosed or taught or suggested by McFarland, Ground 1 of the Petition necessarily fails and claims 1-5, 7-11 and 20-21 should be found not unpatentable.

B. Ground 2: McFarland in view of Kates-089 (Claims 13-16)

Petitioner does not argue that McFarland discloses all of the elements of claims 13-16 and looks to U.S. Patent Application Publication No. 2006/0071089 (“Kates-089”) for additional disclosure of two limitations: [13.e], “receive a wake-

up command from a second automation component” and [13.g], “receive a power-down command from the second automation component.”

As an initial matter, Petitioner does not provide separate arguments for claim limitation [13.a] “a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable.” McFarland does not disclose, teach or suggest this claim limitation for the same reasons it fails to disclose, teach or suggest the corresponding claim limitations in [1.e], [7.a], or [20.a]. *See* Ex. 2008, ¶¶ 47-48.

Accordingly, as the aforementioned limitation is not disclosed or taught or suggested by McFarland, Ground 2 of the Petition necessarily fails and claims 13-16 should be found not unpatentable.

C. Ground 3: McFarland in View of Stoner (Claims 1-5, 7-11, 20- 21)

Perhaps in recognition of the inherent deficiencies in Ground 1, Petitioner also argues that the same claims are unpatentable over McFarland in view of U.S. Patent No. 8,276,829 (“Stoner”). As an initial matter, Petitioner does not provide separate arguments for claims 1-5 and 20-21. *See* Pet., 67 (“As discussed in Grounds 1-2, McFarland discloses claims 1-5 and 20-21,...”).

Petitioner’s arguments should be rejected for several reasons. First, although Petitioner argues that Stoner discloses “sensor control information,” *id.*, that argument is made solely by reference to claim element [7.e], which does not even

recite “sensor control information,” and Petitioner’s arguments regarding Stoner and “sensor control information,” to the extent there are any, should therefore be rejected. Secondly, although Stoner allegedly discloses a portable remote controller, Petitioner does not argue that Stoner’s remote portable controller is not within the building automation system. To the contrary, Petitioner proposes modifying McFarland by making McFarland’s automation component a remote controller. Pet., 55, 60.

Accordingly, Petitioner does not rely on Stoner to address any of the three aforementioned deficiencies with respect to McFarland and the challenged claims as reiterated here. First, McFarland neither discloses or suggests [1.a], “a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable,” [7.a], “a multi-sensor package configured to generate a plurality of sensor data for each sensor within the multi-sensor package,” and [20.a], “scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package.” Second, there is not disclosure or teaching in McFarland to the claim limitation to “receive sensor control information related to sensor data in control,” in [1.e], “wherein the computer readable instructions are programmed to: receive sensor control information related to sensor data in control at a second automation component in communication with the building automation system; and” Third, McFarland does not disclose, teach or suggest a “second automation

system in communication with the building automation system,” recited in [1.e] (“a second automation component in communication with the building automation system”), [7.e] (“a second automation component in communication with the building automation system”), and [20.c] (“a second automation component in communication with the first automation component and the building automation system.”). *See* Ex. 2008, ¶¶ 37-43.

Accordingly, Ground 3 of the Petition necessarily fails and claims 1-5, 7-11 and 20-21 should be found not unpatentable.

D. Ground 4: McFarland in View of Stoner and Kates-089 (Claims 13-16)

Although it is difficult to discern, Petitioner appears to argue that the combined teachings of McFarland, Stoner and Kates-089 would have rendered obvious claims 13-16. However, as with claims 1-5 and 20-21, Petitioner does not make any additional arguments with respect to limitation [13.a] “a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable.” And, as discussed above, McFarland and Kates-089 do not disclose, teach or suggest this claim limitation for the same reasons that McFarland fails to disclose, teach or suggest the corresponding claim limitations in [1.e], [7.a], or [20.a]. *See* Ex. 2008, ¶¶ 47-48.

Accordingly, Ground 4 of the Petition necessarily fails and claims 13-16 should be found not unpatentable.

E. Ground 5: McFarland in view of Ahmed-629 (Claims 1-5, 7-11, 20-21)

Petitioner also argues it would have been obvious to modify McFarland's teachings with the teachings of a sensor module in U.S. Patent Application Publication No. 2005/0268629 ("Ahmed-629"). Pet., 69. Petitioner argues that the sensor module includes "a 'MEMS sensor suite' that is 'a collection of MEMS sensors,' including, e.g., 'temperature and humidity' sensors, 'incorporated into a single substrate.'" *Id.*, citing Ahmed-629, ¶¶ 47-48. Petitioner further alleges that "[t]he sensor suite is used on a 'sensor module' used for, e.g., 'HVAC sensing' and 'building control systems.'" *Id.* (citing Ahmed-629, Fig. 2, ¶¶ 2, 11-14, 38, 44-47).

However, Ahmed-629, like McFarland, does not disclose, teach or suggest multiple operational sensors in a single package in a sensor module or automation component. Ex. 2008, ¶ 44. Ahmed-629 does not disclose a single packaged sensor device with multiple operable sensors. In the disclosure of Ahmed-629, each sensor module is used for a specific purpose that is defined by the configuration information. *Id.*, ¶ 45. "The programmable non-volatile memory 38, which may be embodied as a flash programmable EEPROM, stores configuration information for the sensor module 28." Ex. 1036, ¶ 51. "The memory 38 further includes set-up

configuration information related to the type of sensor or sensors being used.” *Id.*, ¶ 52.

In Ahmed-629, only one sensor functionality is enabled in a particular sensor module. Ex. 2008, ¶ 46. *See* Ex. 1036, ¶ 52 (“if the sensor suite 42 is implemented as a number of sensor devices, the memory 38 includes the information that identifies which sensor functionality to enable.”). *See also Id.*, ¶ 56 (“The sensor module 28 may be programmed upon shipment from the factory, or upon installation into the building control system. The microcontroller 36, responsive to the configuration information, causes the signal processing circuit 40 to process signals only from the temperature sensor, ignoring output from other sensors of the sensor suite 42.”).

In Ahmed-629, “[t]he first sensor module 28 represents a temperature sensor module and is preferably embodied as a wireless integrated network sensor that incorporates micro electromechanical system (‘MEMS’) technology.” *Id.*, ¶ 47. In Ahmed-629, only one sensor functionality is enabled in a particular sensor module. *Id.*, ¶ 52 (“if the sensor suite 42 is implemented as a number of sensor devices, the memory 38 includes the information that identifies which sensor functionality to enable.”). *See, e.g.*, sensor modules 28 and 30 in Figure 2, reproduced below.

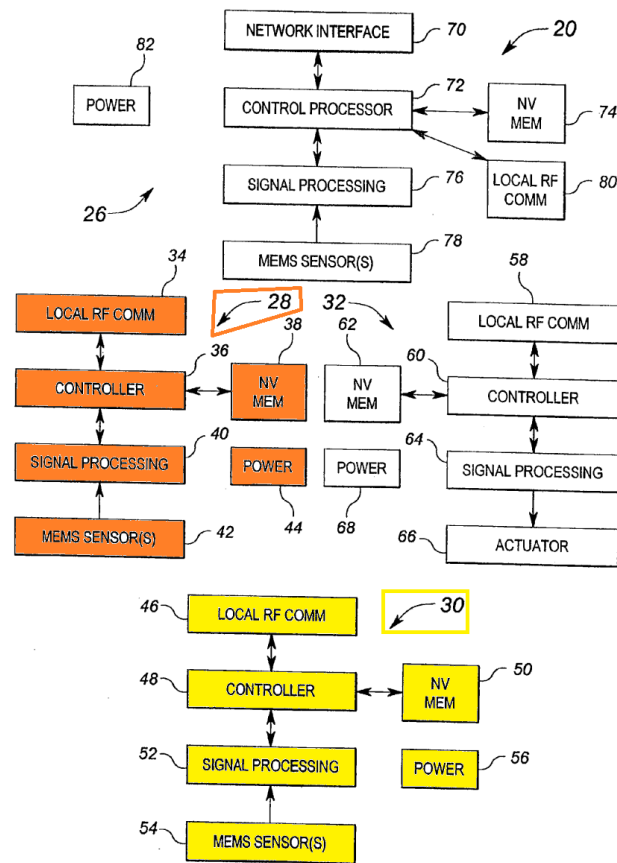


FIG. 2

Ex. 1036, Fig. 2 (Highlighting added). “The sensor module 28 may be programmed upon shipment from the factory, or upon installation into the building control system. The microcontroller 36, responsive to the configuration information, causes the signal processing circuit 40 to process signals only from the temperature sensor, ignoring output from other sensors of the sensor suite 42.” *Id.*, ¶ 56. “The sensor module 30 is configured to operate as a flow sensor in the embodiment described herein. The sensor module 30 may suitably have the same physical construction as the sensor module 28. ... In contrast to the sensor module 28, however, the memory

50 of the sensor module 30 contains configuration information identifying that the sensor module 54 is to function as a flow sensor.” *Id.*, ¶ 57.

Even if a person of ordinary skill in the art would have been motivated to combine the teachings of McFarland and Ahmed-629, that combination would still fall far short of rendering claims 1-5, 7-11, 20-21 obvious. Ahmed-629 does not disclose, teach or suggest [1.a], “a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable,” [7.a], “a multi-sensor package configured to generate a plurality of sensor data for each sensor within the multi-sensor package,” or [20.a], “scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package.” Ex. 2008, ¶ 44. In fact, Ahmed-629’s teachings of configuration data would teach away from “a single packaged sensor device with multiple operational sensors.” In Ahmed-629, configuration data is set at the factory or when a sensor module is installed in a building control system. Ex. 1036, ¶¶ 56-57.

Accordingly, Ground 5 of the Petition necessarily fails and claims 1-5, 7-11 and 20-21 should be found not unpatentable.

F. Ground 6: McFarland in view of Kates-089 and Ahmed-629 (Claims 13-16)

Although it is difficult to discern, Petitioner appears to argue that claims 13-16 would have been obvious in view of McFarland and Kates-089 in view of Ahmed-

629's teaching of a MEMS sensor suite. As discussed above, even it would have been obvious to a person of ordinary skill in the art to combine the teachings of McFarland, Kates-089 and Ahmed-629, that combination would still not render claims 13-16 obvious. Neither McFarland or Ahmed-629 disclose, teach or suggest limitation [13.a] "a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable" for the same reasons they fail to disclose, teach or suggest the corresponding claim limitations in [1.e], [7.a], or [20.a]. *See* Ex. 2008, ¶¶ 47-49.

Accordingly, Ground 6 of the Petition necessarily fails and claims 13-16 should be found not unpatentable.

G. Ground 7: McFarland in view of Stoner and Ahmed-629 (Claims 1-5, 7-11, 20-21)

As discussed above with respect to Ground 3, neither McFarland alone or McFarland in view of Stoner disclose, teach, or suggest [1.a], "a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable," [7.a], "a multi-sensor package configured to generate a plurality of sensor data for each sensor within the multi-sensor package," and [20.a], "scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package." And, as discussed above, Ahmed-629 does not disclose, teach or suggest either of these limitations either. To the contrary, Ahmed-629's

teachings of configuration data would teach away from “a single packaged sensor device with multiple operational sensors.” *See* Ex. 2008, ¶¶ 37-46.

Accordingly, Ground 7 of the Petition necessarily fails and claims 1-5, 7-11 and 20-21 should be found not unpatentable.

H. Ground 8: McFarland in view of Stoner, Kates-089, and Ahmed-629 (Claims 13-16)

Although it is difficult to discern, Petitioner appears to argue that claims 13-16 would have been obvious over McFarland in view of Stoner and Kates-089 in view of Ahmed-629’s teaching of a MEMS sensor suite. As an initial matter, there does not seem to be any applicability of Stoner to claims 13-16 and Petitioner’s arguments should be rejected on that basis alone.

Furthermore, as discussed above, even it would have been obvious to a person of ordinary skill in the art to combine the teachings of McFarland, Kates-089, Stoner and Ahmed-629, that combination would still not render claims 13-16 obvious. Neither McFarland or Ahmed-629 disclose, teach or suggest limitation [13.a] “a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable” for the same reasons they fail to disclose, teach or suggest the corresponding claim limitations in [1.e], [7.a], or [20.a]. *See* Ex. 2008, ¶¶ 47-48.

Accordingly, Ground 8 of the Petition necessarily fails and claims 13-16 should be found not unpatentable.

I. Ground 9: Kates-089 in View of Ahmed-629 (Claims 20-21)

Petitioner argues in the alternative that claims 20 and 21 would have been obvious to a person of ordinary skill in the art over Kates-089 in view of Ahmed-629. Pet., 72. Petitioner’s arguments fail because the combination of Kates-089 and Ahmed-629 do not disclose, teach or suggest two limitations of claim 20: [20a] “scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package of a first automation component;” and [20c] “receiving a first communication from a second automation component in communication with the first automation component and the building automation system;” *See* Ex. 2008, ¶ 50.

1. Kates-089 and Ahmed-629 do not disclose or teach “a multi-sensor package” as recited in claim 20.

The first limitation that is neither disclosed nor suggested by Kates-089 in view of Ahmed-629 is [20.a], “scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package of a first automation component.” As discussed above, the term “multi-sensor package” in claim limitation [20.a] should be construed as “a single packaged sensor device with multiple operational sensors.”

Kates-089 does not disclose, teach or suggest a single packaged sensor device with multiple operational sensors. Nor does Petitioner suggest that it does. *See* Pet., 72. Kates-089, like the Petite reference distinguished over during the prosecution of the '282 Patent, discloses separate sensors.

And, as discussed above, Ahmed-629, does not disclose, teach or suggest multiple operational sensors in a single package in a sensor module or automation component. Ahmed-629 instead teaches that each sensor module is used for a specific purpose that is defined by the configuration information. “The programmable non-volatile memory 38, which may be embodied as a flash programmable EEPROM, stores configuration information for the sensor module 28.” *Id.*, ¶ 51. “The memory 38 further includes set-up configuration information related to the type of sensor or sensors being used.” *Id.*, ¶ 52.

In Ahmed-629, “[t]he first sensor module 28 represents a temperature sensor module and is preferably embodied as a wireless integrated network sensor that incorporates micro electromechanical system (‘MEMS’) technology.” Ex. 1036, ¶ 47. In Ahmed-629, only one sensor functionality is enabled in a particular sensor module. *Id.*, ¶ 52 (“if the sensor suite 42 is implemented as a number of sensor devices, the memory 38 includes the information that identifies which sensor functionality to enable.”). Ahmed-629 teaches that “[t]he sensor module 28 may be programmed upon shipment from the factory, or upon installation into the building

control system. The microcontroller 36, responsive to the configuration information, causes the signal processing circuit 40 to process signals only from the temperature sensor, ignoring output from other sensors of the sensor suite 42.” *Id.*, ¶ 56. Ahmed-629 further teaches that each sensor module contains configuration information specific to that sensor module. *Id.*, ¶ 57. Accordingly, Ahmed-629 does not teach operational sensors contained within a multi-sensor package. Rather, it teaches configuring each sensor module for a specific operation, essentially making each sensor module a separate sensor.

Accordingly, even the combination of Kates-089 in view of Ahmed-629 would not disclose, suggest or teach [20.a], “scanning sensor data associated with each of a plurality of sensors contained within a multi-sensor package of a first automation component” when a multi-sensor package is properly construed.

2. Kates-089 and Ahmed-629 do not disclose or teach “a second automation component in communication with the first automation component and building automation system” as recited in claim 20.

The second limitation that is neither disclosed nor suggested by the combination of Kates-089 in view of Ahmed-629 is [20.c] (“a second automation component in communication with the first automation component and the building automation system.”). As discussed above, the claim term “second automation component in communication with ... the building automation system” in claim

limitation [20.c] should be construed as “an automation component that communicates with, but is not within, the building automation system.”

And, as Petitioner recognizes, Kates-089 discloses and teaches communications within a building automation system. *See* Pet., 74 (“*e.g.*, from component in ‘central system’ that ‘communicates with the ECRVs’ within the building automation system...”). Kates-089 “relates to a system and method for directing heating and cooling air from an air handler to various zones in a home or commercial structure.” Ex. 1029, ¶ 2.

Although it is not apparent what Petitioner is asserting constitutes a first automation component or a second automation component in Kates-089, it is apparent that there are no communications disclosed in Kates-089 with any components that are not within “a building automation system (*e.g.*, ‘HVAC system’ in ‘building structure’).” Pet., 72. Accordingly, when this limitation is properly construed as “an automation component that communicates with, but is not within, the building automation system” it is neither disclosed nor suggested or taught by Kates-089.

Because these limitations are not disclosed, suggested or taught by Kates-089 and Ahmed-629, Ground 9 of the Petition necessarily fails and claims 20-21 should be found not unpatentable.

VI. CONCLUSION

The Petition should be denied because Petitioner has not established a reasonable likelihood of invalidity under any ground or challenged claim. The prior art does not disclose, teach or suggest multiple limitations of the independent claims, and the challenged claims are neither anticipated nor rendered obvious by the prior art.

Date: December 29, 2023

Respectfully submitted,

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CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

The undersigned hereby certifies that the word count in this Patent Owner Response to Petition is 9,680 words, as counted by the word-processing program Microsoft Word that was used to generate this Patent Owner Response to Petition, where such word count excludes the table of contents, table of authorities, mandatory notices, certificate of service, appendix of exhibits, claim listing, and this certificate of word count. This Patent Owner Response to Petition is in compliance with the 14,000-word limit set forth in 37 C.F.R. § 42.24(b)(1).

Date: December 29, 2023

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

The undersigned hereby certifies that the above document was served on December 29, 2023, by filing this document through the Patent Trial and Appeal Case Tracking System as well as delivering a copy via electronic mail upon the following attorneys of record for the Petitioner:

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