IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

OLLNOVA TECHNOLOGIES LTD.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Civil Action No. 2:22-CV-00072-JRG
	§	
ECOBEE TECHNOLOGIES, ULC d/b/a ECOBEE,	§	
	§	
	§	
Defendant.	§	

CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER

In this patent case, Plaintiff Ollnova Technologies Ltd. ("Ollnova") alleges infringement by Defendant ecobee Technologies, ULC d/b/a ecobee ("ecobee"), of certain claims from U.S. Patent Nos. 7,746,887 (the "'887 Patent"), 7,860,495 (the "'495 Patent"), 8,224,282 (the "'282 Patent"), and 8,264,371 (the "'371 Patent"). Each patent relates to automation systems for buildings. *See, e.g.*, '887 Patent at 1:53–56 ("The described embodiments include methods, processes, apparatuses, and systems for reporting information over a wireless automation system, and particularly to a wireless building automation system."); '495 Patent at 1:7–8 ("[A] wireless building control architecture implements automation of building systems."); '282 Patent at 1:16–19 ("[T]he present disclosure relates to methods and devices for communicating change-of-value information within a building automation system."); '371 Patent at 1:9–12 (same).

The parties dispute the scope of nine terms or phrases, with ecobee asserting several terms are indefinite. Having considered the parties' briefing and arguments of counsel during a March 8, 2023 hearing, the Court resolves the disputes as follows.

I. LEGAL STANDARDS

A. Generally

"[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). As such, if the parties dispute the scope of the claims, the court must determine their meaning. *See, e.g.*, *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007); *see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), *aff'g*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc).

Claim construction, however, "is not an obligatory exercise in redundancy." *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, "[c]laim construction is a matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims . . . ." *Id.* A court need not "repeat or restate every claim term in order to comply with the ruling that claim construction is for the court." *Id.*

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*, 415 F.3d at 1312–13). 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.*

B. Indefiniteness

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). The claims "must be precise enough to afford clear notice of what is claimed," but that consideration must be made while accounting for the inherent limitations of language. *Id.* at 908. "Indefiniteness must be proven by clear and convincing evidence." *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

II. THE LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the art is the skill level of a hypothetical person who is

presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, "[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Here, the parties proffer similar levels of ordinary skill in the art by way of their respective experts. Ollnova's expert opines a skilled artisan "would have had a Bachelor's Degree in computer science, computer engineering, electrical engineering, or a related field (or its equivalent), and had at least two years of experience in the design or development of automation components." Madisetti Decl., Dkt. No. 89-7 ¶ 39. ecobee's expert opines similarly. *See* Martens Decl., Dkt. No. 89-8 ¶ 28 (concluding a skilled artisan at the time of invention would have had "at least a bachelor's degree, or equivalent professional experience, in electrical engineering, computer science, computer engineering, or a related discipline, and at least 2 years of experience with automation, sensors, or controls systems"). Neither party argues the proper construction of a disputed term or phrase turns on resolving the differences, if any, between these proposed levels of skill in the art.

III. ANALYSIS

A. U.S. Patent 7,746,887

1. Background

The '887 Patent relates to reporting information over a wireless building automation system. '887 Patent at 1:53–56. Such systems typically include devices like controllers, sensors, switches, alarms, actuators, chillers, fans, and air handlers for automating heating, ventilation, air conditioning, and other processes. *Id.* at 1:11–17. The devices may communicate with one another

over a wired or wireless network. *Id.* at 1:17–19.

Systems with large numbers of devices, however, may have issues with communications or power. The more devices on a wireless network, the greater the chance of failed communication as bandwidth becomes exhausted. *Id.* at 1:34–40. Moreover, systems with large numbers of devices use more processing power. *See id.* at 1:40–46.

To address these potential problems, the patent teaches "monitor[ing] a condition and wirelessly report[ing] an event over an automation network *only in response to detecting a change in the condition*." *Id.* at [57] (emphasis added). According to the embodiment shown in FIGS. 3–4, a processor polls a sensor during a recurring polling period by reading a signal from the sensor. The processor then identifies whether the reading has changed from the reading of the prior polling period. If the reading has changed by a predetermined amount, the processor controls a transceiver to selectively send information during a transmission interval. *See generally* '887 Patent at 9:18–11:44.

Notably, the specification refers to two types of "intervals" and two types of "periods"—polling intervals, polling periods, transmission intervals, and transmission periods. The polling and transmission *periods* are periods during which the polling of the sensor and transmission of the information, respectively, occur. The polling and transmission *intervals* are the times between the beginnings of consecutive polling and transmission periods, respectively, which can be different. *See generally* '887 Patent at 9:18–11:44 (describing FIGS. 3–4). For example, the transmission interval of FIG. 4 appears roughly half the polling interval of FIG. 3 (assuming the time axis of both figures is the same).

The patent then explains the processor controls the transceiver to communicate information during the transmission periods unless transmission is "suspended." For example, "a transmission

of information may be suspended for periods of a transmission interval for which no change in the indicator has been identified." '887 Patent at 3:35–37. Or the controller may suspend the transmission of information during a transmission period until the number of polling intervals for which a change has been detected reaches a certain number. *Id.* at 11:56–59. Claim 1 recites this subject matter as:

> 1. A wireless automation device:
>
> a transceiver operable to wirelessly communicate packets of information over a wireless network;
>
> a sensor operable to generate a indicator for a sensed condition;
>
> a controller configured to poll the sensor at a polling interval to read the indicator during a current period of the polling interval and to selectively operate the transceiver to communicate *information associated reading of the indicator*; and
>
> a memory, the controller storing a reading of the indicator during the current period in the memory, where the memory stores at least one prior reading of the indicator, the prior reading of the indicator made during a prior period of the polling interval,
>
> wherein the transceiver is configured to transmit a most recent reading of the indicator stored in the memory during a period of a transmission interval in response to detecting a change in the sensed condition outside a predetermined range and *wherein transmission of the most recent reading of the indicator stored in the memory during the period of the transmission interval is suspended in response to detecting a change in the sensed condition within the predetermined range*.

'887 Patent at 14:48–15:4 (disputed terms italicized).

2. *"wherein transmission of the most recent reading of the indicator stored in the memory during the period of the transmission interval is suspended in response to detecting a change in the sensed condition within the predetermined range" ('887 Patent, Claim 1)*

Ollnova's Construction	ecobee's Construction
No construction necessary; plain and ordinary meaning	wherein the transmission of the most recent reading of the indicator that would otherwise occur is stopped in response to detecting a change in the sensed condition within the predetermined range

This dispute centers on the meaning of "suspended." According to ecobee, "'suspend' is used consistently and exclusively to describe the prevention of a transmission that would otherwise occur during a transmission interval." Dkt. No. 92 at 2 (citing '887 Patent at 11:3–15, 11:50–12:3). It criticizes Ollnova for failing to provide another reasonable interpretation of the term and instead explaining what *causes* the "suspension." *Id.* at 2–3. Ollnova, however, contends "there is no requirement that information 'that would otherwise occur' be 'stopped' from transmission." Dkt. No. 89 at 2. It also suggests ecobee's construction could mean "stopped" permanently rather than temporarily. Dkt. No. 96 at 1.

The Court agrees with ecobee for two reasons. First, ecobee's construction comports with the ordinary meaning of "suspend." *See suspend*, Am. Heritage College Dict., Dkt. No. 92-3 at 1368 ("To cause to stop for a period; interrupt."); *suspend,* Microsoft Press Comput. Dict., Dkt. No. 92-4 at 454 ("To halt a process temporarily."). Second, this meaning is consistent with the specification. *See* '887 Patent at 11: 8–12 (noting "the processor 216 may control the transceiver 216 to suspend the transmission of information, notwithstanding a flag being set identifying *a transmission may be pending*" (emphasis added)).

Ollnova points to nothing in the specification that contradicts this well-understood

meaning. Instead, it suggests the patent "contemplates a number of ways that the transceiver may 'suspend' the transmission of information," but then provides only reasons *for* suspension. Dkt. No. 89 at 2. It also asserts ecobee's construction renders Claims 8, 16, and 17 meaningless, but provides no reasoning for that conclusion. *See id.* at 2–3. In its reply, Ollnova suggests ecobee's construction might require that transmission must be permanently stopped, but ecobee does not take that position. *See* H'rg Tr., Dkt. No. 102 at 6 ("[W]e're not suggesting that it's a permanent stop."). Finally, Ollnova argues "if there's no change or the indicator is otherwise within the predetermined range, there's no information to stop from transmission," *Id.* at 15:15–17, but this ignores the ordinary meaning of "suspend."

Based on the ordinary meaning of the term and the intrinsic record, "suspended" is clearly something more than "not transmitted." Accordingly, the Court adopts ecobee's construction, but notes any stoppage is only for the remainder of the transmission interval. Specifically, the Court construes this phrase as "wherein the transmission of the most recent reading of the indicator that would otherwise occur is stopped for the remainder of the transmission interval in response to detecting a change in the sensed condition within the predetermined range."

3. "information associated reading of the indicator" ('887 Patent, Claims 1, 21)

Ollnova's Construction	ecobee's Construction
"information associated with the reading of the indicator"	Indefinite

The parties agree this phrase is grammatically incorrect. ecobee argues it could be reasonably interpreted three ways and is therefore indefinite: (1) "information <u>with the</u> associated reading of the indicator"; (2) "information associated <u>with the</u> reading of the indicator"; and (3) "<u>an</u> information-associated reading of the indicator." Dkt. No. 92 at 4. Ollnova, on the other hand, urges the

Court to correct what it considers a "minor typographical error." Dkt. No. 89 at 4. Ollnova further contends each of ecobee's alternatives result in the same claim scope, and thus correction is not subject to reasonable debate. Dkt. No. 94 at 2 (citing *Pavo Sols. LLC v. Kingston Tech. Co.*, 35 F.4th 1367 (Fed. Cir. 2022)).

"A district court may correct 'obvious minor typographical and clerical errors in patents.'" *Pavo Sols. LLC v. Kingston Tech. Co.*, 35 F.4th 1367, 1373 (Fed. Cir. 2022) (quoting *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357 (Fed. Cir. 2003)). "Correction is appropriate 'only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.'" *Id.* (quoting *Novo Indus.*, 350 F.3d at 1354). "The error must be 'evident from the face of the patent,' . . . and the determination 'must be made from the point of view of one skilled in the art[.]'" *Id.* (quoting *Grp. One, Ltd. v. Hallmark Cards, Inc.*, 407 F.3d 1297, 1303 (Fed. Cir. 2005), and *Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp.*, 587 F.3d 1339, 1353 (Fed. Cir. 2009)). "In deciding whether a particular correction is appropriate, the court 'must consider how a potential correction would impact the scope of a claim and if the inventor is entitled to the resulting claim scope based on the written description of the patent.'" *Id.* (quoting *CBT Flint Partners, LLC v. Return Path, Inc.*, 654 F.3d 1353, 1359 (Fed. Cir. 2011)).

Applying this test to the disputed phrase, Ollnova's requested correction is appropriate. First, the parties agree the phrase includes a clerical error. Second, ecobee points to no prosecution history that suggests a different interpretation than Ollnova's proposed construction. Third, "the correction is not subject to reasonable debate based on consideration of the claim language and the specification." The limitation in its entirety reads:

> a controller configured to poll the sensor at a polling interval to *read the indicator* during a current period of the polling interval and to selectively operate the transceiver to communicate *information associated reading of the indicator*[.]

'887 Patent at 14:53–57 (emphasis added); *see also id.* at 16:33–36 (reciting similar language in Claim 21). A skilled artisan would understand the output of the phrase "read the indicator" to be the later-recited "reading of the indicator." In fact, the specification uses similar language in a general description of the subject matter, explaining:

> [a] sensor generates a signal based on whether a sensed condition is within a predetermined range. In the device, a controller polls the sensor at a variable periodic interval *to read the signal from the sensor*. . . . The controller also controls the transceiver to selectively communicate *information associated with the signal* from the sensor.

'887 Patent at 2:11–18 (emphasis added). This is highly persuasive given the relationship between the sensor and indicator recited earlier in Claim 1. *See id.* at 14:51–52 (requiring "a sensor operable to generate a[n] indicator for a sensed condition"). Moreover, the phrase "associated with" appears throughout the patent in other contexts. *See, e.g.*,'887 Patent at 3:4–5 ("an indicator *associated with* the current or present condition"), 6:39–40 ("a database *associated with* each field panel"), 10:46–47 ("A time or interval identifier *associated with* when the flag was set"), 11:35–36 ("a predetermined number of indicators *associated with* a change over a prior indicator"), 11:66–67 ("The information may include timing information or date *associated with* the indicators . . . ."), 12:17–19 ("a sequence . . . *associated with* a sensed condition"), 12:20–21 ("a series of large differences will be *associated with* a sensed condition"), 13:15–16 ("a value *associated with* three standard deviations from a mean"), 16:12–13 (reciting, in Claim 14, "timing data *associated with* the most recent reading"), 16:17–18 (reciting, in Claim 16, "a counter *associated with* a number of prior readings stored in memory and not yet transmitted").

In contrast, ecobee does not point to any phrasing like its other interpretations of the disputed phrase. While it cites excerpts allegedly supporting the other interpretations, *see* Dkt. No. 92 at 5, each excerpt explains what certain information "may include" rather than to what or how it is "associated." *See* '887 Patent at 11:21–26 (noting "[t]he information may also include one or more" events, indicators, differences, limits, timing data, or counts), 11:45–47 ("That information may include multiple indicators such as the most current indicator V_i, and one or more indicators V_{i-j} read during one or more prior polling periods."), 11:66–12:1 ("The information may include timing information or date associated with the indicators V_i and the counter information."). Thus, ecobee's oddly-worded first and third interpretations[1] seem contrived to fit the specification rather than being derived from it.

Finally, Ollnova's proposed correction will not impact the scope of the claim, as the correction aligns with how a skilled artisan would understand the limitation in its uncorrected form. In other words, even without judicial correction, the term is not indefinite for many of the reasons set forth *supra*. Moreover, ecobee concedes Ollnova's construction has support in the specification. Dkt. No. 92 at 5. Accordingly, the Court judicially corrects the disputed phrase in both Claim 1 and Claim 21 to "information associated with the reading of the indicator."

B. U.S. Patent 8,224,282

1. Background

The '282 Patent relates to power management. *See* '282 Patent at [54] ("Method and

[1] ecobee's first interpretation, "information <u>with the</u> associated reading of the indicator," fails to explain with what the "reading of the indicator" is associated. At best, this interpretation renders "associated" superfluous. Regarding ecobee's third interpretation, "<u>an</u> information<u>-</u>associated reading of the indicator," presumably all readings are "information-associated."

Device to Manage Power of Wireless Multi-Sensor Devices"). More specifically, the patent teaches configuring components of wireless building automation systems "to optimize radio and/or data communications to extend battery life." *Id.* at 2:26–28.

FIG. 6 shows a power-saving communication method that instructs an automation component to send sensor information in response to an indication that certain sensed data is in use by a higher-level component, like a field panel. More specifically, the field panel sends "sensor usage or control information" to a component, which information identifies the sensors or sensor data currently being analyzed or controlling the field panel. The component then returns the sensor data corresponding to the primary sensor or sensor value in control of the field panel. *See generally* '282 Patent at 8:56–9:35. This prioritizes the most important sensor and/or sensor value, whereas other sensor data may be sent at a more opportune time. *See id.* at 9:27–36.

Claim 1 is directed to the embodiment shown in FIG. 6 and includes two of the three disputed terms from the '282 Patent. That claim recites:

> 1. An *automation component* configured for wireless communication within a building automation system, the *automation component* comprising:
>
> a multi-sensor package configured to detect a plurality of variables and generate sensor data for each detected variable;
>
> a wireless communications component;
>
> a processor in communication with the wireless communications component and the sensor package;
>
> 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; 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
>
> communicate a portion of the stored sensor data corresponding to the received *sensor control information* to the *second automation component*.

'282 Patent at 10:43–62 (emphasis added).

2. "receive sensor control information related to sensor data in control at a second automation component in communication with the building automation system" ('282 Patent, Claim 1)

Ollnova's Construction	ecobee's Construction
No construction necessary; plain and ordinary meaning	receive information that relates to or identifies the sensor values and routines that are controlling and driving a second automation component in communication with the building automation system

The parties dispute the scope of "sensor control information," and both parties point to the patent's description of FIG. 6 at column 9, lines 9–22 as supporting their positions. Dkt. No. 89 at 8–9; Dkt. No. 92 at 7–8. That paragraph explains a receiving device

> 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. 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 . . . . 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 at 9:9–22. ecobee's construction comes almost verbatim from the second sentence of this paragraph, which ecobee treats as definitional. *See* Dkt. No. 92 at 7–8. Ollnova criticizes that

approach as importing limitations from the specification. Dkt. No. 89 at 8. Further, says Ollnova, ecobee's construction conflicts with the paragraph's last sentence, which does not require both sensor values *and* routines or both controlling *and* driving the receiving device. *Id.* at 8–9.

ecobee's construction is, in fact, too narrow. 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." *See* '282 Patent at 10:57–62. This best aligns with the last sentence of the cited paragraph: "The 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 during the scan cycle." Given this disjunctive language, which conflicts with the second sentence's conjunctive language, the second sentence—that is, the sentence on which ecobee relies—cannot be definitional. *See Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (noting lexicography requires a patentee to "clearly set forth a definition of the disputed claim term"). The Court therefore construes the disputed phrase as "receive information that identifies which sensor or sensor value is driving or controlling a second automation component in communication with the building automation system."

3. "[first/second] automation component" ('282 Patent, Claims 1, 5, 7, 11, 13, 19, 20)

Ollnova's Construction	ecobee's Construction
No construction necessary; plain and ordinary meaning	"[first/second] component designed to operate without human interaction in an automation system"

The parties dispute the extent to which "automation component" excludes human interaction during normal operation. ecobee stresses the only human interaction mentioned in the patent

relates to the optional man-machine interface (MMI) for "provid[ing] access to configurable properties of the device and allow[ing] the user to establish or troubleshoot communications between other devices and elements of the BAS." Dkt. No. 92 at 15 (citing '282 Patent at 4:41–46). "In other words," says ecobee, "a human may program or troubleshoot faulty components, but would not interact with such components during normal operation." *Id.* (citing dictionary definitions for "automation"). Ollnova challenges ecobee's construction as too restrictive by excluding *all* human interaction from normal operation and stresses the specification's reference to MMI. Dkt. No. 89 at 13 (citing '282 Patent at 4:41–46).

Although the Court agrees with the language of ecobee's construction, it disagrees with the meaning ecobee assigns that language. Here, ecobee has not shown the meaning of "automation component" in the context of the patent excludes *all* human interaction during so-called "normal" operation. In fact, the patent's reference to MMI cuts against any such notion. Nor do the dictionary definitions on which ecobee relies exclude all human interaction. Thus, while the Court adopts the language of ecobee's construction, that language does not require a component to be designed for normal operation without *any* human interaction.

4. "identification flag for each identified sensor value" ('282 Patent, Claim 4)

Ollnova's Construction	ecobee's Construction
No construction necessary; plain and ordinary meaning Preamble: "The automation component of claim [3]"	Indefinite

The last dispute from the '282 Patent concerns Claims 3–4. Those claims recite:

> 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.

> 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.

'282 Patent at 11:1–7.

Specifically, the dispute concerns the phrase "each identified sensor value" in Claim 4. ecobee contends this phrase is indefinite for lack of antecedent basis. Dkt. No. 92 at 17. Ollnova, however, urges the Court to correct Claim 4 to depend from Claim 3 rather than Claim 1. Dkt. No. 89 at 16. It points to, among other things, what it considers "the relevant discussion in the specification" as:

> At block 604, the sensor data identified during the sensor and memory scan may be compared to a COV threshold value corresponding to each individual sensor and/or sensor value. Sensor data found to exceed the COV threshold may be flagged for later transmission.

Id. at 17 (quoting '282 Patent at 9:4–8).

Applying the standard for correcting a claim discussed *supra*, the Court agrees with Ollnova. Even without the specification, a skilled artisan would have understood Claim 4 to depend from Claim 3 because the output from Claim 3's instruction must be "identified sensor values." Moreover, until an infringing component identifies the sensor *values* from the sensor *data*, as required in Claim 3, flags cannot be set as required by Claim 4. Thus, a skilled artisan would understand *some* identification of sensor values as inherent to Claim 4.

ecobee argues judicial correction on this record is impermissible redrafting of the claim. For one, it asserts Ollnova's proposed change would introduce a new limitation into Claim 4. Dkt. No. 92 at 18–19. Moreover, it notes the specification refers to sensor data (rather than sensor values) "and therefore fails to resolve the ambiguity." *Id.* at 19.

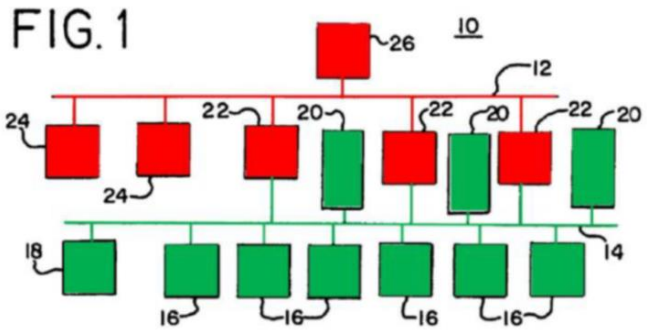
The Court disagrees on both points. First, the Court is not redrafting the claim, but rather

concluding a skilled artisan would recognize the error in dependency and understand the claim's scope even without correction. Second, despite the specification not using identical language, a skilled artisan would nonetheless find it helpful in both identifying the error and understanding its consequence. In particular, the specification explains "[s]ensor data found to exceed the COV threshold"—that is, values of the sensor data identified as exceeding a COV threshold as recited in Claim 3—"may be flagged" as required by Claim 4. *See* '282 Patent at 9:7–8. Thus, lines 4–8 of column 9 are sufficient for a skilled artisan to resolve any ambiguity. Accordingly, the Court judicially corrects "automation component of claim 1" in the preamble of Claim 4 to "automation component of claim 3" given the obvious and apparent nature of this clerical error.

C. U.S. Patent 7,860,495

1. Background.

The '495 Patent teaches a wireless architecture that maximizes control capabilities and available communication paths. On one level of the architecture, sensors and associated actuators communicate directly with one another. The architecture has regional control on a higher, second level, which may control operation of components of the lower level tier as needed. *See generally* '495 Patent at 2:16–36.



ecobee's annotated FIG. 1 of the '495 Patent showing one embodiment of a two-tier architecture having a lower-level network 14 in green and high-level

network 12 in red. Dkt. No. 92 at 20. The specification identifies controllers 22, which are on both networks, as part of the high-level network 12. *See generally* '295 Patent at 10:30–57.

The parties only dispute phrases from independent Claim 1 and dependent Claim 3. Those claims recite:

> 1. A control system for wireless building automation control, the control system comprising:
>
> a first wireless network in a building having first wireless communications protocol; and
>
> a second wireless network in the building having a second wireless communications protocol, the first wireless communications protocol different than the second wireless communications protocol;
>
> wherein the first wireless network is operable to control, *free of communications with the second wireless network*, building components in response to sensors operable within the first wireless network, and wherein the first wireless network is also operable to control the building components in response to data from the second wireless network.
>
> * * *
>
> 3. The control system of claim 1 wherein the first wireless network comprises a first plurality of first processors and the second wireless network comprises a second plurality of second processors, *the second processors having a greater processing power and storage capacity than the first processors*.

'495 Patent at 19:21–44 (emphasis added).

2. *"free of communications with the second wireless network" ('495 Patent, Claim 1)*

Ollnova's Construction	ecobee's Construction
No construction necessary; plain and ordinary meaning	"free of communications with any component on the second wireless network"

The disputed phrase is in the first half of Claim 1's last limitation: "wherein the first wireless network is operable to control, *free of communications with the second wireless network*, building components." '495 Patent at 19:29–31. The parties dispute whether this language excludes a first wireless network that communicates with a component operating on both the first and second wireless networks—i.e., an interfacing component such as controller 22 of FIG. 1. ecobee acknowledges some component must be capable of interfacing with both networks, but asserts any such component is, by definition, on the *second* network. Dkt. No. 92 at 23 (citing '495 Patent at 10:46–48). Ollnova criticizes this position as focusing on *components of*, rather than *communications with*, the network. Dkt. No. 94 at 7–8.

The Court rejects ecobee's construction for three reasons and will give this term its plain and ordinary meaning. First, the disputed phrase concerns network communications rather than network components. ecobee construction, however, wrongly equates communication with the second network with any component touching the second network, even if such component originated the control message and sent it only through the first network using the first protocol. For example, ecobee's construction would exclude a control message generated by an interfacing component but sent only through the first network. That interpretation is too restrictive and not required by the claim language.

Second, ecobee wrongly treats the patent's description of FIG. 1 as definitional concerning

the network on which an interfacing component or controller resides. FIG. 1 is simply one embodiment.

Finally, ecobee's construction could be misinterpreted to preclude any communication from the second network, regardless of whether the first network acted on such communication to control building components. The claim does not require the first network to be free of communications with the second network. It only requires that the first network's control of the building components be free of such communications.

3. "the second processors having a greater processing power and storage capacity than the first processors" ('495 Patent, Claim 3)

Ollnova's Construction	ecobee's Construction
No construction necessary; plain and ordinary meaning	Indefinite

Claim 3 requires the first and second wireless networks of Claim 1 to have first and second pluralities of processors, respectively. '495 Patent at 19:40–43. The claim further requires "the second processors [to have] greater processing power and storage capacity than the first processors." *Id.* at 43–44.

ecobee challenges this term as indefinite alleging it has two reasonable interpretations:

> [Either] (1) *all* processors of the second network . . . have a greater processing power and storage capacity than *all* processors of the first network in the aggregate, or (2) each individual processor of the second network [has] a greater processing power and storage capacity than each individual processor of the first network.

Dkt. No. 92 at 24. Ollnova counters that the disputed phrase reads on both interpretations, and that ecobee confuses breadth with indefiniteness. Dkt. No. 94 at 8.

To start, this is not merely a question of breadth. Ollnova does not challenge either interpretation as unreasonable, and infringement could turn on which interpretation the Court adopts.

For example, if the first plurality of processors has three processors, each with a value of 3 units, and the second plurality of processors has three processors with values of 1 unit, 1 unit, and 4 units, the aggregate values of the first and second plurality of processors would be 9 units and 6 units, respectively, but the value of each processor from the first plurality would not exceed the value of each processor from the second plurality. *Cf. Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1344–45 (Fed. Cir. 2015) (concluding there was not reasonable certainty as to which of three measures of "molecular weight" should be used when each measure was reasonable, the claim provided no indication as to the proper measure, and the specification did not define or mention the term).

Regardless, the specification and claim language together resolve any ambiguity. The most relevant part of the specification compares a "second" processor to individual "first" processors:

> The processor 42 has a greater processing power and storage capacity *than processors of the devices 16, 18 and 20* of the lower level network. For example, the processor 42 is a 16, 32 or 64 bit processor.

'495 Patent at 11:15-32 (emphasis added).[2] This comports with the patent's goal of reducing the cost of individual sensor arrangements by, for example, limiting the maximum processing power to 8- or 16-bit components. *See id.* at 6:66–7:6 ("By minimizing the processor requirements and associated memory, the cost of the sensor arrangement 16 may be reduced."). Further, this reading

[2] ecobee characterizes this passage as "unhelpful" because it identifies only a single processor 42 rather a plurality of processors as required by Claim 3. Dkt. No. 92 at 25. Nonetheless, the most natural reading of this passage compares "processor 42" to each of "devices 16, 18 and 20" rather than those devices in the aggregate. Moreover, the specification's reference to register sizes (i.e., bits) as the measure for processing power also supports a comparison between individual processors, as register size would be difficult to measure in the aggregate. In contrast, it would be straightforward to conclude a single 32-bit processor has more processing power than a single 16-bit processor.

of the specification is consistent with the omission of the word "pluralities" in the disputed phrase, which has some weight given its presence earlier in the limitation. For these reasons, the Court construes this phrase as "each of the second processors having a greater processing power and storage capacity than each of the first processors."

D. U.S. Patent 8,264,371

1. Background

The '371 Patent "relates to methods and devices for communicating change-of-value information within a building automation system." '371 Patent at 1:10–12. The patent describes both a "polled" embodiment and a "push" embodiment for such communication. The description of each explains the corresponding behavior of components 200a, 200b of FIG. 3, with component 200b communicating change-of-value information to component 200a.

FIG. 4 shows the "polled" embodiment, which comprises four messages between the two devices. First, component 200a sends a "change-of-value (COV) request" message to component 200b, asking that component to indicate whether any of the local detected values, received values, parameters, or measurements have changed beyond a pre-defined reporting limit. Second, if component 200b detects a new value since the last "COV request" message, it sends a "COV acknowledgment" message to component 200a; otherwise, component 200b sends a "negative COV acknowledgment" message to component 200a. Third, if component 200a receives a "COV acknowledgment" message, it replies to component 200b with an "acknowledge COV request" message to the component 200b. Finally, because component 200b knows from receiving the "acknowledge COV request" message the COV was successfully sent to component 200a, it clears the reported COVs, and returns an "acknowledge COV request acknowledgment" message. *See generally* '371 Patent at 6:36–7:10.

Claim 1 is directed to a component providing COV information in a "polled" embodiment:

> 1. An automation component configured for wireless communication within a building automation system, the automation component comprising:
>
> a wireless communications component;
>
> a processor in communication with the wireless communications component;
>
> a memory in communication with the processor, the memory configured to store computer readable instructions which are executable by the processor;
>
> wherein the computer readable instructions are programmed to: process a change-of-value request message received via the wireless communications component;
>
> generate a change-of-value update in response to the change-of-value request message, wherein the change-of-value update includes a plurality of change-of-value messages received from a plurality of devices; and
>
> communicate the change-of-value update via the wireless communication component at regular intervals according to a schedule or until a change-of-value acknowledgment is received.

'371 Patent at 8:39–60 (emphasis added).

FIG. 5 shows the simpler "push" embodiment. First, component 200b regularly checks its inputs and outputs for new or changed values. If it detects new or changed values, component 200b creates a "Push COV" message containing all queued COV values and send the message to component 200a. If the message is received and understood, component 200a sends a "Push COV acknowledge" message to component 200b. Otherwise, component 200a sends a negative acknowledge (NAK) and an error code. After receiving an expected "Push COV acknowledge" response, component 200b clears the COV status. Component 200a then processes the COVs into an internal database and may report those new values to other devices. *See generally* '371 Patent

at 7:11–7:42.

Claim 8 concerns the "push" embodiment:

> 8. A method of communicating information between automation components operating within a building automation system, the method comprising:
>
> detecting an indication representing a change-of-value; generating a change-of-value update that includes a plurality of change-of-value messages received from a plurality of devices;
>
> repetitively communicating the change-of-value update in response to the detected indication;
>
> receiving an acknowledgment of the communicated change-of-value update; and
>
> terminating communication of the change-of-value update in response to the received acknowledgement.

'371 Patent at 9:15–27.

2. "change-of-value request message" ('371 Patent, Claims 1, 2, 6); change-of-value message" ('371 Patent, Claims 1, 8, 10, 13, 17, 19)

Disputed Term	Ollnova's Construction	ecobee's Construction
"change-of-value request message"	No construction necessary; Plain and ordinary meaning	a message that requests or directs an automation component to indicate if detected values, received values, parameters, or measurements have changed or altered beyond a pre-defined reporting limit
"change-of-value messages"	No construction necessary; Plain and ordinary meaning	messages denoting that information, settings, signals and/or indications have been altered, updated or otherwise changed

These disputes center on whether "change-of-value messages" require more than the

changed values themselves. ecobee takes that position, arguing "change-of-value" is a term of art in the field of building automation. Dkt. No. 92 at 26. That position is based on BACnet, which ecobee characterizes as "a widely used standard communication protocol for building automation." *Id.* Because of BACnet, says ecobee, a skilled artisan "would have understood 'change-of-value' or 'COV' to describe reports or updates indicating *whether* certain values have changed," but not the values themselves. *Id.* at 27.

ecobee also cites three excerpts from the specification. First, the patent's description of the "polled" embodiment explains component 200b "may generate and communicate a change-of-value (COV) request message [that] *request[s] or direct[s] the automation component 200b to indicate whether any of the local detected values, received values, parameters, or measurements have changed or altered beyond a pre-defined reporting limit*, e.g., COV limit." Dkt. No. 92 at 27–28 (quoting '371 Patent at 6:37–49; emphasis by ecobee). This, says ecobee, "informs a POSITA that a COV request message requests (or directs) an automation component to indicate *whether* certain values have changed (as opposed to, for example, requesting actual values or raw data itself)." *Id.* at 28. Second, ecobee points to the "COV acknowledgement" message, arguing a skilled artisan would have understood this "in this context to describe an indication of whether values had changes (e.g., a logical 'yes or no,' or true/false response)." *Id.* (citing '371 Patent at 6:50–61). Third, ecobee points to a description of a "change-of-value flag which *denotes that the information, setting, signals and/or indications stored within the memory 204 have been altered, updated or otherwise changed*." *Id.* at 29 (quoting '371 Patent at 6:9–17).

The Court rejects ecobee's position for several reasons. First, nothing in the '371 Patent suggests the BACnet standard applies. And even if it does, one reference describing BACnet suggests values are, in fact, communicated using that standard. *See* Integrating Building Automation

Sensors, Dkt. No. 92-9 at 7 ("Using COV, a device subscribes to *receive updates of a property when it changes* with a predefined amount since the last update . . . . This is for example useful for receiving temperature updates only when the temperature actually has changed." (emphasis added)).

Second, both described embodiments support Ollnova's position. Contrary to ecobee's assertion, the reference to "COV values" in the "push" embodiment is not a variable that indicates whether the new value has changed, but a reference to values that have changed. For example, the patent explains "[i]f the new value has changed more than a pre-defined amount from the last reported value, then the variable[3] is to be reported on the next COV communication." '371 Patent at 7:21–23. The patent then describes sending all COV values and checking for new values. *Id.* at 7:24–38. Further, the patent describes sending new values to other devices by way of the polling component. *Id.* at 7:39–42.

In the "polled" embodiment, if the polling component receives the "COV acknowledgement" message, it replies with an "acknowledge COV request" message, after which the polled component "clears the reported COV." '371 Patent at 6:62–7:5. This suggest the "reported COV" is a value rather than merely an indication of change, as it would be nonsensical to clear indicators without first sending the new values to the requesting component.

Third, the Background section supports Ollnova's position. Specifically, the patent explains

[3] Given this sentence's earlier reference to "value," this is likely a clerical error that should read "value" rather than "variable." This is the first time "variable" appears in the specification. The only other references to variables are to an "internal variable" used to define a time period. *See* '371 Patent at 7:66–9 ("If the automation component 200b is operating in a stable state without any COV's for extended periods of time (as defined by internal variable), the automation component 200b will communicate with the automation component 200a so that the automation component 200a knows that the automation component 200b is still operating.").

"[i]nformation such as the temperature indication, sensor readings, and/or actuator positions provided to one or more controllers . . . may, in turn, be communicated to [a network] configured to . . . execute control applications, routines or loops, coordinate time-based activity schedules, monitor priority based overrides alarms and provide field level information to technicians." '371 Patent at 1:36–44. Importantly, the patent does not suggest changing the communicated information, but only *how* that information is communicated. Thus, a skilled artisan would read the claims as transferring the same information described in the Background but in an improved way.

Fourth, Claim 17–19 support Ollnova's position. These claims limit "change-of-value messages" to "representing a wireless device indication" and further to "a sensor reading, a temperature indication, or an actuator position." '371 Patent at 10:26–28; *id.* at 10:37–39. Adopting ecobee's construction would therefore result in conflicting constructions for the same term in different claims, which is disfavored. *See Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp.*, 309 F.3d 1365, 1371 (Fed. Cir. 2002) (noting "[a] claim term used in multiple claims should be construed consistently").

Finally, the'282 Patent unambiguously discloses transmitting sensor data exceeding the COV threshold rather than only a change-of-value indication. *See, e.g.*, '282 Patent at 9:7–8 ("Sensor data found to exceed the COV threshold may be flagged for later transmission"), *id.* at 9:53–54 (same). The '282 Patent is informative given its close relationship to the '371 Patent. Although the two patents are not formally related, there is significant overlap, including the Background, the first five figures, and the related description of the "polled" and "pushed" embodiments. *Compare*, *e.g.*, '282 Patent at 1:15–2:14, *with* '371 Patent at 1:8–2:6.

The Court adopts ecobee's construction for "change-of-value request message," which comes verbatim from the specification's description of that term. *See* '371 Patent at 6:44–49. The

Court, however, rejects ecobee's construction for "change-of-value message," which is based on the specification's description of a change-of-value flag separate from the description of either the "polled" or "pushed" embodiments. *See id.* at 6:11–18. If the "COV request" message seeks an indication as to whether "detected values, received values, parameters, or measurements have changed or altered beyond a pre-defined reporting limit," it stands to reason the responsive COV message provides such an indication. Importantly, however, the Court holds, for the reasons above, transmission of the detected values, received values, parameters, or measurements themselves can serve as that indication of change.

IV. CONCLUSION

Disputed Term	The Court's Construction
"wherein transmission of the most recent reading of the indicator stored in the memory during the period of the transmission interval is suspended in response to detecting a change in the sensed condition within the predetermined range" ('887 Patent, Claim 1)	"wherein the transmission of the most recent reading of the indicator that would otherwise occur is stopped for the remainder of the transmission interval in response to detecting a change in the sensed condition within the predetermined range"
"information associated reading of the indicator" ('887 Patent, Claims 1, 21)	"information associated with the reading of the indicator"
"receive sensor control information related to sensor data in control at a second automation component in communication with the building automation system" ('282 Patent, Claim 1)	"receive information that identifies which sensor or sensor value is driving or controlling a second automation component in communication with the building automation system"
"[first/second] automation component" ('282 Patent, Claims 1, 5, 7, 11, 13, 19, 20)	"[first/second] component designed to operate without human interaction in an automation system"

"identification flag for each identified sensor value" ('282 Patent, Claim 4)	Claim 4 depends from Claim 3 rather than Claim 1.
"free of communications with the second wireless network" ('495 Patent, Claim 1)	Plain and ordinary meaning.
"the second processors having a greater processing power and storage capacity than the first processors" ('495 Patent, Claim 3)	"each of the second processors having a greater processing power and storage capacity than each of the first processors"
"change-of-value request message" ('371 Patent Claims 1, 2, 6)	"a message that requests or directs an automation component to indicate if detected values, received values, parameters, or measurements have changed or altered beyond a predetermined reporting limit"
"change-of-value messages" ('371 Patent Claims 1, 8, 10, 13, 17, 19)	"messages indicating if detected values, received values, parameters, or measurements have changed or altered beyond a predetermined reporting limit"

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party's claim-construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this opinion, other than the actual positions adopted by the Court, in the presence of the jury. Further, neither party may take a position before the jury that contradicts the Court's reasoning in this opinion. Any reference to claim construction proceedings is limited to informing the jury of the positions adopted by the Court.

So ORDERED and SIGNED this 10th day of April, 2023.

RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE