

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ADEMCO INC.,
Petitioner,

v.

ECOFACITOR, INC.,
Patent Owner.

IPR2022-00409
Patent No. 10,584,890

PATENT OWNER'S PRELIMINARY RESPONSE

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Patent Owner's Exhibit List

Exhibit	Description
2001	U.S. Patent No. 8,428,782 (“Imes ’782”)
2002	U.S. Patent No. 8,740,100 (“Steinberg”)

I. Introduction

The Board should deny institution as to U.S. Patent No. 10,584,890 B2 (Ex. 1001, “the ’890 Patent”) for at least two independent reasons.

First, the Petition should be denied on the merits. The sole challenged independent claim recites “[a] thermostat system comprising” various elements, including “one or more processors configured with electronic circuitry to...receive geo-positioning data from the location-aware mobile device....” For both Grounds 1 and 2, to the extent the Petition maps any “system” to the thermostat system of claim 1, it is the thermostat of Leen (for Ground 1) or the thermostat of Ehlers (for Ground 2). However, the Petition fails to allege (much less explain how) the thermostats of Leen or Ehlers include (or would be modified to include) all required claim limitations, particularly “one or more processors configured with electronic circuitry to . . . receive geo-positioning data from the location-aware mobile device . . .,” as explained in further detail below. This deficiency applies to all grounds and is dispositive of the merits of the Petition.

Second, the Board should exercise its discretion and deny the Petition under 35 U.S.C. § 325(d) because the USPTO has already considered the same or substantially the same prior art, and the Petition has failed to show that the Examiner materially erred during prosecution. Ground 1 extensively relies on Trundle and Ehlers, and Ground 2 extensively relies on Imes and Ehlers. But Trundle, Imes, and

Ehlers were all considered by the Examiner. Indeed, a similar and related Imes reference was the basis for a rejection during prosecution of the '554 Application (to which the '890 Patent claims priority). The Petition relies on an additional reference as to each Ground to avoid § 325(d), but this fails, as substantially the same disclosures were considered by the Examiner during prosecution. The Petition does not demonstrate material error in the Examiner's actions. Discretionary denial is warranted.

II. '890 Patent, Prosecution History, and Claim Construction

A. Summary of '890 patent

The '890 Patent (Ex. 1001) is entitled "System and method for using a mobile electronic device to optimize an energy management system," and it describes "systems and methods for using the geographic location of networked consumer electronics devices as indications of occupancy of a structure for purposes of automatically adjustment the temperature setpoint on a thermostatic HVAC control." '890 Patent at Abstract. The '890 Patent relates to improvements to control for heating or cooling systems ("HVAC systems"), such as by using geo-positioning data from a mobile device (e.g., a smartphone) to automatically adjust the setpoint of the HVAC system to an away setting when the building is unoccupied. '890 Patent, 4:3-26, Fig. 8.

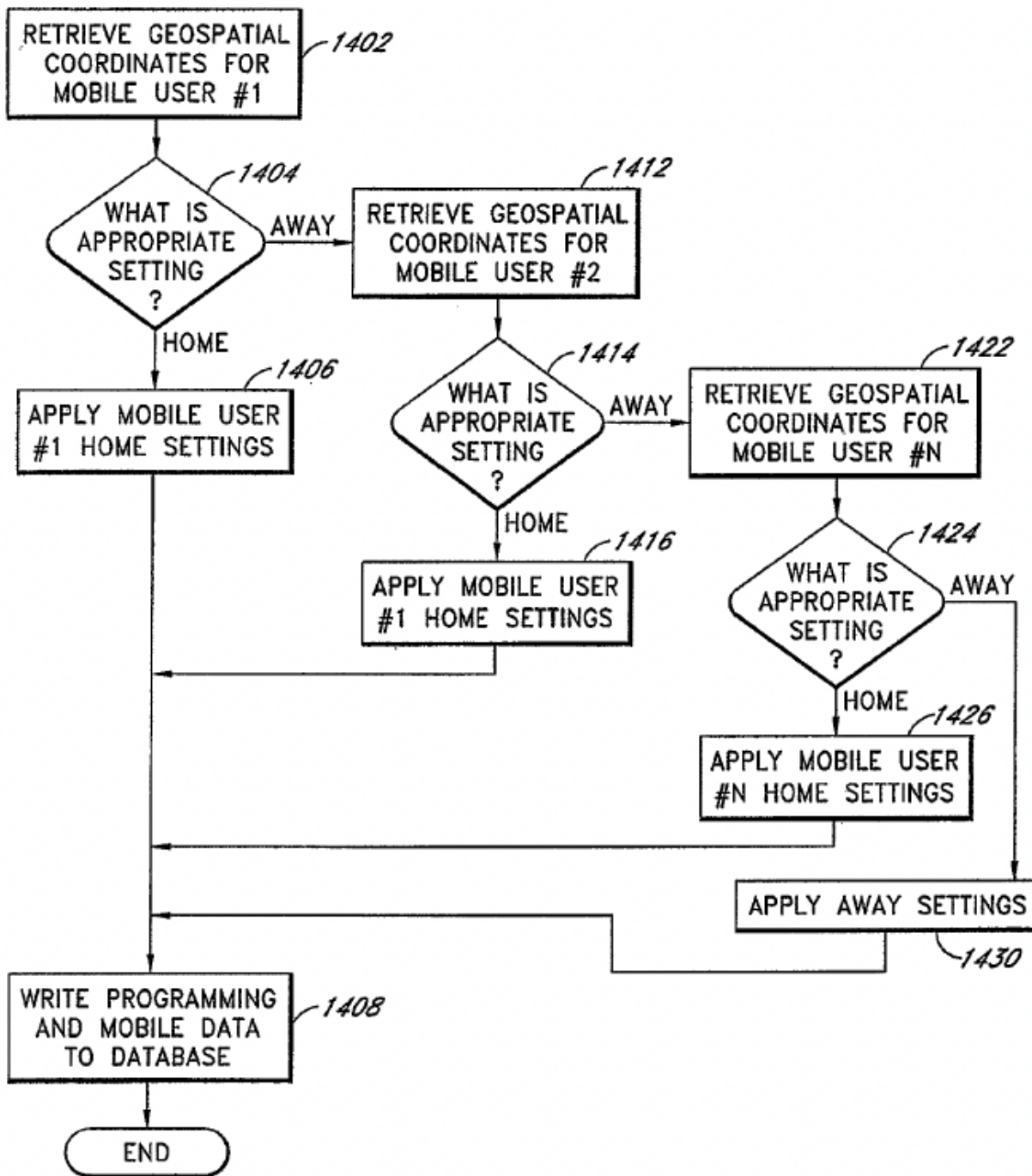


FIG. 8

B. Challenged Claims

The Petition challenges claims 1–17 of the '890 patent. Pet. at 1. The only

independent claim, claim 1, recites as follows (using the Petition's naming convention for claim limitations):

Claim	Recitation
1Pre	A thermostat system comprising:
1A	a housing;
1B	electrical contacts configured to connect the thermostat with wires that allow for at least two electrical connections from a building's HVAC system to the contacts;
1C	a display configured to present information to a user;
1D	a wireless radio compatible with a wireless radio frequency protocol and configured to communicate bi-directionally with a location-aware mobile device
1E	a temperature sensor;
1F	one or more processors configured with electronic circuitry to;
1G	receive HVAC data parameters, including a first data parameter from the temperature sensor comprising an interior temperature inside the building; and
1H	a second data parameter from a network connected to the thermostat, wherein the second data parameter comprises an outside weather condition collected from a source external to the building;
1I	determine a first temperature setpoint data parameter for the building, wherein the first setpoint data parameter includes a first temperature value and a first time value;

- 1J determine a second temperature setpoint data parameter for the building, wherein the second setpoint data parameter includes a second temperature value and a second time value;
- 1K receive radio frequency signals from the location-aware mobile device;
- 1L receive geo-positioning data from the location-aware mobile device and automatically adjust a temperature value based on the geo-positioning data, including initiating at least one cooling or heating cycle for the HVAC system when the geo-positioning data is determined to indicate that the building is unoccupied by the user;
- 1M electronic circuitry configured to allow the user to adjust a desired temperature for the HVAC system;
- 1N electronic circuitry configured to analyze a plurality of data parameters specific to the user, including at least one data parameter relating to usage of the HVAC system at various times; and
- 1O electronic circuitry configured to generate and communicate usage metrics pertaining to the HVAC system over time; and
- 1P a compressor delay circuit configured to delay the start or stop of a compressor for the HVAC system and protect the compressor from rapid cycling.

C. Prosecution History

Patent Owner filed Application No. 16/374,246 (the “’4246 Application”), the application that led to the ’890 Patent, on April 3, 2019, claiming priority to five prior patent applications. The earliest of the five was Application No. 12/788,246,

which was filed on May 26, 2010. Petitioner thus assumed the priority date of the '890 Patent is May 26, 2010. Pet. at 3-4, citing Ex. 1002, ¶44. Patent Owner agrees that the '890 Patent has priority to the application dated May 26, 2010.

During prosecution of the '4246 Application that issued as the '890 Patent, the Examiner considered at least the Imes, Trundle, and Ehlers references presented in the Petition. The Imes reference was cited in an IDS signed by Examiner Marc Norman on July 1, 2019. Ex. 1004 at 142. The Trundle reference (Pub. No. 2010/0289643 to Trundle et al.) was cited in an IDS signed by Examiner Marc Norman on July 1, 2019. Ex. 1004 at 144. And the Ehlers reference (U.S. Patent 6,216,956 to Ehlers) was also cited in an IDS signed by Examiner Marc Norman on July 1, 2019. Ex. 1004 at 139. Finally, the Petition states that the Wedekend reference (U.S. Patent 5,197,666 to Wedekend et al.) was cited as evidence of the state of the art. Pet. at 78, citing Ex. 1004, 389.

The '4246 Application is a continuation of Application No. 16/264,050, filed on January 31, 2019, which is a continuation of Application No. 15/616,719, filed on June 7, 2017, now abandoned, which is a continuation of Application No. 14/491,554 (the "'554 Application") filed on September 19, 2014, now U.S. Patent No. 9,709,292, which is a continuation of Application No. 14/048,932, filed on October 8, 2013, now U.S. Patent No. 8,840,033, which is a continuation of Application No. 12/788,246, which is the earliest-filed application. Ex. 1001,

Related U.S. Application Data.

As to the '4246 Application that issued as the '890 Patent, the Examiner initially rejected the application's priority claim on the basis that the disclosure of the prior-filed applications failed to provide adequate support for the '4246 Application as required by 35 U.S.C. § 112. Ex. 1004, 115-116. In response, Patent Owner provided a table to show §112 support for each claim limitation. An Allowance was mailed on November 1, 2019, in which the Examiner stated that "Applicant's response . . . properly established priority to 26 May 2010." Ex. 1004, 38; Ex. 1002, ¶¶46-49; *see also* Ex. 1002, ¶¶50-62. Examiner also explained reasons for allowing the claims over the prior art. Ex. 1004, 38.

In IPR2022-00535, Petitioner Google LLC requested *inter partes* review of the '890 Patent based on prior art that post-dated the May 26, 2010 priority date. Ex. 1004 at 1-15. Institution was denied because the Petitioner failed to demonstrate that the Office made a material error in determining the May 26, 2010 priority date of the '890 Patent. Ex. 1004 at 1-15.

D. Level of Skill in the Art

Solely for purposes of this Preliminary Response, Patent Owner does not dispute Petitioner's definition of a person of ordinary skill in the art (POSITA)—i.e., a person with "at least (1) an undergraduate degree in electrical engineering, computer engineering, computer science, or a comparable field of study and (2) at

least two years of experience with (i) process control, (ii) automation systems, (iii) or a comparable field of work. Ex. 1002, ¶12. Individuals with different education and additional experience could still be of ordinary skill in the art if that additional experience compensates for a deficit in their education stated above. *Id.* Additional education might substitute for some experience, and vice versa. *Id.*” Pet. at 8.

E. Claim Construction

Petitioner and Patent Owner argued that the preamble of independent claim 1, “A thermostat system,” is limiting, and the District Court adopted this position in the co-pending district court case. Ex. 1025, 5; Ex. 1021, 2; Ex. 1002, ¶¶ 63-64; Pet. at 3. Patent Owner agrees with Petitioner and with the District Court that the preamble, “A thermostat system,” is limiting. This construction should be applied here. However, the arguments in this Preliminary Response do not turn on whether the preamble is construed as limiting or non-limiting, and so the Board need not reach a decision on the preamble in deciding whether institution is warranted. Pet. at 3.

III. Petitioner’s Asserted Grounds

The Petition asserts the following grounds of unpatentability (Pet. at 2):

- Ground 1A: Claims 1-9 are obvious in light of Leen, Trundle, and Ehlers
- Ground 1B: Claims 10-17 are obvious in light of Leen, Trundle, Ehlers, and Wedekend

- Ground 2A: Claims 1-9 are obvious in light of Ehlers, Imes, and Young
- Ground 2B: Claims 10-17 are obvious in light of Ehlers, Imes, Young, and Wedekind

IV. Applicable Legal Standards

The petitioner has the burden to “demonstrate that there is a reasonable likelihood that at least one of the claims challenged in the petition is unpatentable.” 37 C.F.R. § 42.108. A petition challenging a claim on grounds of obviousness must sufficiently explain (1) “how specific references could be combined,” (2) “which combination(s) of elements in specific references would yield a predictable result,” and (3) “how any specific combination would operate or read on” the claims. *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1327-28 (Fed. Cir. 2012).

Moreover, a petitioner may not rely on the Board to substitute its own reasoning to remedy the deficiencies in a Petition. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (rejecting the Board’s reliance on obviousness arguments that “could have been included” in the petition but were not, and holding the Board may not “raise, address, and decide unpatentability theories never presented by the petitioner and not supported by the record evidence”); *Ariosia Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1367 (Fed. Cir. 2015) (holding that “a challenge can fail even if different evidence and arguments might have led to success”). Nor may the Petitioner remedy the deficiencies in a reply brief. *Wasica*

Finance GMBH v. Continental Auto. Systems, 853 F.3d 1272, 1286 (Fed. Cir. 2017) (“Rather than explaining how its original petition was correct, Continental’s subsequent arguments amount to an entirely new theory of prima facie obviousness absent from the petition. Shifting arguments in this fashion is foreclosed by statute, our precedent, and Board guidelines.”) (internal citations omitted).

V. Institution Should Be Denied On The Merits

The Petition fails to identify any alleged “thermostat system” that includes, or would be modified to include, all of the elements of the claimed system.

The sole challenged independent claim recites “[a] thermostat system comprising” various elements, including “one or more processors configured with electronic circuitry to ... receive geo-positioning data from the location-aware mobile device” For both Grounds 1 and 2, to the extent the Petition maps any “system” to the thermostat system of claim 1, it is the thermostat of Leen (for Ground 1) or the thermostat of Ehlers (for Ground 2).¹ However, the Petition fails to even

¹ The Parties agree that the preamble, “A thermostat system,” should be construed as limiting. Ex. 1021 at 2. However, even if the preamble were not deemed to be limiting (contrary to the agreement of both Patent Owner and Petitioner), the Petition nevertheless alleges that a specific thermostat device constitutes the alleged “system” that practices claim 1, such that that thermostat device must itself satisfy

allege (much less explain how) the thermostats of Leen or Ehlers include (or would be modified to include) all required claim limitations, particularly “one or more processors configured with electronic circuitry to . . . receive geo-positioning data from the location-aware mobile device . . .,” as explained in further detail below.

A. Grounds 1A and 1B: The Petition fails to show that the alleged “thermostat system” of Leen includes, or would be modified to include, all claim limitations.

Independent claim 1, from which all challenged claims depend, recites a “thermostat system comprising . . . one or more processors configured with electronic circuitry to . . . receive geo-positioning data from [a] location-aware mobile device and automatically adjust a temperature value based on the geo-positioning data, including initiating at least one cooling or heating cycle for the HVAC system when the geo-positioning data is determined to indicate that the building is unoccupied by the user.” In other words, for a system to practice claim 1, that system must be able to “receive geo-positioning data from [a] location-aware mobile device” and adjust a temperature value on the basis of that received geo-positioning data.

all requirements of the claim. This is true for each of the obviousness theories presented in the Petition, as each alleges a specific thermostat (either Leen’s thermostat, or Ehlers’ thermostat) is the claimed “system” that practices claim 1.

For Grounds 1A and 1B, the Petition clearly and unambiguously maps Leen’s “HVAC controller 10” to the “thermostat system comprising” all claim elements. *See* Pet. at 14; *see also* Ex. 1002, ¶ 108 (Petitioner’s expert: “Leen discloses an HVAC controller (*thermostat system*), ***such as a thermostat***, that includes a processor or controller and a user interface.”) (first italics in original). Thus, in order for the Petition to show obviousness of any challenged claim under Grounds 1A and 1B, the Petition must show that Leen’s HVAC controller 10 (which is a thermostat)² either (1) has circuitry to receive geo-positioning data from a mobile device, or (2) that a POSITA would have found it obvious to modify Leen’s thermostat to include circuitry to receive geo-positioning data from a mobile device. The Petition fails in both respects.

First, for Grounds 1A and 1B, the Petition relies exclusively on teachings from Trundle (rather than Leen) to satisfy the functionality of “receiv[ing] geo-positioning data from the location-aware mobile device and automatically adjust a

² *See* Pet. at 14 (“Leen discloses an HVAC controller 10 (*thermostat system*), such as a thermostat, that may control ‘one or more components of an HVAC system.’”). The Petition’s mapping of Leen’s thermostat (HVAC controller 10) to the claimed “thermostat system” is consistent with Petitioner’s assertion in district court that “thermostat system” requires a “thermostat.” Ex. 1025 at 5-9.

temperature value based on the geo-positioning data.” *See* Pet. at 28-29 (Ground 1A); *see also* Pet. at 43-57 (no additional analysis of this limitation for Ground 1B). Thus, the Petition does not allege that Leen’s thermostat (HVAC controller 10) actually includes “[one or more processors configured with electronic circuitry to] receive geo-positioning data from the location-aware mobile device” as recited by Limitation [1L].

Second, the Petition fails to allege (much less show) that a POSITA would have been motivated to *modify* Leen’s thermostat (HVAC controller 10) to include “[one or more processors configured with electronic circuitry to] receive geo-positioning data from the location-aware mobile device” as required by Limitation [1L]. Indeed, the Petition does not even *mention* Leen or its thermostat (HVAC controller 10) in its analysis of Limitation [1L], much less explain why a POSITA would have modified Leen’s thermostat to receive geo-positioning data from a location-aware mobile device. *See* Pet. at 28-29.

This is not some trivial oversight by the Petition, because there is simply no evidence that a POSITA would have been motivated to modify Leen’s thermostat to receive geo-positioning data and automatically adjust a temperature value based on the geo-positioning data. In particular, the Petition relies on Trundle’s ability to “receive geographic location by using ‘GPS data’ and ‘cell tower triangulation (*receive geo-positioning data*) to ‘infer[] future occupancy’ of the user and

‘determine[] an operation related to controlling the one or more energy consuming devices’ such as ‘automatically setting a thermostat to an energy conserve mode’ (*automatically adjust a temperature value based on the geo-positioning data*)” as satisfying a portion of Limitation [1L]. Pet. at 28. But the Petition identifies only Trundle’s monitor control unit or the mobile device itself (i.e., a system outside of Trundle’s thermostat 230) as allegedly receiving geo-positioning data. Accordingly, a POSITA seeking to combine Trundle and Leen would have no motivation to implement that functionality within Leen’s thermostat (HVAC controller 10), but would instead implement that functionality outside of the thermostat (as Trundle did).

For context, the configuration of various components discussed in Trundle are shown in Trundle’s Figures 2 and 1B (reproduced below), which show that Trundle’s “thermostat” (which the Petition appears to identify as analogous to Leen’s thermostat for purposes of the Petition’s obviousness theory) is separate and distinct from Trundle’s monitor control unit (210) and Trundle’s “native monitoring application” (242, 252).

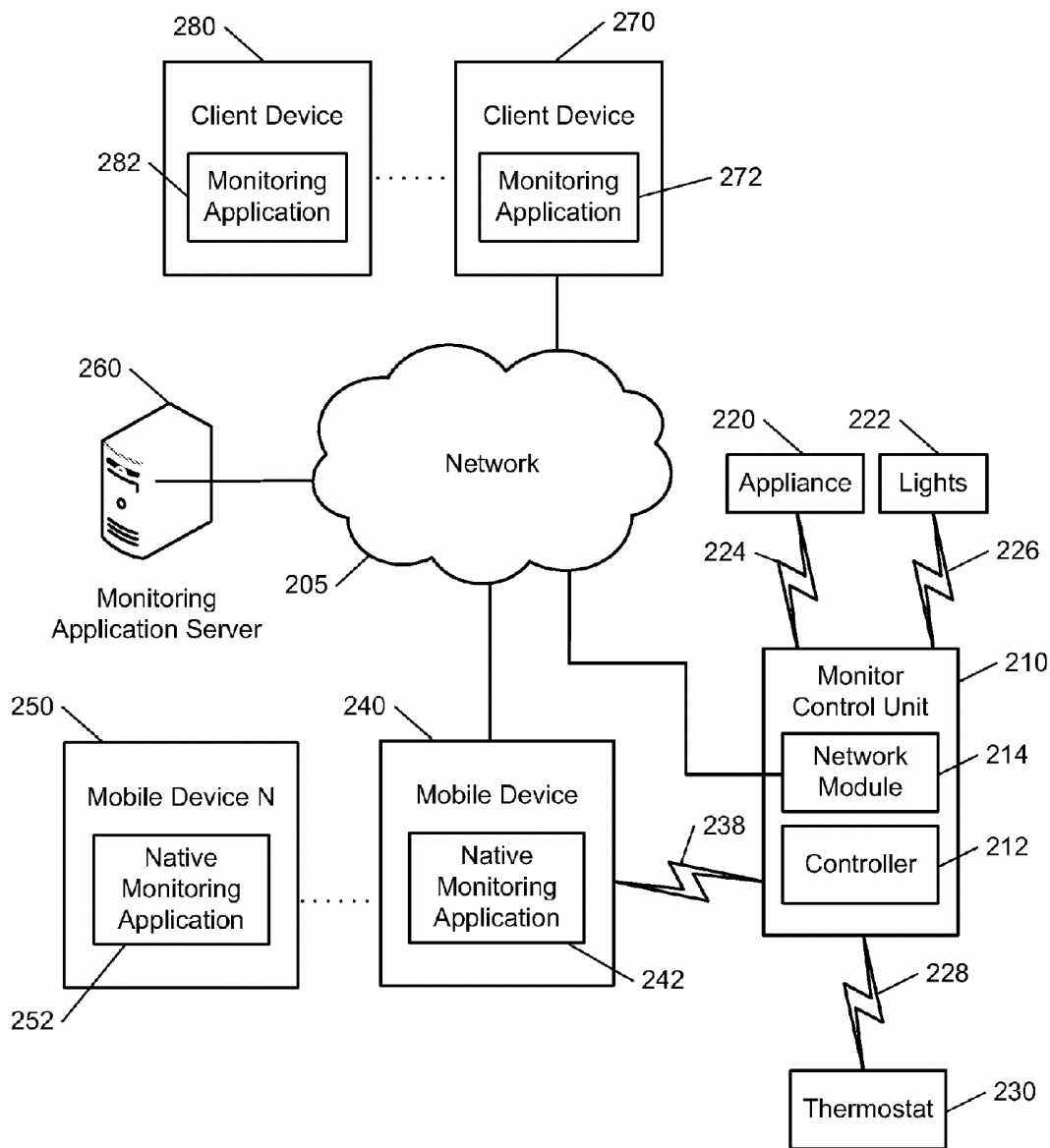


FIG. 2

Ex. 1009 at FIG. 2.

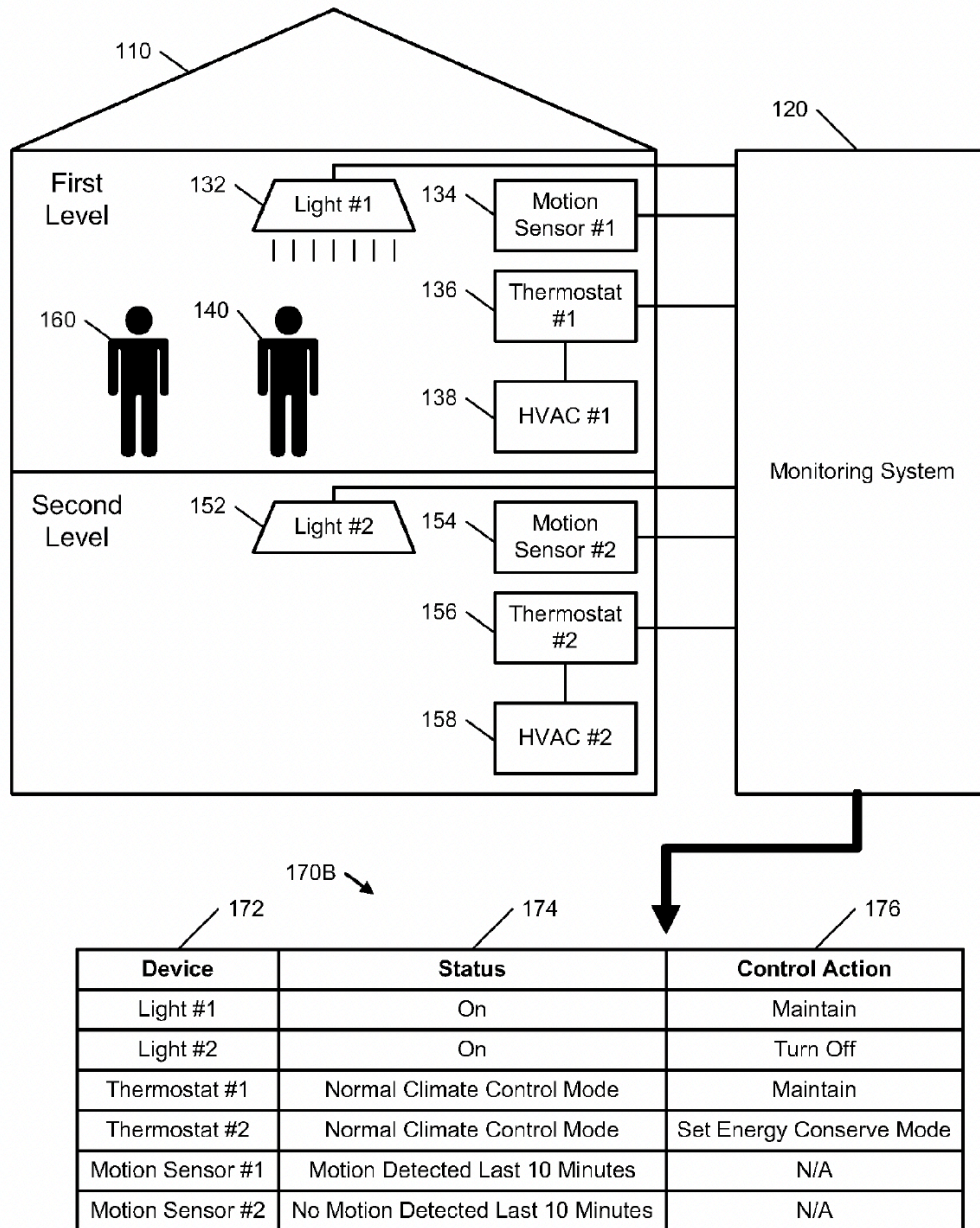


FIG. 1B

Ex. 1009 at FIG. 1B.

Notably, the Petition does not allege that Trundle teaches that its thermostat (e.g., 136, 156, 230) ever receives geo-positioning data. To the contrary, the only aspects of Trundle that allegedly make use of geo-positioning data are Trundle's

“native monitoring application[s]” 242/252 and Trundle’s “monitoring system” 120 (which includes “monitoring system control unit” 210³). According to the Petition, Trundle teaches that, in the embodiment of Figure 12 (which the Petition relies on for Limitation [1L]—see Pet. at 30-31), it is the **monitoring system** (and *not* the thermostat) that receives geo-positioning data and evaluates that geo-positioning data to adjust the thermostat temperature. See, e.g., Ex. 1009 at *id.* at [0144] (“In the example shown in FIG. 12, **the monitoring system** prepares the property 1210 for arrival by the user 1220 based on the distance thresholds”); *id.* at [0139] (“In this example, **the monitoring system** monitors three distance thresholds with respect to the geographic position of the user 1220”); *id.* at [0140] (“At a first time, **the monitoring system** determines that a geographic location of the user 1220 is outside of a first distance threshold” and “**the monitoring system** maintains . . . the thermostat 1216 in an off state to conserve energy.”); *id.* at [0141] (“At a second time, **the monitoring system** determines that a geographic location of the user 1220 is within the first distance threshold Because the geographic location of the user

³ See Ex. 1009 at [0045] (“The monitoring system control unit 210 includes a controller 212 and a network module 214. The controller 212 is configured to control a monitoring system (e.g., a home alarm or security system) that includes the monitoring system control unit 210.”) (emphasis added).

1220 has reached the first distance threshold, *the monitoring system turns the thermostat 1216 to an on state . . .*”); *see also, e.g., id.* at [0142]-[0143].

According to the Petition, the only other component discussed in Trundle that allegedly has access to geo-positioning data is the “native monitoring application” within the mobile device itself, which may use that information to control the “thermostat, lights, [and] appliances accordingly.” *See* Ex. 1009 at [0065] (“For example, *the native monitoring application 242, 252 may check location of the mobile device* periodically and automatically detect when user is going toward or away from a home *and sets thermostat, lights, appliances accordingly.*”); *id.* (“*When the user is detected is moving toward the home, the native monitoring application 242, 252 may . . . adjust the thermostat to a comfortable setting . . .*”).

Each of the Petition’s citations to Trundle are consistent with this understanding. *See generally* Pet. at 28-30 (citing to Ex. 1009 at [0131], [0133], [0136], [0138], as well as [0073] and [0141]). For example, Trundle’s paragraphs [0073] and [0141], respectively, relate to Trundle’s “native monitoring application” and “monitoring system” (neither of which are part of Trundle’s thermostat). And Trundle’s paragraphs [0131], [0133], [0136], and [0138] simply describe a logical flowchart depicted in Figure 11, and do not state *which* components “monitor geographic location data.” Again, the Petition alleges that the “native monitoring application” and “monitoring system” are the components that monitor geographic

location data, and a POSITA would not understand Trundle's Figure 11 (and associated text) to disclose anything to the contrary. Furthermore, because Trundle's native monitoring application and monitoring system are alleged to evaluate location data and control the thermostat on the basis of that data, there would be no need or benefit to having the thermostat itself have the capability to "receive geo-positioning data from the location-aware mobile device," under the Petition's obviousness theory alleging that Leen's thermostat satisfies the claimed thermostat "system."

In sum, the Petition fails to even allege that Leen's thermostat (HVAC controller 10), which the Petition maps to the claimed thermostat "system," would include or be modified to include the functionality required by Limitation [1L]. And the Petition would not be able to make such a showing in any event, because *Trundle's* thermostat likewise does not have such functionality and there would be no benefit to including such functionality in Trundle's thermostat (because that functionality already exists in components other than Trundle's thermostat, according to the Petition). Because this deficiency applies to the challenges of both Grounds 1A and 1B to the sole independent claim (Claim 1), it is dispositive of Grounds 1A and 1B.

B. Grounds 2A and 2B: The Petition fails to show that the alleged "thermostat system" of Ehlers includes, or would be modified to include, all claim limitations.

The Petition's theory for Ground 2 fails for similar reasons as the Petition's

Ground 1 theory. As previously noted, Independent claim 1, from which all challenged claims depend, recites a “thermostat system comprising . . . one or more processors configured with electronic circuitry to . . . receive geo-positioning data from [a] location-aware mobile device and automatically adjust a temperature value based on the geo-positioning data, including initiating at least one cooling or heating cycle for the HVAC system when the geo-positioning data is determined to indicate that the building is unoccupied by the user.”

In its discussion of the preamble for Grounds 2A and 2B, the Petition fails to actually identify a particular system of Ehlers. *See* Pet. at 60-61 (citing to only Ehlers at 1:17-24, which is part of Ehlers’ “Background of the Invention,” and does not discuss Ehlers’ stated invention). To the extent the Petition can be understood to identify any particular system at all in Ehlers as being the thermostat “system” of claim 1, the Petition relies on Ehlers’ thermostat (e.g., shown in Ehlers’ Figure 2) as corresponding to the thermostat system of claim 1. *See, e.g.*, Pet. at 58 (stating, as part of the Petition’s alleged motivation to combine, that a “POSITA would have looked for ways to ***incorporate GPS-based location into thermostats***”); Ex. 1002 at ¶ 72 (Petitioner’s expert explaining that Ehlers “is directed to a thermostat”); *id.* at ¶ 262 (alleging that “POSITA would have been motivated to combine the wireless radio of Imes with the Ehlers thermostat”). Because the Petition (at most) relies on Ehlers’ thermostat as being the system of claim 1, the Petition must show that Ehlers’

thermostat includes (or would have been obvious to modify to include) “[one or more processors configured with electronic circuitry to] receive geo-positioning data from the location-aware mobile device” as required by Limitation [1L]. The Petition fails in both respects.

First, for Grounds 2A and 2B, the Petition relies exclusively on teachings from Imes to satisfy the functionality of “receiv[ing] geo-positioning data from the location-aware mobile device and automatically adjust a temperature value based on the geo-positioning data.” *See* Pet. at 66-69 (Ground 2A); *see also* Pet. at 73-77 (no additional analysis of this limitation for Ground 1B). Thus, the Petition does not allege that Ehlers’ thermostat includes “[one or more processors configured with electronic circuitry to] receive geo-positioning data from the location-aware mobile device” as recited by Limitation [1L].

Second, the Petition fails to allege (much less show) that a POSITA would have been motivated to *modify* Ehlers’ thermostat to include “[one or more processors configured with electronic circuitry to] receive geo-positioning data from the location-aware mobile device and automatically adjust a temperature value based on the geo-positioning data” as required by Limitation [1L]. Indeed, the Petition does not even ***mention*** Ehlers or its thermostat in its analysis of Limitation [1L], much less explain why a POSITA would have modified Ehlers’ thermostat to receive geo-positioning data from a location-aware mobile device. *See* Pet. at 66-69.

Again, this is not some trivial oversight, as there is simply no evidence that a POSITA would have been motivated to modify a thermostat (such as Ehlers' thermostat) to receive geo-positioning data from a location-aware mobile device. Indeed, Imes is not alleged to teach a thermostat capable of receiving geo-positioning data from a mobile device and adjusting a temperature value on that basis; rather, Imes allegedly teaches that devices *other* than its thermostat have access to (and make decisions on the basis of) location data.

According to the Petition, Imes teaches that the reception (and subsequent evaluation) of user location data to adjust a temperature value is performed by a “proximity detection module.” *See, e.g.*, Pet. at 66-68; Ex. 1014 at Abstract; *see also, e.g., id.* at 7:66-8:4, 9:5-14, 12:35-58, 32:18-49, 35:63-36:7, 36:25-44. Imes allegedly also teaches that its “proximity detection module” can be located within one of (1) Imes’ “server,” (2) Imes’ “controller,” or (3) Imes’ “mobile device,” each of which is distinct from Imes’ “thermostat” (which Imes interchangeably refers to as a “TSAT” or “TSTAT”).⁴

A “server” implementation of Imes’ proximity detection module is depicted in Imes’ Figure 2, reproduced below:

⁴ *See* Ex. 1014 at 6:53-55 & Fig. 2; *id.* at 54:1-4 (referring interchangeably to “TSAT 1320” and “TSTAT 1320”).

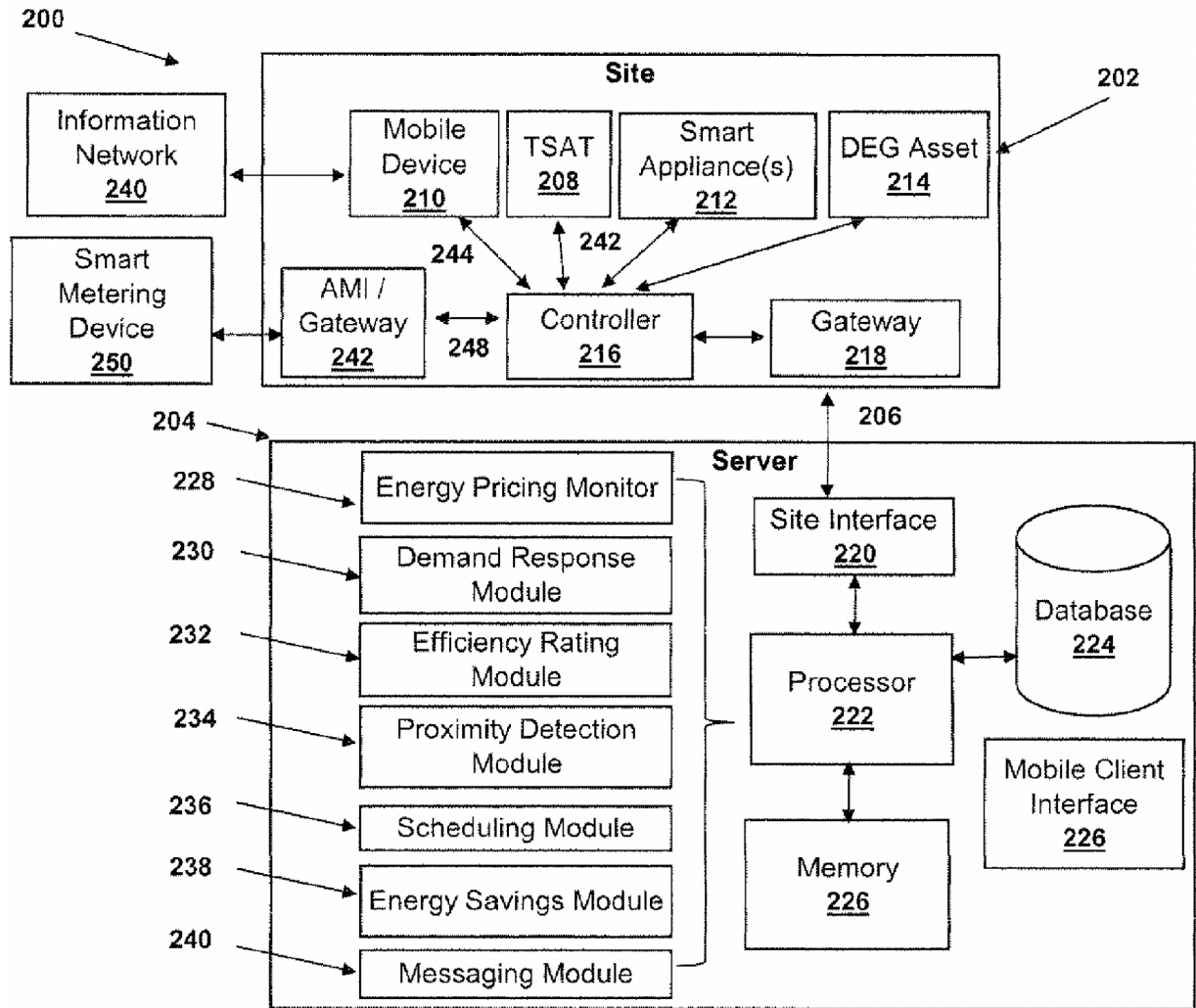


FIG. 2

Ex. 1014 at FIG. 2; *Id.* at 7:47-50 (“Server 204 can also include . . . a proximity detection module 234 . . .”). In this embodiment, Imes teaches that “proximity detection module 234 can . . . detect a location of mobile device 210 relative to site 202, and modify operating conditions of site 202 based on a proximity of mobile device 210 to site 202.” Ex. 1014 at 7:66-8:4. As Imes explains in more detail, in this embodiment the server generates a “control action report” based on the location

data, and that control action report instructs the thermostat to adjust its temperature:

For example, *proximity detection module 234 can include rules based logic to determine if an operating condition of a resource at site 202 should be altered. For example, **if a user is greater than two miles away from site 202**, and is moving away from site 202, **server 204 can generate a control action report to be communicated to site 202**. For example, **a control action report can include adjusting TSTAT 208 up a specific number of degrees** relative based on the distance and direction a user may be from site 202.*

Id. at 9:5-14; *see also id.* at 12:35-58 (describing another example of how the proximity detection module 234 can “access location data” and “further detect a current thermostat setting of TSTAT 208, and output the percentage adjustment as a new set-point value to be used within a control action report” that results in the temperature of the thermostat being adjusted).

Imes similarly depicts the “proximity detection module” residing in Imes’ “server” in Figure 6. *See id.* at FIG. 6 (depicting proximity detection module 662 residing in server 602). Imes’ teachings regarding the proximity detection module’s role in the embodiment of Figure 6 are the same in relevant respect as its teachings with regard to the Figure 2 embodiment, in that the Imes’ server (and not Imes’ thermostat) contains a proximity detection module. *See, e.g., id.* at 35:63-36:7; *id.* at 36:25-44.

Imes also teaches an implementation of its proximity detection module within

Imes' controller (which, as shown in Imes' Figures 2 and 6, is not part of Imes' thermostat 208/628). The "controller" implementation of Imes' proximity detection module is depicted in Imes' Figure 4, reproduced below.

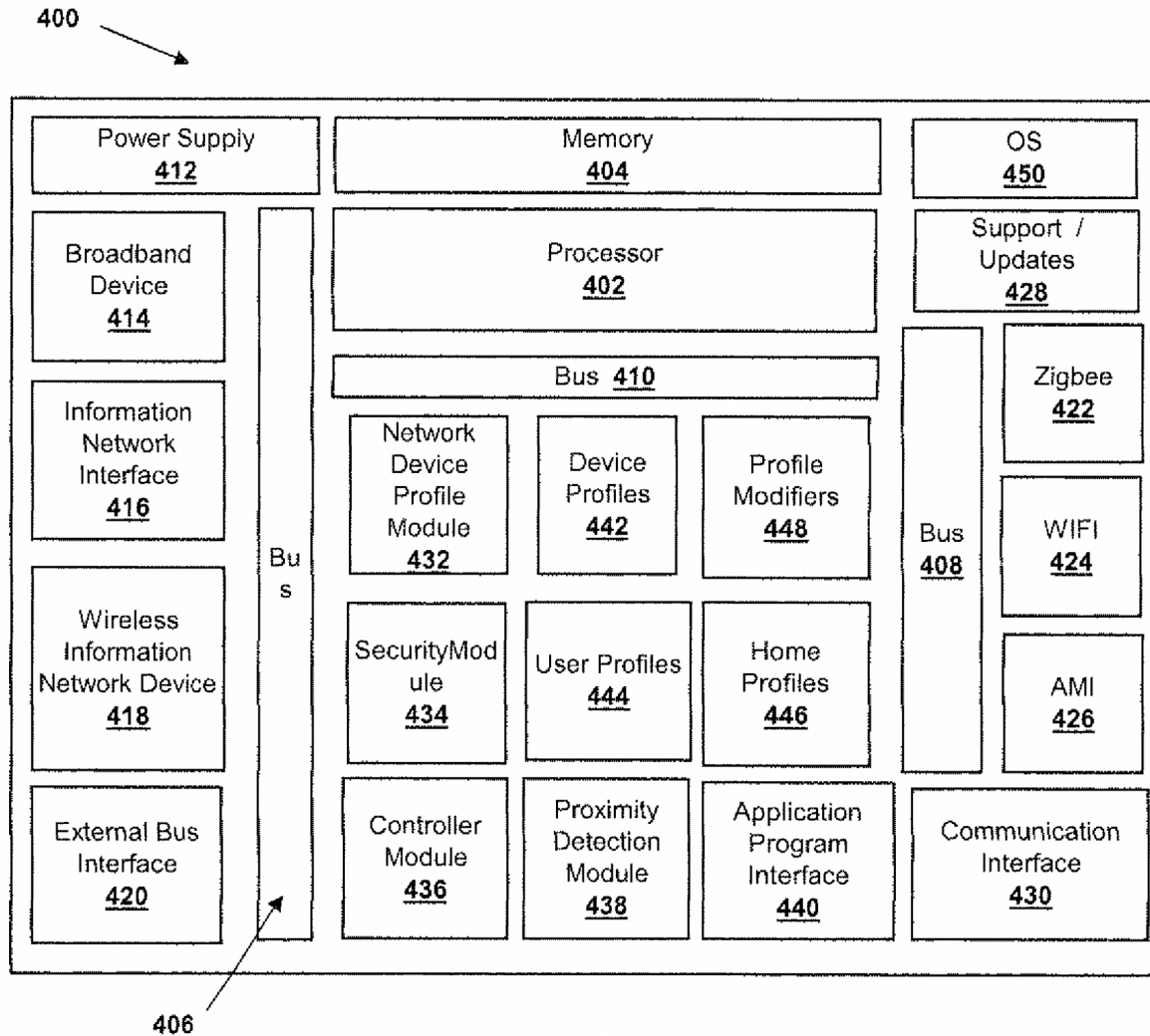


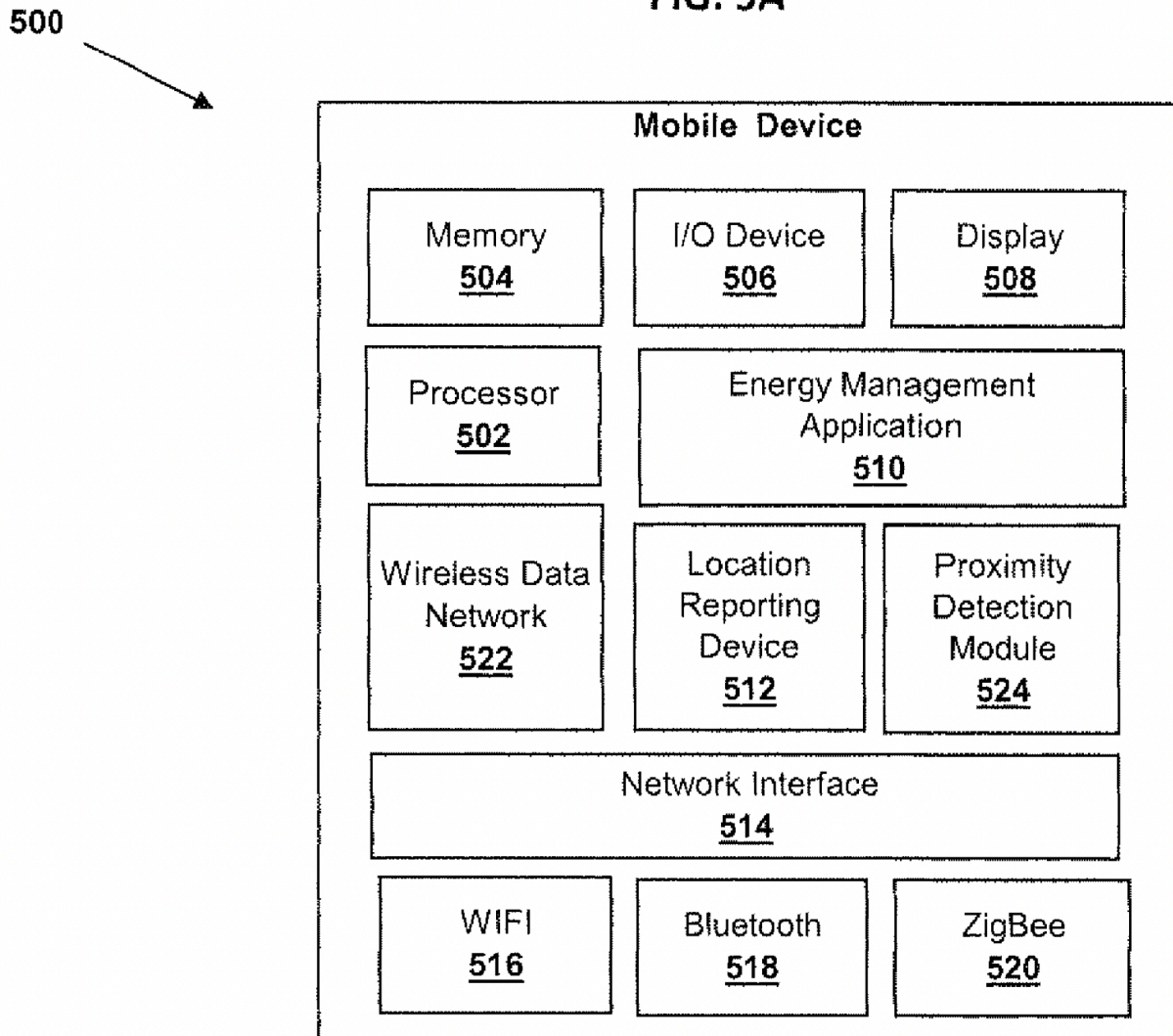
FIG. 4

Id. at FIG. 4 & 23:25-28; *id.* at 28:5-8 (“According to another aspect, controller 400 can include proximity detection module 438 that can be accessed by processor 402 to enable and disable proximity control at a site”). In this embodiment, the

“proximity detection module 438 and processor [402],” which reside in controller 400, “can be used to detect a distance between a mobile device having a location reporting device and the site.” *Id.* at 28:8-10. Then, “[p]rocessor 402 can be used to initiate generation of an outgoing message to include an updated operating condition in response to the [detected] distance.” *Id.* at 28:14-16. Thus, in this embodiment, Imes’ proximity detection module is in Imes’ controller 400, ***not*** Imes’ thermostat.

Likewise, a “mobile device” implementation of Imes’ proximity detection module is depicted in Imes’ Figure 5A, reproduced below.

FIG. 5A



Id. at FIG. 5A. In this embodiment, “proximity detection module 524 can be operated as a background process that periodically requests a location from location reporting device 512” which “can use various location reporting methods (e.g., GPS, triangulation, etc.) to detect a current location.” *Id.* at 32:18-24. Additionally, “proximity detection module 524 can be used to initiate altering an operating condition of an associated site in response to a location of mobile device 500.” *Id.* at

32:39-41. In doing so, “[p]roximity detection module 524 can output a location and direction to energy management application 510,” which is an application on mobile device 500 that determines “whether to initiate a control action at an associated site.” *Id.* at 32:45-49.

The three devices discussed above—Imes’ server, Imes’ controller, and Imes’ mobile device—are the only devices that Imes teaches include a proximity detection module. The Petition’s reliance on Imes is further consistent with this understanding. *See* Pet. at 66-69 (relying on Imes’ Figures 5A and 6, which explicitly depict the proximity detection module within Imes’ mobile device and server, respectively).

Because the Petition asserts that components in the server, controller, and mobile device of Imes adjust site operating conditions on the basis of geo-positioning data, there would be no need under the Petitioner’s theory for Imes’ thermostat to receive geo-positioning data. The Petition does not allege or even mention any reason to modify Imes’ thermostat to receive geo-positioning data, and the Petition is similarly deficient with respect to any reason to modify *Ehlers’s* thermostat to work this way, given that it does not even work this way in Imes. Indeed, the Petition does not even **mention** Ehlers or its thermostat in its analysis of Limitation [1L], and there is no evidence that a POSITA would have modified Ehlers’ thermostat to receive geo-positioning data from a location-aware mobile device, even though this is required for the Petition’s obviousness theory to prevail

in alleging Ehlers' thermostat to be the thermostat "system" of claim 1. *See* Pet. at 66-69.

In sum, the Petition fails to even allege that Ehlers' thermostat, which is the only component the Petition even arguably sets forth as the claimed thermostat "system," would include or be modified to include the functionality required by Limitation [1L]. And the Petition would not be able to make such a showing in any event, because *Imes*' thermostat likewise does not have such functionality and there would be no benefit to including such functionality in Imes' thermostat (because the Petition alleges that such functionality already exists in components other than Imes' thermostat). Because this deficiency applies to the challenges of both Grounds 2A and 2B to the sole independent claim (Claim 1), it is dispositive of Grounds 2A and 2B.

VI. Institution Should Be Denied Under § 325(d)

A. The *Advanced Bionics* Framework for § 325(d)

Under *Advanced Bionics*, the Board applies a two-part test to analyze whether to exercise its discretion to decline to institute IPR under § 325(d), determining "(1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a

manner material to the patentability of the challenged claims.” *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8-9 (Feb. 13, 2020) (precedential). “If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director will generally exercise discretion not to institute *inter partes* review.” *Id.* at 8–9.

Advanced Bionics thus expands upon and clarifies the factors in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential). *Advanced Bionics* makes clear that unless the petitioner shows there was a material error in the Office’s analysis of the previously presented prior art, the Board will generally exercise its discretion to decline to institute *inter partes* review. *Advanced Bionics* at 8. “If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.” *Id.* at 10.

B. *Advanced Bionics* Step 1 (*Becton, Dickinson* Factors (a), (b), and (d)): The same or substantially the same prior art was previously presented to the Office.

The Petition contains four alleged obviousness grounds, labeled as Ground 1A, 1B, 2A, and 2B. Pet. at 2; *supra* § III. Each of those grounds are addressed below.

1. Ground 2A: Imes, Ehlers, and Young

As to Ground 2A, the Petition relies almost entirely on Imes and Ehlers. Imes

is used for limitations [1D], [1H], [1K], and [1L]. Young is relied on for [1P]. Ehlers alone is used for all other limitations of claim 1.

The Petition admits that “both Imes and Ehlers appear on the face of the ’890 Patent.” Pet. at 79. Indeed, on April 3, 2019, Patent Owner submitted an IDS containing the citations to the Imes and Ehlers references. Ex. 1004, 303 (citing Ehlers), 305 (citing Imes). And on July 1, 2019, the Examiner indicated that he considered the references by signing the bottom of the IDS with the statement “all references considered except where lined through.” Ex. 1004 at 139 (signed IDS citing Ehlers), 142 (signed IDS citing Imes). As neither Ehlers nor Imes have a line through them on these IDSes, the Examiner therefore considered these references during prosecution. *Id.*

As to Imes and Ehlers, the Examiner’s signature on the IDS is sufficient to satisfy the first part of the *Advanced Bionics* framework. *See Biocon Pharma Ltd. v. Novartis Pharms. Corp.*, Case IPR2020-01263, Paper No. 12 at 9 (PTAB Feb. 16, 2021) (“*Biocon*”) (“[W]e accept that the Examiner considered [the prior art reference] because it is listed on the IDS and the Examiner signed the IDS with the statement ‘all references considered except where lined through.’”); *see also Palo Alto Networks, Inc. v. Centripetal Networks, Inc.*, Case IPR2021-01156, Paper No. 10 at 13-14 (PTAB Jan. 24, 2022) (rejecting argument that “the first part of the *Advanced Bionics* framework is not met because [the prior art was] not substantively

discussed or applied in a rejection during prosecution” because “[u]nder the Board’s precedent in *Advanced Bionics*, however, ‘[p]reviously presented art includes . . . art provided to the Office by an applicant, such as on an [IDS]’”) (quoting *Advanced Bionics* at 7-8) (alterations in original); *BMW of N. Am., LLC v. Stragent, LLC*, Case IPR2021-00419, Paper No. 14 at 12-13 (PTAB July 19, 2021) (discretionarily denying institution under § 325(d) in part because relied-upon prior art was cited on an IDS), *reh’g denied*, Paper No. 21 at 5 (PTAB Mar. 21, 2022); *Microsoft Corp. v. AlmondNet, Inc.*, IPR2022-01319, Paper No. 9 at 7-8, 10-11 (PTAB Jan. 30, 2023) (“*Microsoft*”).⁵

The only other reference in Ground 2A is Young. But despite “ha[ving] the burden of proof to establish that it is entitled to the relief requested,” the Petition

⁵ Moreover, Examiner Marc E. Norman also considered U.S. Patent 8,428,782 to Imes (“Imes ’782”). Ex. 1004 at 142, Ex. 1006 at 395-397. He substantively discussed Imes ’782 during the prosecution of the ’554 Application, an application to which the ’890 Patent claims priority. Ex. 1006, 395-397. Imes ’782 contains the same figures and has a substantially similar specification as the Imes ’797 reference relied upon by the Petition for Ground 2. Further, both Imes ’782 and Imes ’797 claim priority to the same two provisional applications. This only further demonstrates that *Advanced Bionics* is more than satisfied as to the Imes reference.

does not present any evidence or argument addressing why Young is not substantially the same as the prior art considered by the Examiner during prosecution. *See* Pet. at 78-79; *EcoFasten Solar, LLC v. Unirac, Inc.*, Case IPR2021-01379, Paper No. 11 at 38-39 (PTAB Feb. 8, 2022) (“*EcoFasten*”). Rather, the Petition simply alleges in conclusory fashion that “Young was not cited.” Pet. at 78. But “the issue of § 325(d) is *not* limited to whether the Examiner ‘considered’ a reference or grounds during the original prosecution leading to the issuance of the ’[890] patent, but whether the same or *substantially the same* prior art or arguments ‘*previously were presented to the Office.*’” *EcoFasten* at 36 (emphases in original)

For the sole independent claim (claim 1), the Petition only relies on Young for an alleged disclosure of a compressor delay circuit (limitation [1P]). Pet. at 70. However, the Examiner considered substantially the same disclosures as Young during prosecution, using U.S. Patent No. 8,740,100 (“Steinberg”, Ex. 2002), which was filed on May 5, 2010. Patent Owner drew Steinberg to the Examiner’s attention in an office action response. Ex. 1004 at 99. Patent Owner also disclosed Steinberg in an IDS. Ex. 1004 at 305. Steinberg is cited in the IDS that the Examiner signed on July 1, 2019, and it does not have a line through it. Ex. 1004, 142. Thus, the Examiner considered Steinberg. Ex. 1004 at 99, 142, 305.

The Petition presents Young as purportedly disclosing a compressor delay circuit that prevents wear and tear on the compressor. Pet. at 70, citing Ex. 1016,

2:51-61, 3:12-22, 3:29-48. But the Examiner considered Steinberg, which discloses a thermostat that provides “compressor delay” via “electronic circuitry” to prevent against “rapid automatic cycling” as shown below.

20 However, most systems do not allow direct access to this parameter. And the hysteresis band only protects the system against rapid automatic cycling. The hysteresis band will not prevent a user from rapidly changing settings, which can cause the damage discussed above.

25 The way most electronic systems approach this problem is to enforce, via the electronic circuitry, a compressor delay—that is, whenever the compressor is switched off, the thermostat prevents it from restarting for a set interval, usual in the range of two to five minutes or so. (Some air conditioners may
30 have an additional fail-safe delay in series with any circuitry in the thermostat as well.)

Many programmable thermostats include mechanical switches to allow the installer or user to adjust the compressor delay for the system. But because it is generally expected that
35 the installer of the system will set this parameter once based upon the requirements of the specific air conditioner being controlled, these mechanical switches are generally not accessible to the user from outside the unit. Changing the

Ex. 2002, 2:20-41.

The above disclosures from Steinberg are substantially the same as the alleged disclosure in Young of a compressor delay circuit that prevents wear and tear on the compressor. *Compare* Pet at 70, citing Ex. 1016, 2:51-61, 3:12-22, with Ex. 2002 (Steinberg), 2:20-41.

Because the Examiner considered during prosecution disclosures from at least Steinberg (Ex. 2002, 2:20-41) and Ehlers (Ex. 1010, 21:41-47) or Trundle (Ex. 1009, [0087]) that are substantially the same as the disclosures from Young on which the Petition now relies (e.g., Ex. 1016, 2:51-61, 3:12-22, 3:29-48) for claim 1, Young is cumulative of and thus substantially the same as the art previously considered by the Examiner. The Petition also relies on Young for disclosure of limitations for dependent claims 2 and 4, but reliance on a reference for dependent limitations does not counsel against discretionary denial pursuant to 35 U.S.C. § 325(d). *See Miltenyi Biomed. GmbH v. Trs. of Univ. of Pa.*, Case IPR2022-00853, Paper No. 11 at 45 (PTAB Oct. 11, 2022) (“*Miltenyi*”) (“Petitioners’ citation of references not considered by Examiner solely for ‘additional subject matter of certain dependent claims[] is insufficient to persuade us that exercising our discretion under 35 U.S.C. § 325(d) is inappropriate.’”) (quoting *Kayak Software Corp. v. Int’l Bus. Machs. Corp.*, Case CBM2016-00075, Paper No. 16 at 10 (PTAB Dec. 15, 2016) (informative) (“*Kayak Software*”)) (alteration in original); *see also Microsoft* at 8, 10-11 (declining to evaluate whether a reference cited for dependent claims was cumulative with previously considered art). Thus, Young does not provide relevant information that was not already considered by the Office. And the Office previously considered the remaining references for Ground 2A (Imes and Ehlers). Accordingly, the first prong of *Advanced Bionics* is satisfied. *See Biocon* at 9-11.

2. Ground 1A: Leen, Trundle, and Ehlers

Ground 1A concerns Leen, Trundle, and Ehlers. The Petition admits that the Trundle and Ehlers references were cited during prosecution. Pet. at 4 (“Trundle was cited in the ’890 Patent”), 7 (“Ehlers was cited in an IDS”), 78 (“With respect to Grounds 1A and 1B, both Trundle and Ehlers appear on the face of the ’890 Patent.”). Indeed, on April 3, 2019, Patent Owner submitted an IDS containing the citations to the Trundle and Ehlers references. Ex. 1004, 303, 307. And on July 1, 2019, the Examiner indicated that he considered the references by signing the bottom of the IDS with the statement “all references considered except where lined through.” See Ex. 1004 at 139 (signed IDS citing Ehlers), 144 (signed IDS citing Trundle). As neither Ehlers nor Trundle are lined through on these IDSes, the Examiner therefore considered these references during prosecution. *Id.* As to Trundle and Ehlers, the Examiner’s signature on the IDS is sufficient to satisfy the first part of the *Advanced Bionics* framework. *Biocon* at 9; *supra* at V.B.1.

Aside from Ehlers and Trundle, the only other reference in Ground 1A is Leen. But if one compares the Petition’s allegations for Ehlers and Trundle to the Petition’s allegations for Leen, it is evident that the Petitioner agrees that Ehlers and Trundle contain substantially the same disclosures as Leen. As an example, the Petition relies on Leen to disclose a thermostat that controls an HVAC system (Pet. at 14) with a housing (Pet. at 14), relays (Pet. at 15), a display (Pet. at 16-17), a

temperature sensor (Pet. at 20), and a processor that receives indoor and outdoor temperatures (Pet. at 21-22) and multiple setpoints for the building (Pet. at 24-26). But the Petition makes the exact same allegations for Ehlers, alleging that Ehlers discloses a thermostat that controls an HVAC system (Pet. at 60) with a housing (Pet. at 61), relays (Pet. at 15, 61), a display (Pet. at 61), a temperature sensor (Pet. at 64), and a processor that receives indoor and outdoor temperatures (Pet. at 64) and multiple setpoints for the building (Pet. at 65). Despite this obvious overlap, and despite bearing the burden, the Petition does not present any evidence or argument addressing why Leen is not substantially the same as the prior art considered by the Examiner during prosecution, such as Ehlers and Trundle. *See* Pet. at 78-79; *EcoFasten* at 38-39. Rather, the Petition simply alleges in conclusory fashion that “Leen was not cited during prosecution.” Pet. at 78.

An element-by-element analysis of the Petition’s reliance on Leen for the sole independent claim (claim 1) confirms that each disclosure from Leen that the Petition relies upon is substantially the same as disclosures from Ehlers, Trundle, and/or U.S. Patent 8,740,100 (“Steinberg,” Ex. 2002), which the Examiner considered during prosecution. Each claim element for which the Petition relies on Leen are addressed below in turn.

[1Pre]: The Petition alleges that “Leen discloses an HVAC controller 10 (thermostat system), such as a thermostat.” Pet. at 14, citing Ex. 1008, [0025]. But

the Petition alleges that Ehlers (which was considered during prosecution) contains substantially the same disclosure. Pet. at 60-61 (stating that Ehlers describes thermostat systems as devices that sense interior temperatures and “‘activate a heating and/or cooling system or systems to maintain the temperature at [a user-defined] setting.’ (thermostat system). EX. 1010, 1:17-24; EX. 1002, ¶252.”).

[1A]: The Petition alleges that “Leen discloses an HVAC controller that ‘includes a display 22 that is disposed within a housing 24.’ (housing). Ex. 1008, [0030].” Pet. at 14. This is substantially the same as disclosures that the Petition identifies in Ehlers as satisfying [1A]. Pet. at 61 (“Ehlers discloses an HVAC control unit that ‘may be contained within a case similar to thermostats presently available.’ (housing). EX. 1010, 27:36-38; EX. 1002, ¶253.”).

[1B]: The Petition alleges that “Leen inherently discloses relays because it discloses that the HVAC controller operates the HVAC equipment and electrical contacts are the standard and necessary mechanism for connecting a thermostat to the HVAC equipment. EX. 1002, ¶¶111-112; EX. 1008, [0057].” Pet. at 15. This is substantially the same as what the Petitioner alleges concerning the “electrical contacts” of Ehlers’ thermostat as satisfying [1B]. Pet. at 15, citing EX. 1010, 30:37-44; EX. 1002, ¶¶254-256.

[1C]: The Petition alleges that Leen discloses a display by disclosing a user interface, citing Ex. 1008, [0026]. Pet. at 16. This is substantially the same as the

“display device” disclosures that the Petitioner relied on from Ehlers. Pet. at 61 (“Ehlers further discloses a user interface which may include a ‘display device, which displays information to a user.’ EX. 1010, 7:37-44; EX. 1002, ¶257.”).

[1D]: The Petition alleges that “Leen discloses a data port (wireless or wired) configured to communicate with controller 12 to exchange thermostat configurations and values of operating parameters with the HVAC controller.” Pet. at 17-18. But the Petition alleges that Trundle (which was considered by the Examiner) contains substantially the same disclosure of a thermostat wirelessly communicating with a controller. Pet. at 18-19. For example, the Petition alleges that Trundle’s Figure 2 illustrates the thermostat communicating wirelessly with the controller 212. Pet. at 18-20, citing Ex. 1009, Fig. 2. The Petition also alleges that Trundle discloses “‘one or more mobile devices 240, 250’ e.g., smart phones (location-aware mobile device), which send and ‘receive data directly from’ module 230, a thermostat. Ex. 1009, [0054], [0056], [0060]-[0061], Fig. 2 (annotated); Ex. 1002, ¶121.” Pet. at 18-19.

[1E]: The Petition alleges that “Leen discloses a controller that uses an ‘internal thermal sensor’ to sense ambient temperature (temperature sensor). EX. 1008, [0041]-[0042].” Pet. at 20. The Petition alleges that Ehlers contains substantially the same disclosure of a temperature sensor. Pet. at 64 (“Ehlers discloses ‘sensors and equipment’ such as those that ‘sense internal and external

environmental conditions including temperature.’ (temperature sensor). EX. 1010, 10:14-19; EX. 1002, ¶263.”).

[1F]: The Petition alleges that “Leen discloses an HVAC controller 10 which includes ‘a processor or controller 12.’ (one or more processors configured with electronic circuitry). EX. 1008, [0025].” Pet. at 21. The Petition alleges that Ehlers contains substantially the same disclosure as Leen in this respect. Pet. at 64 (“Ehlers discloses ‘a processor 30’ (one or more processors configured with electronic circuitry). EX. 1010, 6:66-7:3 (emphasis added); EX. 1002, ¶264.”).

[1G]: The Petition alleges that Leen discloses a thermostat sensing indoor temperature. Pet. at 21 (“Leen teaches an HVAC controller that receives HVAC data parameters, such as ‘ambient temperature at HVAC controller 20 using an internal thermal sensor’ (*first data parameter from the temperature sensor comprising an interior temperature*). EX. 1008, [0025], [0041]-[0042]; EX. 1002, ¶¶129-30.”). But again, the Petition alleges that Ehlers contains substantially the same disclosure—here, a thermostat sensing indoor temperature. Pet at 64, citing EX. 1010, 2:52-65, 10:14-19, 32:31-37; EX. 1002, ¶¶265-66.

[1H]: The Petition alleges that Leen discloses “wireless devices” including an “exterior temperature sensor” and “exterior humidity sensor” that provide *outside weather conditions* to the “HVAC controller 20.” Pet. at 22; Ex. 1008, [0173], [0176]. The Petition further alleges that the *outside weather conditions* could be

received from a “Bluetooth” network connection or via a wired connection. Pet. at 22, citing Ex. 1008, [0029]. But the Petition itself contends that Ehlers discloses receiving the *outside weather conditions* of [1H] based on “[i]nput function 13 [that] provides weather information,’ which can be provided by ‘decoding DTMF from a phone input or through a communications link,’ i.e., a network. EX. 1010 at 9:50-58, *see also* 35:13-17; EX. 1002, ¶¶131, 268; EX. 1010, Fig. 4 (annotated).” Pet. at 22-23. The Petition further alleges “Ehlers also discloses the Ethernet as one type of network connection (i.e., a computer network) that supports Ehlers’ weather data input function 13. EX. 1010, 14:48–59.” Pet. at 23. The Petition also alleges that [1H] is disclosed in Trundle. Pet. at 24, citing Ex. 1009, [0119], [0090]. Accordingly, the Petition fails to explain why Leen is not cumulative of Ehlers and Trundle for purposes of this limitation.

[11/1J]: The Petition alleges that Leen discloses determining temperature setpoints in a schedule. Pet. at 24-25, citing Ex. 1008, [0062], FIG. 19. But the Petition alleges that Trundle contains substantially the same disclosure as Leen, by alleging that Trundle discloses determining different setpoints for different schedules set by the user, and by determining setpoints without user involvement. Pet. at 25-26, citing Ex. 1009, [0116], [0152], Figs. 16B, 17. Similarly, Ehlers states that a “modern system, for example, may be programmed by a user with multiple desired temperature settings for activating both heating systems and cooling systems

based on time-dependent user-programmed parameters, such as time of day, day of week, month, etc.” Ex. 1010, at 1:53-2:9.

The Petition also alleges that Leen discloses changing setpoints based on sensor-based determination of occupancy. Pet. at 24-25, citing Ex. 1008, [0171]. But the Petition alleges that Trundle contains substantially the same disclosures, in alleging that Trundle discloses using a motion sensor to detect user presence and switch thermostat settings accordingly. Pet. at 37-38, citing Ex. 1009, [0087], Fig. 4.

[1K/1L] The petition does not rely on Leen for [1K] or [1L].

[1M]: The Petition alleges that Leen discloses allowing the user to adjust the desired temperature for the HVAC system using buttons on the thermostat. Pet. at 32, citing EX. 1008, [0036], FIG. 4. The Petition alleges Ehlers contains substantially the same disclosure, as it asserts that Ehlers discloses allowing users to input temperature setpoints. Pet. at 69 (“Ehlers discloses an energy management system that includes an input function 14 that allows a user to input data such as a temperature setpoint (allow the user to adjust a desired temperature for the HVAC system). EX. 1010, 9:65-10:3, 10:3-9; EX. 1002, ¶283.”).

[1N/1O]: The petition does not rely on Leen for [1N] or [1O].

[1P]: Finally, the Petition argues that Leen discloses compressor delay. Pet. at 36 (“Leen teaches that a compressor may be programmed to remain off for a user-

determined minimum time period, as illustrated below in Figure 161 (annotated) 6. Specifically, Leen teaches that ‘[a] second setup parameter may be a compressor minimum off time’ (a compressor delay circuit configured to delay the start or stop of a compressor for the HVAC system and protect the compressor from rapid cycling). EX. 1008, [0317]; EX. 1002, ¶161.”) (footnote removed). But the Examiner considered substantially the same disclosure during prosecution, including Steinberg’s disclosure of “compressor delay” to protect against “rapid automatic cycling.” Ex. 2002, 2:20-41. As shown above (*supra* V.B.1), Steinberg was considered during prosecution and was filed on May 5, 2010. Ex. 1004 at 99, 142, 305. This included considering Steinberg’s disclosure of a thermostat that provides “compressor delay” via “electronic circuitry” to prevent against “rapid automatic cycling.” Ex. 2002, 2:20-41 (reproduced below).

20 However, most systems do not allow direct access to this parameter. And the hysteresis band only protects the system against rapid automatic cycling. The hysteresis band will not prevent a user from rapidly changing settings, which can cause the damage discussed above.

25 The way most electronic systems approach this problem is to enforce, via the electronic circuitry, a compressor delay—that is, whenever the compressor is switched off, the thermostat prevents it from restarting for a set interval, usual in the range of two to five minutes or so. (Some air conditioners may
30 have an additional fail-safe delay in series with any circuitry in the thermostat as well.)

Many programmable thermostats include mechanical switches to allow the installer or user to adjust the compressor delay for the system. But because it is generally expected that
35 the installer of the system will set this parameter once based upon the requirements of the specific air conditioner being controlled, these mechanical switches are generally not accessible to the user from outside the unit. Changing the

Ex. 2002, 2:20-41.

Thus, Leen does not provide information that was not already considered by the Office for claim 1, and as explained above the Petition’s reliance on Leen for certain dependent limitations does not counsel against discretionary denial pursuant to 35 U.S.C. § 325(d). *See Miltenyi* at 45 (“Petitioners’ citation of references not considered by Examiner solely for ‘additional subject matter of certain dependent claims[] is insufficient to persuade us that exercising our discretion under 35 U.S.C.

§ 325(d) is inappropriate.’”) (quoting *Kayak Software* at 10) (alteration in original); *see also Microsoft* at 8, 10-11 (declining to evaluate whether a reference cited for dependent claims was cumulative with previously considered art). The Office previously considered the remaining references for Ground 1A (Trundle and Ehlers). Accordingly, the first prong of *Advanced Bionics* is satisfied. *See Biocon* at 9-11.

3. Grounds 1B and 2B: Wedekind

As compared with Grounds 1A and 2A (challenging independent claim 1 and dependent claims 2-8), Grounds 1B and 2B (challenging dependent claims 9-17) simply add the same additional reference to the respective obviousness combinations—Wedekind. But as noted above, reliance on a reference for limitations of dependent claims would have made no difference to the Examiner’s analysis, and it is therefore unnecessary to evaluate the questions of what Wedekind discloses or whether Wedekind was of record. *See Miltenyi* at 45 (“Petitioners’ citation of references not considered by Examiner solely for ‘additional subject matter of certain dependent claims[] is insufficient to persuade us that exercising our discretion under 35 U.S.C. § 325(d) is inappropriate.’”) (quoting *Kayak Software* at 10) (alteration in original); *see also Microsoft* at 8, 10-11 (declining to evaluate whether a reference cited for dependent claims was cumulative with previously considered art).

* * *

Because the same or substantially the same prior art was presented during prosecution, the *Advanced Bionics* inquiry continues to part two. *See Advanced Bionics* at 20 (“As discussed above, we determine that the ‘same or substantially the same prior art’ was previously presented to the Office. Accordingly, the first condition of the first part of the framework is satisfied, and we need not reach whether the ‘same or substantially the same arguments’ previously were presented to the Office.”).

C. *Advanced Bionics* Step 2: Petitioner fails to demonstrate that the Examiner erred in evaluating Trundle, Ehlers, and Imes

Step two looks to “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims.” *Advanced Bionics* at 8. The burden remains on Petitioner to show material error by the Examiner during prosecution. *Id.* 8–9. And despite bearing the burden, Petitioner fails to demonstrate that the Examiner made a material error in allowing the challenged claims.

First, Although the Petition admits that the Examiner considered Trundle, Ehlers, and Imes during prosecution, it does not point out *how* the Examiner erred in its evaluation of these references. Rather, the Petition simply alleges in conclusory fashion that “Petitioner has demonstrated a material error by pointing out and explaining how the combinations teach the limitations of the claims,” without any indication of what the alleged material error or errors are. Pet. at 80; *see, e.g.,*

Microsoft at 10-11. Moreover, as addressed in Part IV above, the Petition’s proposed grounds based on these references each fail on the merits, providing further indication that the Examiner did in fact not err, let alone materially, during prosecution. Second and likewise, the Petition does not offer any explanation of why Leen, Young, and Wedekind are not “substantially the same” art as art previously presented to the USPTO, let alone how or why the Examiner materially erred in considering that previously-presented art to not be invalidating. *See* Pet. at 78-80. For these reasons, and under *Advanced Bionics*, Petitioners fail to make a showing of material error.

* * *

Because the Petition presents only the same and substantially the same prior art as previously presented during prosecution, and because the Petition fails to make any showing of error by the USPTO, the Board should exercise its discretion and deny institution under 35 U.S.C. § 325(d). *See Advanced Bionics* at 9 (“If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error the Director will generally exercise discretion not to institute *inter partes* review.”).

VII. Conclusion

For the foregoing reasons, institution should be denied.

Respectfully submitted,

Dated: May 8, 2023

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CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Patent Owner certifies that there are 9,314 words in the paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

Dated: May 8, 2023

/s/ Reza Mirzaie
Reza Mirzaie

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on May 8, 2023, by filing this document through P-TACTS as well as delivering a copy via electronic mail upon the following attorneys of record for Petitioners:

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