

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ABBOTT LABORATORIES and ABBOTT DIABETES CARE INC.,
Petitioner,

v.

ALTIVERA LLC,
Patent Owner.

IPR2024-00425
Patent 7,969,307 B2

Before JOSIAH C. COCKS, JULIET MITCHELL DIRBA, and
BACH V. HOANG, *Administrative Patent Judges*.

HOANG, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background*

Abbott Laboratories and Abbott Diabetes Care Inc. (collectively, “Petitioner”) filed a petition for *inter partes* review (Paper 2 (“Pet.” or “Petition”)) challenging claims 1–3, 5, 9, and 10 of U.S. Patent No. 7,969,307 B2 (Ex. 1001 (“the ’307 Patent”)). Altivera LLC (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). With our authorization (*see* Ex. 3001), Petitioner filed a pre-institution Reply (Paper 8, “Prelim. Reply”), and Patent Owner filed a pre-institution Sur-reply (Paper 9, “Prelim. Sur-reply”).

Under 37 C.F.R. § 42.4(a), we have authority to determine whether to institute review. The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response, and informed by the pre-institution record, shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

For the reasons explained below, we institute an *inter partes* review of all challenged claims on all grounds raised in the Petition.

B. *Real Parties in Interest*

Petitioner identifies Abbott Laboratories and Abbott Diabetes Care Inc. as the real parties in interest. Pet. 70. Patent Owner identifies Altivera LLC, Gentag, Inc., and Gentag Funding, LLC as the real parties in interest. Paper 6 (Patent Owner’s Mandatory Notices), 1.

C. *Related Matters*

The parties indicate that the ’307 Patent has been asserted in a district court lawsuit: *Gentag, Inc. and Altivera, LLC v. Abbott Laboratories and*

Abbott Diabetes Care Inc., No. 1:23-cv-00310 (N.D. Ill.). Pet. 70; Paper 6, 1.

D. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–3, 5, 9, and 10 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. ¹ §	Reference(s)/Basis
1, 2, 5, 9, 10	103	Bandy ²
3	103	Bandy, Heller ³
1–3, 5, 9, 10	103	Beck, ⁴ Heller, Lovejoy ⁵

Pet. 1.

E. Testimonial Evidence

Petitioner relies on the proffered declarant witness testimony of Majid Sarrafzadeh, Ph.D. *See* Ex. 1003.

Patent Owner relies on the proffered declarant witness testimony of William Bandy, Ph.D. (“Dr. Bandy”) (*see* Ex. 2001) and John P. Peeters, Ph.D. (“Dr. Peeters”) (*see* Ex. 2002).

F. The ’307 Patent

As relevant to this proceeding, the ’307 Patent describes a “wireless chip diagnostic sensor” whose information is “interrogated” or “read” with

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, (2011), revised 35 U.S.C. §§ 102 and 103 effective March 16, 2013, and revised 35 U.S.C. § 112(f), effective September 16, 2012. The ’307 Patent claims priority to an application filed before that date, so we refer to the pre-AIA version of the statute, but our findings and analysis of the substantive merits of the grounds would be the same under the current version of the statute.

² US 7,148,803 B2, filed January 22, 2004, issued December 12, 2006. Ex. 1005.

³ WO 02/058537 A2, published August 1, 2002. Ex. 1016.

⁴ US 2002/0178126 A1, published November 28, 2002. Ex. 1007.

⁵ US 6,031,454, issued February 29, 2000. Ex. 1009.

an external “wireless device,” e.g., a mobile phone. Ex. 1001, 2:14–21, code (57). In turn, the wireless device analyzes the information received from the wireless chip diagnostic sensor. *Id.* at 2:17–21, 2:51–52, 5:4–7. The wireless device is further in communication with a “remote computer,” which assists the wireless device in analyzing wireless chip diagnostic sensor information. *Id.* at 2:53–56, 3:5–9, 17:24–33, 18:16–27.

Figure 21, reproduced below, shows an exemplary wireless chip diagnostic sensor in network communication with a wireless device; the wireless device is further in network communication with a remote computer. *Id.* at 4:44–45, 17:11–14.

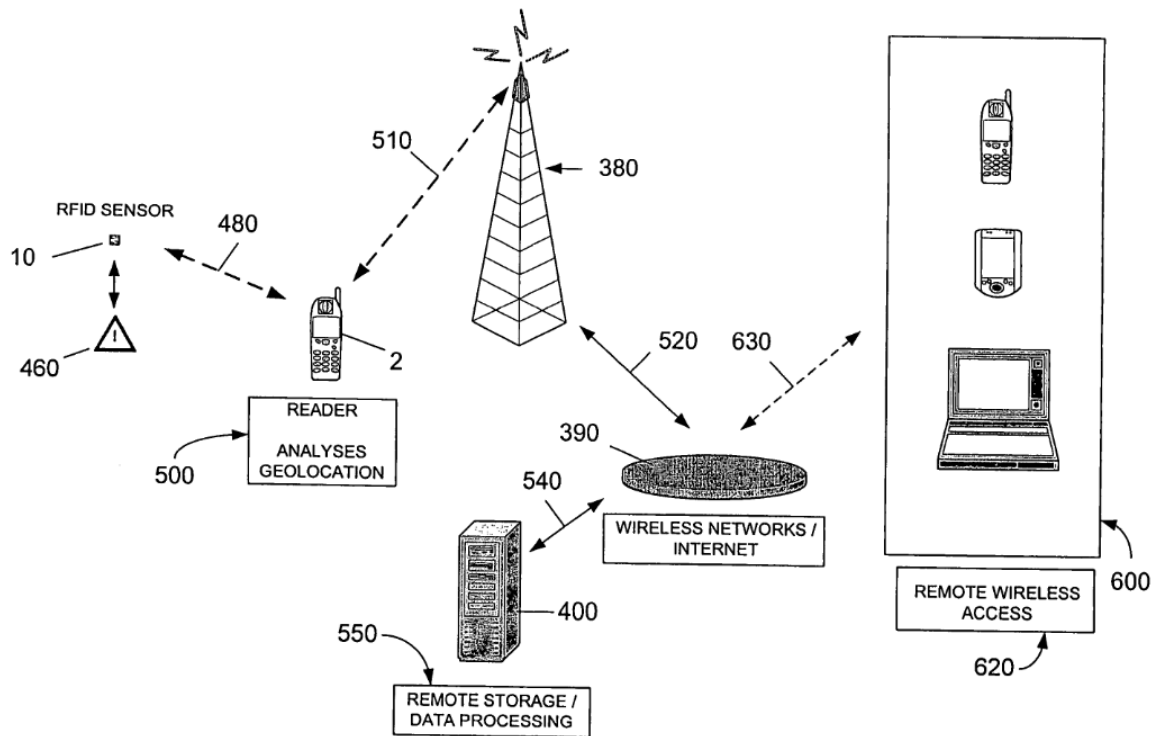


FIG. 21

As shown in Figure 21, Radio Frequency Identification (“RFID”) diagnostic tag 10 (depicted as a block), i.e., a wireless chip diagnostic sensor, communicates with wireless device 2 (depicted as a mobile phone) via wireless link 480 (depicted via a two-headed dashed arrow). *Id.* at 17:14–

18. A wireless chip diagnostic sensor communicates certain information, e.g., its unique identification and sensor data, to a wireless device. *Id.* at 2:53–56, 3:1–5; *see id.* at 5:4–7, 5:63–6:2, 9:1–3. Sensor data broadly relates to some sensed stimulus, e.g., glucose or temperature. *See id.* at 5:4–7, 5:63–6:2, 18:21.

Wireless devices, also referred to as “RFID readers,” analyze the information received from the wireless chip diagnostic sensor and can further provide geolocation of the wireless chip diagnostic sensor. *Id.* at 17:17–24. Furthermore, the wireless device analyzes diagnostic sensor information with assistance from a remote computer. For example, as shown in Figure 21, wireless device 2 is in network communication with remote computer 400 (shown as a tower form factor computer) through a series of network links 510, 520, 540 (shown as respective two-headed arrows). *Id.* at 17:24–33. A wireless device can “download software that enables reading and analyses of [a wireless chip diagnostic sensor] from a database.” *Id.* at 2:53–56. For example, a wireless device may recognize that it “may not have the necessary software and processing ability to analyze” a particular diagnostic sensor. *Id.* at 18:10–14. In that case, the wireless device “must first obtain [software] from a given remote database” and, when “the ID of the RFID sensor is matched to a given class of sensor (e.g. a glucose sensor),” then “the software and/or instructions for the analyses are downloaded” onto the wireless device. *Id.* at 18:16–23; *see id.* at 12:42–49. Even further, the wireless device can request that the remote computer perform processing of the diagnostic sensor information, e.g., in the case that processing diagnostic sensor information is too complex for the wireless device. *Id.* at 3:5–9, 13:41–50, 18:24–27.

G. Illustrative Claim

Petitioner challenges claims 1–3, 5, 9, and 10 of the '307 Patent. Claim 1 is the sole independent claim. Claim 1 is reproduced below with Petitioner's added limitation identifiers.⁶ See Pet. 19–30, 47–62.

[1pre] 1. A radio frequency (RF) addressable diagnostic sensor unit comprising:

[1a] at least one sensor element;

[1b] at least one reference sensor element;

[1c] a unique identification ID number;

[1d] a sensor interface having an analog to digital converter coupled to the at least one sensor and reference sensor element;

[1e] at least one antenna;

[1f] a substrate;

[1g] an RF power and communication interface coupled to the at least one antenna and sensor interface;

[1h] a controller coupled to the RF power and communications interface and the sensor interface; and

[1i] a memory coupled to the controller and the sensor interface;

[1j] wherein the RF addressable sensor communicates with a remote wireless device, said wireless device having multiple wireless communication means, geolocation means and a unique ID, whereby said wireless device is coupled to at least one communications network linked to t⁷ least one remote server; and

[1k] wherein the wireless device communicates with the RF addressable sensor interface to obtain the ID and sensor data;

⁶ For discussion purposes, we adopt and reference Petitioner's limitation identifiers.

⁷ We understand this clause to read "whereby said wireless device is coupled to at least one communications network linked to at least one remote server."

[11] wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID and communicates to said wireless device processed information relating to said sensor data and software related to the unique sensor ID, thereby allowing said wireless device to interpret said sensor anywhere worldwide.

Ex. 1001, 19:26–56.

II. ANALYSIS

A. *Legal Standards*

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any secondary considerations, if in evidence. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966).

To determine if a reference patent is “by another,” to qualify as prior art under pre-AIA 35 U.S.C. § 102(e), we

[(1)] determine what portions of the reference patent were relied on as prior art to anticipate the claim limitations at issue, (2) evaluate the degree to which those portions were conceived “by another,” and (3) decide whether that other person’s contribution is significant enough, when measured against the full anticipating disclosure, to render the other person a joint inventor of the applied portions of the reference patent.

Duncan Parking Techs., Inc. v. IPS Grp., Inc., 914 F.3d 1347, 1358 (Fed. Cir. 2019). And, to be a joint inventor,

one must: (1) contribute in some significant manner to the conception or reduction to practice of the invention, (2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely explain to the real inventors well-known concepts and/or the current state of the art.

Id. at 1357–58 (citations omitted). The conclusion on “[i]nventorship is a question of law based on underlying facts.” *Id.* at 1357 (citing *Gen. Elec. Co. v. Wilkins*, 750 F.3d 1324, 1329 (Fed. Cir. 2014)).

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art (“POSITA”)

would have had a bachelor’s degree in computer science, electrical engineering, biomedical engineering (or a related or equivalent field), and two or more years of experience researching, developing, designing and/or evaluating systems of networked devices, such as, networked medical devices or networked embedded devices that communicate wirelessly through, for example, Radio Frequency Identification (RFID), Bluetooth, and/or cellular protocols. A person with less or different education but more relevant practical experience, or vice versa, may also meet this standard. A POSITA may be part of an interdisciplinary team with others having the relevant

experience set forth above. The prior art also evidences the level of skill in the art.

Pet. 5 (citing Ex. 1003 ¶¶ 18–19).

At this stage, Patent Owner does not dispute this assessment. *See generally* Prelim. Resp.

For purposes of this Decision, we accept the uncontested assessment offered by Petitioner.

C. Claim Construction

We interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). Under the principles set forth by our reviewing court, the “words of a claim ‘are generally given their ordinary and customary meaning,’” as would be understood by a POSITA at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

We address the construction of one phrase in independent claim 1: “the remote server authenticates said unique sensor ID associated with said unique wireless device ID.” We also address the construction of various means-plus-function limitations. During the trial, the parties should directly address any claim construction adopted in this Decision if either party contends we should not adopt that construction in the final written decision.

1. “the remote server authenticates said unique sensor ID associated with said unique wireless device ID”

Limitation 11 recites, in relevant part, “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID.” Ex. 1001, 19:51–52. For purposes of this Decision, we

determine that this limitation does not require authentication of the unique wireless device ID, or authentication using the unique wireless ID.

Neither the Petition nor the Preliminary Response expressly construes this particular phrase. *See* Pet. 6–11; Prelim. Resp. 17. However, in its Preliminary Response, Patent Owner argues the “plain language of this limitation requires the remote server to authenticate based on at least two items: the ‘unique sensor ID’ and the ‘unique wireless device ID.’” Prelim. Resp. 25; *see id.* at 37–38. We disagree with such a construction.⁸

On this record, we determine the plain language and structure of the limitation does not support a construction requiring authentication using *both* the unique sensor ID and the unique wireless ID, as asserted by Patent Owner. The claim recites “the remote server authenticates *said unique sensor ID associated with said unique wireless device ID*,” but Patent Owner’s construction appears to read out the phrase “associated with” and adds an unrecited requirement to the claim such that the remote server authenticates said unique sensor ID *and* said unique wireless device ID. Ex. 1001, 19:51–52 (emphasis added). The language and structure of the limitation reads that the unique wireless ID is “*associated with*” the unique sensor ID. As such, the last portion of the limitation reciting “associated with said unique wireless device ID” serves to further describe the unique sensor ID, specifically, that the unique sensor ID is associated with the unique wireless device ID.

⁸ In Petitioner’s Reply and Patent Owner’s Sur-reply, the parties dispute the construction of this phrase. *See* Prelim. Reply 2; Prelim. Sur-reply 1–3. Those arguments go beyond the scope of the briefing we authorized on discretionary denial and inventorship (*see* Ex. 3001), so we do not consider them here.

We also note that the Specification does not describe authentication using both the unique sensor ID and a unique wireless device ID. The Specification does not use, let alone define, the terms “server” or “authentication.” *See generally* Ex. 1001. To the extent the Specification provides examples of access to a remote computer, those examples describe access on the basis of a sensor ID—but not a wireless device ID. In one example, a wireless device obtains software for a RFID sensor tag from “a centralized database for RFID tags or a diagnostics database that is accessed only by paying an access fee. Subsequently, the *ID of the RFID sensor is matched* to a given class of sensor (e.g. a glucose sensor) and the software and/or instructions for the analyses are downloaded” to the wireless device. Ex. 1001, 18:16–23 (emphasis added). Another example similarly provides access solely on the basis of a sensor ID: “a patient can . . . upload into the cell phone the necessary information to conduct any given test by *matching the ID of the RFID sensor* with given software and data tables stored remotely on computer 400.” *Id.* at 16:50–56 (emphasis added).

Accordingly, for institution purposes, we construe “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID” such that the remote server’s authentication requires use of a unique sensor ID; but the remote server’s authentication does not require use of the unique wireless device ID.

2. *Means-Plus-Function Limitations*

Petitioner further contends the claim recites a number of means-plus-function terms: “multiple wireless communication means,” “geolocation means,” “GPS means for geolocating said system,” and “non-GPS geolocation means for geolocating said system.” Pet. 11–15. For each of those alleged means-plus-function terms, Petitioner identifies the claimed

function and identifies corresponding structures in the Specification for performing those functions. *See id.* (citations omitted). Petitioner states “[e]ach term should be construed as limited to the corresponding structures and their equivalents.” *Id.* at 11.

Patent Owner, in its Preliminary Response, states that “Patent Owner does not contest Petitioner’s proposed claim constructions” of any of these other claim terms or phrases. Prelim. Resp. 17.

On this record, we agree with Petitioner that the identified limitations—which each recite a “means” or “means for” performing a particular function—are means-plus-function limitations that should be interpreted under pre-AIA 35 U.S.C. § 112 ¶ 6. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (en banc) (holding that “use of the word ‘means’ creates a presumption that § 112, ¶ 6 applies”). We are also preliminarily persuaded that Petitioner correctly identifies the recited functions and corresponding structure for these limitations. *See* Pet. 11–15 (citing Ex. 1001, 2:20–21, 2:24–28, 3:33–36, 17:18–30); *see* Pet. 13–15 (citing Ex. 1009, 9:4–6, 9:19–20, 9:57–65, 10:10–11) (explaining that Lovejoy is incorporated by reference into the ’307 Patent).

For purposes of this Decision, we apply the constructions identified by Petitioner. These are shown in the table below:

Limitation	Function	Structure
“multiple wireless communication means” (claim 1)	wireless communication	wireless devices (including cellular phones and PDAs) and devices that include wireless communication protocols such as Bluetooth, Internet, cellular network, RFID reader communication standard, or other existing wireless network
“geolocation means” (claim 1)	geolocation, or, determining the geographic position of an object	geolocating by GPS methods or processing logic for determining a geographic position of an object; and geolocating using non-GPS triangulation methods or processing logic for determining a geographic position of an object
“GPS means for geolocating said system” (claim 9)	determining the geographic position of an object by GPS	GPS methods or processing logic for determining a geographic position of an object
“non-GPS geolocation means for geolocating said system” (claim 10)	determining the geographic position of an object without GPS	non-GPS triangulation methods or processing logic for determining a geographic position of an object

Pet. 11–15.

3. Other Terms/Phrases

Petitioner offers claim constructions for a number of other terms. In particular, Petitioner contends limitation 11, reciting “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID and communicates to said wireless device processed information relating to said sensor data and software related to the unique

sensor ID, thereby allowing said wireless device to interpret said sensor anywhere worldwide,” should be construed as

wherein the remote server authenticates a unique sensor ID associated with a unique wireless device ID and ***in response to the authentication*** communicates to the wireless device (1) processed information relating to the sensor data and (2) software related to the unique sensor ID necessary for the wireless device to interpret the sensor anywhere worldwide.

Pet. 6–11 (citing Ex. 1003 ¶ 56). That is, Petitioner states that its proposed construction “requires a cause-and-effect relationship between the authentication of the unique sensor ID and the communication of software to the wireless device to enable the wireless device to interpret sensor data.” *Id.* at 11 (citing Ex. 1001, Fig. 22).

Patent Owner, in its Preliminary Response, states that “Patent Owner does not contest Petitioner’s proposed claim constructions” of any of these other claim terms or phrases. Prelim. Resp. 17.

At this stage, we determine that it is not necessary to address the construction of any of these other claim terms or phrases. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Obviousness over Beck, Heller, and Lovejoy

Petitioner asserts that claims 1–3, 5, 9, and 10 are unpatentable as obvious over the combined teachings of Beck, Heller, and Lovejoy. Pet. 1, 38–69. Patent Owner opposes, contending there is no motivation to combine

the references and that certain limitations are not obvious over the combination. Prelim. Resp. 27–38.

1. Overview of Beck (Ex. 1007)

Beck relates to a medical device which measures a patient's biological/physiological conditions and further communicates its measurements to a client computing device, e.g., a cellular phone, which, in turn, communicates those measurements to a server computing device.

Ex. 1007 ¶¶ 4, 18, 27, 34. The server computing device also provides the client computing device protocol components that configure the computing device for communication with the medical device. *Id.* ¶¶ 14–15, 18.

Figure 1, reproduced below, is a block diagram showing a system incorporating the medical device, client computing device, and server computing device. *Id.* ¶¶ 8, 14.

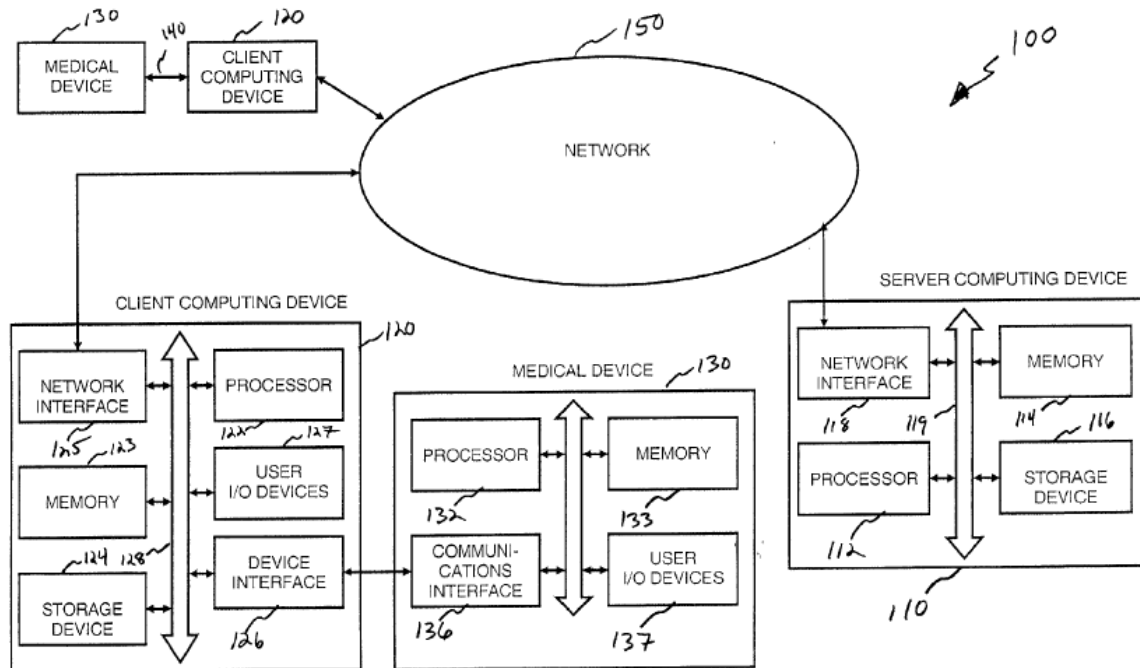


FIG. 1

Figure 1 shows medical device 130 (shown as a block) coupled to client computing device 120 (shown as a block) via communications link 140 (shown as a two-headed arrow); Figure 1 further shows client computing device 120 coupled to server computing device 110 (shown as a block) via network 150 (shown as an oval). *Id.* ¶ 14.

We discuss additional pertinent details of this reference in our analysis below.

2. *Overview of Heller (Ex. 1016)*

Heller relates to an analyte monitor which includes a sensor which monitors analyte levels, e.g., glucose or lactate, for a patient. Ex. 1016, code (57), 1:3–7, 9:12–16. Heller explains that temperature affects sensor readings and, so, its monitor uses a temperature probe to adjust sensor readings. *Id.* at 67:8–11, 67:20–68:20. Heller further explains that its sensor and temperature probe provide “raw signals” to a measurement circuit which “convert[s] the raw signal to a format that can be used by digital logic” so that a processing circuit can “evaluate the data and provide commands.” *Id.* at 61:10–18.

We discuss additional pertinent details of this reference in our analysis below.

3. *Overview of Lovejoy (Ex. 1009)*

Lovejoy relates to a “person-specific monitor that provides sensor information regarding hazards to which the person is exposed and means to geolocate the person at the time of the exposure.” Ex. 1009, code (57). Lovejoy explains that “geolocation of the monitor” can be provided by GPS or by other techniques such as triangulation via antennae. *Id.* at 9:4–6, 9:67–10:11.

We discuss additional pertinent details of this reference in our analysis below.

4. *Independent Claim 1*

Based on this record, and for the purposes of institution, Petitioner has adequately shown that claim 1 would have been obvious over the combination of Beck, Heller, and Lovejoy, and Petitioner has set forth sufficient rationale showing that a POSITA would have been motivated to combine the references. Our detailed analysis follows.

a) *Motivation to Combine*

We start by acknowledging that, although the challenge is over the combination of Beck, Heller, and Lovejoy, Petitioner more specifically combines Beck and Heller to assert certain claimed sensor features would have been obvious and separately combines Beck and Lovejoy to assert certain claimed wireless device features would have been obvious. Correlating to its stated combinations, Petitioner offers motivations to combine Beck and Heller and offers separate motivations to combine Beck and Lovejoy. We determine Petitioner has proffered sufficient motivation to support its combinations adding Heller to Beck and adding Lovejoy to Beck, resulting in its combination of Beck, Heller, and Lovejoy.⁹ We address in detail Petitioner's combinations of Beck and Heller and Beck and Lovejoy and their associated motivations in turn below.

⁹ Although Patent Owner asserts that Petitioner must establish “a POSITA would have been motivated to combine Beck, Heller, and Lovejoy” (Prelim. Resp. 27), Petitioner does not combine all three references to assert that a particular claimed feature is obvious. Patent Owner has not offered any authority requiring Petitioner to supply a motivation to support combinations it does not make; as such, we do not require Petitioner to supply motivation to support combinations it does not make.

(1) *Motivation to Combine Beck and Heller*

Petitioner combines Beck and Heller by incorporating certain patient-monitoring sensors and sensor features taught by Heller into Beck's patient-monitoring medical device. Pet. 41, 44; *see id.* at 48–49, 51, 54, 57–58 (incorporating Heller sensor features to reach sensor features recited in limitations 1a, 1b, 1d, 1f, 1g, and 1h).

Petitioner contends that the combination uses “known techniques” relating to medical device sensors described in Heller to “implement and improve” Beck's medical devices. Pet. 41–45; *see also id.* at 50–51, 55, 57 (describing various known techniques and proposed improvements). On this record, the improvements Petitioner asserts are supported by its declarant and are rational: improving sensor readings using a reference sensor provides better information for medical determinations (Pet. 44, 50–51; Ex. 1003 ¶¶ 233, 267), using a substrate to affix a sensor to a person and maintain the physical integrity of the sensor elements avoids damage during use (Pet. 55; Ex. 1003 ¶ 289), and using inductive coupling eliminates electrical contacts, which reduces noise and allows for water resistance (Pet. 57; Ex. 1003 ¶ 297). Petitioner also sufficiently shows that a POSITA would have been motivated to incorporate the sensor implementation details described in Heller, e.g., an A/D converter and patient attachment systems (Pet. 44–45, 53, 55; Ex. 1003 ¶¶ 228, 234, 236–238, 259, 267, 278, 288), because doing so combines familiar elements according to known methods which do no more than yield predictable results, e.g., converting signals or attaching a sensor to a patient. *See KSR*, 550 U.S. at 401 (“[A] combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”)

In its only argument specifically addressing Petitioner’s proffered motivation, Patent Owner asserts Petitioner’s motivation is “conclusory.” Prelim. Resp. 29–30. We disagree. As discussed above, Petitioner, supported by its declarant’s testimony, describes the improvements that Beck’s system gains by incorporating Heller’s sensor features and also explains that implementing Heller’s sensor features applies a known technique to accomplish a desired result.

Patent Owner’s remaining arguments present reasons a POSITA would not have been motivated to combine Beck and Heller. At this stage, those arguments do not persuade us Petitioner’s motivation is insufficient. Patent Owner’s argument that it would not have been “obvious to a POSITA to transition from Beck’s bulky system to a disposable patch” as taught by Heller (Prelim. Resp. 28) is unavailing at this stage. Petitioner does not propose the wholesale replacement of Beck’s medical device with Heller’s patches; instead, Petitioner contends that a POSITA would have been motivated to implement Beck’s medical devices using certain implementation details from Heller. To the extent Patent Owner argues that a POSITA would not have considered Heller’s implementation details to be applicable to Beck, Patent Owner does not sufficiently explain its argument at this stage. Even assuming Beck’s medical device is “bulky” and Petitioner’s combination results in a less bulky device, as the predecessor to our reviewing court explains, “it is not regarded as inventive to merely make an old device portable or movable without producing any new and unexpected result.” *In re Lindberg*, 194 F.2d 732, 735 (CCPA 1952).

Patent Owner also argues a POSITA would not have been motivated to improve Beck’s system because “Beck is not directed to device construction or optimization” and “[n]othing in either reference would have

motivated a POSITA to add the high-level protocols described in Beck to the sensor described in Heller.” Prelim. Resp. 30. But we do not find those arguments availing because they rely on the rejected theory that obviousness requires a teaching, suggestion, or motivation in the references themselves to support their combination. *See KSR*, 550 U.S. at 402–403.

Finally, even assuming Patent Owner is correct that a POSITA “would have been interested in utilizing the teachings in Beck to implement multi-device systems comprised of already assembled, commercially available products” (Prelim. Resp. 30), it is not necessary to show that a combination is “the best option, only that it be a suitable option.” *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797, 800 (Fed. Cir. 2021) (quoting *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014)). As discussed above, we are preliminarily persuaded that incorporating Heller’s patient-monitoring sensor features is a suitable option for Beck’s patient-monitoring medical device.

Accordingly, on this record, Petitioner provides adequate motivation for modifying the device of Beck based on the teachings of Heller.

(2) *Motivation to Combine Beck and Lovejoy*

Petitioner’s combination of Beck and Lovejoy incorporates Lovejoy’s geolocation techniques—namely, geolocation via GPS or via triangulation with radar-responsive tags—into Beck’s cellular phone client computing device such that Beck’s cellular phone communicates geolocation data along with medical device measurement data to its server computing device. Pet. 45–47.

Petitioner argues a POSITA would have been motivated to make such a combination because doing so implements known geolocation techniques taught by Lovejoy and improves Beck’s system by providing useful location

information. *See* Pet. 45–47. As explained by Petitioner, and supported by its declarant and other evidence in the form of an FCC Report, geolocation is a common cellular phone feature. *Id.* at 45–46; Ex. 1003 ¶¶ 245–246; Ex. 1017, 2, 5–7, 13–15, 21, 48–50.

Further, Petitioner asserts that location-based improvements resulting from the combination also motivate the combination. Petitioner asserts, supported by its declarant, that when Beck’s cellular phone provides geographic information to its server computing device, its server device can return protocol components customized to geographic context. Pet. 46–47; Ex. 1003 ¶ 247 (citing Ex. 1003 ¶ 24). Additionally, Petitioner asserts, supported by its declarant, that providing geographic information allows an emergency response to be dispatched if a dangerous condition is detected by Beck’s system. Pet. 47; Ex. 1003 ¶¶ 242–245.

Patent Owner argues that there is not adequate motivation to combine Beck and Lovejoy (*see* Prelim. Resp. 30–34), but these arguments are unavailing at this stage. First, Patent Owner argues that “the fact that Lovejoy discloses geolocation of the ‘monitor’ (i.e., sensor unit) is irrelevant to teaching geolocation of any wireless device reading the monitor.” *Id.* at 32. On this record, we disagree. Even if Lovejoy’s monitor is more akin to the recited “diagnostic sensor” than to the claimed “wireless device,” that does not mean that Lovejoy’s teachings are “irrelevant” to the wireless device. Moreover, Petitioner has sufficiently explained why a POSITA would have been motivated to combine Beck and Lovejoy in the manner Petitioner proposes.

Patent Owner also points out that Lovejoy’s monitor is a durable, wearable unit whereas Beck’s monitor is a bedside device. Prelim. Resp. 32 (citations omitted). Those arguments are unavailing because they discuss

features in Lovejoy which Petitioner’s combination does not incorporate and is not required to incorporate, e.g., Lovejoy’s wearable units. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.”). Moreover, Patent Owner does not explain why durability and wearability are features counseling against the combination.

Further, Patent Owner’s argument that the combination “contravenes” Beck because Beck does not suggest its “medical device and the (purportedly wireless) client computing device could be co-located” (Prelim. Resp. 33) does not address relevant disclosures in Beck. Beck explains that, *inter alia*, “the physical communications link 140 between the client computing device 120 and the medical device 130” is provided via “IR transmitter/receivers.” Ex. 1007 ¶ 30. It stands to reason that IR, i.e., infrared light, transmission requires line-of-sight between devices, suggesting co-location. Similarly, other communication mechanisms Beck describes suggest proximity between client computing device 120 and medical device 130, e.g., RS-232 cable, SCSI, USB, and FireWire. *Id.* ¶¶ 29–30. Patent Owner also argues that Beck “makes no mention of an emergency response” (Prelim. Resp. 33), but even if Beck does not itself suggest provisioning a location-based emergency response, that motivating improvement, as provided by Petitioner and its declarant, does not need to be found in Beck itself. *See KSR*, 550 U.S. 402–403.

Still further, Patent Owner’s discussion of the FCC Report (Ex. 1017) misunderstands Petitioner’s use of that report. *See* Prelim. Resp. 34. Petitioner does not use the FCC Report to show that geolocation is inherent or to combine the FCC Report with Beck, Heller, or Lovejoy, as argued by

Patent Owner. Rather, Petitioner uses the FCC Report, which discusses requiring geolocation for cellular phones, as evidence of what was known in the art—geolocation is a feature “normally found on cell phones”—in support of its claim that a POSITA would have been motivated to incorporate known geolocation features in Beck’s cellular phone. Pet. 45–46 (citing Ex. 1017, 2, 5–7, 13–15, 21, 48–50).

Even further, Patent Owner contends Petitioner has not established that a POSITA would have had a reasonable expectation of success in combining the references because Petitioner only relies on its declarant’s testimony. Prelim. Resp. 34. On this record, we disagree. To the extent Patent Owner argues Petitioner cannot rely on its declaration testimony as evidence supporting its arguments, Patent Owner has not explained why Petitioner’s evidence in the form of declaration testimony should be disregarded. Moreover, Petitioner has done more than simply rely on conclusory declarant testimony. Petitioner explains, with support from its declarant, that there is a reasonable expectation of success because the references relate to similar technology, the features relied upon were commonplace or otherwise known, and the features relied upon in its combination operate in their expected manner. *See* Pet. 41, 44–46, 57, 66; *see* Ex. 1003 ¶ 47, 223, 238, 297, 315, 341. On this record, based on Petitioner’s declarant testimony, we determine Petitioner has sufficiently shown for the purpose of institution that one of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of the prior art in the manner proposed by Petitioner.

Finally, Patent Owner offers no contrary argument to Petitioner’s argument that the combination would have been motivated by improvements to protocol component delivery. *See* Prelim. Resp. 30–34. As discussed

above, Petitioner’s argument is supported with declarant testimony which we credit, and the asserted improvements provide sufficient motivation to combine Beck and Lovejoy.

Accordingly, on this record, Petitioner provided adequate motivation for modifying the device of Beck based on the teachings of Lovejoy.

(3) Conclusion

For the above reasons, we determine Petitioner has adequately shown for the purposes of institution that a POSITA would have been motivated to combine Beck, Heller, and Lovejoy.

b) Specific Limitations

Petitioner has adequately shown a reasonable likelihood of prevailing in its contention that claim 1 would have been obvious over the combination of Beck, Heller, and Lovejoy. Below, we address the limitations recited in claim 1 and highlight claim features Patent Owner asserts are not disclosed, taught, or obvious over the combination of Beck, Heller, and Lovejoy.

(1) Preamble

Petitioner contends Beck discloses “[a] radio frequency (RF) addressable diagnostic sensor unit.” Pet. 47–48 (citing Ex. 1007, code (57), ¶¶ 30, 34, 39, 63; Ex. 1003 ¶¶ 248, 251–253). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck discloses the preamble.¹⁰

(2) Limitation 1a

Petitioner contends Beck discloses, or in combination with Heller would have rendered obvious, “at least one sensor element.” Pet. 48–49

¹⁰ At this stage of the proceeding, the panel need not resolve whether the preamble is limiting because Petitioner shows sufficiently for purposes of institution that the prior art satisfies the recitation in the preamble.

(citing Ex. 1007 ¶¶ 34–36; Ex. 1016, code (57), 9:12–16, 12:31–13:2, Figs. 3A, 3B; Ex. 1003 ¶¶ 256–259). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck or the combination of Beck and Heller discloses this limitation.

(3) Limitation 1b

Petitioner contends Beck in combination with Heller would have rendered obvious “at least one reference sensor element.” Pet. 49–51 (citing Ex. 1007 ¶ 34; Ex. 1016, 13:12–13, 66:30–68:20; Ex. 1003 ¶¶ 261–263, 266–267). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that the Beck-Heller combination discloses this limitation.

(4) Limitation 1c

Petitioner contends Beck discloses “a unique identification ID number.” Pet. 51 (citing Ex. 1007 ¶ 55, Fig. 2; Ex. 1003 ¶ 269). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck discloses this limitation.

(5) Limitation 1d

Petitioner contends Beck alone or in combination with Heller would have rendered obvious “a sensor interface having an analog to digital converter coupled to the at least one sensor and reference sensor element.” Pet. 51–53 (citing Ex. 1007 ¶¶ 35, 44; Ex. 1016, 62:10–16, claim 39; Ex. 1003 ¶¶ 272–273, 275–278). In a first contention, Petitioner argues Beck discloses this limitation because a POSITA would have understood that Beck’s medical device collects analog measurement data and, to process that data via a computing device, that measurement data must be converted into a digital signal using an interface with an A/D converter. Pet. 51–52 (citing Ex. 1007 ¶¶ 35, 44; Ex. 1003 ¶¶ 273, 275); *see id.* at 48. In another

contention, Petitioner also argues the combination of Beck and Heller would have rendered this limitation obvious. Petitioner points out Heller discloses that its sensors, e.g., glucose sensors and temperature probes, provide analog signals in the form of “raw signals” to a measurement circuit which must be converted into digital format so sensor outputs can be processed by digital logic circuits. Pet. 52–53 (citing Ex. 1016, 62:10–16; Ex. 1003 ¶¶ 276–278); *see id.* at 50 (citing Ex. 1016 13:12–13, 66:30–68:20; Ex. 1003 ¶¶ 266–267). Petitioner’s combination modifies Beck to incorporate Heller’s sensor interface for sensors and reference sensors to enable sensor output processing. *Id.* at 53.

Patent Owner’s counter to Petitioner’s combination is that “there are ways to calculate a value based on [Beck or Heller’s] sensors without first converting them to digital values.” Prelim. Resp. 36. Even assuming as correct Patent Owner’s evidence-free assertion that a device could directly “calculate a value” from analog signals, the existence of alternative options does not show that Petitioner’s proposed combination is an unsuitable option (and therefore non-obvious). *See Intel*, 21 F.4th at 797. Petitioner’s combination, relying on digital conversion of Heller’s analog sensor outputs, is at least a suitable option for preparing an analog signal for digital processing.

Accordingly, we agree that Petitioner has adequately shown that the combination of Beck and Heller would have rendered this limitation obvious. As such, Patent Owner’s argument that Beck alone fails to disclose “a sensor interface” which is coupled to a “sensor” and a “reference sensor element” (Prelim. Resp. 35–36) is inapposite because Petitioner has not asserted that Beck alone discloses a “reference sensor element” (*see* Pet. 49–51).

(6) *Limitation 1e*

Petitioner contends Beck discloses “at least one antenna.” Pet. 53 (citing Ex. 1007 ¶ 39; Ex. 1003 ¶¶ 280–281). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck discloses this limitation.

(7) *Limitation 1f*

Petitioner contends Beck in combination with Heller would have rendered obvious “a substrate.” Pet. 54–55 (citing Ex. 1016, code (57), 9:12–16, 13:18–16:15, 24:28–25:19, Figs. 2–11; Ex. 1003 ¶¶ 288–289). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck in combination with Heller would have rendered this limitation obvious.

(8) *Limitation 1g*

Petitioner contends Beck in combination with Heller would have rendered obvious “an RF power and communication interface coupled to the at least one antenna and sensor interface.” Pet. 55–57 (citing Ex. 1007 ¶¶ 30, 35, 39, 41, 63, Fig. 1; Ex. 1016, 59:11–27; Ex. 1003 ¶¶ 292–298 (citation omitted)). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck in combination with Heller would have rendered this limitation obvious.

(9) *Limitation 1h*

Petitioner contends Beck in combination with Heller renders obvious “a controller coupled to the RF power and communications interface and the sensor interface.” Pet. 57–58 (citing Ex. 1007 ¶ 35; Ex. 1003 ¶¶ 300–302). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck in combination with Heller would have rendered this limitation obvious.

(10) *Limitation 1i*

Petitioner contends Beck discloses “a memory coupled to the controller and the sensor interface.” Pet. 58 (citing Ex. 1007 ¶ 35; Ex. 1003 ¶¶ 303–304). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck discloses this limitation.

(11) *Limitation 1j*

Petitioner contends Beck in combination with Lovejoy would have rendered obvious “wherein the RF addressable sensor communicates with a remote wireless device, said wireless device having multiple wireless communication means, geolocation means and a unique ID, whereby said wireless device is coupled to at least one communications network linked to least one remote server.” Pet. 58–61 (citing Ex. 1007 ¶¶ 14, 27, 30, 65; Ex. 1009, 4:32–37; Ex. 1017, 48–50; Ex. 1003 ¶¶ 246–247, 306–310, 315–321). We discuss, in turn below, whether Petitioner has adequately shown (1) Beck discloses “a remote wireless device . . . having . . . a unique ID” and (2) the combination of Beck and Lovejoy would have rendered obvious “a remote wireless device . . . having . . . geolocation means.”

(a) *“unique ID”*

Petitioner argues Beck discloses “a remote wireless device . . . having . . . a unique ID” because Beck describes an Internet-enabled cellular phone having a network address. Pet. 59–60 (citing Ex. 1007 ¶¶ 27, 30, 65; Ex. 1003 ¶¶ 308–310, 317–319). Petitioner, supported by its declarant, asserts that a POSITA would have understood that an Internet-enabled cellular phone would have a network address which uniquely identifies the device, e.g., IP address, Media Access Control (“MAC”) address, and/or an International Mobile Equipment Identity (“IMEI”) number. *Id.* at 60 (citing Ex. 1003 ¶ 319). Petitioner’s declarant explains that a “MAC address is a

unique identifier assigned to devices having network capability. Similarly, an IMEI number is a unique identifier assigned to wireless phones.”

Ex. 1003 ¶ 319. On this record, we agree with Petitioner, as supported by its declarant’s testimony, that Beck’s cellular phone has a unique ID.

Patent Owner argues that the only evidence Petitioner provides that the identified network addresses are unique is “the *ipse dixit* of its proffered expert.” Prelim. Resp. 37–38. However, evidence in the form of expert testimony can be relied on to show the general knowledge of a skilled artisan. *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1338 (Fed. Cir. 2020). Petitioner’s declarant provides a sufficient explanation of his testimony, and Patent Owner does not identify any evidence to the contrary. As such, we credit Petitioner’s declarant testimony as evidence adequately showing the general knowledge of a POSITA: an Internet-enabled cellular phone has a network address, e.g., IP address, MAC addresses, or IMEI number, which uniquely identifies the device on its communication network. Ex. 1003 ¶ 319; *see id.* ¶ 185.

Accordingly, on this record, Petitioner has shown sufficiently that this limitation is disclosed by Beck.

(b) “geolocation means”

Petitioner contends the combination of Beck and Lovejoy would have rendered obvious “a remote wireless device . . . having . . . geolocation means” based on its assertions that Beck’s cellular phone discloses “a remote wireless device,” the FCC requires cellular phones to have geolocation capability, and Lovejoy discloses geolocation techniques. Pet. 59–61 (citing Ex. 1007 ¶¶ 27, 30; Ex. 1017 ¶¶ 48–50; Ex. 1009, 4:32–37; Ex. 1003 ¶¶ 246–247, 315–316). Based on those teachings, Petitioner argues it would have been obvious to modify Beck’s cellular phone to

incorporate the geolocation techniques taught by Lovejoy. *Id.* at 60–61 (citing *id.* 45–47 (citations omitted)). We preliminarily agree with Petitioner that Beck and Lovejoy teach the features they are relied upon for and that modifying Beck’s cellular phone to include Lovejoy’s geolocation techniques results in a “a remote wireless device . . . having . . . geolocation means.”

Patent Owner does not dispute the teachings of Beck and Lovejoy and instead presents arguments which do not address Petitioner’s stated combination, similar to its earlier arguments addressed above in § II.D.4.a.2. First, Patent Owner asserts that Lovejoy’s monitor device, which includes geolocation features, “maps—if at all—to the sensor of claim 1. But it is the wireless device of the claim that has the geolocation means.” Prelim. Resp. 36. As discussed in § II.D.4.a.2, Petitioner’s combination incorporates Lovejoy’s geolocation techniques—not Lovejoy’s monitor device. Petitioner’s case for obviousness does not require the bodily incorporation of Lovejoy’s monitor or some hypothetical situation where Beck’s cellular phone is supplanted by Lovejoy’s monitor. *See In re Keller*, 642 F.2d at 425. Second, Patent Owner argues that Beck’s cellular phone does not inherently include geolocation means (Prelim. Resp. 37), but as discussed above, Petitioner relies on obviousness, not inherency, for this feature (*see* Pet. 58–61).

We also agree with Petitioner that, on this record, Beck discloses “a wireless communication means” that has the same or equivalent structure and performs the claimed function. Pet. 59–60 (citing Ex. 1007 ¶¶ 27, 30; Ex. 1003 ¶¶ 308–310).

Accordingly, on this record, Petitioner has shown sufficiently that this limitation would have been obvious over Beck in combination with Lovejoy.

(12) Limitation 1k

Petitioner contends that Beck discloses “wherein the wireless device communicates with the RF addressable sensor interface to obtain the ID and sensor data.” Pet. 61 (citing Ex. 1007 ¶¶ 55, 74–75; Ex. 1003 ¶¶ 322–324). Patent Owner does not dispute this contention. On this record, we agree with Petitioner that Beck discloses this limitation.

(13) Limitation 1l

Petitioner contends that Beck discloses

wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID and communicates to said wireless device processed information relating to said sensor data and software related to the unique sensor ID, thereby allowing said wireless device to interpret said sensor anywhere worldwide.

Pet. 62–65 (citing Ex. 1007 ¶¶ 65, 67, 69, 71, 76, 78–87, Figs. 3–4; Ex. 1003 ¶¶ 325–326, 328–329, 331–332). Specifically, Petitioner argues Beck discloses “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID” because Beck’s “server computing device 110 in step 306 attempts to authenticate the user, the client computing device 120, and/or the medical device 130” using “the serial number of the medical device 130,” i.e., a unique sensor ID. Pet. 62; Ex. 1007 ¶ 65.

Patent Owner’s argument that Beck fails to disclose this limitation is based on a claim construction we do not agree with at this stage in the proceeding. *See* Prelim. Resp. 37–38. Specifically, Patent Owner argues this limitation requires remote server authentication using both “a unique sensor ID” and “a unique wireless device ID” but Petitioner does not show that Beck uses a unique wireless device ID for authentication. *Id.* But, as

discussed above in § II.C.1, this limitation only requires remote server authentication of the unique sensor ID. As Petitioner adequately shows that Beck's server computing device authenticates based on the serial number of Beck's medical device, we agree Petitioner has adequately shown Beck discloses or teaches "wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID."

Accordingly, on this record, Petitioner has shown this limitation is disclosed by Beck.

(14) Conclusion as to Claim 1

For the reasons discussed above and based on Petitioner's contentions and evidence, summarized above, we are persuaded, on this record, that Petitioner shows a reasonable likelihood of prevailing in demonstrating that claim 1 is unpatentable for obviousness over the combination of Beck, Heller, and Lovejoy.

5. Remaining Claims 2, 3, 5, 9, and 10

Petitioner also asserts that dependent claims 2, 3, 5, 9, and 10 are unpatentable as obvious over the combined teachings of Beck, Heller, and Lovejoy. Pet. 65–69. Patent Owner does not set forth additional arguments for claims 2, 3, 5, 9, and 10 at this stage of the proceeding, instead relying on its claim 1 arguments. *See* Prelim. Resp. 38. We have reviewed Petitioner's contentions, and we are sufficiently persuaded, on this record, that Petitioner shows a reasonable likelihood of prevailing in demonstrating that claims 2, 3, 5, 9, and 10 are unpatentable for obviousness over the combined teachings of Beck, Heller, and Lovejoy.

E. Institution of Inter Partes Review and Additional Grounds

Because we are persuaded that Petitioner has shown a reasonable likelihood of prevailing in showing that the subject matter of claims 1–3, 5,

9 and 10 would have been obvious over Beck, Heller, and Lovejoy, we institute *inter partes* review of all claims and all challenges raised in the Petition. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2020) (35 U.S.C. § 314 “simply requires [the Director] to decide whether the petitioner is likely to succeed on ‘at least 1’ claim. Once that single claim threshold is satisfied, it doesn’t matter whether the petitioner is likely to prevail on any *additional* claims; the Director need not even consider any other claim before instituting review.”); 37 C.F.R. § 42.108(a).

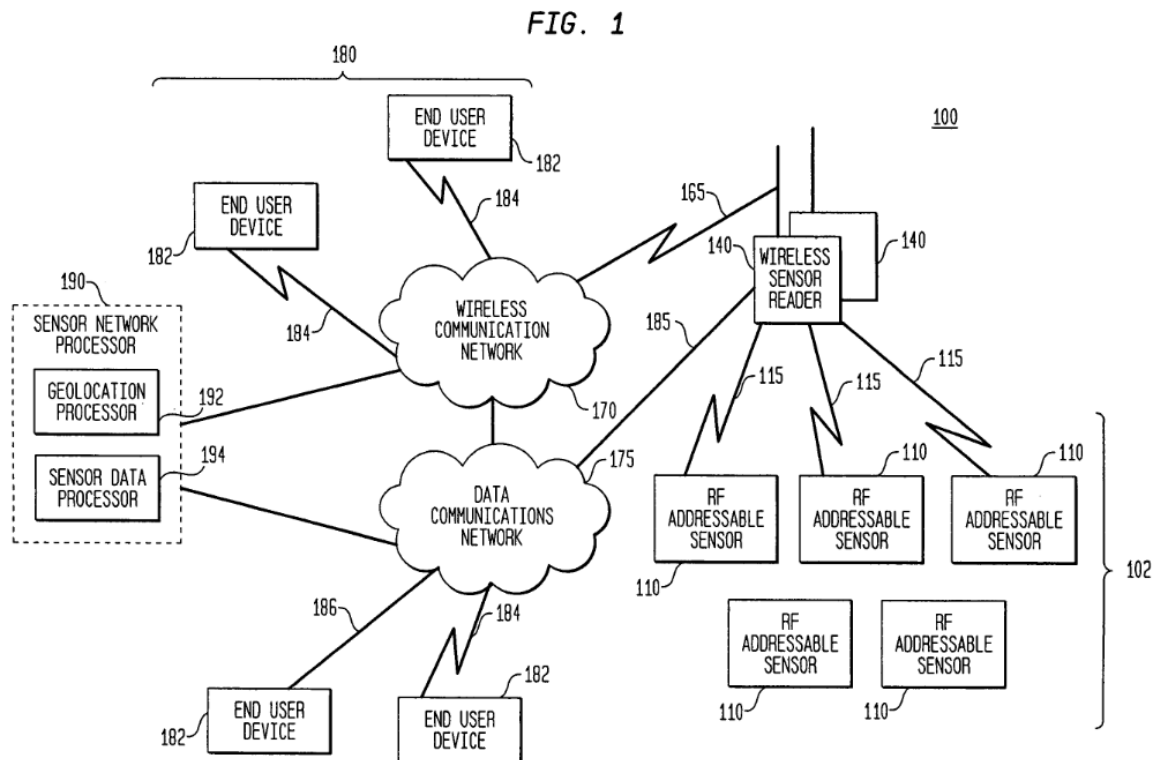
However, as noted above, Petitioner asserts two additional grounds, the first asserting claims 1, 2, 5, 9, and 10 would have been obvious over Bandy and the second asserting claim 3 would have been obvious over the combination of Bandy and Heller. Pet. 1, 15–37. Patent Owner opposes. Prelim. Resp. 20–27. To provide guidance to the parties for the upcoming trial, the remainder of this Decision focuses on the parties’ disputes as to these two additional grounds. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide 6, 64 (Nov. 2019), *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

1. Obviousness Over Bandy

a) Overview of Bandy (Ex. 1005)

Bandy relates to “a radio frequency (RF) addressable sensor network architecture” in which RF addressable sensors communicate with wireless sensor readers which are further coupled to a communications network. Ex. 1005, 1:51–60. When an RF addressable sensor communicates its sensor data to the wireless sensor reader, the wireless sensor reader may process that sensor data or may communicate that sensor data to a sensor network processor via the communications network. *Id.* at 2:47–57.

Figure 1 shows a block diagram of an illustrative RF addressable sensor network and is reproduced below.



The block diagram of Figure 1 shows RF addressable sensors 110 communicating with a wireless sensor reader 140 via RF transmission signals 115; sensor reader 140 is in further communication with sensor network processor 190 via communications network 180. *Id.* at 4:33–45, 4:63–65. An “RF addressable sensor includes RFID tag functionality integrated with sensor functionality,” e.g., biological, chemical, temperature, etc., sensors. *Id.* at 6:51–54, 7:36–59; *see id.* at Fig. 2. A wireless sensor reader may be, e.g., a cellular phone, which receives software for processing and recognizing a particular RF addressable sensor. *Id.* at 10:33–41. Such “necessary processing and analysis information” for the wireless sensor reader “is downloaded from a remote location” or from sensor network processor 190 in which “only the ID of the RFID-sensor is necessary.” *Id.* at 10:33–41, 10:29–32. Further, sensor network processor 190 may also

receive “sensor data over network 180, and process[] the data.” *Id.* at 6:9–12, 18:1–7.

We discuss additional pertinent details of this reference in our analysis below.

b) Prior Art Status of Bandy

Patent Owner contends Bandy is not qualified prior art under pre-AIA § 102(e) and thus is not usable in Petitioner’s obviousness challenge because Petitioner’s relied-upon portions of Bandy were entirely conceived of and contributed by Dr. Peeters, the sole inventor of the ’307 Patent. Prelim. Resp. 20–24; Prelim. Sur-reply 4–7. However, we agree with Petitioner that the record raises questions which would benefit from additional fact-finding through trial. Prelim. Reply 4. We detail our analysis below.

To qualify as prior art under pre-AIA § 102(e), Bandy must be “by another.” *EmeraChem Holdings, LLC v. Volkswagen Grp. of Am., Inc.*, 859 F.3d 1341, 1345 (Fed. Cir. 2017) (citation omitted). To decide whether Bandy is “by another” we must

[(1)] determine what portions of the reference patent were relied on as prior art to anticipate the claim limitations at issue, (2) evaluate the degree to which those portions were conceived ‘by another,’ and (3) decide whether that other person’s contribution is significant enough, when measured against the full anticipating disclosure, to render him a joint inventor of the applied portions of the reference patent.

Duncan Parking, 914 F.3d at 1358.

Although the listed inventive entities in Bandy and the ’307 Patent are different on their face (*compare* Ex. 1001, code (75) (listing Dr. Peeters as the sole inventor), *with* Ex. 1005, code (75) (listing William R. Bandy (“Dr. Bandy”) and Dr. Peeters as joint inventors), our inquiry does not end there. We next examine whether the portions of Bandy relied upon by Petitioner in

its obviousness challenge were solely conceived of and contributed to by Dr. Peeters to determine whether those relied-upon portions are “by another.”

Patent Owner argues “the portions of Bandy relied on by Petitioner were conceived by John Peeters, the sole inventor of the ’307 Patent” and, therefore, Bandy does not qualify as prior art. Prelim. Resp. 20. Patent Owner submits declarations from both Dr. Peeters (Ex. 2002) and Dr. Bandy (Ex. 2001) (collectively, “Declarations”) in support of its argument that Dr. Peeters solely conceived of the relied-upon portions of Bandy. Dr. Bandy and Dr. Peeters similarly attest that Dr. Peeters alone conceived of “the concept of integrating RFID into cell phones, diagnostic applications, software download for analyzing sensor data, sensor networks based on cell phones and RFID sensors, specific types of sensors, . . . the use of reference sensors, on-person sensor cards or badges, [and] wireless geolocation technologies” disclosed in Bandy. Ex. 2001 ¶ 9; Ex. 2002 ¶ 19.

Furthermore, Dr. Peeters states “[a]ll portions of [Bandy] upon which Petitioner relies were solely contributed by me, without any contribution from Dr. Bandy.” Ex. 2002 ¶¶ 22–23. Dr. Bandy states “[m]y contributions to [Bandy] did not relate to the sensor features recited in claims 1, 2, 3, 5, 9, and 10 of the ’307 Patent. Thus, to the extent that any of these features were disclosed in [Bandy], they were contributed by Dr. Peeters.” Ex. 2001 ¶ 11.

The statements in the Declarations are favorable to Patent Owner’s arguments, but other evidence of record suggests that this dispute would benefit from additional fact-finding. As Petitioner notes, it has not yet had an opportunity to cross-examine the declarants. Prelim. Reply 4. Patent Owner asserts it has provided “documentary evidence corroborating [Dr. Peeters’] declaration” that he solely conceived of the relied-upon portions of Bandy. Prelim. Sur-reply 6. But Petitioner has had neither the

opportunity to cross-examine the declarants regarding this evidence, nor the opportunity to address it in detail. Moreover, other documentary evidence could suggest that certain relied-upon portions of Bandy included important contributions from another. In particular, the August 19, 2003 email and attached Patent Outline sent from Dr. Peeters to Dr. Bandy (Ex. 2006) suggest that Dr. Peeters relied on the contributions of others for features Petitioner asserts Bandy teaches, e.g., portions requesting others were to provide or complete “lacking” features. *See* Pet. 21 (citing Ex. 1005, 9:26–32, 16:36–38, Figs. 2, 7), 27–28 (citing Ex. 1005, 5:45–48, 5:67–6:5, 6:42–49, Fig. 1); Ex. 2006, 2–4. This evidence potentially calls into question that another person contributed to features related to the relied-upon portions of Bandy.

We agree with Patent Owner that Dr. Bandy’s co-inventorship of an unrelated patent is of little value because it is not clear what Dr. Bandy personally contributed to that patent. Prelim. Sur-reply 5. We do not, however, agree with Patent Owner that Dr. Bandy’s declaration confirms that Dr. Bandy did not contribute to *any* features relied upon in Bandy. *Id.* at 4. Rather, Dr. Bandy’s declaration appears to limit his disavowal of relied-upon features disclosed in the ’307 Patent to “sensor features”—rather than to all relied-upon features. *See* Ex. 2001 ¶ 11.

Although Patent Owner argues we should follow previous nonprecedential Board decisions which denied institution after determining that a reference should be disqualified for having the same inventive entity based on inventor declarations (Prelim. Sur-reply 6–7), this situation is distinguishable from those previous Board cases. Here, we have decided to institute a trial on Petitioner’s Beck-Heller-Lovejoy ground, and so we

institute a trial as to all claims and grounds in the Petition. *See* 37 C.F.R. § 42.108(a). We expect the parties to address this ground at trial.

c) Independent Claim 1

(1) Preamble, Limitations 1a–1i, and 1k

Petitioner contends Bandy discloses “[a] radio frequency (RF) addressable diagnostic sensor unit.” Pet. 19 (citing Ex. 1005, 4:33–29, 19:56–60, 19:64–67, Fig. 1; Ex. 1003 ¶¶ 121–123).

Petitioner further contends Bandy discloses “at least one sensor element.” Pet. 19–20 (citing Ex. 1005, 6:58–60, 17:17–22, 18:25–34, 19:59–63, 20:50–59, 21:19–23, 21:33–40, 21:67–22:1, 22:53–58, 23:4–7, 23:63–64, Figs. 2, 8, 10–17; Ex. 1003 ¶¶ 127–133).

Petitioner further contends Bandy discloses “at least one reference sensor element.” Pet. 20 (citing Ex. 1005, 8:59–9:7, Fig. 2; Ex. 1003 ¶¶ 134–138).

Petitioner further contends Bandy discloses “a unique identification ID number.” Pet. 20–21 (citing Ex. 1005, 10:6–13, 11:19–29, Fig. 2; Ex. 1003 ¶¶ 144–146 (citation omitted)).

Petitioner further contends Bandy discloses “a sensor interface having an analog to digital converter coupled to the at least one sensor and reference sensor element.” Pet. 21 (citing Ex. 1005, 9:26–32, 16:36–38, Figs. 2, 7; Ex. 1003 ¶¶ 146–149).

Petitioner further contends Bandy discloses “at least one antenna.” Pet. 21–22 (citing Ex. 1005, 6:55–57, 10:57–61, Fig. 2; Ex. 1003 ¶¶ 150–153).

Petitioner further contends Bandy discloses “a substrate.” Pet. 22 (citing Ex. 1005, 6:61–7:10, Fig. 2; Ex. 1003 ¶¶ 154–156).

Petitioner further contends Bandy discloses “an RF power and communication interface coupled to the at least one antenna and sensor interface.” Pet. 22 (citing Ex. 1005, 8:11–13, 11:30–34, Fig. 2; Ex. 1003 ¶¶ 157–160).

Petitioner further contends Bandy discloses “a controller coupled to the RF power and communications interface and the sensor interface.” Pet. 22–23 (citing Ex. 1005, 10:62–11:2, Fig. 2; Ex. 1003 ¶¶ 161–164).

Petitioner further contends Bandy discloses “a memory coupled to the controller and the sensor interface.” Pet. 23 (citing Ex. 1005, 9:63–66, 11:21–29, Fig. 2; Ex. 1003 ¶¶ 165–167).

Petitioner further contends that Bandy discloses “wherein the wireless device communicates with the RF addressable sensor interface to obtain the ID and sensor data.” Pet. 29 (citing Ex. 1005, 4:56–65, 10:14–32, 13:1–13, 15:23–26, 16:41–51, 17:54–56, Figs. 5, 7A, 7B, 8–16; Ex. 1003 ¶ 191).

Patent Owner does not dispute any of these contentions at this stage in the proceeding. *See generally* Prelim. Resp.

(2) *Limitation 1j*

Petitioner contends Bandy would have rendered obvious “wherein the RF addressable sensor communicates with a remote wireless device, said wireless device having multiple wireless communication means, geolocation means and a unique ID, whereby said wireless device is coupled to at least one communications network linked to least one remote server.” Pet. 23–29 (citing Ex. 1005, 4:50–65, 5:6–18, 5:45–63, 5:67–6:5, 6:42–49, 8:41–45, 11:63–12:16, 13:6–8, 17:62–67, Figs. 1, 3, 8; Ex. 1003 ¶¶ 170, 173, 178, 181, 183–187). Patent Owner disputes that Petitioner has adequately shown Bandy would have rendered obvious “a remote wireless device” having “a unique ID.” Prelim. Resp. 24–25.

At this stage, Patent Owner does not dispute that “a remote wireless device” is disclosed by Bandy’s “wireless sensor reader 140,” which “could be a wireless phone, a personal digital assistant (PDA), a computer having wireless communications capabilities, or other type of mobile, handheld, and/or computing device,” and communicates over networks to remote devices. Ex. 1005, 5:6–18, Fig. 1; Ex. 1003 ¶ 170; *see* Pet. 23–24; Prelim. Resp. 24–25. Furthermore, on this record, we agree with Petitioner that Bandy’s wireless sensor reader 140 has a “unique ID” because “a POSITA would have understood” that some unique ID, e.g., IP addresses, MAC addresses, and IMEI numbers, would be used to communicate over a network by “uniquely identifying the respective device to the network.” Pet. 26–27 (citing Ex. 1003 ¶¶ 184–185); *see also supra* § II.D.4.b.11.a (analyzing similar issue in the context of the Beck-Heller-Lovejoy ground).

Although Patent Owner asserts that those exemplary unique IDs are “not discussed anywhere in Bandy” (Prelim. Resp. 24), Petitioner relies on testimony from its declarant as evidence showing that a POSITA would have understood such exemplary unique IDs are used to communicate over networks such as the Internet or mobile networks. And, although Patent Owner asserts that Petitioner’s declarant “provides no support for his assertion that MAC addresses and IMEI numbers are ‘unique’” (*id.*), the declarant’s testimony is sufficient evidence of these facts at this stage (Ex. 1003 ¶ 185).

(3) *Limitation 11*

Petitioner contends that Bandy teaches or would have rendered obvious

wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID and

communicates to said wireless device processed information relating to said sensor data and software related to the unique sensor ID, thereby allowing said wireless device to interpret said sensor anywhere worldwide.

Pet. 30–31 (citing Ex. 1005, 10:6–51; Ex. 1003 ¶ 200). Patent Owner disputes that Petitioner has adequately shown Bandy discloses or teaches “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID.” Prelim. Resp. 25–26.

On this record, we preliminarily agree with Petitioner that Bandy teaches or would have rendered obvious these claimed authentication features because Bandy describes that its wireless sensor reader downloads necessary software using the ID of its RFID sensor. Specifically, Bandy states that when its wireless sensor reader 140 requires additional software to recognize and analyze a particular type of RFID sensor, “necessary processing and analysis information is downloaded from a remote location” to wireless sensor reader 140 and, to do so, “only the ID of the RFID-sensor is necessary.” Ex. 1005, 10:33–41. We also preliminarily agree with Petitioner and its declarant that, based on those teachings, a “POSITA would have thus understood that Bandy disclosed and would have rendered obvious a remote server (e.g., sensor data processor 194) that authenticates the ID of the RFID-sensor (unique sensor ID).” Pet. 31; Ex. 1003 ¶¶ 200–201 (citing Ex. 1005, 10:6–13, 10:14–16, 10:33–47).

Similar to its earlier argument we addressed in § II.4.b.13, Patent Owner argues this limitation requires remote server authentication using both “a unique sensor ID” and “a unique wireless ID.” Prelim. Resp. 25–26. But, as discussed above in § II.C.1, this limitation only requires remote server authentication of the unique sensor ID, e.g., Bandy’s “ID of the RFID-sensor.”

Patent Owner’s additional argument that Bandy’s remote location download “relate[s] at most to what is communicated from the server, and [does] not disclose authentication” (Prelim. Resp. 26) does not address the portion of Bandy that states “the ID of the RFID-sensor is *necessary*” for the remote location download (Ex. 1005, 10:37–41 (emphasis added)). As such, the current record shows Bandy explains the ID of its RFID-sensor is required for access to the remote location download.

d) Remaining Claims 2, 5, 9, and 10

Petitioner also asserts that dependent claims 2, 5, 9, and 10 are unpatentable as obvious over Bandy. Pet. 31–34. Patent Owner does not set forth additional arguments for claims 2, 5, 9, and 10 at this stage of the proceeding, instead relying on its claim 1 arguments. *See* Prelim. Resp. 27.

2. Obviousness Over Bandy and Heller

Petitioner also asserts that dependent claims 3 is unpatentable as obvious over the combination of Bandy and Heller. Pet. 35–37. Patent Owner does not set forth additional arguments for this ground and instead relies on its arguments specific to claim 1 of Bandy. *See* Prelim. Resp. 27.

III. DISCRETIONARY DENIAL

Patent Owner argues that we should exercise discretion to deny institution under 35 U.S.C. § 325(d) because, according to Patent Owner, the same or substantially the same prior art previously was presented to the Office. Prelim. Resp. 39–43; Prelim. Sur-reply 1–3. Petitioner counters that we should not exercise our discretion because any art previously presented to the Office was not actually or substantively discussed by the Office, showing that the Office overlooked relevant disclosures in that art. Prelim. Reply 1–3; *see* Pet. 69–70. For the reasons given below, we decline to exercise discretion to deny.

Section 325(d) of Title 35 of the United States Code addresses the relationship of proceedings before the Board with other proceedings in the Office, and provides, in part, that

[i]n determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31,^[11] the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.

35 U.S.C. § 325(d).

In evaluating arguments under Section 325(d), we use a two-part framework, determining, first, “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.” *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). If either condition of the first part of the framework is satisfied, we then determine “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Id.*

Petitioner’s challenge over the combination of Beck, Heller, and Lovejoy counsels us not to discretionarily deny institution. Patent Owner does not dispute that Beck and Heller were not before the Office. *See* Prelim. Resp. 42–43; Prelim. Sur-reply 3. Although Patent Owner characterizes that as “irrelevant” (Prelim. Sur-reply 3), Petitioner asserts it relies on Beck to teach the limitation leading to allowance (Prelim. Reply 3). In fact, the Petition largely relies on Beck, or the combination of Beck and Heller, in its obviousness challenge and only relies on Lovejoy for a sliver of

¹¹ Chapter 31 (35 U.S.C. §§ 311–319) relates to *inter partes* review.

the claim, “geolocation means.” *See* Pet. 47–65. As such, we determine the first part of *Advanced Bionics* is not satisfied and do not exercise our discretion to deny institution for this reason.

Even if we were to reach the second part of *Advanced Bionics*, we agree with Petitioner the Office erred in a manner material to the patentability of challenged claims by not applying the combination of Beck, Heller, and Lovejoy during prosecution, as evidenced by Petitioner’s reliance on that combination in its unpatentability challenges. Prelim. Reply 3; *see* Pet. 69–70. Petitioner specifically points out the Office erred by overlooking Beck’s “disclosure of the limitation that allegedly was missing from the prior art and led to allowance,” i.e., “wherein the remote server authenticates said unique sensor ID . . . and communicates to said wireless device . . . software related to the unique sensor ID.” Prelim. Reply 3. Patent Owner, at most, suggests Petitioner fails to demonstrate the Office erred in a manner material to the patentability of challenged claims because Petitioner’s combination does not show unpatentability. *See* Prelim. Resp. 43. However, as detailed in our analysis above, Petitioner adequately shows that the claims would have been obvious over the combination of Beck, Heller, and Lovejoy.

Accordingly, we do not exercise our discretion to deny institution under § 325(d) over Petitioner’s challenge based on Beck, Heller, and Lovejoy. We need not address whether Patent Owner’s argument that Petitioner’s challenge based on Bandy warrants discretionary denial. Prelim. Resp. 40–42.

IV. CONCLUSION

As explained above, we determine that Petitioner has established a reasonable likelihood of prevailing in its challenge to at least one claim of

the '307 Patent. Thus, we institute an *inter partes* review of all challenged claims on all asserted grounds.

The factual findings and conclusions of law in this Decision are preliminary and based on the current record. They are made for the sole purpose of determining whether Petitioner meets the threshold for initiating review. Any final decision as to the patentability of the challenged claims will be based on the full record developed during trial, including any response timely filed by Patent Owner. Any arguments not raised by Patent Owner in such a response may be deemed forfeited.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED pursuant to 35 U.S.C. § 314(a) and 37 C.F.R. § 42.4, an *inter partes* review is hereby instituted as to claims 1–3, 5, 9, and 10 of the '307 Patent on all challenges raised in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which will commence on the entry date of this decision.

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