

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 JAMESON LEE, BART A. GERSTENBLITH, and
BACH V. HOANG, *Administrative Patent Judges*.

HOANG, *Administrative Patent Judge*.

DECISION
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

On July 22, 2024, we instituted an *inter partes* review of claims 1–3, 5, 9, and 10 of U.S. Patent No. 7,969,307 B2 (Ex. 1001 (“the ’307 Patent”)). Paper 10 (“Inst. Dec.”). Having considered the full record at trial, and for the reasons explained below, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–3, 5, 9, and 10 are unpatentable.

A. *History of this Proceeding*

On January 16, 2024, Abbott Laboratories and Abbott Diabetes Care Inc. (collectively, “Petitioner”) filed a petition for *inter partes* review challenging claims 1–3, 5, 9, and 10 of the ’307 Patent. Paper 2 (“Pet.”). Altivera LLC (“Patent Owner”) filed a Preliminary Response. Paper 7. Additionally, Petitioner filed a pre-institution Reply (Paper 8), and Patent Owner filed a pre-institution Sur-reply (Paper 9). Based on the preliminary record, we determined that Petitioner demonstrated a reasonable likelihood that it would prevail in establishing the unpatentability of at least one challenged claim, and we instituted an *inter partes* review of all challenged claims on all asserted grounds. Inst. Dec. 44–45.

During trial, Patent Owner filed a Response (Paper 17, “PO Resp.”), Petitioner filed a Reply (Paper 23, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 28, “PO Sur-reply”).

An oral hearing in this proceeding was held on April 23, 2025, and a transcript of the hearing is included in the record. Paper 44 (“Tr.”).

B. 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 (Patent Owner's Mandatory Notices), 1.

C. 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.

D. Testimonial Evidence

Petitioner relies on the proffered declarant witness testimony of Majid Sarrafzadeh, Ph.D., submitted prior to institution. *See* Ex. 1003 (Declaration of Majid Sarrafzadeh in Support of Petition). Petitioner also relies on an additional declaration from Dr. Sarrafzadeh, submitted after institution. *See*

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 apply 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 Jan. 22, 2004, issued Dec. 12, 2006. Ex. 1005.

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

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

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

Ex. 1033 (Declaration of Majid Sarrafzadeh in Support of Petitioner's Reply). In addition, Patent Owner twice deposed Dr. Sarrafzadeh and filed the corresponding transcripts. *See* Ex. 2011 (dated Sept. 26, 2024); Ex. 2024 (dated Feb. 19, 2025).

Patent Owner relies on the proffered declarant witness testimony of William Bandy, Ph.D. (*see* Ex. 2001 (Declaration of William Bandy, PHD)), John P. Peeters, Ph.D. (*see* Ex. 2002 (Declaration of John P. Peeters, PHD)), and Steven Warren, Ph.D. (*see* Ex. 2009 (Declaration of Steven Warren, PH.D.)). In addition, Petitioner deposed Dr. Bandy, Dr. Peeters, and Dr. Warren and filed the corresponding transcripts. *See* Ex. 1030 (dated Dec. 18, 2024); Ex. 1032 (dated Jan. 8, 2025); Ex. 1031 (dated Dec. 19, 2024).

E. The '307 Patent

As relevant to this proceeding, the '307 Patent describes a “wireless chip diagnostic sensor” whose information is “interrogated” or “read” with 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. Ex. 1001, 4:44–45, 17:11–14.

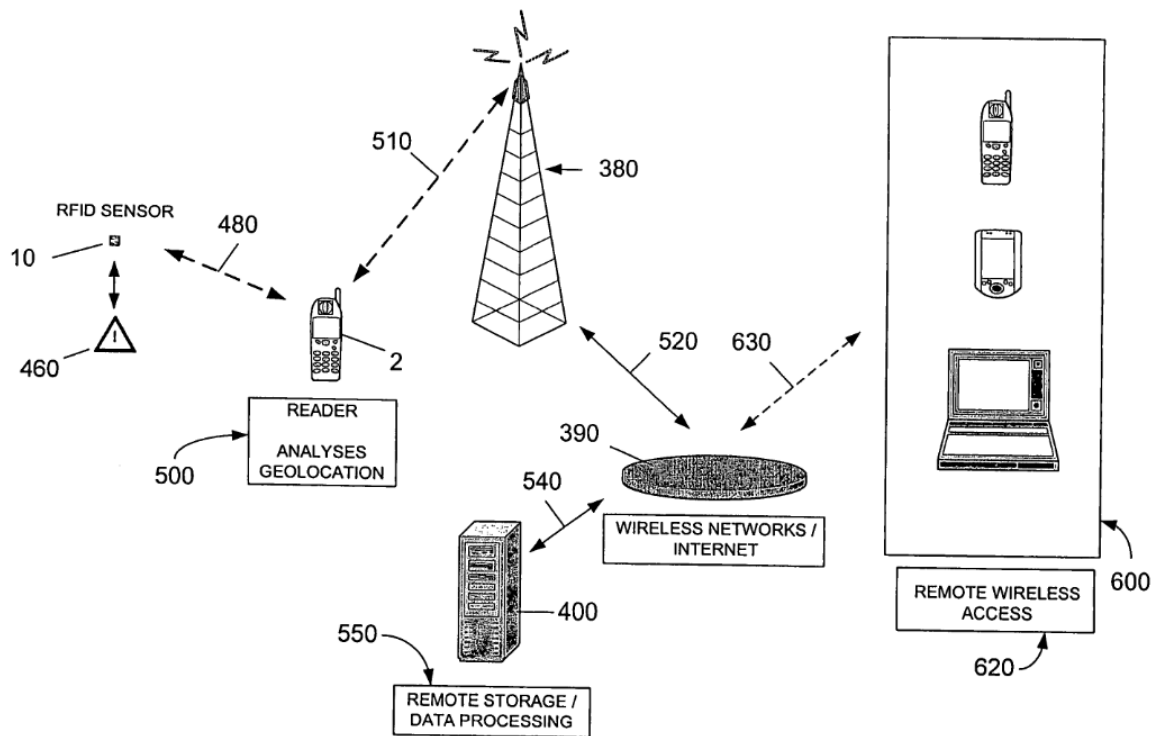


FIG. 21

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 provide geolocation of the wireless chip diagnostic sensor. Ex. 1001, 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.

F. Illustrative Claim

Claim 1 is the sole independent claim challenged in this proceeding. Claim 1 is reproduced below with Petitioner’s added limitation identifiers for reference. *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 t^[6] least one remote server; and

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

[1l] 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*

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

⁶ 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.” See Prelim. Resp. 8; Pet. 23.

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).

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).

Patent Owner does not dispute this assessment. *See generally* PO Resp.

Having considered the record, we adopt Petitioner’s proposed level of skill, as articulated above. We are satisfied that Petitioner’s proposal comports with the level of skill necessary to understand and implement the teachings of the ’307 Patent. *Accord* Inst. Dec. 8–9.

C. *Claim Construction*

We interpret a patent claim 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 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.

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

There are two claim construction issues relevant to this limitation. First, whether the remote server must authenticate “said unique wireless device ID” in addition to authenticating “said unique sensor ID.” Second, whether the claim requires an association between the unique sensor ID and the unique wireless device ID. We address those issues in turn.

a) *“the remote server authenticates”*

Patent Owner suggests we construe the claim phrase “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID” (Ex. 1001, 19:51–52), as recited in limitation [11], to mean “the remote server authenticates the unique

sensor ID *and* the associated unique wireless device ID”⁷ (PO Resp. 18 (emphasis added)).

Patent Owner’s suggested construction requiring authentication of both the unique sensor ID as well as the associated unique wireless device ID is contradicted, or at least unsupported, by the claim language and the Specification. We determine that this limitation does not require authentication of both the unique sensor ID and the unique wireless device ID, or otherwise require authentication using the unique wireless ID. Rather, the limitation only requires authentication of the unique sensor ID.

The language and structure of the claim itself, “the remote server authenticates *said unique sensor ID associated with said unique wireless device ID*,” requires authentication of the unique sensor ID but not the unique wireless device ID. *See* Ex. 1001, 19:51–52 (emphasis added). The portion of the limitation reciting “associated with said unique wireless device ID” is linguistically an appositive modifying the “unique sensor ID.” Indeed, Patent Owner acknowledges the “plain meaning of the claim term is that the remote server authenticates the unique sensor ID and that such unique sensor ID is associated with a unique wireless device ID.” PO Resp. 18.

⁷ Limitation [11] does not exactly recite the antecedent basis for “said unique wireless device ID.” Ex. 1001, 19:51–52. However, preceding limitation [1j] recites “a remote wireless device, said wireless device having . . . a unique ID.” *Id.* at 19:42–45. We understand “said unique wireless device ID” refers to the “unique ID” of the “remote wireless device” or “wireless device” recited in limitation [1j]. *See* PO Resp. 29 (interchangeably discussing unique IDs of the “remote wireless device” and the “wireless device”).

Our interpretation of claim 1 is further supported by contrasting language recited in claim 18. *Phillips*, 415 F.3d at 1314 (“Differences among claims can . . . be a useful guide in understanding the meaning of particular claim terms.”). The differences in claims 1 and 18 “take[] on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous.” *Curtiss–Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1381 (Fed. Cir. 2006). Claim 18 plainly recites the interpretation Patent Owner wishes to apply to claim 1: “wherein the remote server authenticates remotely said unique sensor tag ID *and* said unique wireless device ID.” Ex. 1001, 21:8–9 (emphasis added). As such, adopting Patent Owner’s interpretation would incorrectly collapse the distinction in language between claim 1 (where the associated “unique wireless device ID” is an appositive to the “unique sensor ID”) and claim 18 (where the “unique wireless device ID” is acted upon by the “remote server” because of the word “and”).

The Specification also supports our interpretation that claim 1 does not require authentication of the 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 only describe access on the basis of a sensor ID — not a wireless device ID. In one example, a wireless device obtains software for an RFID sensor tag from “a centralized database for RFID tags or a diagnostics database 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. *Id.* at 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). Patent Owner’s requirement that the unique wireless device ID also be authenticated would therefore improperly exclude the only examples of authentication described by the Specification. *See Vitronics*, 90 F.3d at 1583 (A construction that excludes a preferred, and indeed only, embodiment “is rarely, if ever, correct.”).

The prosecution history of the ’307 Patent also does not support reading into claim 1 a requirement that authentication also be of the unique wireless device ID. Patent Owner points out that the prosecution history shows “that both the sensor ID and the wireless device ID are transmitted to the remote server.” PO Resp. 20 (citing Ex. 2009 ¶ 59; Ex. 1002, 65). But *transmitting* the unique wireless device ID is not equivalent to *authenticating* the unique wireless device ID. In fact, the relevant prosecution history does not mention authentication at all. *See* Ex. 1002, 65–66. As such, the prosecution history does not suggest reading into the claim a requirement that the unique wireless device ID also be authenticated in limitation [11].

Patent Owner, relying on Dr. Warren’s testimony, argues that the unique wireless ID must be part of the authentication process because, otherwise, the unique wireless device ID would serve no purpose. PO Resp. 19–20 (citing Ex. 2009 ¶¶ 57–58). We disagree. As explained by Petitioner, the unique wireless ID has non-authentication purposes. Petitioner, relying on Dr. Sarrafzadeh’s testimony, explains that a “unique ID, such as an IP address, Media Access Control (MAC) address, and/or an International Mobile Equipment Identity (IMEI) number” is used “for

uniquely identifying the respective device to the network 170, 180.” Pet. 60 (citing Ex. 1003 ¶ 319) *see id* at 26–27 (citing Ex. 1003 ¶¶ 184–185). As IP addresses and IMEI numbers are used on a network in order to route communications, they serve a non-authentication purpose, undermining Patent Owner’s reasoning.

Patent Owner also argues there would be potential security or data access concerns if the unique wireless device ID was not authenticated in limitation [11]. Although a unique wireless device ID can be used to improve an authentication process, it is not clear why security concerns *require* authenticating the unique wireless device ID in limitation [11]. The concerns Patent Owner identifies are not described in the Specification, let alone authenticating the unique wireless device ID to address those concerns. And those concerns can be mitigated using other authentication techniques which do not require using the unique wireless ID. For example, Beck describes alternative techniques to secure data access, such as a username and password scheme. Reply 3 (citing Ex. 1033 ¶ 15); Ex. 1007 ¶ 65.

Accordingly, we construe “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID,” in accordance with the plain and ordinary meaning of the phrase, to require the authentication of the unique sensor ID associated with the unique wireless device ID; our construction does not require authentication of the unique sensor ID *and* authentication of the unique wireless device ID. *See* Inst. Dec. 11 (similarly rejecting Patent Owner’s overly narrow construction).

b) “associated with”

Patent Owner argues “unique sensor ID associated with said unique wireless device ID” requires that there “must be an association between the unique sensor ID and the unique wireless ID.” PO Resp. 21. Patent Owner does not assert that this limitation requires anything more than the existence of an association between the unique sensor ID and the unique wireless device ID. *See id.* Petitioner does not offer any definition for the phrase “associated with.” *See* Pet. Reply 1–3; Pet. 6–11; Tr. 9:15–18.

We agree with Patent Owner that claim requires an association between the unique sensor ID and the unique wireless device ID. The plain language of the claim recites such an association. The Specification does not use the term “associated” in regard to the relationship between the unique sensor ID and the unique wireless device ID. Nor does Patent Owner point to any example in the Specification which illustrates such an association between the unique sensor ID and the unique wireless device ID. As such, we do not import any unrecited requirements as to how the IDs are associated into the claim.

Accordingly, we construe “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID,” in accordance with the plain and ordinary meaning of the phrase, such that there must be an association between the unique sensor ID and the unique wireless device ID.

2. Means-Plus-Function Limitations

Petitioner further contends the claims recite 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 these alleged means-plus-function terms, Petitioner identifies the claimed function and identifies corresponding structures in the Specification for performing those functions. *See id.* Petitioner states “[e]ach term should be construed as limited to the corresponding structures and their equivalents.” *Id.* at 11.

Patent Owner does not contest Petitioner’s proposed constructions of any of these other claim terms or phrases. PO Resp. 24.

We agree with the parties 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”). And we agree with Petitioner’s uncontested identification of the recited functions and corresponding structure for these limitations for the reasons explained by Petitioner. *See* Pet. 11–15 (citing Ex. 1001, 2:20–21, 2:24–28, 3:33–36, 17:18–30); *id.* at 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).

We adopt the uncontested constructions identified by Petitioner, as 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; *see* Inst. Dec. 11–13 (adopting Petitioner’s proposed constructions at that stage of the proceeding).

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. PO Resp. 35–62.

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.

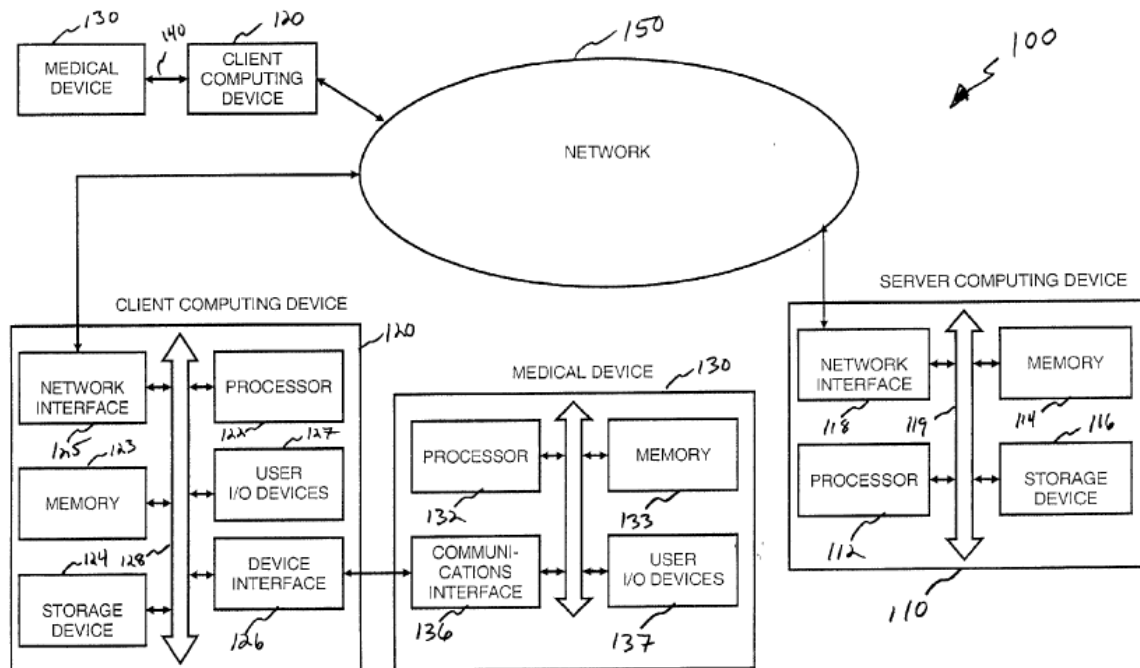


FIG. 1

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.

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), 2:3–7, 9:12–16.⁸ 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.

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.

⁸ We cite to the Bates-stamped page numbers added by Petitioner.

4. *Motivation to Combine*

a) *Beck and Heller*

Petitioner asserts that one of ordinary skill in the art would have been motivated to combine Beck and Heller. Pet. 41–45. Petitioner combines Beck and Heller by incorporating certain patient-monitoring sensors and sensor-related features taught by Heller into Beck’s teaching of patient-monitoring medical device. Pet. 41, 44–45; *see id.* at 48–49, 51, 54, 57–58 (incorporating Heller’s sensor features to reach sensor features recited in limitations [1a], [1b], [1d], [1f], [1g], and [1h]). Petitioner first explains that Beck teaches a medical device for monitoring biological/physiological conditions; Petitioner points out that, in an exemplary embodiment, “medical device 130 includes a glucose meter such as the glucose meters manufactured by Roche Diagnostics Corporation which are generally operable to measure blood glucose levels of blood applied to test strips.” *Id.* at 41–42 (citing Ex. 1006 ¶ 34). Next, Petitioner explains that Heller teaches an analyte monitor including “an implantable sensor for the *in vivo* determination of a concentration of an analyte such as glucose” and further teaches corresponding sensor-related features. *Id.* at 42 (citing Ex. 1016, 9:12–16); *see id.* at 42–44. Thus, Petitioner’s combination incorporates certain details taught by Heller’s analyte monitor into Beck’s teaching of a medical device which also monitors analytes or other biological/physiological conditions. *See id.* at 41, 44–45.

Petitioner contends that a POSITA would have been motivated to combine Heller’s teachings with Beck’s teachings because doing so uses known techniques to implement and improve Beck’s medical device. Pet. 41, 44–45; *see also id.* at 49–51, 55, 57 (describing various known

techniques and proposed improvements). Petitioner asserts there are several specific improvements realized by the combination: improving sensors in Beck's medical device (*id.* at 44), improving sensor readings using a reference sensor, which provides better information for medical determinations (*id.* at 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. 44–45, 55; Ex. 1003 ¶ 289), and using inductive coupling eliminates electrical contacts, which reduces noise and allows for water resistance (Pet. 57; Ex. 1003 ¶ 297).

We agree with Petitioner that the improvements offered by the incorporation of Heller's teachings would have motivated one of ordinary skill in the art to combine the teachings of Beck and Heller in the manner proposed by Petitioner. Confirming Petitioner's assertion that the combination yields improvements, Heller states that it improves the type of glucose monitor used in one of Beck's embodiments. Beck states that its "medical device 130 includes a glucose meter" which "measure[s] blood glucose levels of blood applied to test strips." Ex. 1007 ¶ 34. Specifically addressing such "conventional" test strip glucose monitoring, Heller states that its *in vivo* glucose sensor system addresses a need for continuous or automatic monitoring in a small, comfortable device. Ex. 1016, 2:1–7, 2:15–58, 3:19–25. As such, we agree that a person of ordinary skill in the art would have been motivated to combine the teachings of Beck and Heller to improve Beck's medical device. *See KSR*, 550 U.S. at 401.

We further agree with Petitioner that a POSITA would have been motivated to incorporate sensor implementation details described in Heller, e.g., an A/D converter and patient attachment systems, with Beck's medical device. Pet. 44–45, 53, 55; Ex. 1003 ¶¶ 228, 234, 236–238, 259, 267, 278,

288. 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.”).

Patent Owner’s arguments are unavailing and ineffective in rebutting Petitioner’s arguments. As an initial matter, many of Patent Owner’s arguments focus on a single embodiment of Beck where its medical device includes a glucose meter. *See* PO Resp. 40–42; PO Sur-reply 5–8. However, Petitioner’s combination is not based solely on that embodiment; Petitioner’s combination is directed to Beck’s broadly described medical devices which are “generally operable to monitor one or more biological/physiological conditions.” Pet. 41–42 (citing Ex. 1007 ¶ 34), 48. In fact, Patent Owner recognizes that Petitioner’s combination is not limited to the specific glucose meter described in Beck because Patent Owner’s other arguments rely on Beck’s more generic medical device disclosures. *See* PO Resp. 40 n.6 (citing Ex. 2009 ¶ 113), 42 (discussing Beck’s generic computing components). Nor does Patent Owner show where the claim requires glucose meters or glucose sensing. Accordingly, Patent Owner’s arguments focused on Beck’s glucose meter embodiment do not indicate a flaw in Petitioner’s combination, which is not limited to glucose sensing. But, even considering the combination of Beck and Heller based on glucose sensing, Patent Owner’s arguments that a POSITA would not have combined Beck and Heller are unavailing, as we discuss next.

Many of Patent Owner’s arguments that a POSITA would not have combined Beck and Heller are conditioned on factual assertions regarding Beck which are not supported by the record. PO Resp. 39–40; *see id.* at 35–

37. In particular, we disagree with Patent Owner's assertion that Beck "merely discloses an aggregation of pre-designed, off-the-shelf medical devices for use in a hospital setting (i.e., non-ambulatory devices)." *Id.* at 38–41; *see id.* at 35–37.

First, Patent Owner's assertion that Beck's medical devices are restricted to hospital use is contradicted by Beck. Patent Owner does not cite any portion of Beck stating that its medical device is restricted to hospital use. *See* PO Resp. 38–40. Beck explains, "[p]atients commonly use medical devices to monitor various biological and/or physiological conditions," and a patient is provided "a mechanism for controlling operation of the system 100 in regard to the client computing device 120 and the medical device 130." Ex. 1007 ¶¶ 2, 52. Beck's description of patients accessing and controlling their medical devices shows that its medical device is not limited to a hospital setting. For example, in the case of glucose monitoring, it is important for a diabetic patient to monitor glucose levels during daily activities outside of a hospital. *See id.* ¶ 2 ("Patients commonly use medical devices to monitor various biological and/or physiological conditions."); Ex. 1016, 2:9–14 ("The monitoring of glucose is particularly important to individuals with diabetes, as they must determine when insulin is needed to reduce glucose levels in their bodies or when additional glucose is needed to raise the level of glucose in their bodies.").

We also do not agree with Patent Owner's assertion that Beck limits itself to off-the-shelf medical devices which are bulky or non-ambulatory. Patent Owner does not cite any portion of Beck stating that its medical device is limited to off-the-shelf medical devices which are bulky or non-ambulatory. *See* PO Resp. 38–42. Instead, Patent Owner bases its assertion on identifying medical device components which are bulky or non-

ambulatory, such as monitor and keyboard input/output devices and RS-232 serial port communication cable links. *Id.* at 35–37. But Patent Owner’s discussion of those components ignores or dismisses without explanation other portions of Beck showing that Beck is not limited to bulky, non-ambulatory devices. In particular, Beck explains that its input/output devices can be omitted or can be replaced with a pair of light-emitting diodes (LEDs) for visual feedback and that communications may occur via “wireless technologies such as RF and/or [infrared (IR)] transmitter/receivers.” Ex. 1007 ¶¶ 39, 41. These disclosures, describing lightweight or small components, contradict Patent Owner’s assertions. In fact, Beck discloses that its medical device interfaces with “[s]pecial purpose computing devices such as handheld computing devices (e.g. PalmPilots) and Internet enabled cellular phones,” suggesting that Beck’s medical device would similarly be a special purpose, mobile device. *Id.* ¶ 27.

Furthermore, Dr. Warren’s declaration does little to support Patent Owner’s assertions. *See* PO Resp. 35–42 (citing Ex. 2009 ¶¶ 105–111). Rather than offer additional reasoning or reference additional supporting evidence, much of Dr. Warren’s declaration mimics Patent Owner’s arguments and asserts that the absence of any express description that the medical device is small, wearable, or patch-like means that Beck is limited to off-the-shelf medical devices for use in a hospital setting. *See* Ex. 2009 ¶¶ 105–111. Dr. Warren also emphasizes, with bold font, portions of Beck’s disclosure to support his opinion that Beck is limited to off-the-shelf medical devices. *See id.* ¶¶ 113, 116. The bolded portions reflect Beck’s medical devices use computing components that are standard or known, but Dr. Warren does not explain *why* the use of standard or known hardware and software components in a medical device shows that the medical device is

an off-the-shelf medical device or limited to a hospital setting. For example, Dr. Warren highlights that Beck discloses its medical devices “utilize different communications protocols” or have protocol components such as “Java Applets, JavaScripts, ActiveX Controls, etc.,” but does not explain why the use of those known communication protocols shows that Beck’s medical device is limited to an off-the-shelf medical device. Ex. 1007 ¶¶ 14–16, 49, 62; *see* Ex. 2009 ¶ 113. Similarly, Dr. Warren highlights Beck’s disclosure of hardware components such as “a parallel port, a SCSI port, a USB port, a 1394 port (i.e. FireWire or I-Link port), a Fibre Channel port, [and] a network interface controller,” but, again, does not explain why using known hardware components shows that the medical device is limited to an off-the-shelf device. Ex. 1007 ¶¶ 29–30, 38, 40–42, 56; *see* Ex. 2009 ¶ 113. It is unclear how the use of, e.g., a USB port using standard communication protocols, signals a bulky, non-ambulatory, off-the-shelf device. And, like Patent Owner, Dr. Warren does not address disclosures in Beck suggesting that its medical device can be a small, mobile device, e.g., the wireless device omits I/O devices (Ex. 1007 ¶ 41) and uses wireless communication (*id.* ¶ 39) which contemplates communication with a special purpose, mobile computing device (*id.* ¶ 27).

As we do not agree with Patent Owner’s underlying factual premise for its arguments, we therefore do not agree with Patent Owner’s assertions that Heller “disparages—and therefore explicitly teaches away from” Beck, that Heller is “antithetical” to Beck, and that a “POSITA would not have been motivated to make improvements” to Beck’s device based on Heller. PO Resp. 39–41. Moreover, even if we consider Beck as limited to a bulky off-the-shelf medical device for use in a hospital setting, Heller expressly states that its system improves upon bulky devices. Ex. 1016, 2:29–3:25.

As such, rather than “teaching away” from the combination (PO Resp. 39), Heller supports Petitioner’s argument that one of ordinary skill in the art would have been motivated to improve Beck based on Heller’s teaching (*see, e.g.*, Pet. 41 (“Heller provides use of known techniques that can be used [to] implement and improve Beck’s medical devices.”)). Thus, Patent Owner’s assertion that Beck describes a bulky device serves to identify a problem in Beck that one of ordinary skill in the art would have been motivated to improve by incorporating Heller’s teachings.

Additionally, Patent Owner bootstraps its assertion that the “distinction between sensor and [medical] device is critically important” to argue that a POSITA would not have been motivated to combine Beck and Heller and that Beck and Heller are incompatible. PO Resp. 40–41; PO Sur-reply 6–7. Patent Owner’s argument emphasizes that, in Beck, “the glucose meter is a medical *device*, and it is the test strips that are the glucose *sensors*” and that Beck discloses “a system that uses the serial number of the glucometer, not a serial number of the sensors or test strips.” PO Resp. 41; PO Sur-reply 6.⁹ Those factual assertions, however, are contradicted by Beck which states that its serial number specifically identifies its described *medical device* which “includes a glucose meter.” Ex. 1007 ¶¶ 34, 55.

Thus, we disagree because the factual premise for Patent Owner’s arguments

⁹ Patent Owner’s arguments here overlap with its other arguments that Beck, or the combination of Beck and Heller, do not teach “a unique identification ID number.” PO Resp. 41 (The “combination would not meet the limitations of the challenged claims because it would not include . . . a unique identifier for the *sensor*.”); PO Sur-reply 6 (“Beck thus discloses, at most, a system that uses the serial number of the glucometer, not a serial number of the sensors or test strips.”). We address whether Beck, or the combination of Beck and Heller, meets that feature in our discussion of limitation [1c], reciting “a unique identification ID number,” below.

is incorrect. Furthermore, even if Beck's sensors were test strips as Patent Owner alleges, Heller specifically states that it aims to improve glucose monitoring systems which use test strips. Ex. 1016, 2:15–28. Therefore, Patent Owner's alleged distinction is addressed by the combination of Beck and Heller which improves Beck's glucose meter based on Heller's glucose monitoring system teachings. Pet. 41, 44–45, 49.

Patent Owner points out different technical features between Beck and Heller, but does not provide explanation as to why those differences negate Petitioner's stated motivations. See PO Resp. 42. In any case, the differences Patent Owner highlights are not differences between comparable features. For example, Patent Owner states "Beck describes software protocol components" while "Heller, conversely, describes a rudimentary communication system using frequency modulation (FM) transmissions." *Id.* But a protocol for sending data, defining the format and procedure for sending data, is directed to a different feature than the physical mechanism for sending data, e.g., via FM transmissions. Ex. 1007 ¶ 36 ("[P]rotocols . . . define different procedures for formatting data and the procedure used to transfer the data."). Moreover, contradicting Patent Owner's alleged difference, Beck describes using the same physical transmission mechanism Heller describes; Beck states its "communications interface 136 may . . . include wireless technologies such as *RF* and/or IR transmitter/receivers to establish the physical communications link 140 between the client computing device 120 and the medical device 130." *Id.* ¶ 39 (emphasis added). As such, the differences Patent Owner points out regarding technical features are of little moment and are ineffective to undermine Petitioner's stated rationale to combine the teachings of Beck and Heller.

Patent Owner’s final distinction between Beck and Heller — that “Heller focuses on details of certain features of specific wearable sensors” while “Beck discusses the networking of various devices at a high level” — again lacks any explanation as to why those differences negate Petitioner’s stated motivations. PO Resp. 42. If anything, Patent Owner’s argument that Beck is written at a high-level while Heller focuses on details further supports Petitioner’s argument and evidence that a POSITA would be motivated to apply Heller’s “implementation details . . . to Beck’s system.” Pet. 42.

Accordingly, we find that Petitioner, supported by Dr. Sarrafzadeh, has shown that a POSITA would have been motivated to combine Beck and Heller in the manner Petitioner has proposed.

b) 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 information 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-based features. *See* Pet. 45–47. As explained by Petitioner, and supported by Dr. Sarrafzadeh’s testimony and other evidence in the form of an FCC Report, geolocation is a known cellular phone feature. *Id.* at 45–46; Ex. 1003 ¶¶ 245–246; Ex. 1017 (FCC Report), 2, 5–7, 13–15, 21, 48–50. We agree with Petitioner that a POSITA would have been motivated to

incorporate known cellular phone features, especially in light of forthcoming or potential FCC requirements. Pet. 45–46 (citing Ex. 1003 ¶ 456; Ex. 1017, 2, 5–7, 13–15, 21, 48–50). It would have been rational for one of ordinary skill in the art to add a feature in preparation of a regulatory requirement and to add increasingly common features. We also agree that adding geolocation would have been desirable and would have improved Beck’s cellular phone client computing device by providing protocol components customized to geographic context. *Id.* at 46–47 (citing Ex. 1003 ¶ 24). Beck’s server returns protocol components, e.g., “medical device measurement data” or “internal clock” data. Ex. 1003 ¶¶ 15, 74, 93. And, as medical devices are used globally, it would have been rational to provide localized medical device measurement data, e.g., localized measurement units, and localized clocks.

We disagree with Patent Owner’s arguments to the contrary. Many of Patent Owner’s arguments rest on its previous factual assertion that Beck’s medical device monitoring system is limited to use in hospitals; as discussed above, that factual assertion is not supported by Beck’s disclosure. *See* PO Resp. 42–49. Accordingly, we disagree with Patent Owner’s arguments relying on that rejected factual premise. *See, e.g., id.* at 44 (“Beck is focused on medical monitoring in, for example, a hospital setting In such a situation, a POSITA would have understood that patient location is obviously known”), 47–48 (“A POSITA would also have been dissuaded from using a cellular phone in the hospital setting of Beck for practical reasons.”); PO Sur-reply 8. Furthermore, Patent Owner’s argument that “a POSITA would not have been motivated to incorporate a cell phone into Beck’s” allegedly hospital-limited system (*see* PO Resp. at 48) is not responsive to Petitioner’s challenge because Petitioner’s combination does

not rely on modifying Beck to include a cell phone; rather, Petitioner relies on Beck's express disclosure of "Internet enabled cellular phones which could be used to implement the client computing device 120" in Beck's system. Pet. 45–46, 59; Ex. 1007 ¶ 27.

Patent Owner also argues "Beck and Lovejoy are directed to unrelated domains" because "Beck is directed to medical devices which monitor and/or analyze patients" whereas Lovejoy "monitor[s] occupational exposures using a wearable external device (on clothing) that does not interact with the user's biology." PO Resp. 43 (citing Ex. 1007 ¶ 2; Ex. 1009, 1:25–35; 4:44–50); *see id.* at 44 ("Lovejoy refers to an entirely different application domain"). Patent Owner does not explain why or cite any authority that allegedly different domains somehow indicate that a POSITA would not have combined references.¹⁰ *See id.* As discussed above, Petitioner explains that geolocation, as implemented by the techniques described in Lovejoy, is desirable for Beck's system. Pet. 45–47

Patent Owner further argues that the differences "between Beck's medical devices and Lovejoy's monitor . . . would have prevented a POSITA from combining the references." PO Resp. 49. But, the differences Patent

¹⁰ To the extent Patent Owner's argument could be read as contesting whether Beck and Lovejoy are analogous art to the '307 Patent, we disagree. Beck is in the same field of endeavor as the '307 Patent because Beck is directed to a computing device which receives a protocol component to analyze medical device information (Ex. 1007 ¶ 4–6) and the '307 Patent is similarly directed to a computing device which receives software or instructions to analyze medical device information (Ex. 1001, 18:1–34). Lovejoy is analogous art because it is, at least, reasonably pertinent to the particular problem the '307 Patent at issue is concerned with. Indeed, the '307 Patent expressly relies on Lovejoy precisely to address the issue of geolocation by GPS and non-GPS means. Ex. 1001, 17:18–24.

Owner identifies, i.e., that Lovejoy’s monitor “is intended to be worn for years” and is for “occupational-hazard applications,” improperly require the bodily incorporation of Lovejoy’s monitor system. *See 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. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.”). Petitioner’s combination does not incorporate Lovejoy’s entire monitor device — just its teaching of geolocation features. *See* Pet. 45–47. Moreover, Patent Owner does not explain why durability and wearability are features counseling against the combination. To the contrary, these features would appear beneficial.

Additionally, Patent Owner’s arguments contesting Petitioner’s motivation based on the FCC Report misunderstand Petitioner’s reliance on the FCC Report and do not address Petitioner’s stated combination. *See* PO Resp. 49–53. Petitioner’s combination is not premised on “show[ing] that the disclosure of the FCC Report was inherent in the disclosure of Lovejoy or that a POSITA would have been motivated to combine Lovejoy with the FCC Report.” *Id.* at 49–50. Nor does Petitioner use the FCC Report to “establish that all (or even any) cell phones were in compliance with those rules” requiring geolocation (*id.* at 50–51 (emphasis omitted)) or to “teach ‘geolocation’ . . . precise enough to be useful for the applications contemplated by the ’307 Patent” (*id.* at 52–53). Instead, Petitioner relies on the FCC Report, which discusses forthcoming requirements for cellular phone geolocation, as evidence of what was known in the art — that geolocation is a feature “normally found on cell phones” — in support of its argument 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).

Patent Owner also contests Petitioner's additional motivation for the combination which relies on location-based emergency service provisioning. PO Resp. 46–47; *see* Pet. 47; Ex. 1003 ¶¶ 242–245. As we determine that a POSITA would have combined Beck and Lovejoy based on Petitioner's other stated motivations, we need not address whether a POSITA would have combined Beck and Lovejoy for this additional reason.

Accordingly, Petitioner, supported by Dr. Sarrafzadeh's testimony, has shown that a POSITA would have been motivated to combine Beck and Lovejoy.

c) Reasonable Expectation of Success

Petitioner contends that one of ordinary skill in the art would have had a reasonable expectation of success in achieving the proposed combination. *See, e.g.*, Pet. 57 (discussing limitation [1g]). 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 Dr. Sarrafzadeh's testimony and that, during his deposition, he allegedly refused to provide details about which components would be included in the combination. PO Resp. 53 (citing Ex. 2011, 87:23–90:25, 95:15–96:17). We disagree. Petitioner explains, with sufficient support from Dr. Sarrafzadeh, that one of ordinary skill in the art would have had 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 the combination operate in their expected manner. *See* Pet. 41, 44–46, 57, 66; *see* Ex. 1003 ¶¶ 47, 223, 238, 297, 315,

341. Indeed, Heller provides precise detail regarding the implementation of its sensors and Lovejoy provides ample detail regarding geolocation functions which would have been sufficient for one of ordinary skill in the art to implement of their relied-upon features. *See* Ex. 1016, Ex. 1009. Furthermore, Dr. Sarrafzadeh adequately explained the combination. For, example, Dr. Sarrafzadeh states Heller’s medical device is “attach[ed] or affix[ed] that to the skin of a user” and “you could use that exact same thing with the Beck’s system.” Ex. 2011, 90:10–14. Dr. Sarrafzadeh further explains “Heller discloses methods for affixing a medical device” such as “Heller’s on the skin sensor control unit to the skin of a patient, including through the use of an adhesive patch. This is in column 51, 54, and different parts of column 54 of Heller.” *Id.* at 91:19–25. Accordingly, we determine Petitioner has shown 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.¹¹

5. *Limitations of Claim 1*

a) *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 Petitioner’s contention. *See* PO Resp. Beck describes a medical device which monitors biological/physiological conditions and is in RF

¹¹ We acknowledge Patent Owner’s argument regarding improper hindsight (*see, e.g.*, PO Resp. 53), but we disagree because we find that Petitioner has presented sufficient reasoning with rational underpinning as to why one of ordinary skill in the art would have been motivated to combine Beck, Heller, and Lovejoy as proposed.

communication with a client computing device. Ex. 1007 ¶¶ 34, 39, 63. We find that Petitioner has shown, by a preponderance of the evidence, that Beck discloses the preamble.¹²

b) Limitation [1a]

Petitioner contends Beck alone or in combination with Heller, teaches “at least one sensor element.” Pet. 48–49 (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 Petitioner’s contention that Beck teaches this limitation. *See* PO Resp. Beck describes that its medical device monitors “conditions such as body fluids or bodily functions (e.g. blood, urine, saliva), bodily signals (e.g. electrocardio-signals, brain waves, blood pressure waves), and/or other bodily stimuli (e.g. respiration) to obtain measurements of blood pressure, blood gases, blood coagulation, electrolytes, cardiovascular activity, drug levels, respiration rate, stress” and glucose. Ex. 1007 ¶ 34. Petitioner asserts that a “POSITA would have understood that to monitor or analyze biological/physiological parameters . . . the medical device would include a sensor element to detect the respective biological signal.” Pet. 48 (citing Ex. 1004 ¶¶ 257–258). We are persuaded that a sensor would be used in a medical device to detect biological conditions and, so, Petitioner has shown, by a preponderance of the evidence, that Beck meets this limitation.

¹² We need not determine whether the preamble is limiting because Petitioner has shown that Beck teaches the preamble of claim 1. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019).

Further, Patent Owner does not directly dispute Petitioner's contention that Beck in combination with Heller meets this limitation, instead arguing that a POSITA would not have combined Beck and Heller, as discussed above. *See* PO Resp. We are persuaded that Petitioner has shown, by a preponderance of the evidence, that the combination of Beck and Heller meets this limitation because Heller describes an "electrochemical sensor" which detects and measures analyte, e.g., glucose, levels. Ex. 1016, 9:28–9:2; *see id.* at 12:11–13:16.

c) Limitation [1b]

Petitioner contends Beck in combination with Heller teaches "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. *See* PO Resp. Heller describes a temperature probe which is used to account for sensor measurements at different temperatures. Ex. 1016, 67:20–68:20. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the combination of Beck and Heller meets this limitation.

d) Limitation [1c]

Petitioner contends Beck discloses "a unique identification ID number." Pet. 51 (citing Ex. 1007 ¶ 55, Fig. 2; Ex. 1003 ¶ 269); *see id.* at 60 (citing Ex. 1007 ¶ 65). In particular, Petitioner argues that Beck's disclosure of a serial number for its medical device, which includes a sensor, discloses "a unique identification ID number." *Id.* at 51 (citing Ex. 1007 ¶ 55); *see* Ex. 1007 ¶ 65.

Patent Owner does not contest that Beck's serial number uniquely identifies a medical device in Beck but, rather, argues that claim 1 requires

“unique identification ID numbers of . . . sensors (as opposed to medical devices).” PO Resp. 56; *see id.* at 54–56. That is, Patent Owner argues the claims require the “unique identification ID number” to identify a specific sensor.

Patent Owner’s argument is not commensurate with the scope of claim 1. In relevant context, the claim recites

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

[1a] at least one sensor element . . .

[1c] a unique identification ID number[.]

Ex. 1001, 19:26–31. The “unique identification ID number” is a component of the “diagnostic sensor unit” (recited in the preamble) which comprises “at least one sensor element” as well as a number of other elements such as “one antenna,” “a controller,” and “a memory.” *Id.* at 19:31–41. The claim does not include language specifying what the “unique identification ID number” identifies. If anything, the claim language suggests that the “unique identification ID number” is *not* for one specific sensor because the claim recites “at least one sensor element,” suggesting multiple sensor elements could be encompassed within the scope of the claim. The Specification supports this understanding because it provides an example where IDs are used to identify different *types of sensors*. *Id.* at 15:24–26 (“many different sensors can be used with a single RFID chip, therefore allowing identification of specific types of bacteria”). Additionally, the Specification explains that the unique ID can identify the *type* of sensor used, rather than identifying any specific sensor. *Id.* at 7:44–45. As such, claim 1 does not require that the “unique identification ID number” identifies any specific sensor.

Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that Beck meets this limitation.

e) 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 its 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 argues the combination of Beck and Heller would have rendered this limitation obvious. Petitioner asserts that analog to digital converters were conventional and in widespread use. Pet. 52 (citing Ex. 1003 ¶ 276). 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. *Id.* at 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. *Id.* at 53. We are persuaded that it would have been obvious to combine Beck and Heller

in order to provide a mechanism to process analog signals with a computer processor. *Id.*

Patent Owner does not contest that Heller discloses analog to digital converters, or that such converters were well known. Rather, Patent Owner argues Beck does not disclose this limitation. *See* PO Resp. 61–62. Petitioner, however, also contends that this limitation would have been obvious over Beck or the combination of Beck and Heller. As Patent Owner’s arguments regarding Beck’s disclosures do not address Petitioner’s contentions based on obviousness, those arguments do not undermine Petitioner’s contention that the combination of Beck and Heller meets this limitation.

Further, even if it were the case that “there are ways to calculate a value based on those two sensors without first converting them to digital values” (PO Resp. 62 (citing Ex. 2009 ¶ 160)), the existence of alternative options does not show that Petitioner’s proposed combination is an unsuitable option (and therefore non-obvious). *See PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1198 (Fed. Cir. 2014). 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 and uses a known technique to improve similar devices in the same way.

Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the proposed combination of Beck and Heller meets “a sensor interface having an analog to digital converter coupled to the at least one sensor and reference sensor element.”

f) 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. Beck describes its medical device can communicate using “wireless technologies such as RF and/or IR transmitter/receivers” (Ex. 1007 ¶ 39) which a POSITA would understand use antennae (Ex. 1003 ¶ 281). Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that Beck meets this limitation.

g) 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. *See* PO Resp. Heller describes substrates for analyte monitors and sensors. Ex. 1006, 13:18–16:15. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the combination of Beck and Heller meets this limitation.

h) 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). Patent Owner does not dispute this contention. *See* PO Resp. Beck describes that its medical device has an interface coupling its communication and sensor components which a POSITA would understand requires power. Ex. 1007 ¶¶ 35, 39, 63; Ex. 1003 ¶¶ 293–295. Heller also

describes RF wireless transmissions which are powered. Ex. 1016, 59:11–23. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the combination of Beck and Heller meets this limitation.

i) 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. *See* PO Resp. Beck describes that its medical device includes a processor connected to its communications interface. Ex. 1007 ¶ 35. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the combination of Beck and Heller meets this limitation.

j) 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. *See* PO Resp. Beck describes its medical device includes a memory connected to its components. Ex. 1007 ¶ 35. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the combination of Beck and Heller meets this limitation.

k) 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 meets “a remote wireless device . . . having . . . geolocation means.”

(1) “a remote wireless device . . . 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 asserts that Beck’s Internet-enabled cellular phone discloses “a remote wireless device.” *Id.* at 59–60 (citing Ex. 1007 ¶¶ 27, 30). Further, Petitioner, supported by Dr. Sarrafzadeh’s testimony, asserts that a POSITA would have understood that an Internet-enabled cellular phone has “a unique ID” because it would have a network address which uniquely identifies the device to its network, e.g., an IP address, MAC address, and/or IMEI number. *Id.* at 60 (citing Ex. 1003 ¶ 319). Dr. Sarrafzadeh 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.

Patent Owner argues that Beck does not disclose a “a remote wireless device . . . having . . . a unique ID” (i.e., “unique wireless device ID,” as recited in limitation [11]) because Beck “does not refer to any particular type of network address” and because IP addresses are not unique when on a

private network. PO Resp. 56–57 (citing Ex. 2009 ¶ 149).¹³ But even if Beck does not expressly state what type of network Beck’s Internet-enabled cellular phone communicates on, Dr. Sarrafzadeh explains 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, MAC address, and/or an IMEI number. Ex. 1003 ¶ 319, *cited in* Pet. 60.

Dr. Sarrafzadeh’s testimony that a “MAC address is a unique identifier assigned to devices having network capability” and “an IMEI number is a unique identifier assigned to wireless phones,” is undisputed and we credit his testimony. As Beck’s client computing device is an Internet-enabled cellular phone, we find that one of ordinary skill in the art would have understood Beck’s cellular phone has a MAC address or an IMEI number which uniquely identifies that device on the networks it communicates on, such as the Internet or a cellular network. We also disagree with Patent Owner that an IP address is not a unique ID because, even if an IP address is specific to a private network, the IP address is still unique to that private network.

Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that Beck discloses this limitation.

(2) *“geolocation means”*

Petitioner contends the combination of Beck and Lovejoy meets “a remote wireless device . . . having . . . geolocation means” because Beck’s cellular phone discloses “a remote wireless device,” the FCC requires

¹³ Patent Owner’s arguments addressing these features first recited in limitation [1j] appear in its arguments for limitation [11]. We address Patent Owner’s relevant arguments in regards to limitation [1j] which provides better context for our discussion.

cellular phones to have geolocation capability, and Lovejoy teaches 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.* at 45–47).

Patent Owner argues “Petitioner has failed to show how the existence of a cellular phone necessarily includes the particular structure (or an equivalent structure) disclosed by the ’307 Patent for performing geolocation.” PO Resp. 58; *see id.* at 58–60. Petitioner, however, does not assert that Beck’s cellular phone inherently or expressly includes geolocation means. As discussed above, Petitioner contends this feature is met by the combination of Beck and Lovejoy, supported by reasoning suggested by the FCC report. *See* Pet. 58–61. As discussed above, we agree with Petitioner that a POSITA would have combined Beck and Lovejoy to reach this limitation.

Patent Owner further argues Lovejoy teaches “geolocation of Lovejoy’s *personal monitors* — the components, worn by the subjects, that measure the exposure to hazards of those subjects. This maps — if at all — to the diagnostic *sensor* of claim 1. But it is the claimed *wireless device* that includes the geolocation means, not the sensor.” PO Resp. 60. As discussed in § II.D.4.b, 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 combination where Beck’s cellular phone is supplanted by Lovejoy’s monitor. *See In re Keller*, 642 F.2d at 425.

Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that Beck in combination with Lovejoy meets this limitation.

l) 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. *See* PO Resp. Beck describes its medical device received serial numbers and identification codes from its medical device. Ex. 1007 ¶ 55. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that Beck discloses this limitation.

m) 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.” *Id.* at 62 (citing Ex. 1007 ¶ 65; Ex. 1003 ¶ 326). In addition to authentication based

on Beck’s medical device’s serial number, Petitioner also argues Beck provides authentication based on its client computing device’s “unique wireless device ID” because Beck describes “authentication may be based further upon or alternatively upon the network address of [the] client computing device.” *Id.* at 60 (citing Ex. 1007 ¶ 65).

Patent Owner argues that Petitioner fails to show that Beck transmits, or authenticates, the network address of Beck’s client computing device, i.e., “said unique wireless device ID.” PO Resp. 57; *see id.* at 18–21.¹⁴ That argument is based on Patent Owner’s claim construction, which we reject as discussed above in § II.C.1.a. But, even under Patent Owner’s construction requiring that Beck transmit and authenticate its network address, Petitioner points out¹⁵ that Beck does so. Pet. 60. Beck states that “authentication may be based further upon or alternatively upon the network address of client computing device.” Ex. 1007 ¶ 65.

Additionally, Patent Owner argues that Petitioner fails to show that the serial number of Beck’s medical device (i.e., the “unique sensor ID”) is

¹⁴ In arguing this limitation, Patent Owner also argues that Beck does not disclose “said wireless device having . . . a unique ID.” PO Resp. 56. That feature is recited in limitation [1j] and we discuss Patent Owner’s arguments above in § II.D.5.k.

¹⁵ Although Patent Owner argues Petitioner’s explanation is untimely (PO Sur-reply 12), the Petition previously asserted “Beck further discloses that the client computing device has *a network address, which can be used for authentication* — i.e., a unique ID” (Pet. 60 (citing Ex. 1007 ¶ 65)). We disagree that Petitioner has raised a new argument. And, even if this was a new argument from Petitioner, it is not impermissible here as a response to the claim construction position first raised by Patent Owner. *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1384 (Fed. Cir. 2023) (“petitioner must be given the opportunity in its reply to argue and present evidence of . . . obviousness under [a] new construction”).

“associated with” the network address of Beck’s client computing device (i.e., “said unique wireless device ID”). PO Resp. 21, 57; PO Sur-reply 12–13. In particular, Patent Owner asserts “[n]owhere does Petitioner map *anything* in any prior-art reference to this ‘association’ requirement of the claims.” PO Resp. 21. We disagree.

We understand from the Petition that Petitioner contends the serial number of Beck’s medical device (i.e., the “unique sensor ID”) is “associated with” the network address of Beck’s client computing device (i.e., “said unique wireless device ID”) because Beck describes that its client computing device, which has a unique wireless device ID in the form of a network address, receives its medical device’s serial number. Pet. 61 (citing Ex. 1007 ¶¶ 55, 74–75); Pet. Reply 14. Proving the “association” between the medical device’s serial number and the client computing device network address, Petitioner explains that Beck’s client computing device uses its network address to communicate the medical device’s serial number to a remote server for authentication and for receiving a protocol component specific to the medical device. Pet. 61–63 (citing Ex. 1007 ¶¶ 55, 67, 69, 75, 78–87, Figs. 3–4); Pet. Reply 14. Patent Owner’s argument that “[p]aragraph 51 of Beck . . . does not disclose associating [a client computing device] address with a unique sensor ID for authentication” and Petitioner did not map “*anything*” to the claimed feature does not address Petitioner’s discussion and other cited portions of Beck. *See* PO Sur-reply 13; PO Resp. 21, 57.

Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that Beck discloses limitation [11].

n) Conclusion as to Claim 1

For the reasons provided above, we are persuaded that the combination of Beck, Heller, and Lovejoy teaches or suggests the subject matter of claim 1.

6. Dependent Claims 9 and 10

Claims 9 and 10 directly depend from claim 1 and add geolocation features. In particular, claim 9 recites “a GPS means for geolocating said system” and claim 10 recites “a non-GPS geolocation means for geolocating said system.” Ex. 1001, 20:6–9. Petitioner relies on Lovejoy to teach the recited “GPS means” and “non-GPS geolocation means.” Pet. 68–69.

Patent Owner argues that “Petitioner has not identified any structure” corresponding to the claimed “GPS means” of claim 9 and the “non-GPS means” of claim 10. PO Resp. 63.

We disagree. Petitioner’s combination specifically relies on Lovejoy’s GPS and non-GPS geolocation techniques. Pet. 68–69 (citing Ex. 1009, 4:32–37; Ex. 1003 ¶ 352). Petitioner explains that “because the ’307 [P]atent incorporates by reference Lovejoy for disclosure relating to such geolocation, the combination of Beck and Lovejoy can only disclose structure that is identical to corresponding structure in the ’307 [P]atent.” *Id.* (citing Ex. 1001, 17:21–24; Ex. 1003 ¶ 352). We understand that Petitioner references the same GPS and non-GPS geolocation structure the ’307 Patent references, namely, the corresponding structural details in the “Geolocating . . . Capability” described in Lovejoy in column 8, line 50, through column 13, line 3. In fact, Petitioner identifies those details when discussing “GPS or radar-responsive tags that provide for non-GPS location triangulation” in its combination of Beck and Lovejoy. *Id.* at 46

(citing Ex. 1009, 8:59–9:33), 60–61. Petitioner further identifies that Lovejoy describes “corresponding structure for geolocating by GPS is the GPS system, which makes use of GPS satellites for geolocating.” *Id.* at 14–15 (citing Ex. 1009, 9:4–6). Even further, Petitioner identifies that Lovejoy describes “reading, analysis and geolocation by GPS or non-GPS means” with “corresponding structure for performing the recited function as: an interrogator system, e.g., VHF or UHF . . . one or more interrogator and receiver antennas, radar auxiliary receivers . . . and triangulation algorithm.” *Id.* at 15 (citing Ex. 1009, 9:19–20, 9:57–65, 10:10–11).

Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the combination of Beck, Heller, and Lovejoy teaches or suggests the subject matter of claims 9 and 10 .

7. *Dependent Claims 2, 3, and 5*

Petitioner provides argument and evidence in support of its contention that dependent claims 2, 3, and 5 would have been obvious over the combined teachings of Beck, Heller, and Lovejoy. Pet. 65–68.

Patent Owner does not address dependent claims 2, 3, and 5 beyond linking those claims to arguments in connection with the claims from which they depend, which we have considered above. *See* PO Resp. 62; PO Sur-reply 14. For reasons provided above in § II.5, Patent Owner’s arguments are unavailing.

As to Petitioner’s analysis addressing the subject matter expressly recited in claims 2, 3, and 5, we adopt Petitioner’s analysis as our own in this Decision. *See* Pet. 65–68.

Accordingly, we conclude Petitioner has shown by a preponderance of the evidence that the combination of Beck, Heller, and Lovejoy teaches or suggests the subject matter of claims 2, 3, and 5.

8. *Weighing the Graham Factors*

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.” *Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1361 (Fed. Cir. 2017). On balance, considering the record presently before us, Petitioner has shown that the subject matter of claims 1–3, 5, 9, and 11 of the ’307 Patent would have been obvious to one of ordinary skill in the art at the time of the invention.

E. *Remaining Grounds*

Petitioner asserts that the subject matter of claims 1–3, 5, 9, and 10 also would have been obvious to one of ordinary skill in the art at the time of the invention over Bandy and over the combination of Bandy and Heller. Pet. 15–37. Patent Owner opposes. PO Resp. 26–34.

We have already concluded that each of claims 1–3, 5, 9, and 10 is unpatentable as obvious over the combination of Beck, Heller, and Lovejoy (*see supra* § II.D), so we need not (and do not) address whether Petitioner has shown the claims to be unpatentable based on these alternative grounds. *See SAS Inst. Inc. v. Iancu*, 584 U.S. 357, 371 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (recognizing the “Board need not address issues that are not necessary to the resolution of the proceeding,” and agreeing the

Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

III. CONCLUSION¹⁶

For the reasons discussed above, Petitioner has shown by a preponderance of the evidence that claims 1–3, 5, 9, and 10 of the ’307 Patent are unpatentable.

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 5, 9, 10	103	Bandy ¹⁷		
3	103	Bandy, Heller ¹⁸		
1–3, 5, 9, 10	103	Beck, Heller, Lovejoy	1–3, 5, 9, 10	
Overall Outcome			1–3, 5, 9, 10	

¹⁶ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*, 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

¹⁷ For the reasons explained above, we do not reach this alternative ground because we determine that claims 1, 2, 5, 9, and 10 are unpatentable based on the combination of Beck, Heller, and Lovejoy.

¹⁸ For the reasons explained above, we do not reach this alternative ground because we determine that claim 3 is unpatentable based on the combination of Beck, Heller, and Lovejoy.

IV. ORDER

Accordingly, it is

ORDERED that claims 1–3, 5, 9, and 10 of the '307 Patent are determined to be unpatentable; and

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

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