

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

GENTAG, INC. and ALTIVERA, LLC,

Plaintiffs,

v.

ABBOTT LABORATORIES
and ABBOTT DIABETES CARE INC.

Defendants.

Civil Action No.: 1:23-cv-310

Judge Martha M. Pacold

Magistrate Judge Jeffrey T. Gilbert

DEFENDANTS' REPLY CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

I. INTRODUCTION 1

II. THE PERSON OF ORDINARY SKILL IN THE ART 2

III. DISPUTED CONSTRUCTIONS 2

 A. “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” (“the authentication and communication limitation”) 2

 B. “software” 6

IV. CONCLUSION.....9

TABLE OF AUTHORITIES

Page(s)

CASES

<i>3M Innovative Properties Co. v. Tredegar Corp.</i> , 725 F.3d 1315 (Fed. Cir. 2013).....	4
<i>Ajinomoto Co. v. Int’l Trade Comm’n</i> , 932 F.3d 1342 (Fed. Cir. 2019).....	4
<i>Aylus Networks, Inc. v. Apple, Inc.</i> , 856 F.3d 1353 (Fed. Cir. 2017).....	3
<i>Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP</i> , 616 F.3d 1249 (Fed. Cir. 2010).....	9
<i>Data Engine Techs. LLC v. Google LLC</i> , 10 F.4th 1375 (Fed. Cir. 2021)	4, 5
<i>Eon Corp. IP Holdings v. Silver Spring Networks</i> , 815 F.3d 1314 (Fed. Cir. 2016).....	6, 7
<i>Fantasy Sports Properties, Inc. v. SportsLine.com, Inc.</i> , 287 F.3d 1108 (Fed. Cir. 2002).....	7
<i>O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.</i> , 521 F.3d 1351 (Fed. Cir. 2008).....	2
<i>Ricoh Co. v. Quanta Computer Inc.</i> , 550 F.3d 1325 (Fed. Cir. 2008).....	7, 8
<i>Saffran v. Johnson & Johnson</i> , 712 F.3d 549 (Fed. Cir. 2013).....	4
<i>Southwall Techs., Inc. v. Cardinal IG Co.</i> , 54 F.3d 1570 (Fed. Cir. 1995).....	4
<i>Speedtrack, Inc. v. Endeca Techs., Inc.</i> , 524 F. App’x 651 (Fed. Cir. 2013)	9
<i>Starhome GmbH v. AT&T Mobility LLC</i> , 743 F.3d 849 (Fed. Cir. 2014).....	7
<i>Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.</i> , 200 F.3d 795 (Fed. Cir. 1999).....	6

Wi-Lan, Inc. v. Apple, Inc.,
811 F.3d 455 (Fed. Cir. 2016).....5

Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.,
442 F.3d 1322 (Fed. Cir. 2006).....5

OTHER AUTHORITIES

Microsoft Computer Dictionary 489 (5th ed.2002) 8

I. INTRODUCTION

Patentees are not allowed to say one thing to secure their patent, then say the opposite when enforcing it in court. But that’s precisely what Gentag seeks to do here.

First, during prosecution, Gentag told the Patent Office that its “present invention” used a remote server that “loads software onto the wireless device ***relative to a particular sensor id.***” ’307 FH, January 25, 2011 Amendment and Response at 25 (JA-643). Now Gentag says the exact opposite—that the loading of the software ***does not have to be relative to a particular sensor id*** and can instead be before the remote server even receives a sensor *id*.

Second, Gentag told the Patent Office that the claimed wireless device “communicates the unique sensor ID and unique wireless ID to a remote server ***which uses this information to send the wireless device the information or software necessary to communicate with the unique sensor ID.***” *Id.* Now, Gentag says that the remote server ***doesn’t need*** to use the sensor ID at all to communicate the information or software necessary to communicate with the unique sensor ID.

Third, Gentag told the Patent Office that software was different from “information relating to said sensor data”—by amending its claims, which originally recited “information relating to said sensor id or software” to “information relating to said sensor data and software.” ’307 FH Examiner’s Amendment (JA-660); *id.* January 25, 2011 Amendment and Response at 11-12 (JA-629-630) (pending claim language before amendment). But now it says mere sensor data is software. Resp. at 14.

Gentag’s doubletalk flouts controlling Federal Circuit precedent. Because Gentag defined the scope of the asserted claims to the Patent Office, Gentag must be held to its prior representations. And the claim language and specification also track Abbott’s construction.

Abbott’s constructions should be adopted and Gentag’s rejected.

II. THE PERSON OF ORDINARY SKILL IN THE ART

Gentag criticizes Abbott for not providing a definition of the person of ordinary skill in the art (“POSITA”). But there was no reason for Abbott to do so at this stage, and create unnecessary disputes, since Abbott’s constructions are correct even under Gentag’s definition.

III. DISPUTED CONSTRUCTIONS

- A. **“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” (“the authentication and communication limitation”)**

Abbott’s Construction	Gentag’s Construction
“wherein the remote server authenticates a unique sensor ID associated with the unique wireless device ID and in response to the authentication communicates to the wireless device (1) results of processing of sensor data and (2) software related to the unique sensor ID necessary for the wireless device to interpret the sensor anywhere worldwide.”	Plain and ordinary meaning

Abbott’s opening brief explains its proposed construction for the authentication and communication limitation—the results of processing of sensor data and software relating to a unique sensor ID are communicated by the remote server *after* the remote server authenticates the unique sensor ID. Br. at 5-7. Because Gentag disagrees (Resp. 11-12), there is a fundamental dispute about the scope of the claims, which the Court should resolve. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361-62 (Fed. Cir. 2008).

Rather than meaningfully addressing Abbott’s arguments, Gentag creates strawmen to knock down. Gentag barely acknowledges what it told the Patent Office to secure its patent: that the remote server first authenticates the unique sensor ID and “uses” the unique sensor ID to send the wireless device the information and software “necessary to communicate” with the sensor:

Most notably, the present invention in claim 65 actively recites limitation wherein ***the remote device communicates the unique sensor ID and unique wireless ID to a remote server which uses this information to send the wireless device the information or software necessary to communicate with the unique sensor ID.***

'307 FH, January 25, 2011 Amendment and Response at 25 (JA-643).¹ How can the remote server “use this information”—i.e., the unique sensor ID—to send the wireless device the software “necessary to communicate with the unique sensor ID,” if the server never received the unique sensor ID in the first place? Gentag has no answer. Nor does it offer any alternative explanation of these statements.

What's more, Gentag underscored the point when it told the Patent Office that the “claimed limitations” of the “present invention” required the remote server to load “software onto the wireless device ***relative to a particular sensor id.***” Specifically, Gentag told the Patent Office that the prior art did “not teach the ***claimed limitations*** wherein the remote server loads software onto the wireless device ***relative to a particular sensor id*** that was relayed to the server from the wireless device as claimed by the present invention.” *Id.*² How is it possible to load “software onto the wireless device relative to a particular sensor id” if the sensor id is not received and authenticated first? Gentag ducks this dispositive question as well.

¹ Argued in challenging rejection of claim 65, which issued as claim 1. See '307 FH, Issue Classification (JA-665).

² In its Patent Owner Preliminary Response (“POPR”) in the co-pending *inter partes* review proceeding for the '307 patent, Gentag further argued to the Patent Office that this limitation “requires the remote server to authenticate based on at least ... the ‘unique sensor ID’ and the ‘unique wireless device ID.’” Ex. A (*Abbott Laboratories, et al. v. Altivera LLC*, IPR2024-00425, Paper 7 (April 25, 2024)) at 25, 38. Should the Board adopt Gentag’s construction, Abbott intends to further amend its construction to require that the remote server authenticate not only the “unique sensor ID,” but also the “unique wireless device ID.” *Aylus Networks, Inc. v. Apple, Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017) (“[S]tatements made by a patent owner during an IPR proceeding [including in a preliminary response filed prior to an institution decision] can be considered for claim construction and relied upon to support a finding of prosecution disclaimer.”).

As the Federal Circuit has said, “[c]onsistent with the public notice function of the prosecution history, the public is entitled to rely on these statements as defining the scope of the claims.” *Data Engine Techs. LLC v. Google LLC*, 10 F.4th 1375, 1383 (Fed. Cir. 2021). Gentag surely benefits from ignoring these statements after arguing a narrow construction of its claims to get a patent; if successful in its attempt to eschew its prior statements, Gentag could then ensnare Abbott technology. But this type of “bait and switch” approach is precisely what the doctrine of prosecution disclaimer prevents. Patentees cannot “construe[] [the claims] one way in order to obtain their allowance and in a different way against accused infringers.” *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995).

Gentag’s only response is to cite *3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315 (Fed. Cir. 2013), and argue without explanation that there was no clear and unmistakable disavowal of claim scope here. But it is hard to imagine how any disclaimer could be deemed “clear” if Gentag’s statements during prosecution were not. Patentees “rarely submit affirmative disclaimers along the lines of ‘I hereby disclaim the following...’ during prosecution and need not do so to meet the applicable standard.” *Saffran v. Johnson & Johnson*, 712 F.3d 549, 559 (Fed. Cir. 2013). Gentag “must be held to what [it] declares during the prosecution of [its] patent, because a contrary rule would undermine [t]he public notice function of a patent.” *Ajinomoto Co. v. Int’l Trade Comm’n*, 932 F.3d 1342, 1351 (Fed. Cir. 2019).

The prosecution history thus amply confirms that the authentication and communication limitation requires that the remote server first authenticate the unique sensor ID, before sending the information related to the sensor data and software necessary to enable the wireless device to interpret the sensor data. Br. at 5-6

Gentag’s remaining arguments fare no better.

First, Gentag disputes the import of the “thereby” clause and disagrees that it creates a cause-and-effect relationship between authentication and communication. According to Gentag, “the proper reading of the claim is that the ‘cause’ is communicating processed information and software, and the ‘effect’ is interpreting the sensor worldwide.” Resp. at 11. Even setting aside the prosecution history above, the claim language shows that interpreting the sensor can be realized only if the remote server communicates to the wireless device specific information and software—“processed information *relating to said sensor data* and software *related to the unique sensor ID*.” The claim’s “subsequent use of the definite article ‘the’ [before unique sensor ID] refers back to the same [sensor ID] term recited earlier in the claim.” *Wi-Lan, Inc. v. Apple, Inc.*, 811 F.3d 455, 462 (Fed. Cir. 2016). Thus, both the claim language and common sense dictate that to communicate software *related to the unique sensor ID*, the remote server must first receive and authenticate the unique sensor ID. Accordingly, the “thereby” clause also supports Abbott’s construction. And irrespective of whether there was a disclaimer (there was), the prosecution history overwhelmingly supports Abbott’s read of the “thereby” clause. *Data Engine Techs.*, 10 F.4th at 1382 (“The prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.”) (cleaned up).

Second, Gentag disparages Abbott as trying to construe this term in view of the accused device. Resp. at 10 (arguing Abbott’s non-infringement arguments are irrelevant to claim construction). But claim construction “always takes place in the context of a specific accused infringing device.” *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326 (Fed. Cir. 2006).

Third, Gentag argues that “in response to” is ambiguous and “requires far more than just one action happening after the other.” Resp. at 10-11. That is a red herring. A “sound claim construction need not always purge every shred of ambiguity.” *Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314, 1318 (Fed. Cir. 2016). Rather, “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.” *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). Gentag has not tied the hypothetical issues purportedly raised by “in response to” to any controversy in this case, let alone any of the parties’ infringement or invalidity positions.

Finally, Gentag tries to take Abbott to task for defining “processed information relating to said sensor data” as “the results of processing sensor data.” But that is the plain meaning, and Gentag proposes no alternative. Indeed, the only “processed information relating to said sensor data” described in the specification is the results of processing sensor data. U.S. Patent Appl. Pub. No. 2005/0088299 ¶ [0110]-[0112] (JA-737), Fig. 5 (JA-715). In contrast, Gentag improperly untethers “processed information relating to said sensor data” from “the context of the invention.” *Eon Corp. IP*, 815 F.3d at 1321. Thus, the Court should adopt Abbott’s proposed construction for this term.

B. “software”

Claims	Abbott’s Construction	Gentag’s Construction
Claims: 1, 2, 3, 5, 9, 10	“programs or instructions that direct the operations of a computer system”	Plain and ordinary meaning, i.e., programs, programming languages, instructions, information, or data that direct operations of a computer system

The primary dispute between the parties is whether mere “information” or “data” alone—without accompanying programming instructions—can be “software.” It cannot.

Gentag’s arguments find no support in the law or the intrinsic evidence. To start, once again, Gentag has ***nothing*** meaningful to say about what happened during prosecution. There, Gentag agreed to amend its claims from “information relating to sensor data or software” to “information relating to sensor data and software.” ’307 FH Examiner’s Amendment (JA-660); *id.* January 25, 2011 Amendment and Response at 11-12 (JA-629-630) (pending claim language before amendment). Now, to try to ensnare Abbott’s accused product, it tries to recapture exactly what it gave up—which is impermissible and would contravene the public notice function of the prosecution history.

Next, Gentag objects to Abbott’s reliance on *Ricoh Co. v. Quanta Computer Inc.*, 550 F.3d 1325 (Fed. Cir. 2008) and *Fantasy Sports Properties, Inc. v. SportsLine.com, Inc.*, 287 F.3d 1108 (Fed. Cir. 2002). Gentag contends that *Ricoh* and *Fantasy Sports* do not support Abbott’s position because “neither case involved a claim construction of the term ‘software’” and therefore cannot be used to restrict its meaning. Resp. at 15. But those cases instruct on what the plain and ordinary meaning of “software.” When, as here, a term has an ordinary and customary meaning in the field to a skilled artisan, that meaning governs, unless the patentee clearly and unequivocally states otherwise in the specification or during prosecution. *Starhome GmbH v. AT&T Mobility LLC*, 743 F.3d 849, 856 (Fed. Cir. 2014). Gentag has not come close to explaining why this plain and ordinary meaning of “software” should not control here. Indeed, the opposite is true—the intrinsic evidence shows that “software” is ***not*** “data that direct operations of a computer system” as Gentag proposes. Resp. at 17.

Indeed, Gentag admits that information encompasses data. Resp. at 16 (“Information and software are both broader than data, and while either could include data, they each can include other things”). And although Gentag appears to argue that information is broader than data,

there is no such daylight between “information” and “data” here: the claim language speaks of “information relating to *said sensor data*.” And Gentag fails to explain how “information relating to said sensor data” is meaningfully different from the “data” it is trying to equate with “software.” Gentag likewise fails to explain how the amendment to the claims from information relating to the sensor data “or” software is meaningful if sensor data was software from the start.

In addition, Gentag similarly criticizes the dictionary definition Abbott relies on (the “Microsoft dictionary”). Gentag Resp. at 14. As an initial matter, this is the same dictionary the Federal Circuit relied on in *Ricoh* to define software. *Compare* ECF No. 79-1 at 489 *with Ricoh*, 550 F.3d at 1335 (citing Microsoft Computer Dictionary 489 (5th ed.2002)). Gentag points out that the Microsoft dictionary shows that “‘software’ includes ‘language software, which provides programmers with the tools they need to write programs’ as well as ‘spreadsheets’ and ‘databases,’”—ostensibly arguing that the definition includes programming languages and data. Resp. at 14. That argument, however, conflates spreadsheet and database applications (e.g., Microsoft Excel), which *are software*, with the data they can process or store, which *is not*.

Moreover, Gentag’s own cited dictionary refutes its construction—it defines software as *the combination* of “programs, programming languages, and data that direct the operations of a computer system.” *Id.* The use of conjunctive language (“and”) contrasts with the disjunctive definition “information, *or* data,” that Gentag wants to redefine “software” as in the claims. Gentag cites no definition in any dictionary that defines “software” as data by itself or information by itself—without accompanying programming instructions.

Finally, Gentag urges the Court to ignore distinctions between software and information (data) found throughout the claims, specification, and prosecution history. In its opening brief, Abbott identifies the distinctions that Gentag itself made between software and information

(data) in the intrinsic record. Br. at 10-12. Based on longstanding canons of claim interpretation, those distinctions support Abbott's construction and reinforce that "software" does not include information or data. *See, e.g., Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (holding that separately listing elements in a claim indicates those elements are distinct components of the invention); *see also, e.g., Speedtrack, Inc. v. Endeca Techs., Inc.*, 524 F. App'x 651, 656-57 (Fed. Cir. 2013) ("category description" did not include "category description identifiers" because "the claim language and the specification distinguish" the two). Gentag cites no basis that would permit deviating from these general rules of claim construction.

IV. CONCLUSION

The Court should adopt Abbott's proposals for both disputed terms.

May 24, 2024

Respectfully submitted,

/s/ Giri Pathmanaban

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CERTIFICATE OF SERVICE

The undersigned certifies that on May 24, 2024, a copy of the foregoing Defendants' Reply Claim Construction Brief was served on counsel of record via the Court's ECF system.

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Exhibit A

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.

Case No. IPR2024-00425

Patent No. 7,969,307 B2

PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. BACKGROUND	3
A. Overview of the '307 Patent.....	3
B. The Challenged Claims	7
C. The Alleged Prior Art.....	9
1. U.S. Patent No. 7,148,803 (“Bandy”) (EX-1005)	9
2. U.S. Patent App. Pub. No. US 2002/0178126 A1 (“Beck”) (EX-1007).....	12
3. WIPO Pub. No. WO 02/058537 A2 (“Heller”) (EX-1016).....	13
4. U.S. Patent No. 6,031,454 (“Lovejoy”) (EX-1009)	15
III. CLAIM CONSTRUCTION	17
IV. PETITIONER HAS NOT ESTABLISHED A REASONABLE LIKELIHOOD OF SUCCESS IN SHOWING THAT ANY CLAIM IS UNPATENTABLE	17
A. Ground 1 (Asserted Unpatentability of Claims 1, 2, 5, 9, and 10 over Bandy)	20
1. Bandy is Not Prior Art Because it was Not “by Another”	20
2. Petitioner Fails to Show That Bandy Discloses or Renders Obvious Several Limitations of the Challenged Claims	24
a. “unique ID” of the remote wireless device.....	24
b. “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”	25

TABLE OF CONTENTS (CONTINUED)

	Page
3. Petitioner Fails to Show that Bandy Renders Obvious Dependent Claims 2, 5, 9, and 10	27
B. Ground 2 (Asserted Unpatentability of Claim 3 over Bandy in view of Heller).....	27
C. Ground 3 (Asserted Unpatentability of Claims 1-3, 5, 9, and 10 over Beck in view of Heller and Lovejoy).....	27
1. Petitioner Fails to Show That a POSITA Would Have Been Motivated to Combine Beck with Heller and/or Lovejoy	27
2. The Petition Fails to Show that the Challenged Claims Are Rendered Obvious by Beck in View of Heller and Lovejoy	35
a. “a sensor interface having an analog to digital converter coupled to the at least one sensor and reference sensor element”	35
b. “geolocation means”	36
c. “said wireless device having...a unique ID,” “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID”	37
3. Petitioner Fails to Show that the Asserted Combination Renders Obvious Dependent Claims 2, 3, 5, 9, and 10	38
V. INSTITUTION SHOULD BE DENIED BECAUSE PETITIONER RELIES ON PREVIOUSLY CONSIDERED ART AND ARGUMENTS WITHOUT SHOWING A MATERIAL ERROR.....	39
VI. CONCLUSION.....	43

TABLE OF AUTHORITIES

	Page(s)
CASES	
<i>Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH</i> , IPR2019-01469, Paper 6 (Feb. 13, 2020)	39, 40, 42
<i>Apple Inc. v. XR Commc'ns LLC</i> , IPR2022-01155, Paper 11 (Jan. 5, 2023)	32
<i>ATD Corp. v. Lydall, Inc.</i> , 159 F.3d 534 (Fed. Cir. 1998)	19
<i>Google LLC v. IPA Techs. Inc.</i> 34 F.4th 1081 (Fed. Cir. 2022)	22
<i>In re Katz</i> , 687 F.2d 450 (C.C.P.A. 1982)	23
<i>Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.</i> , 821 F.3d 1359 (Fed. Cir. 2016)	34
<i>KSR Int'l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007)	18, 19
<i>LSI Corp. v. Regents of the Univ. of Minn.</i> , IPR2017-01068, Paper 58 (Apr. 14, 2021)	22
<i>Metalcraft of Mayville, Inc. v. The Toro Co.</i> , 848 F.3d 1358 (Fed. Cir. 2017)	19
<i>Millennium Pharms., Inc. v. Sandoz Inc.</i> , 862 F.3d 1356 (Fed. Cir. 2017)	19
<i>Miltenyi Biomedicine GmbH v. Tr. of the Univ. of Pa.</i> , IPR2022-00853, Paper 11 (Oct. 11, 2022)	23
<i>R.J. Reynolds Vapor Co. v. Altria Client Servs.</i> , IPR2021-00793, Paper 7 (Oct. 27, 2021)	23
<i>Risen (Suzhou) Pharma Tech Co. v. Alzheon, Inc.</i> , IPR2022-01200, Paper 14 (Jan. 9, 2023)	42

TABLE OF AUTHORITIES (CONTINUED)

	Page(s)
<i>Sanofi-Aventis U.S. LLC v. Immunex Corp.</i> , IPR2017-01879, Paper 88 (Feb. 14, 2019)	22
<i>SMIC, Ams. v. Innovative Foundry Techs., LLC</i> , IPR2020-00837, Paper 13 (Oct. 9, 2020)	17
<i>Unigene Labs., Inc. v. Apotex, Inc.</i> , 655 F.3d 1352 (Fed. Cir. 2011)	19
<i>Vital Connect, Inc. v. Bardy Diagnostics, Inc.</i> , IPR2023-00381, Paper 7 (July 11, 2023)	42

STATUTES

35 U.S.C. §102	20, 22, 24
35 U.S.C. §103	18, 20
35 U.S.C. §314	1, 17
35 U.S.C. §325	passim

EXHIBIT LIST

PATENT OWNER'S EXHIBITS	
Exhibit No.	Description
2001	Declaration of William Bandy, Ph.D.
2002	Declaration of John P. Peeters, Ph.D.
2003	Feb. 1, 2005 email from John Melngailis, Bates numbered GEN-AB-0003666 in <i>Gentag, Inc. v. Abbott Laboratories</i> , No. 1:23-cv-00310 (N.D. Ill.)
2004	May 6, 2003 handwritten notes by John Peeters, Bates numbered GEN-AB-00001440 in <i>Gentag, Inc. v. Abbott Laboratories</i> , No. 1:23-cv-00310 (N.D. Ill.)
2005	May 7, 2003 letter from John Peeters, Bates numbered GEN-AB-0001441-1442 in <i>Gentag, Inc. v. Abbott Laboratories</i> , No. 1:23-cv-00310 (N.D. Ill.)
2006	Aug. 19, 2003 email from John Peeters, Bates numbered GEN-AB-00002974-2977 in <i>Gentag, Inc. v. Abbott Laboratories</i> , No. 1:23-cv-00310 (N.D. Ill.)

I. INTRODUCTION

Abbott Laboratories and Abbott Diabetes Care Inc. (collectively, “Petitioner”) filed a Petition for *Inter Partes* Review of claims 1, 2, 3, 5, 9, and 10 of U.S. Patent No. 7,969,307 (“’307 Patent”) (EX-1001). Altivera LLC (“Patent Owner”) requests that institution be denied because the Petitioner has failed to establish “that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition” under 35 U.S.C. §314(a).

Petitioner’s asserted grounds of unpatentability suffer from multiple fatal defects. Particularly, with respect to the primary reference asserted in Petitioner’s first and second grounds (“Bandy”), Petitioner fails to show that Bandy is prior art “by another.” As confirmed by Bandy’s two named inventors—Dr. William Bandy and Dr. John Peeters—the portions of Bandy upon which Petitioner relies were all contributed by Peeters, the sole inventor of the ’307 Patent. Thus, as a matter of law, Bandy cannot invalidate the ’307 Patent.

Moreover, as to Grounds 1 and 2, Petitioner fails to show that several required claim limitations are disclosed or rendered obvious by Bandy, alone or in view of Heller. The Petition fails to show that Bandy discloses a wireless reader having a “unique ID,” or “authentica[t]ing said unique sensor ID associated with said unique wireless device ID.” Nor does the Petition establish that these disclosures are inherent in Bandy or would have been supplied by the knowledge of a POSITA. The

ipse dixit opinions of Petitioner's proffered expert are insufficient to support Grounds 1 and 2.

Petitioner's third asserted ground of unpatentability is likewise deficient. Again relying in large part on the unsupported and conclusory opinions of its expert, Petitioner fails to show that a POSITA would have been motivated to combine Beck's system—which discloses a system to communicate with commercially available medical devices—with the sensor technology disclosed in Heller or the workplace safety system disclosed in Lovejoy. Moreover, Petitioner fails to show that the purported combination would teach all the required claim limitations.

Finally, the Board should exercise its discretion to deny institution under 35 U.S.C. §325(d), because Grounds 1 and 2 are based on art that was previously presented to the USPTO. The primary reference upon which Petitioner relies for those grounds (Bandy) is expressly cited and discussed several times in the '307 Patent specification and was clearly considered by examiner during prosecution. As Petitioner has failed to show that the USPTO erred in a manner material to the patentability of challenged claims, the Board should exercise its discretion and decline institution of this Petition.

II. BACKGROUND

A. Overview of the '307 Patent

The '307 Patent was invented by Dr. John Peeters. '307 Pat., Face. The patent is directed to a system for wireless diagnostics using radio frequency identification (RFID) tags that are combined with novel types of diagnostic sensors. *Id.*, 2:14-17. The technology allows a modified cell phone (or other wireless RFID reader) to perform diagnostic tests using RFID tags and sensors integrated with a disposable skin patch. *Id.*, 2:21-24, 2:32-36, 3:54-61. For example, in one embodiment, the RFID tag and skin patch combination includes a plurality of sensors that can be combined for different diagnostic applications, measuring directly on the surface of the skin, transdermally, in skin sweat, or in blood drawn directly onto a disposable skin patch. *Id.*, 6:35-40. The smart patch technology described in the patent can perform any number of different tests on a subject and be processed remotely by a wireless device such as a cell phone, which can interpret the sensor anywhere in the world. *Id.*, 5:42-43, 7:34-36. This technology allows on-the-spot processing of complex sensor data at a relatively low cost. *Id.*, 4:63-65.

For example, the technology of the '307 Patent can be utilized for monitoring glucose levels by persons having diabetes. *Id.*, 8:64-9:3, Fig. 4. Prior to the invention of the '307 Patent, such a person would have to monitor their glucose levels manually, such as by pricking a finger with a needle to test glucose levels in blood

using test strips and a glucometer several times a day. The invention of the '307 Patent eliminated the need for this cumbersome process, allowing a person to instead apply an adhesive skin patch capable of sensing glucose levels in interstitial fluid, which would automatically communicate information regarding glucose levels with a cell phone (or other wireless reader). This invention was prescient, as cell phone technology in 2003 was still in its infancy.

As shown below, Figures 1-2 of the '307 Patent depict a cell phone 2 serving as an RFID reader in conjunction with a disposable skin patch 4 including an RFID tag and sensor module 11. *Id.*, 5:12-16, 6:46-49. Typically, the patch 4 is composed of a thin flexible support 5 that has an adhesive surface 7. *Id.*, 6:51-52. The patch includes an RFID electronic chip 10, a sensor 12, and at least one antenna 8. *Id.*, 6:49-51. The RFID tag and sensor module 11 form an integrated unit on a substrate disk 6. *Id.*, 6:64-65. Typically, disk 6 and sensing elements 12 are protected by at least one protective layer 20, which makes direct contact with the surface of the skin. *Id.*, 7:14-17.

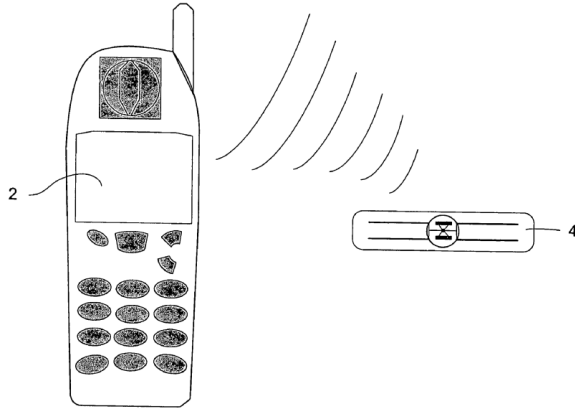


FIG. 1

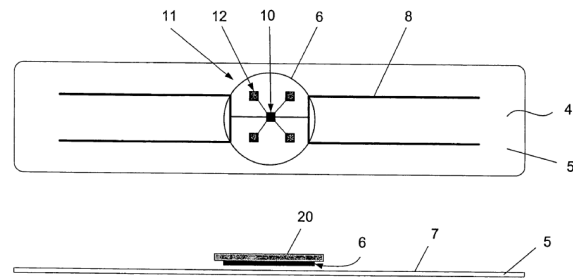


FIG. 2

Figure 5 (reproduced below) shows the basic elements of the RFID electronic chip 10, including a power unit 60, a controller 62, an identification unit 64, a memory unit 66, a sensor table 68, a thermistor or temperature module/sensor 70, and an analog to digital converter 72. *Id.*, 9:35-39. The electronic chip 10 is coupled to antenna 8. *Id.*, 9:24-25.

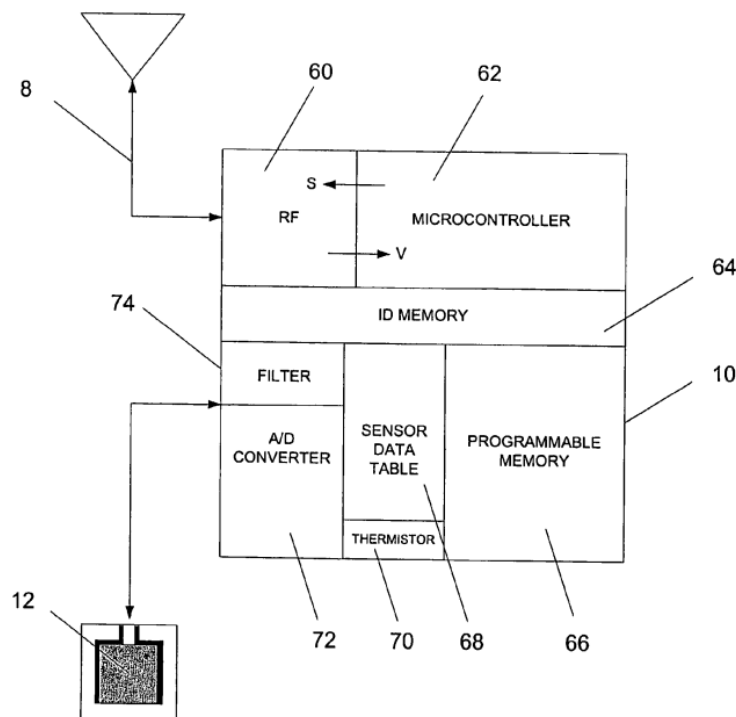


FIG. 5

The RFID tag provides a unique ID to the wireless device identifying the type of sensor used. *Id.*, 7:43-45. Since each RFID tag 10 contains its own electronic identification number 64, wireless device 2 can immediately recognize the type of sensor involved and perform the correct analysis. *Id.*, 12:42-45.

The RFID tag and sensor module responds to a stimulus by wirelessly transmitting and receiving signals through the use of the antenna. *Id.*, 2:46-48. The RFID reader (e.g., cell phone) is adapted to retrieve the electronic identification of a tag and sensor module and download software that enables reading and analyses of the tag and sensor from a database. *Id.*, 2:53-56. The RFID reader is also capable of communicating over a network. *Id.*, 2:56-58. The diagnostics system may also include a remote storage/data access unit that remotely stores data transmitted and/or received by the RFID tag and sensor module and the RFID reader. *Id.*, 2:59-62.

The patent further discloses a remote wireless device that enables access to the RFID tag and sensor module, the RFID reader, and the remote storage/data access unit from virtually any location. *Id.*, 2:62-65. The wireless devices or the sensors can also be geolocated anywhere by a global positioning system (GPS) and/or non-GPS triangulation means and can be interrogated remotely through the use of the Internet or by any other wireless device that can access a cell phone reader. *Id.*, 3:33-40.

Applications of the present invention include on-the-spot medical and self-diagnostics on smart skin patches, Point of Care analyses, food diagnostics, pathogen detection, disease-specific wireless biomarker detection, remote structural stress detection and sensor networks for industrial or Homeland Security using wireless devices such as modified cell phones. *Id.*, Abstract. For example, in one embodiment, the sensor 12 may be a chemical sensor. *Id.*, 10:24-27. As noted above, the patent describes using such a sensor to perform on-the-spot diagnostics such as blood glucose monitoring via a disposable RFID-skin patch and wireless device combination. *Id.*, 8:49-52, 9:5-8, Fig. 4.

B. The Challenged Claims

Claim 1, the sole challenged independent claim, recites:

A radio frequency (RF) addressable diagnostic sensor unit comprising:

at least one sensor element;

at least one reference sensor element;

a unique identification ID number;

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

at least one antenna;

a substrate;

an RF power and communication interface coupled to the at least one antenna and sensor interface;

a controller coupled to the RF power and communications interface and the sensor interface; and

a memory coupled to the controller and the sensor interface;

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 [a]t least one remote server; and

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

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.

Id., claim 1.

The challenged dependent claims recite additional limitations, namely, that “said wireless device is a cell phone” (claim 2); “said sensor unit is integrated into a

disposable wireless skin patch for diagnostic applications” (claim 3); “said sensor is a chemical sensor” (claim 5); “a GPS means for geolocating said system” (claim 9) and “a non-GPS geolocation means for geolocating said system” (claim 10). *Id.*, claims 2, 3, 5, 9, 10.

C. The Alleged Prior Art

1. U.S. Patent No. 7,148,803 (“Bandy”) (EX-1005)

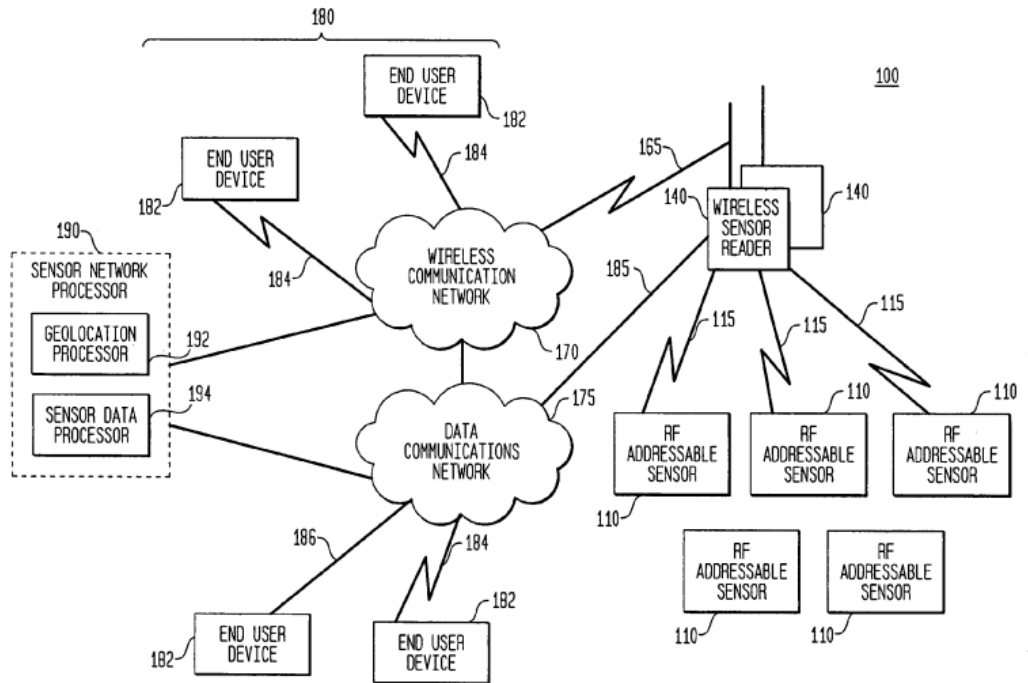
Bandy, the primary reference upon which Petitioner relies for Grounds 1 and 2, is listed on the '307 Patent among the “References Cited.” '307 Pat., p.2. During prosecution of the '307 Patent, the examiner initialed the applicant's Information Disclosure Statement corresponding to Bandy, indicating that she considered the reference ('307 FH, 383). In addition, the application from which Bandy issued is discussed and incorporated by reference in the specification of the '307 patent. '307 Pat., 5:7-11 (“The underlying principles of the technology are described in more detail in U.S. patent application Ser No. 10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ that is incorporated herein by reference in its entirety.”); *id.*, 5:16-19 (“As it is made clear in U.S. patent application Ser No. 10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ any modified wireless device can be used.”); *id.*, 9:28-33 (“The principles and operation of the RFID tag having a sensor input is described in detail in U.S. patent application Ser No.

10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ which is incorporated herein by reference in its entirety.”); *id.*, 14:52-58 (“The type of sensor ID is matched with data tables and processing instructions that can be downloaded directly into the cell phone. See U.S. patent application Ser No. 10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ which is incorporated herein by reference in its entirety.”). As such, Bandy was before the Examiner during prosecution.

Dr. Peeters—the sole inventor of the ’307 Patent—is one of two inventors listed on the face of Bandy. Bandy, Face.¹ Bandy is directed to RFID-based sensor networks. *Id.*, Abstract. The sensor network includes one or more RF addressable sensors, one or more wireless sensor readers coupled to a communications network, and one or more optional end user devices coupled to the communications network. *Id.*, 1:58-62. Figure 1, reproduced below, shows an illustrative RF addressable sensor network 100 for monitoring, detecting, and geolocating RF addressable sensors (*id.*, 4:33-35):

¹ As discussed in Section IV.A.1., *infra*, the portions of Bandy relied upon by Petitioner were solely invented by Dr. Peeters.

FIG. 1



The RF addressable sensor includes one or more antennas for communicating with the wireless sensor reader, one or more sensor elements, an RF power and communications interface, an RFID control module, and a sensor interface. *Id.*, 2:19-13; *see also id.*, Fig. 2. The wireless sensor reader includes one or more antennas, a user interface, a controller, a network communications module, and an RF addressable sensor logic module. *Id.*, 2:21-24; *see also id.*, Fig. 3.

Bandy describes multiple purposes—from detecting hazardous materials for homeland security applications to remote monitoring of shipping containers—but does not describe any patch-based sensors, diagnostics, or any remote wireless device having a unique ID.

2. U.S. Patent App. Pub. No. US 2002/0178126 A1 (“Beck”) (EX-1007)

Beck is directed to large, commercial equipment for monitoring the biological or physiological conditions of patients, e.g., in a hospital setting. Beck, [0002]. More specifically, Beck describes systems, client computing devices, server computing devices, and methods for accessing medical devices, providing remote access to medical devices, and/or remotely accessing medical devices. *Id.*, Abstract, [0004]. For example, in one embodiment, client computing devices utilize protocol components that may be obtained from a server computing device via a network to communicate with medical devices in a communications protocol supported by the medical device. *Id.*, Abstract.

More specifically, Beck describes a system including a server computing device, a client computing device, a medical device operably coupled to the client computing device via a communications link, and a network which operably couples the client computing device to the server computing device. *Id.*, [0014]. The system includes a set of protocol components which the server computing device transfers to the client computing devices. *Id.*, [0015]. The server computing device is adapted to detect, over the network, medical devices that are operably coupled to the client computing device. *Id.*, [0016]. Beck describes combining commercially available components and devices, including for the server computing device (*id.*, [0017]),

processor (*id.*, [0018]), storage device (*id.*, [0020]), network interface (*id.*, [0021]), client computing device (*id.*, [0023], [0027]), and medical device (*id.*, [0034]).

With respect to the medical device, Beck provides little detail, noting that it is “generally operable to monitor one or more biological/physiological conditions and communicate with the client computing device.” *Id.*, [0034]. The medical device includes a processor, memory, a communications interface, one or more user I/O devices, and a system bus. *Id.*, [0035]. In one embodiment, the medical device 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.*, [0034]. As discussed below, Beck fails to disclose several limitations of the challenged claims of the ’307 Patent.

3. WIPO Pub. No. WO 02/058537 A2 (“Heller”) (EX-1016)

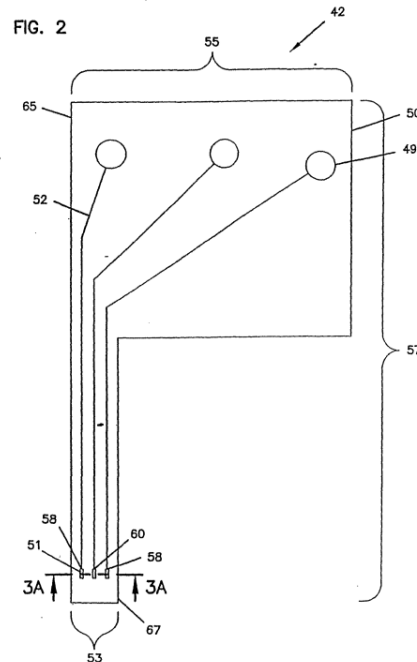
Petitioner asserts Heller as a secondary reference in connection with Grounds 2 and 3. Heller is generally directed to an analyte monitoring system using an implantable sensor for the *in vivo* determination of a concentration of an analyte (such as glucose or lactate) in a fluid. Heller, 1:3-7 (“The present invention is, in general, directed to devices and methods for the *in vivo* monitoring of an analyte, such as glucose or lactate. More particularly, the present invention relates to devices and methods for the *in vivo* monitoring of an analyte using an electrochemical sensor to provide information to a patient about the level of the analyte.”), 8:12-14 (“The

present invention is applicable to an analyte monitoring system using an implantable sensor for the *in vivo* determination of a concentration of an analyte, such as glucose or lactate, in a fluid.”).

More specifically, Heller describes a sensor that is implanted under the skin of a patient (i.e., subcutaneously) for the continuous or periodic monitoring of an analyte in a patient's interstitial fluid, which can be used to infer the glucose level in the patient's bloodstream. *Id.*, 2:27-29 (“Generally, the present invention relates to methods and devices for the continuous and/or automatic *in vivo* monitoring of the level of an analyte using a subcutaneously implantable sensor.”), 8:14-17 (“The sensor can be, for example, subcutaneously implanted in a patient for the continuous or periodic monitoring an analyte in a patient's interstitial fluid. This can then be used to infer the glucose level in the patient's bloodstream.”). Heller further describes analyte sensors “for insertion into a vein, artery, or other portion of the body containing fluid.” *Id.*, 8:17-19; *see also id.*, 10:11-12 (“implantation of the sensor may be made in the arterial or venous systems for direct testing of analyte levels in blood”), 10:22-27.

Heller further describes a sensor control unit having a housing adapted to receive a portion of an electrochemical sensor; conductive contacts disposed on the housing and configured for coupling to contact pads on the sensor; a transmitter disposed in the housing and coupled to the conductive contacts for transmitting data

obtained using the sensor; and various optional components. *Id.*, 2:30-3:9. As seen in Figure 2 below, sensor 42 includes at least one electrode 58 formed using conductive traces 52 disposed on a substrate 50 (*id.*, 11:11-13, 11:24-25):



4. U.S. Patent No. 6,031,454 (“Lovejoy”) (EX-1009)

Like Bandy, Lovejoy is listed on the '307 Patent among the “References Cited” ('307 Pat., p.2) and the examiner initialed the applicant's Information Disclosure Statement at the row corresponding to Lovejoy, indicating that she considered the reference ('307 FH, 291). Moreover, like Bandy, Lovejoy is discussed and incorporated by reference in the specification of the '307 Patent. '307 Pat., 6:10-13 (“In addition as explained in U.S. Pat. No. 6,031,454, that is incorporated herein in its entirety real time precise geolocation of the firefighter is possible.”), 17:21-24 (“The reading, analysis and geolocation by GPS or non-GPS

means is described in U.S. Pat. No. 6,031,454 that is included herein by reference in its entirety.”), 18:38-43 (“Starting with device 800 and as explained in U.S. Pat. No. 6,031,454 and Patent Application US 2004/0119591 A1 by the present inventor that are incorporated by reference in their entirety, a wireless device such as a cell phone may be modified to accommodate any number of sensors 816, including diagnostic sensors.”). Having been listed on an IDS accompanied by the examiner’s initials and having been repeatedly discussed in the specification, Lovejoy was previously presented during prosecution.

Dr. Peeters, the inventor of the ’307 Patent, is also an inventor on Lovejoy. Lovejoy, Face. Lovejoy is directed to a person-specific monitor that provides sensor information regarding a person’s occupational exposure to hazards, such as a radiological, chemical or other toxic agent in the environment surrounding the person. *Id.*, Abstract, 1:25-28. Lovejoy describes a sensor module used in conjunction with an electronic monitor, which can be adapted to monitor for any type of exposure or combination of exposures (e.g., heat, humidity, noise, particles, radiation, chemicals, etc.) and allows for the monitoring of different types of cumulative occupational exposures over the lifetime of a worker. *Id.*, 2:28-31, 6:16-19. Lovejoy further describes base stations for reading out data from the personal monitors, for recharging the monitors, and antennae for use in the geolocation of the monitors. *Id.*, 4:38-41.

III. CLAIM CONSTRUCTION

For purposes of this preliminary response, Patent Owner does not contest Petitioner's proposed claim constructions. Even under Petitioner's proposed constructions, Petitioner fails to show a reasonable likelihood that it would prevail with respect to any of the challenged claims. Patent Owner reserves the right to respond to Petitioner's proposed constructions in the event institution is not denied.²

IV. PETITIONER HAS NOT ESTABLISHED A REASONABLE LIKELIHOOD OF SUCCESS IN SHOWING THAT ANY CLAIM IS UNPATENTABLE

"Petitioner bears the burden on institution of demonstrating a reasonable likelihood that it will prevail in showing the unpatentability of at least one claim. ... Petitioner must file a Petition that, among other requirements, 'identifies ... the evidence that supports the grounds for the challenge to each claim.'" *SMIC, Ams. v. Innovative Foundry Techs., LLC*, IPR2020-00837, Paper 13, 13-14 (Oct. 9, 2020) (citing 35 U.S.C. §§314(a) and 312(a)(3)). Here, the Board should deny institution of *inter partes* review under 35 U.S.C. §314(a) because Petitioner has not met its

² Patent Owner further reserves the right to challenge any claim construction proposed by Petitioner in any other forum, including in the currently pending litigation in the Northern District of Illinois.

burden to demonstrate a reasonable likelihood that it will prevail as to any challenged claim based on the information contained within the Petition.³

The Petition presents only obviousness grounds. Petition, 1. A claim is invalid under 35 U.S.C. §103(a) only if “the differences between the subject matter sought to be patented 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 the POSITA.⁴ *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). An obviousness determination must be based on four factual inquiries: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the

³ As discussed in Section V, *infra*, the Board should exercise its discretion to deny institution under 35 U.S.C. § 325(d) as well.

⁴ For purposes of this preliminary response only, Patent Owner does not contest Petitioner’s asserted definition of a POSITA. Even applying Petitioner’s definition, the Petition fails to show a reasonable likelihood that it would prevail with respect to any of the challenged claims. Patent Owner reserves the right to respond to Petitioner’s proposal if institution is not denied. Patent Owner further reserves the right to challenge any Petitioner’s definition of a POSITA in any other forum, including in the currently pending litigation in the Northern District of Illinois.

art; and (4) objective indica of non-obviousness. *Id.* (citing *Graham v. John Deere Co. Kan. City*, 383 U.S. 1, 17-18 (1966)). A party alleging obviousness is “required to place themselves in the minds of those of ordinary skill in the relevant art *at the time the invention was made*, to determine whether that which is now plainly at hand would have been obvious at such earlier time.” *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1367 (Fed. Cir. 2017) (emphasis added).

“Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination.” *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). “This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR*, 550 U.S. at 418-19. Thus, a party challenging a patent must also articulate a reason *why* a person of ordinary skill in the art would have combined or modified the prior art references. *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1366 (Fed. Cir. 2017). It is inappropriate to use hindsight or the disclosure of the '307 Patent itself to show any claims of the '307 Patent are obvious. *See ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998) (“[O]bviousness can not be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the

patented invention.”). Petitioner has not met this burden for any challenged claim under any ground of unpatentability.

A. Ground 1 (Asserted Unpatentability of Claims 1, 2, 5, 9, and 10 over Bandy)

1. Bandy is Not Prior Art Because it was Not “by Another”

As an initial matter, Bandy cannot be used as prior art for any obviousness combination under 35 U.S.C. §103(c) (pre-AIA) because Bandy would qualify as prior art—if at all—only under 35 U.S.C. §102(e), which applies to patents and applications “by another.” Bandy, however, is not “by another” because—as discussed below—the portions of Bandy relied on by Petitioner were conceived by John Peeters, the sole inventor of the ’307 Patent. As an inventor’s own work is not prior art “by another,” Dr. Peeters’ own work as reflected in Bandy cannot be used to invalidate the ’307 Patent.

Each of the named inventors of the Bandy reference, Dr. William Bandy and Dr. John Peeters, have submitted a declaration, signed under penalty of perjury, in these proceedings (EX-2001 and EX-2002). As explained in the declarations, at the time of invention of the Bandy reference, Dr. Bandy had experience designing features of RFID systems that would allow for faster reading of large volumes of RFID tags and for reading of RFID tags from increased distances. Bandy Decl. ¶4. Dr. Peeters had background in sensor technologies, health, threat detection, and wireless geolocation. Peeters Decl. ¶¶9, 11.

On May 5, 2003, Professor John Melngailis of the University of Maryland introduced Dr. Peeters to Dr. Bill Bandy and Mike Arneson, the founders of Matrics (an RFID chip company). Bandy Decl. ¶5; Peeters Decl. ¶10; EX-2003 (Melngailis email corroborating the May 5, 2003 meeting). At the meeting, Dr. Peeters conceived the idea of modifying cell phones to read RFID sensors, creating the basis for NFC cell phone sensor networks. Bandy Decl. ¶6; Peeters Decl. ¶¶12-13; EX-2003 (Melngailis email indicating “You [John Peeters] brought up [the] idea of using the cell phone as an RFID tag/sensor reader.”).

Dr. Bandy's contributions to the '803 Patent related to specific features for enhancing RFID systems, namely initialization of an RFID tag (as recited in claims 65, 81, and 83 of Bandy, as originally issued), as well as a method for rapid reading of multiple tags. Bandy Decl. ¶8; Peeters Decl. ¶18. As Dr. Bandy did not have any background in medical devices, biomarkers, or diagnostic sensors, he did not contribute to those aspects of the claims. Bandy Decl. ¶9; Peeters Decl. ¶¶10, 18-19.

Other than the initialization of an RFID tag and a method for rapid reading of multiple tags (neither of which is relevant to the challenged claims of the '307 Patent), Dr. Peeters contributed the remainder of the '803 Patent's disclosure, including 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 (MEMS sensors/microcantilevers, food

sensors, pharma sensors, threat detection sensors, and antenna sensors), the use of reference sensors, on-person sensor cards or badges, wireless geolocation technologies, container monitoring and security, and smart shopping. Peeters Decl. ¶19; Bandy Decl. ¶9. Dr. Bandy did not contribute to any aspects of the '803 Patent relating to these features. *Id.*

Petitioner has not shown—and cannot show—that the relevant portions of Bandy did not originate from Dr. Peeters himself. In *Google LLC v. IPA Techs. Inc.*, the Federal Circuit held that the Board correctly placed the burden on the petitioner to establish that a reference was “by another” by showing that a person, who was not named as an inventor on the challenged patent, was an inventor of the relevant portions of the asserted reference. 34 F.4th 1081, 1086 (Fed. Cir. 2022); *see also*, *e.g.*, *LSI Corp. v. Regents of the Univ. of Minn.*, IPR2017-01068, Paper 58, 44 (Apr. 14, 2021) (“Petitioner has not satisfied its burden to prove the portions of Tsang relied upon for anticipation represent the work of another to qualify as prior art under § 102(e)”); *Sanofi-Aventis U.S. LLC v. Immunex Corp.*, IPR2017-01879, Paper 88, 24 (Feb. 14, 2019) (“Petitioner has not satisfied its burden to prove the portions of the '132 Publication relied upon for anticipation ... represent the work of another to qualify as prior art under § 102(e).”).

Indeed, the Board has previously denied institution of *inter partes* review based on declarations showing that alleged prior art is not the work of another. *See*,

e.g., Miltenyi Biomedicine GmbH v. Tr. of the Univ. of Pa., IPR2022-00853, Paper 11, 30-33 (Oct. 11, 2022) (denying institution of *inter partes* review where “we find it unlikely that Petitioner can demonstrate that Dr. Bagg’s contribution to Porter constitutes the work of another”); *R.J. Reynolds Vapor Co. v. Altria Client Servs.*, IPR2021-00793, Paper 7, 5-7 (Oct. 27, 2021) (denying institution based on author declaration and evidence of “a common inventive entity”); *see also In re Katz*, 687 F.2d 450, 455 (C.C.P.A. 1982) (explaining that submission of a co-author’s declaration disclaiming his inventive contribution “would have ended the inquiry”).

As further detailed in Dr. Peeters’ Declaration, the portions of Bandy upon which Petitioner and its expert rely were all contributed solely by Dr. Peeters. Peeters Decl. ¶¶21-24; *see also* Bandy Decl. ¶¶10-11.⁵ Accordingly, Bandy is not prior art

⁵ Petitioner cannot try to get around this fact by pointing to irrelevant portions of Bandy, as “[t]he portions of the reference being considered must be relied upon *and relevant to establishing obviousness.*” *Google*, 34 F.4th at 1086 n.3 (emphasis added). “Otherwise, a party challenging a patent could artificially alter the inventive entity for comparison by citing extraneous portions of a multi-inventor prior art reference, thereby making it ‘by others’ even if the portions of the reference necessary for establishing obviousness had the same inventive entity as the challenged patent.” *Id.*

“by another” under 35 U.S.C. §102(e). Thus, the Board should find that Petitioner has failed to satisfy its burden that Bandy qualifies as prior art under §102(e).

2. Petitioner Fails to Show That Bandy Discloses or Renders Obvious Several Limitations of the Challenged Claims

a. “unique ID” of the remote wireless device

Claim 1 further requires that the wireless device has a “unique ID.” Petitioner argues that this limitation is met because “a POSITA would have understood that wireless sensor reader 140 and/or user device(s), such as ‘a wireless phone, a personal digital assistant (PDA), a computer having wireless communications capabilities, or other type of mobile, handheld, and/or computing device,’ (Bandy at 5:11-18) would have a unique ID, such as an IP address, Media Access Control (MAC) address, and/or an International Mobile Equipment Identity (IMEI) number, for uniquely identifying the respective device to the network 170, 180 and sensor network processor.” Petition at 26-27 (citing Sarrafzadeh Decl. ¶¶184-85).

Petitioner’s sole reliance on the conclusory opinion of its expert fails to show that Bandy discloses any unique ID as part of any remote wireless device, as required by claim 1. Petitioner’s argument relies on features not discussed anywhere in Bandy (e.g., IMEI numbers and MAC addresses), and Petitioner’s expert provides no support for his assertion that these are “unique,” as required by the claim. More importantly, even if IMEI numbers or MAC addresses are “unique,” it is not sufficient that those identifiers merely exist on the wireless device; rather, they must

be used in connection with the authentication. '307 Patent at claim 1 (“wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID”). Petitioner utterly fails to show that this limitation is met by Bandy.

b. “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”

Claim 1 further requires that “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....” 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.” The portions of Bandy cited by Petitioner, however, do not disclose these features.

First, Petitioner quotes Bandy's disclosure that “some or all of the necessary information to handle and analyze the sensor is retrieved from processor 190.” Petition, 30 (quoting Bandy at 10:29-32). But this says nothing about either the “unique sensor ID” or the “unique wireless device ID.”

Second, Petitioner quotes Bandy's disclosure that “when a sensor 110 having data table 258 is activated by wireless sensor reader 140, the sensor 110 identifies

itself (e.g., by providing its [i.e., the sensor's] identification number) and provides the cell phone reader with the necessary information for analyzing the sensor output.” Petition, 30 (quoting Bandy at 10:19-24). But this disclosure refers—at most—to the “unique sensor ID,” and says nothing about the “unique wireless device ID.” Further, this disclosure refers only to what is provided to the “cell phone reader,” not to any remote server, as required by this limitation.

Third, Petitioner's other quotes (Petition 30-31 (quoting “Software may also be downloaded directly and transparently into the cell phone or reader 140 to ‘train’ the wireless device to recognize and analyze that given type of RFID sensor” (Bandy at 10:14-51); “When the necessary processing and analysis information is downloaded from a remote location, only the ID of the RFID-sensor is necessary, providing a highly streamlined solution for universal sensor analyses for wireless devices such as cell phones” (*id.* at 10:37-41); Bandy at claims 29, 39, 40)) relate at most to what is communicated from the server, and do not disclose authentication.

Therefore, even if IMEI numbers and MAC addresses are “unique,” Petitioner has made no attempt to show that Bandy discloses using either identifier in connection with authentication, as required by claim 1. In fact, Petitioner cites Bandy's statement that “*only the ID of the RFID-sensor* is necessary,” undermining its argument. Petition at 30 (citing Bandy at 10:37-41) (emphasis Petitioner's).

3. Petitioner Fails to Show that Bandy Renders Obvious Dependent Claims 2, 5, 9, and 10

As Petitioner has failed to establish that Bandy is prior art or meets all limitations of claim 1, it likewise cannot prevail on dependent claims 2, 5, 9, and 10. Patent Owner reserves the right to raise additional arguments as to these claims in the event that the Petition is not denied.

B. Ground 2 (Asserted Unpatentability of Claim 3 over Bandy in view of Heller)

Because Petitioner has not provided any analysis—beyond what is presented for Ground 1—for how the combination of Bandy and Heller meets the limitations of claim 1, from which claim 3 depends, institution based on Ground 2 should be denied for the same reasons institution based on Ground 1 should be denied. Patent Owner reserves the right to raise additional arguments as to this claim in the event that the Petition is not denied.

C. Ground 3 (Asserted Unpatentability of Claims 1-3, 5, 9, and 10 over Beck in view of Heller and Lovejoy)

1. Petitioner Fails to Show That a POSITA Would Have Been Motivated to Combine Beck with Heller and/or Lovejoy

The Petition fails to show that a POSITA would have been motivated to combine Beck, Heller, and Lovejoy. Not only does Petitioner fail to assert that a POSITA would have been motivated to combine Beck, Heller, *and* Lovejoy, it further fails to show that a POSITA would have been motivated to combine Beck and Heller *or* Beck and Lovejoy. Beck is directed to creating secure systems by

integrating various commercially available devices. The medical devices of Beck include “one or more user I/O devices 137 and a system bus 138.” Beck, [0035]. Beck describes the I/O devices as including, e.g., “mechanisms for entering information into the medical device ..., receiving information from the medical device ..., and/or controlling the operation of the medical device.” *Id.*, [0040]. For example, the user I/O device may include “cathode ray tubes (CRT), liquid crystal displays (LCD), light emitting diodes (LED), printers, and/or other output devices that are operable to visually present information to a user”; “sound cards, wave generators, sequencers, mixers, speakers, and/or other audio devices that are used to audibly present information to a user”; and “a mouse, a keyboard, a touch pad, a push button, a scanner, a stylus, a touch screen, and/or another input device that provides a user of the exemplary medical device ... with an interface to directly control the operation of the exemplary medical device.” *Id.*, [0040-41].

The medical devices of Beck are thus large, bulky, and powered—far from disposable, wireless skin patches. Petitioner’s suggestion that it would have been obvious to a POSITA to transition from Beck’s bulky system to a disposable patch is unsupported. Further, a POSITA would not have been motivated to modify one particular component of the system when Beck discloses only a larger, integrated system.

In addition, Beck describes a networked, wired medical system and makes no reference to RFID (or any other wireless protocol or standard). While Beck makes a brief reference to wireless, most of the patent describes a wired or “hard” connected system found, for example, in a hospital setting. *Id.*, [0029] (“exemplary client computing device 120 includes a standard RS-232 serial port to which the medical device 130 may be operably coupled via an RS-232 cable”), [0038] (“the exemplary medical device 130 includes a standard RS-232 serial port to which the client computing device 120 may be operably coupled via an RS-232 cable”), [0030] (referring to a “SCSI port, a USB port, a 1394 port (i.e. FireWire or I-Link port), a Fibre Channel port”), [0039] (same). The Beck reference describes various communication methods and protocols (such as TCP/IP) developed in the 1970’s when communication (interconnectivity) between computers and other devices started to explode. On the other hand, the ’307 Patent describes a dynamic, standalone, wireless system. This is completely different from Beck.

With respect to Petitioner’s Beck-Heller argument, the Petition fails to show that a POSITA would have been motivated to combine Beck with Heller or that the resulting combination would meet all the limitations of the identified claims. Petitioner asserts that Beck and Heller “are both directed to medical/diagnostic sensing systems, including systems with chemical sensors for measuring glucose,” and that “Heller provides use of known techniques that can be used implement and

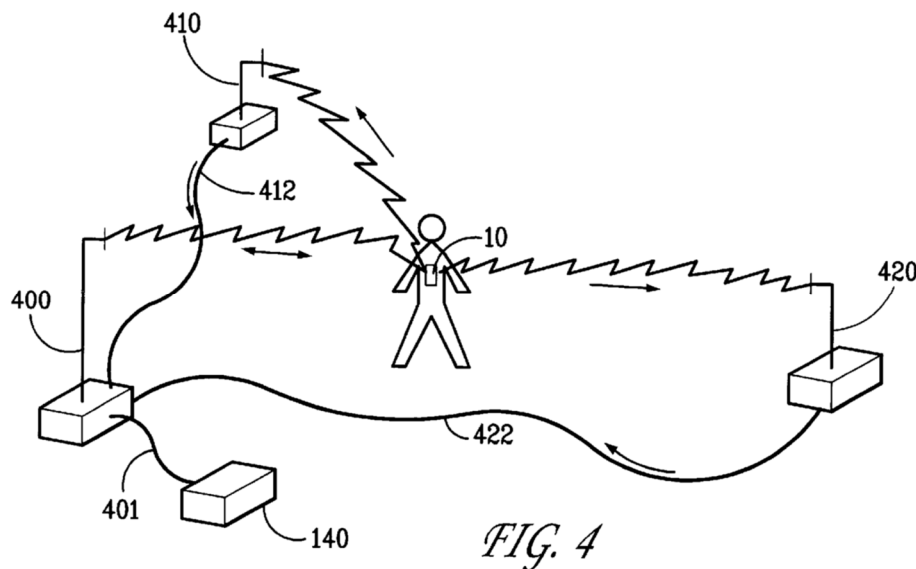
improve Beck's medical devices." Petition, 41 (citing Sarrafzadeh Decl. ¶225). This conclusory argument is insufficient to establish a motivation to combine.

Beck simply discloses an aggregation of pre-designed, off-the-shelf medical devices for use in a hospital setting (i.e., non-ambulatory devices). Beck, [0034]. Beck focuses on methods employed to connect those devices to the overall network via the use of client computing devices. *Id.*, [0035]. Beck is not directed to device construction or optimization, and a POSITA would not have been motivated to make improvements to a single device out of Beck's aggregation using the teachings of Heller (which describes a small, wearable, ambulatory device). Rather, a POSITA would have been interested in utilizing the teachings in Beck to implement multi-device systems comprised of already assembled, commercially available products. Thus, a POSITA would not have been motivated to use the implantable sensor disclosed by Heller with the system of Beck.

For example, Beck describes software protocol components, such as ActiveX and HTTP/HTML. *Id.*, [0049], [0053]. Heller, conversely, describes a rudimentary communication system that uses frequency modulation (FM) transmissions. Heller, 75:3-16. Nothing in either reference would have motivated a POSITA to add the high-level protocols described in Beck to the sensor described in Heller. Petitioner's assertions regarding an alleged motivation to combine Beck and Lovejoy are even more general: "both disclosures are directed to mobile sensing systems" (Petition,

45). This is unsurprising being that Lovejoy is unrelated to any medical or diagnostic testing. Instead, Lovejoy discloses monitoring occupational exposures using a wearable external device (on clothing) that does not interact with the user's biology. EX-1009, 1:25-35; 4:44-50.

Petitioner paints over the details of Lovejoy's disclosure in its attempt to show motivation to combine. Lovejoy discloses a wearable "monitor" and an "interrogator system," which provides two functions: geolocation of the monitor and data transfer to and from the monitor. Lovejoy, 9:17-40. The geolocation aspect is shown in Figure 4 of Lovejoy, reproduced below. *Id.*, 4:17-19.



Petitioner points to a disclosure in Lovejoy regarding geolocation of the monitor to meet the geolocation means limitation. Petition, 60-61. While Petitioner fails to explain how Lovejoy could properly be combined with Beck and Heller, the closest mapping of Lovejoy's monitor/interrogator system to the claims of the '307

patent seemingly would be that Lovejoy's monitor is the "diagnostic sensor unit," while the interrogator system is the "wireless device." Therefore, 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, and would not have motivated a POSITA to add such geolocation into the client computing device of Beck.

There are also differences between Beck's medical devices and Lovejoy's monitor that would prevent a POSITA from being motivated to combine the references. Lovejoy's monitor device is intended to be worn for years. Lovejoy, 2:57-65. The wearability and occupational-hazard applications for this device are different in intent from Beck, which discloses the aggregation of a collection of off-the-shelf medical devices that are static in their application (e.g., bedside devices)—not wearable units. Beck, [0029]-[0030] (describing physical connections using cables), [0040] (describing glucose meter manufactured by Roche Diagnostics Corporation). A POSITA thus would not have been motivated to combine the device of Lovejoy with the system of Beck, nor would such a combination have resulted in the claimed diagnostic sensor unit. "Absent reasoning supporting this specific modification, Petitioner's selectively incorporating this apparent disparate teaching from [another reference] seems based more on hindsight reconstruction of the claimed invention than an obvious modification." *Apple Inc. v. XR Commc'ns LLC*,

IPR2022-01155, Paper 11, 32 (Jan. 5, 2023) (decision denying institution of *inter partes* review).

Petitioner's additional arguments for incorporating geolocation into Beck based on the teaching of Lovejoy are similarly flawed. Petitioner argues that "both disclosures are directed to mobile sensing systems" and that Beck discloses that its client computing device can be wireless and implemented as a cell phone, which Petitioner argues "would prompt a POSITA to implement such a cell phone with features normally found on cell phones" including GPS and non-GPS geolocation features such as those described in Lovejoy. Petition, 45-47. According to Petitioner, this "would enable the provision of emergency response to users of Beck's system in the event that the medical device detects a dangerous condition." *Id.*, 47. Not only is this hypothetical situation completely unsupported by Beck, which makes no mention of an emergency response, it contravenes what is taught by Beck. Nothing in Beck suggests that the medical device and the (purportedly wireless) client computing device could be co-located. In fact, Beck's reference to "Internet enabled cellular phones" as client computing devices (Beck, [0027], [0049]) indicates that such devices were meant to be able to operate at far distances from the medical devices with which they were communicating. Therefore, the location of the client computing device (i.e., where the medical professional is reading the output of the

medical device) is irrelevant for sending an emergency response to the location of the medical device (i.e., where the patient is located).

Further, Petitioner's reliance on the FCC Report is misplaced. *See* Petition, 46. In particular, Petitioner fails to show 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. Indeed, Petitioner does not make any arguments regarding a motivation to combine the FCC Report with any other art.

Finally, an obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, *and that the skilled artisan would have had a reasonable expectation of success in doing so.*’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367-68 (Fed. Cir. 2016) (citation omitted; emphasis added). As to how the individual teachings of Beck, Heller, and Lovejoy would have been combined into an operable system or would have had a reasonable expectation of success, the Petition provides essentially no explanation, instead relying on the *ipse dixit* of its expert. This is insufficient to institute the Petition.

2. The Petition Fails to Show that the Challenged Claims Are Rendered Obvious by Beck in View of Heller and Lovejoy

a. “a sensor interface having an analog to digital converter coupled to the at least one sensor and reference sensor element”

Claim 1 recites a radio frequency (RF) addressable diagnostic sensor unit comprising “a sensor interface having an analog to digital converter coupled to the at least one sensor and reference sensor element.” Petitioner argues that Beck, alone or in view of Heller, renders this limitation obvious because (1) a POSITA would have understood that collecting “measurement data” would be analog, and (2) the “analog data must be converted into a digital signal for processing by processor 132 of the medical device 130.” Petition, 51-52. In particular, Petitioner focuses on Beck’s general disclaimer that the software components shown in Figure 2 can be replaced with hardware components, including “analog/digital hybrid circuits.” *Id.*; Beck, [0044]. Even if that were true, however, Petitioner fails to indicate which portion of Figure 2 implements a “sensor interface,” “sensor,” or “reference sensor element.” In fact, for the “reference sensor” limitation, Petitioner relies on Heller, not Figure 2 (or any other part) of Beck, and this limitation is absent from Beck. Petition, 49-51.

Beck’s lack of disclosure of this limitation is unsurprising. As discussed above, Beck discloses a system that connects to commercially available medical devices. Beck does not disclose the internal operation of those medical devices.

Nor is this limitation inherent in the disclosure of Beck. To the extent Beck and/or Heller disclose an analog sensor and an analog reference sensor—and Petitioner has provided no evidence that is the case—there are ways to calculate a value based on those two sensors without first converting them to digital values. In doing so, neither sensor would be coupled to any analog to digital converter. And Petitioner has not demonstrated otherwise.

b. “geolocation means”

Claim 1 recites a “wireless device having...geolocation means....” Petitioner argues that this limitation is met because (1) “Beck discloses...an internet enabled cellular phone” and (2) “a POSITA would have been motivated to modify Beck’s client computing device to add geolocation disclosed by Lovejoy....” Neither of these arguments holds water.

First, as discussed above, Petitioner’s assertion that a POSITA would have been motivated to combine Beck and Lovejoy is substantially flawed and cannot be relied on to show this limitation is met.

Second, as also discussed above, Petitioner is relying on a disclosure from Lovejoy related to geolocation of Lovejoy’s monitor device, which maps—if at all—to the sensor of claim 1. But it is the wireless device of the claim that has the geolocation means. Petitioner does not even attempt to show that any portion of Lovejoy discloses any such wireless device having a geolocation means.

Third, 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. While Petitioner attempts to fill in this missing limitation by pointing to an FCC Report (Petition, 60, citing Ex. 1017), that document fails to establish that any geolocation means was inherent in the disclosure of Beck. While the FCC Report revises certain rules, it does not establish that all cell phones were *in compliance* with those rules at the relevant time. Indeed, if all cell phones already included this feature, no need would have existed for the FCC Report to establish target deadlines for compliance with the revised rules. And, regardless, Petitioner has offered no evidence that all cell phones already included a geolocation means or that such a means was inherent in the disclosure of Beck.

c. “said wireless device having...a unique ID,” “wherein the remote server authenticates said unique sensor ID associated with said unique wireless device ID”

Claim 1 recites “said wireless device having...a unique ID” and later requires authentication of the “unique sensor ID associated with said wireless device ID.” Petitioner fails to show that either of these limitations is met. For the wireless device having a unique ID, Petitioner relies on Beck’s disclosure that authentication can include using a network address. Petition, 60; Beck, [0065]. But Petitioner provides no evidence, other than the *ipse dixit* of its proffered expert, that a network address—including an IP address—is necessarily unique. And, as with Bandy in Ground 1,

Petitioner's argument relies on features not discussed anywhere in Beck (e.g., IMEI numbers and MAC addresses), and Petitioner's expert provides no support for his assertion that these are "unique," as required by the claim. To the extent such numbers are inherent in the client computing device and unique—two issues Petitioner fails to support—the section of Beck referenced by Petitioner does not describe using any particular network address, let alone IP address, IMEI number, or MAC address. Finally, Petitioner makes the same fatal mistake as with Ground 1, citing only that "the serial number of the medical device" (i.e., the purported unique ID of the sensor unit) is used in authentication (Petition, 62), while ignoring that the limitation requires authentication of "said unique sensor ID associated with *said unique wireless device ID*" ('307 Patent at claim 1) (emphasis added). Nowhere does Petitioner provide any assertion that the purportedly unique ID of Beck's client computing device (the purported wireless device of claim 1) is used in authentication.

3. Petitioner Fails to Show that the Asserted Combination Renders Obvious Dependent Claims 2, 3, 5, 9, and 10

As Petitioner has failed to establish a reasonable likelihood that it would prevail on claim 1, it likewise cannot prevail on dependent claims 2, 3, 5, 9, and 10. Patent Owner reserves the right to raise additional arguments as to these claims in the event that institution is not denied.

V. INSTITUTION SHOULD BE DENIED BECAUSE PETITIONER RELIES ON PREVIOUSLY CONSIDERED ART AND ARGUMENTS WITHOUT SHOWING A MATERIAL ERROR

The Board may deny institution under 35 U.S.C. §325(d) when a petition presents “the same or substantially the same prior art or arguments” as were previously presented to the USPTO. 35 U.S.C. §325(d). The Board applies a two-part inquiry:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 7-8 (Feb. 13, 2020) (precedential). As to the second part of the framework, the Board elaborated: “If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.” *Id.*, 9.

In making these determinations, the Board considers the following non-exclusive factors:

(a) the similarities and material differences between the asserted art and the prior art involved during examination;

(b) the cumulative nature of the asserted art and the prior art evaluated during examination;

(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

(d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;

(e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Id. at 9 n.10 (citing *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8, 17-18 (Dec. 15, 2017) (precedential as to § III.C.5, first paragraph)).

As discussed above, Bandy is expressly listed on the '307 Patent among the "References Cited." EX-1001, p.2. During prosecution, the examiner initialed the applicant's Information Disclosure Statement corresponding to Bandy (and did not draw a line through Bandy), indicating that she considered the reference. '307 FH, 383. The IDS form the examiner initialed specifically instructs "EXAMINER: Initial

if reference considered.... Draw line through citation if not in conformance and not considered.” *Id.* Thus, Bandy was “considered” by the examiner during prosecution.

In addition, the application from which Bandy issued is discussed and incorporated by reference in the specification of the '307 Patent four separate times. '307 Patent, 5:7-11 (“The underlying principles of the technology are described in more detail in U.S. patent application Ser No. 10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ that is incorporated herein by reference in its entirety.”); *id.*, 5:16-19 (“As it is made clear in U.S. patent application Ser No. 10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ any modified wireless device can be used.”); *id.*, 9:28-33 (“The principles and operation of the RFID tag having a sensor input is described in detail in U.S. patent application Ser No. 10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ which is incorporated herein by reference in its entirety.”); *id.*, 14:52-58 (“The type of sensor ID is matched with data tables and processing instructions that can be downloaded directly into the cellphone. See U.S. patent application Ser No. 10/761,362, filed Jan. 22, 2004, entitled, ‘Radio Frequency Identification Based (RFID) Sensor Networks,’ which is incorporated herein by reference in its entirety.”). The examiner was thus well aware of the disclosures of Bandy relevant to the '307 Patent.

Although Petitioner summarily argues that “while Bandy...was cited, it was not applied or discussed by the Examiner during prosecution” (Petition, 70), there can be no credible dispute that Bandy was before the examiner. As the Board has explained, previously presented art includes “art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent.” *Advanced Bionics*, IPR2019-01469, Paper 6, 7-8; *see also Risen (Suzhou) Pharma Tech Co. v. Alzheon, Inc.*, IPR2022-01200, Paper 14, 23 (Jan. 9, 2023) (denying institution under §325(d), noting that “references considered in an IDS are considered presented to the Office”); *Vital Connect, Inc. v. Bardy Diagnostics, Inc.*, IPR2023-00381, Paper 7, 14 (July 11, 2023) (denying institution under §325(d), noting that a reference was previously presented where it was “listed in an information disclosure statement (IDS),” “appears on the face of the ... patent” and “[t]he examiner also certified that he considered all references listed in the IDS ‘except where lined through,’ and [the reference] [was] not lined through.”).

While Petitioner gives short shrift to the fact that Bandy was cited during prosecution, it completely ignores that Lovejoy, relied on in Ground 3 for purportedly disclosing the claimed “geolocation means,” (Petition, 60-61), is also cited on the face of the ’307 Patent, (EX-1001, p.2), is explicitly discussed and incorporated by reference in the ’307 Patent, (’307 Pat., 6:10-14, 17:21-24, 18:38-

43), and was disclosed in an Information Disclosure Statement, which was initialed by the examiner, ('307 FH, 291).

Because Petitioner relies on a reference that (1) is not prior art and (2) was considered by the examiner, for Grounds 1 and 2, and has fatal flaws in Ground 3 (including relying on a reference that was considered by the examiner), as described above, the Board should exercise its discretion and decline institution under §325(d).

VI. CONCLUSION

For the reasons set forth above, Petitioner cannot meet its burden of establishing that at least one claim is unpatentable as obvious over the cited art, and the Board should exercise its discretion to deny institution. Patent Owner respectfully requests that the Board deny institution of this Petition for all challenged claims of the '307 Patent.

Dated: April 25, 2024

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CERTIFICATE OF WORD COUNT UNDER 37 CFR § 42.24(d)

Under 37 C.F.R. § 42.24(d), the undersigned certifies that the word count for this Patent Owner's Preliminary Response to the Petition for *inter partes* review totals 9,200 excluding the parts exempted by 37 C.F.R. § 42.24(a). The word count was made using the built-in word count function in the Microsoft® Word software used to prepare this document.

Dated: April 25, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that I caused to be served a true and correct copy of the foregoing: PATENT OWNER'S PRELIMINARY RESPONSE and accompanying exhibits by email to the electronic service addresses for Petitioner on the date indicated below:

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