

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 SUR-REPLY TO PETITIONER'S REPLY

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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.)
2007	Defendants' Reply Claim Construction Brief, <i>Gentag, Inc. v. Abbott Laboratories</i> , Case No. 1:23-cv-310 (N.D. Ill. May 24, 2024), ECF No. 87
2008	Nokia 1100 User Guide
2009	Declaration of Steve Warren, Ph.D.
2010	Curriculum Vitae of Steve Warren, Ph.D.
2011	Transcript of Sept. 26, 2024 Deposition of Dr. Majid Sarrafzadeh
2012	Nokia 1100 full phone specifications (https://www.gsmarena.com/nokia_1100-512.php)

PATENT OWNER'S EXHIBITS	
Exhibit No.	Description
2013	Robert Triggs, <i>A little history of Bluetooth</i> , dated Sept. 1, 2023 (https://www.androidauthority.com/history-bluetooth-explained-846345/)
2014	Len Ott, <i>The Evolution of Bluetooth In Wireless Medical Devices</i> , Socket Mobile (July 2010)
2015	Wikipedia, <i>Near-field communication</i> , last accessed Oct. 7, 2024
2016	Nathan Lawrentschuk & Damien M. Bolton, SYSTEMATIC REVIEW, <i>Mobile phone interference with medical equipment and its clinical relevance: a systematic review</i> , Vol. 181, No. 3 (Aug. 2004)
2017	A.A. Klein & G. N. Djaiani, JAPI, <i>Mobile Phones in the hospital – past, present and future</i> , Anesthesia (2003)
2018	ME YEOLEKAR & A SHARMA, <i>Use of Mobile Phones in ICU – Why Not Ban?</i> , Vol. 51 (Apr. 2004)
2019	Hiroshi Furuhashi, JIKEI UNIV. SCHOOL OF MEDICINE TOKYO, JP, <i>Electromagnetic Interferences of Electric Medical Equipment from hand-held radiocommunication Equipment</i>
2020	P Gilligan, et al., THE BRITISH JOURNAL OF RADIOLOGY, <i>GSM cell phones can interfere with ionizing radiation dose monitoring equipment</i> (2000)
2021	Werner E. Irnich & Rolf Tobisch, <i>Mobile Phones in Hospitals</i>
2022	Greg Knell, <i>SureCall Cell Phone Signal Booster Blog</i> (Feb. 2022), https://surecall.com/surecall-cell-phone-signal-booster-blog/cellular-phone-frequency-bands-guide-2022/
2023	U.S. Patent Publication 2016/0026767A1
2024	Transcript of Feb. 19, 2025 Deposition of Dr. Majid Sarrafzadeh

I. INTRODUCTION

Altivera, LLC (“Patent Owner” or “PO”) responds to the new arguments and evidence offered in Petitioner’s Reply (“Reply”). As Petitioner has failed to show that Bandy qualifies as prior art “by another,” and has not shown that any prior art anticipates or renders obvious the claims at issue, the Board should confirm the patentability of all challenged claims.

II. CLAIM CONSTRUCTION

A. **The Board found claim 1 requires that the unique sensor ID is associated with the unique wireless device ID**

Petitioner argues against Patent Owner’s proposed construction of “the remote server authenticates said unique sensor ID associated with said unique wireless device ID”—and those arguments are addressed below—but fails to show how the purported prior art meets the limitation under any proposed construction. Indeed, according to the guidance already provided by the Board, the claim requires that “the unique sensor ID is *associated with* the unique wireless device ID.” Inst. Dec. 10 (emphasis added). Petitioner also concedes that the “associated with” claim language “requires that the IDs be *related or connected* in some way.” Reply, 2 (emphasis added) (citing Ex. 1033, ¶14). Yet, Petitioner points to nothing in Beck or Bandy (or any other prior art) establishing that the unique sensor ID and unique wireless ID are “related or connected” in any way. Therefore, even if the Board does not adopt

Patent Owner's construction in full, Petitioner cannot show that the claims are unpatentable.

Not finding any association between the sensor ID and wireless ID in the prior art, Petitioner incorrectly posits that simply using a wireless device to read a serial number from a medical device shows the claimed association. *See* Reply, 14, 23-24. Petitioner effectively argues that merely because the unique ID of the medical device is *read* by a wireless device, the unique ID of the medical device is “associated with” the device that reads it.

The Board should not consider Petitioner's argument, as it is a new position, raised for the first time on reply; nowhere in the Petition did Petitioner map the “associated” limitation to anything in the prior art. Regardless, under Petitioner's new theory, each piece of data sent in every transmission to or from a networked device would have been “associated with” the address of that networked device. The claims of the '307 Patent clearly require more.

If “associated” were construed as broadly as Petitioner proposes, the limitation would be meaningless, i.e., Petitioner's proposed construction would amount to “wherein the remote server authenticates said unique sensor ID ~~associated with said unique wireless device ID~~ and communicates to said wireless device....” This is akin to saying that every call you receive on your cell phone somehow causes you to be “associated with” the caller. That defies common sense and finds no

support in the intrinsic record. As such, Petitioner's new proposal runs afoul of the canon that "[a]n interpretation rendering some portion of the claim language 'void, meaningless, or superfluous' is 'highly disfavored.'" *Qualcomm Inc. v. Network Sys. Techs., LLC*, No. IPR2024-00355, 2024 WL 3029552, at *11 (P.T.A.B. June 17, 2024) (quoting *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 810 (Fed. Cir. 2021)).

B. The Board should adopt Patent Owner's claim construction

As detailed in the POR, and supported by the declaration of Dr. Warren, the phrase "the remote server authenticates said unique sensor ID associated with said unique wireless device ID" should be construed as "the remote server authenticates the unique sensor ID and the associated unique wireless device ID." POR, 18. While Petitioner summarily relegates Dr. Warren's opinions to "conclusory unsupported assertions" (Reply, 3), Dr. Warren systematically walked through the intrinsic evidence from the perspective of a POSITA. POR, 18-21; Ex. 2009 ("Warren") ¶¶54-59. Nothing in Petitioner's Reply properly rebuts his opinions.

A POSITA would have understood that, because the claim requires an *association* between the unique sensor ID and the unique wireless device ID, the authentication of the sensor ID necessarily requires the unique wireless ID to be part of the authentication process. Warren ¶54. Indeed, if the unique wireless ID was not part of the authentication process, the claim language requiring an association between the unique wireless device ID and the unique sensor ID would be rendered

meaningless. Warren ¶57. That is why, as even Petitioner concedes, the prosecution history indicates that *both* the unique sensor ID and unique wireless ID are transmitted to the remote server. POR, 20-21; Warren ¶59; Reply, 2-3.

Petitioner's apparent claim-differentiation argument is a red herring. Petitioner argues that because a separate independent claim, claim 18, recites authentication of "said unique sensor tag ID and said unique wireless device ID," claim 1, which uses slightly different language, cannot be construed to require authentication of the wireless device ID associated with the sensor ID. Reply, 1. Not so, as "[t]wo independent claims with different terminology can define the exact same subject matter." *Kranos Corp. v. Riddell, Inc.*, No. IPR2016-01650, 2018 WL 1037395, at *6 (P.T.A.B. Feb. 21, 2018) (citing *Hormone Rsch. Found. v. Genentech, Inc.*, 904 F.2d 1558, 1567 n.15 (Fed. Cir. 1990) ("It is not unusual that separate claims may define the invention using different terminology, especially where (as here) independent claims are involved.")). The mere fact that Claims 1 and 18—both independent claims that are not related to each other and include numerous distinct limitations—recite differing authentication language would not have informed a POSITA that claim 1 does not require authentication of the unique

wireless device ID. On the contrary, Patent Owner's proposed construction reflects how a POSITA would have understood this limitation.¹

III. PETITIONER FAILS TO ESTABLISH THAT THE CLAIMS WOULD HAVE BEEN OBVIOUS OVER BECK IN VIEW OF HELLER AND LOVEJOY

A. Petitioner fails to establish a motivation to combine

In its Reply, Petitioner regurgitates its arguments regarding motivation to combine, without addressing the fatal deficiencies raised in the Patent Owner's Response. For example, Dr. Sarrafzadeh failed to provide any details about what would have been included or not included in the purported combination. POR, 53 (citing Warren ¶143; Ex. 2011, 87:23-90:25, 95:15-96:17). Nor does Petitioner address the physical incompatibility of combining Heller's on-skin sensor unit with Beck's glucometer, much less articulate why a POSITA would have combined these disparate devices in a way that meets the limitations of the challenged claims.

¹ While Petitioner proposed a construction that required communication to the wireless device to be "in response to the authentication," Petitioner now says the Board "need not adopt Petitioner's construction to resolve any disputes." Reply, 3. As stated in the Patent Owner's Response, PO agrees that whether communication is "in response to" authentication is irrelevant for the purposes of this IPR. POR, 21-22.

Further, Petitioner fails to address the central argument raised by PO: that “Petitioner conflates a *medical device* (a piece of equipment, such as a glucose meter or EKG machine) and the *sensor* used with that medical device (such as a test strip for a glucose meter or electrodes for an EKG machine).” POR, 2, 40-41 (“The distinction between sensor and device is critically important in the analysis of the (lack of) motivation to combine Beck and Heller.”).

The problems with Petitioner's purported combination grew based on the deposition testimony of Dr. Sarrafzadeh. Dr. Warren identified Beck's glucose meter (relied on by Petitioner for its purported combination, Petition, 41-42) as a medical device that uses separate sensors (test strips). Warren ¶112. Dr. Sarrafzadeh was unable to rebut this opinion, because “where you exactly draw the line [as to whether a test strip is a sensor] is not something that I have opined on.” Ex. 2024, 59:16-22. In fact, Dr. Sarrafzadeh was unable to identify a sensor in the glucose meter. *Id.*, 59:23-60:5 (“Q. So what is the sensor in a glucose meter?... [A.] Again, there is sensing being performed in a glucose meter. That information is then transformed into a number. Where do you actually draw the box around what is and is not a sensor is not something that I've opined on.”).

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. Petitioner's expert has opined only that the serial number of the glucose meter tells you the type of strip to

purchase for that medical device. *Id.*, 61:8-10 (“What the serial number tells you is which strip to buy or if you already have a strip[,] have you bought the right strip or not.”); *see also id.* at 93:25-94:12 (“[W]hen you know the medical device, you know the type of the strips that is to be used.”). A serial number identifying the *type* of strip, however, is not the same as a unique identifier for a particular, individual strip (sensor). Nor could Petitioner’s expert explain how the serial number of the glucose meter could determine which particular strip was used in the meter. *Id.* at 64:20-66:16 (refusing to answer the question because he didn’t know “if anybody would be interested in that”); *see also id.* at 95:3-96:12 (confirming that he has not opined on whether you can determine the serial number of leads/electrodes from the serial number of the EKG machine with which the leads/electrodes are used). Claim 1 of the ’307 Patent, conversely, requires authentication of a unique *sensor ID*.

Heller also discloses two components, an “on-skin sensor unit,” and a “receiver/display unit.” Ex. 1016, 86:6-10; *see also* Warren ¶117. Petitioner does not explain whether a POSITA would have been motivated to combine the references by replacing Beck’s test strips with Heller’s on-skin sensor unit, or Beck’s glucometer with Heller’s receiver/display unit, or something else. And Dr. Sarrafzadeh could not articulate which specific position, if any, Petitioner is purportedly taking. POR, 53 (citing Warren ¶143; Ex. 2011, 87:23-90:25, 95:15-96:17). Nor could he explain how to distinguish between a medical device and a

sensor. Ex. 2024, 60:1-5; *id.* at 67:18-22 (“I don’t believe I have opined on [whether EKG lead electrodes are sensors] or drawn a box where the sensing will start and end.”). In sum, Petitioner has failed to meet its burden, essentially throwing disparate references at the wall to see what sticks. It has not articulated a specific motivation to combine the cited references, nor has it demonstrated how combining those references would arrive at the challenged claims.

Regarding the motivation to combine Beck and Lovejoy, Petitioner again avoids Patent Owner’s arguments and resorts to impermissible hindsight, citing the ’307 Patent and an unrelated FCC Report. Reply, 8-9. As pointed out in the Patent Owner’s Response, and not addressed by Petitioner in its Reply, “a POSITA would have understood that patient location is obviously known” under the asserted combination. POR, 44. Thus, there would have been no need for geolocation of the patient (or the medical device monitoring the patient), and no benefit to geolocating the client computing device.

B. Petitioner fails to establish that the combination renders obvious a “unique identification ID number”

Petitioner now takes a new (and unsupported) view of the “unique identification ID number.” In its Petition, Petitioner asserted that this limitation was met by a “serial number” or “identification code” for the medical devices disclosed in Beck. Petition, 51. In response, Patent Owner demonstrated that the limitation requires a unique identification ID number for the “diagnostic sensor unit”—not for

a broader medical device. POR, 54-55. Faced with its failure of proof, Petitioner now misrepresents the claim language, asserting “the claim does not require the ID to separately identify any particular component of the claimed system....” Reply, 11; *see also id.*, 10 (disputing that “the claims require the unique identification ID number to identify a ‘sensor unit’.”). This is plainly incorrect. The claim requires the diagnostic *sensor* unit to have a unique identification ID number. Ex. 1001, claim 1 (“A radio frequency (RF) addressable diagnostic sensor unit comprising: ... a unique identification ID number”). Petitioner’s expert confirmed as much. Ex. 2024, 80:22-81:3.

Instead of addressing the plain language of the claim, Petitioner argues that the “unique identification ID number” need not actually be unique, but only needs to identify the type of sensor. Reply, 10. Dr. Sarrafzadeh doubled down on this incorrect view, asserting that even if two glucose meters had the same identifying number “123,” the “123” number would still be “unique.” Ex. 2024, 81:19-82:5. This is because, according to him, “the whole purpose is what kind of software you are delivering to these systems.” *Id.* That interpretation contradicts the plain meaning of “unique” and is not supported by the intrinsic evidence.

While Petitioner asserts that Patent Owner “mischaracterizes” the ’307 Patent as requiring the sensor to have a unique identifier (Reply, 11), it ignores the fact that each sensor having a unique identifier is precisely what allows the proper

identification, retrieval, and downloading of the claimed software. Ex. 1001, 4:67-5:2; claim 1 (“software related to the unique sensor ID”). Indeed, it is *Petitioner* that mischaracterizes the '307 Patent as “matching the ID to a ‘type’ or ‘class’ of sensor or ‘test.’” Reply, 11-12. And Petitioner has not demonstrated that the software downloaded for two sensor units of the same model would necessarily be the same.

Petitioner tries to sow confusion by distinguishing between a sensor unit and a sensor element. Reply, 11. But this is an irrelevant diversion, as medical devices are *neither* sensor units *nor* sensor elements. As detailed by Dr. Warren, “a Beck medical device is a capable, stand-alone unit with user I/O capabilities, display mechanisms, standard interface connectivity with the outside world (e.g., a network), etc.” Warren ¶122. A medical device may include one or more sensor units, each containing one or more sensors. For example, an EKG machine includes leads that are sensors. *Id.*, ¶147. There each sensor would be contained in a sensor unit. In that situation, however, the serial number in Beck identifies the entire device (the EKG machine), not any individual sensor or sensor unit (the leads). *Id.*, ¶¶145-47; *see also* Ex. 1007, [0055] (reciting techniques for identifying a “medical device,” such as using the “serial numbers retrieved from the medical device.”). This makes sense in the context of Beck, which is directed to remote access of “medical devices,” and has no disclosure of remote access to sensors or sensor units. Ex. 1007, Abstract. In fact, Beck does not include any reference to “sensor” or “sensors.”

Petitioner further attempts to obfuscate the issue by asserting that “Beck’s serial number, which identifies the ‘type of medical device’ (e.g., a glucose meter), also identifies every component of that meter.” Reply, 11. But such a serial number would not, and cannot, uniquely identify every component of the device. For example, as Dr. Warren explained, changing the detachable leads of an EKG machine would not change the serial number of the EKG machine. Warren ¶147. The EKG machine simply does not know to which leads or electrodes it is attached. Similarly, a glucometer’s serial number does not uniquely identify the particular test strip used with that glucometer. And Petitioner’s expert, Dr. Sarrafzadeh, could not explain how one could identify an individual sensor based on the serial number of a medical device. Ex. 2024, 64:20-66:1, 95:3-96:12.

As an analogy, the vehicle identification number (VIN) is a unique identifier for a car. But that VIN does not uniquely identify all components of that car. For example, the VIN does not tell you the serial number of the tires or brake components on the car, which can be replaced without changing the VIN.

That the claims require a specific association is not surprising, given the invention is designed for use in intensely personal applications (e.g., monitoring an individual’s medical conditions). Thus, the data sent to and received from the sensor are not commensurate with the more generic information about the “type” of sensor.

C. Petitioner fails to establish that the combination renders obvious a wireless device having a unique ID

Petitioner ignores another point raised by Patent Owner in the POR: even if network addresses are unique—and in some cases they are not, as with internal IP addresses—Petitioner has failed to show that either Beck or Heller discloses a unique sensor ID that is associated with a network address. POR, 56-57. *See supra*, Section II.A.

D. Petitioner fails to establish that the combination renders obvious the authentication limitation

Petitioner argues that Beck satisfies the authentication limitation because “the client computing device (which includes a network address) retrieves ‘serial numbers’ from the medical device.” Reply, 14. Again, Petitioner falls into the same trap, failing to identify a unique sensor ID *associated with a unique wireless device ID*, as Beck does not disclose that a remote server receives a unique wireless device ID. Warren ¶150; *see also supra*, Section II.A. This is fatal to Petitioner’s obviousness argument.

Having failed to address this gap in Beck’s disclosure in its Petition, Petitioner raises another new argument for the first time in reply. Reply, 14-15. The Petition argued only that authentication used “the serial number of the medical device.” Petition, 62. Petitioner now tries to expand that argument, citing—for the first time—a different section of Beck to argue that Beck discloses authenticating the

wireless device ID. Reply, 15 (citing Ex. 1007, [0051]). That untimely argument should be ignored.

If the Board considers Petitioner's new argument, the newly cited section of Beck still does not disclose the limitation: "the remote server authenticates said unique sensor ID associated with said unique wireless device ID." Paragraph 51 of Beck includes examples of "authentication information," including "client computing device address," but does not disclose associating that address with a unique sensor ID for authentication.

E. Petitioner fails to establish that the combination renders obvious the "geolocation means"

Petitioner argues that the claimed geolocation means would have been obvious in view of Beck's disclosure of an Internet-enabled cellular phone, in combination with the geolocation disclosed by Lovejoy. Reply, 15. A POSITA would not have been motivated to combine these references. Warren ¶¶151-52. Regardless, Petitioner fails to show that the "internet cellular phone" of Beck necessarily included the "geolocation means" of the '307 Patent. Warren ¶¶153-56. Nor does Petitioner point to any disclosure in Lovejoy of a *wireless device* having a geolocation means. Warren ¶156. This limitation is thus not met.

F. Petitioner fails to establish that the combination renders obvious a “sensor interface having an analog to digital converter”

In its Petition, Petitioner argued that “Beck alone or in view of Heller” renders obvious a “sensor interface having an analog to digital converter.” Petition, 51, 53. Petitioner now appears to backtrack on its arguments relating to Beck alone, primarily focusing on Heller for this limitation, and otherwise generically asserting that “A/D converters were conventional years before the ’307 patent.” Reply, 17. Petitioner, however, has failed to establish a motivation to combine Beck and Heller, as discussed above.

With respect to Beck, Petitioner tellingly does not dispute that ways exist to calculate a value from analog sensors without first converting them to digital values. Reply, 17-18. Instead, Petitioner improperly tries to shift the burden to Patent Owner to identify a “counterexample of accomplishing Beck’s measurements without an A/D converter” (*id.*, 18).

G. Petitioner fails to establish that the dependent claims would have been obvious

Finally, as Petitioner has failed to establish that claim 1 is not patentable, it likewise cannot prevail on dependent claims 2, 3, 5, 9, and 10. Warren ¶161.

IV. PETITIONER FAILS TO ESTABLISH THAT THE CLAIMS WOULD HAVE BEEN OBVIOUS OVER BANDY ALONE OR IN VIEW OF HELLER

A. Bandy is not prior art

Petitioner’s entire basis for asserting Bandy is “by another” is asserting that

Dr. Bandy contributed “the binary tree traversal protocol,” which allowed interrogation of tags to “singulate the tag you want to be interrogated.” Reply, 21. This argument has at least three fatal flaws.

First, the '307 Patent does not claim a particular communication protocol, much less a binary tree traversal protocol. In fact, a binary tree traversal protocol—just one of multiple protocols disclosed in the Bandy '803 patent—is not even mentioned in the '307 Patent. Thus, to the extent Dr. Bandy contributed a binary tree traversal protocol to the disclosure of the '803 patent, it is irrelevant to the claims of the '307 Patent. (Further, the binary tree traversal protocol was known in the art well before the application for the '803 patent was filed.) Tellingly, Petitioner's expert offered no opinion regarding whether the binary tree traversal protocol in the '803 patent was “based on some known technique” and did not opine “on the details of the binary tree methodology that Dr. Bandy uses.” Ex. 2024, 25:6-9, 35:12-36:7 (unable to explain how binary tree traversal would work in the context of an interrogation protocol).

Indeed, Petitioner's expert admitted that he “has not opined ... in [his] report” on what considerations would go into determining what type of interrogation protocol to use, much less whether the particular binary tree traversal protocol would be used in the '307 Patent. Ex. 2024, 15:24-16:4; *see also id.* at 21:4-7 (conceding that “I don't believe I have opined on” whether the physical distance between the

reader and tag would be considered when designing an interrogation protocol). In fact, he conceded that the state of the art included an existing protocol: “Dr. Bandy describes that the state of the art could interrogate ‘a few tags per second’ but that with his contribution ‘we increased that to 1,000 tags per second.’” Ex. 1033, ¶ 22 (citing Ex. 1030, 21:19-22:2); Ex. 2024, 18:10-18.

Petitioner's expert did not opine that the existing state-of-the-art protocol would not have worked for the '307 Patent. Ex. 2024, at 24:3-9 (“Q. So you don't know whether there was an interrogation protocol not invented by Dr. Bandy that could interrogate a few tags per second prior to Dr. Bandy's contribution to the Bandy reference; is that right? A. What I can say is that I have not opined on all possible interrogation protocols that existed before.”). Nor has he offered any opinion that faster interrogation is valuable when you only have one tag. *Id.* at 20:2-9 (pointing to portions of his declaration but failing to identify any opinions on this issue). To the contrary, where there is only a small number of tags (or one tag), no need exists to employ a binary tree traversal protocol. *See id.* at 30:15-32:24 (providing a synoptic analysis that a binary tree search of 1024 items would take 10 steps, as compared with 1024 steps for a linear search, but that a binary tree search of 3 items would be around 2 or 1.5 steps compared with 3 steps for a linear search).

Second, as demonstrated by the Lovejoy patent (on which Dr. Peeters, but not Dr. Bandy, is a named inventor), which pre-dates the filing of the application for the

'803 patent by several years, and which is incorporated by reference in the '307 Patent, Dr. Peeters was already familiar with techniques for wireless interrogation of tags to identify a particular tag. *See* Ex. 1009, Fig. 5, 10:44-11:12 (“In this method, the interrogator sends out a pulses [sic] that alerts all the RR-tags it is responsible for and a second pulse which causes an individual RR-tag to respond.”).

Third, identifying a particular tag by its unique ID from a sea of tags—the “interrogation” that the “binary tree traversal protocol” purportedly performs—is unrelated to the claims of the '307 Patent. And, in fact, it would have been useless for the invention of the '307 Patent. The '307 Patent discloses, and claims, a system that reads the unique ID for a given (unique) physical sensor unit. *See, e.g.,* Ex. 1001, claim 1 (“wherein the wireless device communicates with the RF addressable sensor interface to **obtain** the ID and sensor data”) (emphasis added). Petitioner's expert could not identify a single example in the '307 Patent where a wireless sensor interacted with more than one RF tag. Ex. 2024, 98:8-100:3 (pointing only to the patent's general disclaimer that it was not limited to the disclosed embodiments and otherwise vaguely alluding to the “patent as a whole”). Thus, a “binary tree traversal protocol” would provide no value in the system of the '307 patent.

Instead, the “binary tree traversal protocol” would be useful in the *inverse situation*, where the ID of a tag with which one wants to communicate is already known, and the goal is to find that tag among a number of tags. *See, e.g.,* Ex. 1005,

2:43-44 (“The wireless sensor reader then ***isolates*** an individual RF addressable sensor.”) (emphasis added), 15:32-35 (“the RFID tag processor 356 ***isolates*** an RF addressable sensor 110 from the population 102 using a conventional general read protocol Such as binary tree traversal”) (emphasis added); Ex. 2024, 15:10-12 (“[A]s is stated in the patent by Bandy, the Bandy protocol is ... specifically to ***isolate*** a tag.”) (emphasis added).

This is a fundamental difference. The binary tree traversal protocol is used to communicate with a number of tags in a sensor network. *See, e.g.*, Ex. 1005, 5:6-9 (“Wireless sensor reader 140 includes logic to ***interrogate the population*** of RF addressable sensors 102 and logic to read sensor data and RFID tag data transmitted by the RF addressable sensors 110.”) (emphasis added). The claims of the '307 Patent, conversely, are directed to a system that reads the unique ID of a specific sensor.

Viewed under the framework of *Duncan Parking Techs., Inc. v. IPS Grp., Inc.*, 914 F.3d 1347, 1358 (Fed. Cir. 2019), cited by Petitioner (Reply, 19), Petitioner has problems with each step.

Petitioner summarizes step 1 as “the Board must (1) determine what portions of Bandy were relied on as prior art,....” Reply, 19. But Petitioner omits that the Board need not only determine what portions were relied on, but what portions were relied on “to anticipate the claim limitations at issue.” *Duncan Parking Techs.*, 914

F.3d at 1358.

Petitioner asserts it is relying on “various passages about interrogation” from the '803 patent for limitation [1k] of the '307 Patent. Reply, 19. Limitation [1k] recites, “wherein the wireless device communicates with the RF addressable sensor interface to obtain the ID and sensor data.” Petition, 29. This limitation has nothing to do with an interrogation protocol, which involves isolating a tag, not receiving data from it. Dr. Sarrafzadeh understood this. When asked “what does it mean to interrogate a tag,” Dr. Sarrafzadeh responded, “for example, as is stated in the patent by Bandy, the Bandy protocol is as [sic] specifically to isolate a tag.” Ex. 2024, 15:5-17.

And the Petition does not cite “various passages about interrogation,” but only a single quote, in a string of cites: “RFID tag processor 356 includes logic to interrogate and read RFID tag information from RF addressable sensors.” That quote describes two things: “logic to interrogate” and “read RFID tag information.” Of these, only reading RFID tag information has anything to do with limitation [1k]. And the “binary tree traversal protocol,” included, but not quoted, in a larger cite by Petitioner, (Petition, 29 (citing “Bandy at 16:41-51”), has nothing to do with communicating with the RF addressable sensor interface to obtain the ID and sensor data, as recited in limitation [1k]. Further, the cited section of the '803 patent indicates only that this particular protocol is used in “an embodiment of the present

invention,” Ex. 1005, 16:45-47, and even Dr. Sarrafzadeh recognized that “state of the art” protocols existed prior to the Bandy’s purported contribution, Ex. 2024, 24:3-14.

Petitioner’s reliance on Bandy’s purported contribution for limitation [1j] is even more specious. Limitation [1j] recites “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.” Petition, 23. Dr. Bandy’s purported contribution to this limitation is an “air interface protocol.” Reply, 20. Petitioner provides no evidence that Dr. Bandy contributed a generic “air interface protocol.” As discussed above, Dr. Bandy’s purported contribution was limited to a “binary tree traversal protocol,” which is a type of “interrogation protocol.” Nothing in limitation [1j] requires such an interrogation protocol.

Petitioner, therefore, did not rely on an interrogation protocol generally, or the binary tree traversal protocol in particular, to demonstrate that limitations [1k], [1j], or any other limitation were met by the Bandy reference.

Even if Petitioner had properly relied on an interrogation protocol for limitations [1k] or [1j], it still has a problem with the second step of *Duncan*. As discussed above, a “state-of-the-art” protocol existed that was not contributed by Dr.

Bandy. And Dr. Sarrafzadeh had no opinion on whether that protocol would have worked for the '307 Patent. Therefore, the only purported contribution of Dr. Bandy would have been the reference to the “binary tree traversal protocol,” mentioned once in the sections of the '803 patent cited by Petitioner for meeting limitations [1k] and [1j]. Petition, 29. Therefore, to the extent Dr. Bandy contributed anything to the portions relied on by Petitioner, the “degree to which those portions were conceived” by Dr. Bandy is extremely low, and any contributions he made are irrelevant to the '307 patent claims.

For step 3 of *Duncan*, Dr. Bandy's contribution of the “binary tree traversal protocol,” not claimed by (or useful in) the '307 Patent, when measured against the full disclosure of the '803 patent, is not enough to render him a joint inventor on those portions of the '803 patent. *Duncan Parking Techs.*, 914 F.3d at 1358. According to Petitioner, Dr. Bandy's contribution is significant enough because “it allowed interrogation of tags to singulate the tag you want to be interrogated.” Reply, 21 (internal quotation marks omitted). The “binary tree traversal protocol” is, however, only an example of a protocol used with one embodiment of the '803 patent. Ex. 1005, 16:45-47. When measured against the full disclosure relied on by Petitioner, that is not a significant enough contribution for Dr. Bandy to be a joint inventor on the applied portions of the '803 patent. Further, as discussed above, the system of the '307 Patent does not “singulate” a tag among a group of tags, nor does

it have any reason to do so.

B. Even if Bandy were prior art (it is not), Petitioner fails to establish that Bandy renders obvious the “unique ID” of the remote wireless device

As with Ground 3, Petitioner takes the improperly broad view that simply reading a wireless sensor having a wireless device creates the claimed association between the wireless device ID and the sensor ID. Reply, 23. This is wrong. *See* Section II.A. Petitioner misapplies *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1339 (Fed. Cir. 2020) in making its argument. In *Uber Techs.*, a specification's silence about the *implementation* of a particular limitation with a limited number of known implementations may suggest a POSITA was capable of selecting between those known methods. *Id.* Here, the issue is not how to implement the claimed association but the scope of the limitation itself. And, as described in Section II.A, simply using a network address to receive or send transmissions does not create the claimed association.

C. Even if Bandy were prior art (it is not), Petitioner fails to establish that Bandy renders obvious the authentication limitation

Petitioner paints this as a claim-construction issue. Reply, 24 (“PO argues that Bandy does not disclose this limitation under its flawed construction.”). But Petitioner inaccurately argues that “PO does not dispute the limitation under the plain meaning of the claim, which does not require authentication of the wireless device ID.” *Id.* As described in the POR, the authentication limitation “requires the

sensor ID to be associated with the wireless device ID.” POR, 32-33. As recognized by the Board, even if the wireless device ID itself need not be authenticated, the claim still requires “that the unique sensor ID is associated with the unique wireless device ID.” Inst. Dec. 10.

As disclosed by Bandy, however—and relied on by Petitioner—“only the ID of the RFID sensor is necessary” for downloading processing and analysis information from a remote location. Ex. 1005, 10:37-41. To the extent Petitioner is arguing, as with Ground 3, that there is an association simply because data is sent and received from a particular network address, that argument fails for at least the reasons explained in Section II.A.

D. Petitioner fails to establish that the dependent claims are obvious

Finally, 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, 3 (under Ground 2), 5, 9, and 10. Warren ¶101.

V. CONCLUSION

For the reasons set forth above, Petitioner has not met its burden of demonstrating the unpatentability of any challenged claim. Accordingly, Patent Owner requests the Board confirm the patentability of claims 1, 2, 3, 5, 9, and 10 of the '307 Patent.

Dated: March 4, 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 Response to the Petition for *inter partes* review totals 5,495 words 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.

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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 SUR-REPLY TO PETITIONER'S REPLY and Exhibits 2023-2024 by email to the electronic service addresses for Petitioner on the date indicated below:

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