

Filed on behalf of: Abbott Laboratories and Abbott Diabetes Care Inc.

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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 IPR2024-00425
Patent 7,969,307 B2

PETITIONER'S REPLY

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1003	Declaration of Majid Sarrafzadeh (“Sarrafzadeh Decl.”)
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1005	U.S. Patent No. 7,148,803 B2 (“Bandy”)
1006	U.S. Utility Patent Application Transmittal for U.S. Patent No. 7,148,803 B2 (“As-Filed Bandy Application”)
1007	U.S. Patent Application Publication No. US 2002/0178126 A1 (“Beck”)
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1009	U.S. Patent No. 6,031,454 (“Lovejoy”)
1010	Assignment of U.S. Patent Application No. 10/761,362 from Peeters to Altivera L.L.C., executed Dec. 2, 2005
1011	Assignment of U.S. Patent Application No. 10/761,362 from Peeters to Altivera, LLC, executed Feb. 10, 2006
1012	Assignment of U.S. Patent Application No. 10/761,362 from Bandy to Symbol Technologies, Inc., executed Feb. 11, 2006
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1014	Gentag’s Response to Abbott’s Initial Invalidity Contentions: Response to Exhibit 1 Regarding Invalidity Based on U.S. Patent No. 7,148,803 “Radio frequency identification (RFID) based sensor networks” (“Bandy”), <i>Gentag, Inc. v. Abbott Laboratories</i> , No. 1:23-cv-00310 (N.D. Ill. Aug. 15, 2023) (“Gentag Invalidity Resp.”)
1015	U.S. Patent No. 6,987,965 B2 (“Ng”)

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I. Introduction

The Petition showed that combinations based on Bandy and Beck render obvious the challenged claims of the '307 patent. In its Patent Owner Response ("POR"), Patent Owner ("PO") makes scattershot arguments about validity based on an overly narrow claim construction, and alleges non-obvious by attacking strawmen combinations. And its arguments for why Bandy is not "by another," and thus not prior art, were refuted by Dr. Bandy's deposition testimony.

The Board should find the challenged claims unpatentable over Grounds 1-3.

II. The Board should reject PO's narrow construction.

PO proposes to construe "the remote server authenticates said unique sensor ID associated with said unique wireless device ID" as requiring authentication of "the unique sensor ID *and* the associated unique wireless device ID." POR 18. The Board correctly rejected PO's implicit construction at institution. I.D. 11.

Claim 18 shows when the inventor intended authentication of both IDs, he explicitly stated this requirement. '307 patent 21:8-9 ("authenticates remotely said unique sensor tag ID *and* said unique wireless device ID"). Claim 1, in contrast, says nothing about authenticating the wireless device ID. *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358-59 (Fed. Cir. 2016) (error to construe a claim to require a limitation where "the patent contains other claims...that specifically recite" the limitation).

PO concedes that the plain meaning is “the remote server authenticates the unique sensor ID and that such unique sensor ID is associated with a unique wireless device ID.” POR 18; Warren ¶55. That ends the analysis, as PO does not argue that the intrinsic record overrides this meaning. *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014).

Outside the claims, the specification lacks *any* discussion of (1) a wireless device ID, (2) associating IDs, and (3) authenticating a wireless device ID. Ex.1033 (“Sarrafzadeh2”) ¶¶10, 12. PO’s expert thus resorted to inherency when asked where the ’307 patent describes these elements. Ex.1031 30:21-32:1 (wireless device ID is “inherently incorporate[d]”), 32:3-34:12 (IDs “must be associated”), 47:1-48:10 (authentication of reader “must be accomplished”), 50:19-51:7 (“the unique IDs must be present”).

PO asserts that authentication of the wireless ID is “necessarily” part of the claim because “the claim requires an association between” the IDs. POR 18. Not so. Nothing about the plain language of “associated with” requires authentication of the wireless device ID. Sarrafzadeh2 ¶¶10, 13-14; Ex.1031 41:7-21. The phrase does not have any specialized technical meaning, and only requires that the IDs be related or connected in some way. Sarrafzadeh2 ¶14.

PO asserts that the prosecution history requires that both IDs “are *transmitted to the remote server.*” POR 20. Even if true, this does not support PO’s

construction, which requires *authentication* of the wireless device ID, not just transmission.

PO relies heavily on Dr. Warren, who offers nothing more than “conclusory unsupported assertions” that “are not useful,” and the Board should give his testimony little weight. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005). Dr. Warren asserts, with no evidence, that authenticating the wireless device ID is “necessary for security and privacy of the system.” Warren ¶¶57-58; *see* POR 19 (same). PO’s and Dr. Warren’s mirrored, conclusory arguments are not founded on any claim construction principles, and no such security or privacy benefits are suggested anywhere in the ’307 patent, let alone claimed. Ex.1031 23:7-15; Sarrafzadeh2 ¶¶10, 13, 15. Nevertheless, security and privacy can be assured without authenticating the wireless device itself. Sarrafzadeh2 ¶15.

Finally, regarding *Petitioner’s* proposed construction, PO does not base any of its validity arguments on whether the communication to the wireless device is “in response to the authentication” or not. POR 21-23. Thus, although Petitioner will pursue its construction in district court, the Board need not adopt Petitioner’s construction to resolve any disputes. *See* ID 14.

III. Ground 3: The challenged claims are obvious over Beck in view of Heller and Lovejoy.**A. The Petition established motivation to combine.**

The Petition showed that a POSITA would have been motivated to combine Beck with Heller and Lovejoy. Pet. 41-47. PO argues that Beck is incompatible with Heller and that Beck and Lovejoy are in “unrelated domains.” POR 35-53. PO is wrong.

1. A POSITA would have combined Beck and Heller.

Petitioner explained why a POSITA would have combined Beck with Heller. Pet. 41-45. Beck discloses that medical device 130 can include a glucose meter, and Heller discloses implementation details about monitoring systems and sensor structures for determining concentrations of an analyte such as glucose in a fluid. Pet. 42 (quoting Heller 9:12-16, 12:31-13:2). Petitioner showed a POSITA would have been motivated to apply Heller's teachings to Beck, including a temperature sensor to improve sensor accuracy (Pet. 44), a substrate as a known way to implement sensors for glucose and other measurements and to provide structure to facilitate affixing the sensor to a person (Pet. 44-45), and use of an adhesive patch to facilitate such affixing (Pet. 45).

PO does not specifically address the combinations from the Petition. PO does not dispute that using a temperature sensor would improve accuracy of Beck's glucose monitor, that a substrate was a known way to provide structure for

sensors, or that an adhesive patch was known to facilitate affixing a sensor to user's skin. Instead, PO argues against strawman combinations. The Board correctly rejected this strategy. I.D. 19-20.

Even if PO's characterizations of Beck and Heller were accurate and complete—they are not—they do not rebut motivation to combine. According to PO, a POSITA's interest in Beck would be limited to implementing "systems comprised of already assembled, commercially available products." POR 41-42. PO is wrong, but has no legal basis to argue that a POSITA would never modify or substitute commercially available products, and PO's expert conceded the opposite. Ex.1031 70:12-16.

PO also argues that Heller's "on-skin sensor unit" is incompatible with Beck, "which uses test strips." POR 40. But this argument is, at best, about physical combinability and is "basically irrelevant" to the obviousness analysis. *In re Etter*, 756 F.2d 852, 859-60 (Fed. Cir. 1985) (en banc).

PO next asserts that Heller teaches away from "large, bulky, and/or inflexible" devices. POR 39. The specific passage PO cites relates to devices that are "directly implanted into a blood vessel or in the subcutaneous tissue of a patient" and does not teach away from Beck. Heller 1:30-2:2. To the extent Beck discloses "large, bulky" devices, this and surrounding passages actually further

motivate combination with Heller to provide “a small, comfortable device.”

Sarrafzadeh2 ¶33; Heller 2:19-21.

PO also asserts that Beck is limited to a “controlled clinical setting, such as a hospital or doctor’s office.” POR 14, 39. Not so. Beck discloses that the data from medical devices can be useful for “[p]hysicians, nurses, technicians, *and patients*.” Beck [0002]. Beck discloses that a “user” of the client computing device that interfaces with the medical device can be “a *patient*.” Beck [0052]. Nothing in Beck limits its disclosure to a hospital or other controlled setting, and its expert admitted that it is not. POR 39 (citing Warren ¶111); *see* Ex.1031 68:22-69:4. Nor is Heller limited to non-hospital settings. Ex.1031 68:4-10; Sarrafzadeh2 ¶¶34-35.

Aside from the wireless ID, PO does not dispute that Beck’s cellular phone discloses the claimed “wireless device,” yet somehow asserts that “Beck does not disclose that a client computing device...is mobile.” POR 43. Of course, even in the early 2000s, it was well-known that cellular phones were mobile. Sarrafzadeh2 ¶36; Ex.1031 65:5-66:11.

Finally, PO argues that the Petition provided no explanation regarding the POSITA’s reasonable expectation of success. POR 53. Not so. The Petition cited Heller’s disclosure that, for example, positioning sensor circuitry on a substrate was conventional and well-known. Pet. 54. The Petition further showed that a POSITA would have combined Beck and Heller as use of a known technique (e.g.,

Heller's inductive coupling) to improve similar devices (Beck's medical device) in the same way, establishing a reasonable expectation of success. Pet. 57; *see also id.* 66-67 (similar). PO does not address these arguments. POR 53.

2. A POSITA would have combined Beck with Lovejoy.

The Petition showed that a POSITA would have combined Beck with Lovejoy for several reasons, including designing Beck's cellular phone with features normally found on cellular phones, such as geolocation using GPS and non-GPS methods. Pet. 45-46. A POSITA would have looked to the prior art such as Lovejoy for known implementation techniques of GPS and non-GPS geolocation features in mobile devices such as Beck's cellular phone. Pet. 46.

PO does not dispute that GPS and non-GPS geolocation were well-known, or that Lovejoy discloses such well-known implementation techniques. Instead, PO repeats its assertions that Beck is focused on hospital settings, does not disclose a mobile system, and that Beck's cellular phone isn't mobile. POR 42-44. That is wrong. *See* Section III.A.1. PO's argument that Beck only discloses cellphones "in the context of *connecting a cell phone to a client computing device*" (POR 43-44) is plainly wrong because the client computing device *can be implemented* as an Internet-connected cellular phone. Beck [0027], [0049]; Sarrafzadeh2 ¶39.

PO argues that "Beck and Lovejoy are directed to unrelated domains" (POR 43) and specifically "different application domain[s]" (*id.* 44). As a result,

according to PO, a POSITA would not have combined these references “for any reason.” *Id.* PO cites no legal authority to argue that being in “different application domain[s]” prohibits combination. Nor does PO explain why any difference between hazard monitoring and physiological monitoring would mean a POSITA would not have looked to Lovejoy’s use of known GPS and non-GPS methods for use in Beck’s cellular phone.

PO argues that Lovejoy’s location capabilities are “completely unrelated to the geolocation limitations recited in the ’307 Patent” (POR 45) but omits that the ’307 patent repeatedly and explicitly incorporates Lovejoy specifically for its geolocation capabilities. Pet. 13-15, 61. PO argues that any combination of Beck and Lovejoy must result in geolocation means within the *medical device*. POR 45. The Board properly rejected these arguments at institution, and PO offers nothing new in Response. ID 21.

PO’s arguments against use of cellular phones in hospitals is self-defeating. Even if PO’s arguments about RF penetration into hospitals had merit, it shows that Beck’s disclosure of cellular phones means that Beck explicitly contemplated non-hospital settings. PO’s argument that “a POSITA would not have been motivated to incorporate a cell phone into Beck’s system” ignores the explicit teachings of Beck. POR 48.

PO's own Patent Outline shows that geolocation was a mere feature offered by cellphones at the time. Ex.2006 2; Sarrafzadeh2 ¶38. Petitioner did not have to show that every device in existence complied with the FCC's rules by the time of the '307 patent. *Cf.* POR 51. PO mischaracterizes the FCC report, including by citing to the report's "Phase I (providing cell site or cell sector information...)"—which is not the geolocation to which Petitioner cites—as not accurate enough to be geolocation. POR 52; Sarrafzadeh2 ¶¶41-42.

Finally, to the extent PO intended to argue that there was no reasonable expectation of success in combining Beck and Lovejoy (POR 53), PO is wrong. The Petition showed, as mentioned above, that geolocation features such as Lovejoy's were planned to be in every cellphone by regulation years before the '307 patent. Pet. 45-46, 60-61; Ex.1003 ¶315.

B. The combination renders obvious a “unique identification ID number.”

The Petition showed that Beck discloses and renders obvious a “unique identification ID number.” Pet. 51. Beck discloses that the client computing device identifies medical device 130 based on information including “identification codes” and “serial numbers retrieved from the medical device.” *Id.*

PO argues that Beck discloses “at most, identification numbers for the entire medical device” and “not for a sensor unit as required by the claim.” POR 54-55.

As a threshold matter, “sensor unit” is only recited in the preamble of claim 1, and PO has not argued that the preamble is limiting. *See* Ex.1031 53:3-6, 54:9-15.

Even assuming the claims require the unique identification ID number to identify a “sensor unit” (which Petitioner disputes), Beck discloses it to the same extent that the '307 patent discloses a sensor unit identifier.

In Beck, the unique IDs are used for authentication and to download software. Beck [0065], [0067]. This information tells the server about the “type of medical device,” enabling the server to provide the correct “protocol component” (software) “to be used with the identified medical device.” Beck [0067], [0069], [0070]-[0072]. Likewise, in the '307 patent, the sensor ID “identifies uniquely the *type* of sensor used,” which is then used by a remote server to provide software associated with that type. Ex.1001 7:43-45; *see id.* 18:18-23 (remote server matches “the ID of the RFID sensor...to a given *class of sensor* (e.g. a *glucose sensor*) and the software and/or instructions for the analyses are downloaded into the reader”).

PO argues that a glucose meter is not itself a sensor unit. POR 55. That is wrong (PO does not dispute that Beck's medical devices disclose the preamble's sensor unit), and appears to be based on a false equivalence of “sensor” and “sensor unit.” *See id.* (arguing that Beck does not disclose a “sensor for the glucose meter” as having a unique ID); Ex.1031 18:8-20:5 (sensor unit is simply what's

recited in the body of the claim); Sarrafzadeh2 ¶44. Nevertheless, Beck's serial number, which identifies the "type of medical device" (e.g., glucose meter), also identifies every component of that meter, including the individual sensors that are undisputedly necessary and obvious in such a glucose meter, enabling a remote device to determine their "type"—e.g., glucose sensors. Sarrafzadeh2 ¶45.

PO's argument is irrelevant because the claim does not require the ID to separately identify any particular component of the claimed system, let alone separately identifying every *sensor* within the system. Ex.1031 55:11-56:3. Indeed, the claim recites a "sensor unit" with a "sensor element" that is not expressly tied to the "unique identification ID number." Ex.1031 54:17-20 ("sensor unit" and "sensor element" are "[c]learly not" the same thing). To be fair, the claim later uses different terms like "the ID" and "said unique sensor ID," both apparently referring to the "unique identification ID number." But the phrase "unique sensor ID" merely distinguishes the claimed ID from the "unique ID" of the "remote wireless device" in the authentication limitation, and does not add a functional requirement of the ID having to identify any particular component of the claimed sensor unit. Ex.1031 59:5-9.

PO also mischaracterizes the '307 patent. According to PO, "merely identif[ying] a *type* of sensor...is insufficient to meet the claim limitation" and "[e]ach *sensor having a unique identifier* is" required. POR 54-55 (citing '307

patent 4:67-5:2). Not so. As mentioned above, software download is based on matching the ID to a “type” or “class” of sensor or “test.” ’307 patent 7:43-45 (the ID “identifies uniquely the *type* of sensor used”), 16:61-63, 18:20-23 (“[T]he ID of the RFID sensor is matched to a given *class* of sensor (e.g. a glucose sensor) and the software...[is] downloaded.”). Neither the claims nor the specification require that the “unique identification ID number” separately and uniquely identifies each “sensor.”

C. The combination renders obvious a wireless device having a unique ID.

The Petition showed that Beck discloses and renders obvious a unique ID for the wireless device. Pet. 60. Specifically, Beck discloses a network address that can be used for authentication, thus teaching a POSITA that the network address is a unique ID. Ex.1003 ¶318. Additionally, POSITAs understood that Internet-enabled phones like Beck’s included other unique IDs, including IP addresses, MAC addresses, and IMEI numbers. Pet. 60; Ex.1003 ¶319.

PO asserts that Beck “does not refer to any particular type of network address.” POR 56. According to PO, “some network addresses might be unique”

but “internal IP addresses” on a “private network, may not be unique.”¹ POR 56-57.

PO does not address Dr. Sarrafzadeh's testimony that Beck's use of the network address for authentication teaches a POSITA that this particular network address is unique. Ex.1003 ¶318. Nor does PO argue that a POSITA would understand Beck to teach a non-unique address or a private network. *Cf.* Beck [0043] (server and client communicate over “the Internet to provide ubiquitous access”).

Further, as with Ground 1, PO does not dispute that unique IDs such as MAC addresses and IMEI numbers were well-known for cellphones. POR 56-57; Ex.1032 73:22-75:9. In fact, PO's “Patent Outline”—asserted as corroboration of conception—lists “Unique ID” as part of “Technologies provided by a cell phone.” Ex.2006 2; Sarrafzadeh2 ¶47. Thus, Beck discloses and renders obvious the unique ID of the wireless device.

D. The combination renders obvious the authentication limitation.

Claim 1 recites a “wireless device having...a unique ID” wherein the wireless device obtains the sensor unit's ID from the sensor interface. The claim

¹ PO is wrong to imply the claim as requiring a globally unique ID. Uniqueness need only exist within relevant context. Sarrafzadeh2 ¶48.

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

The Petition showed that Beck discloses that the client computing device (which includes a network address) retrieves “serial numbers” from the medical device. Pet. 60. As recited in the claim, this step makes the “unique sensor ID associated with said unique wireless device ID.” Beck’s server authenticates both network address and serial numbers. Pet. 60-62 (quoting Beck [0065]). The server sends *software related to the unique sensor ID to the client computing device* in response to the authentication, further demonstrating the association. Pet. 62; Sarrafzadeh ¶328.

PO argues that the Petition did not address PO’s new construction requiring authenticating the wireless ID. POR 57. But PO acknowledges that “Petitioner relies on Beck’s disclosure that *authentication can include using a network address*.” POR 56. Indeed, the quoted passage explicitly discloses the limitation under PO’s construction. Sarrafzadeh2 ¶¶49-50; *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1384 (Fed. Cir. 2023) (“petitioner must be given the opportunity in its reply to argue and present evidence of...obviousness under [a] new construction...”). Beck teaches authentication using both IDs including the network address of the client computing device. Pet. 60 (citing Beck [0065]). This is enabled by Beck’s server storing “authentication information” including “client

computing device network address” and “medical device serial number,” further associating the IDs in a manner well-beyond what the '307 patent itself discloses. Beck [0051]; Sarrafzadeh2 ¶50.

PO also argues that Petitioner did not show that the unique sensor ID is “associated with the unique wireless device ID.” POR 57. Not so. As discussed above, the Petition showed that Beck discloses the ID association in the manner recited in the claim, which is the only such association disclosed in the '307 patent. Sarrafzadeh2 ¶¶50-51; *see* Section III.B; Ex.1031 49:17-51:18 (PO's expert asserting '307 patent's “wireless reader would inherently incorporate a unique ID that must then be associated with the unique sensor ID”).

E. The combination renders obvious geolocation means.

The Petition showed that the claimed “geolocation means” is obvious in view of Beck's disclosure of an Internet-enabled cellular phone as well as in view of the geolocation of Lovejoy. Pet. 60-61.

PO argues that a cellphone does not “*necessarily* include[] the particular structure (or an equivalent structure) disclosed by the '307 Patent for performing geolocation.” POR 58. The Petition does not rely on inherency (ID 22), and the obviousness inquiry does not require that a phone “necessarily includes” geolocation means. But PO does not dispute that the “particular structure” in the '307 patent (the construction of which is undisputed to include GPS methods

and non-GPS triangulation) was well-known to a POSITA. Of course, the '307 patent was not the first to disclose geolocation means in cellphones, and explicitly incorporates Lovejoy for relevant disclosure. Ex.1001 6:10-13, 17:21-24; Ex.1031 71:22-72:1 (“no, [Peeters] did not invent geolocation in cellular phones”). In fact, PO's own “Patent Outline” simply lists “Geolocation” as one of several “Technologies provided by a cell phone.” Ex.2006 2; Sarrafzadeh ¶53. Nor do the claims recite any specific functionality for the geolocation means aside from their conventional use for geolocation. ID 13.

PO argues that adding geolocation to a cellphone RFID reader would be “nonsensical” because it would result in a crash cart being sent to the nurse's location, not the patient's location. POR 60-61. But as shown above, Beck is not limited to such hospital settings. Sarrafzadeh2 ¶54. And Dr. Warren does not cite to anything supporting a large distance between a cellphone reader and a medical device it is reading. *Id.*

The Petition thus showed that POSITAs would have known geolocation means to be obvious to apply to cellphones. Sarrafzadeh2 ¶¶41, 53; *see also* Ex.1031 72:19-20 (“Clearly the idea was stated in the industry prior to” the '307 patent); Ex.1032 83:15-84:15 (“[Were you] the first person to conceive of geolocation in cell phones? A. No....”).

F. The combination renders obvious a “sensor interface having an analog to digital converter.”

PO does not dispute that A/D converters were conventional years before the '307 patent. *See* Pet. 52 (quoting Sarrafzadeh ¶276); Ex.1032 73:5-21. PO does not address Heller's various disclosures cited in the Petition, including “collecting an analog signal representing a level of an analyte in a bodily fluid” and “converting the analog signal into a digital signal.” Pet. 52-53 (quoting Heller 104-105). PO does not dispute that Heller's sensor circuit is a sensor interface and that its measurement circuit, which converts an analog signal to digital, incorporates an A/D converter coupled to the glucose sensor (sensor element) and the temperature sensor (reference sensor element). Pet. 53 (citing Sarrafzadeh ¶277). Nor does PO dispute that a POSITA would have been motivated to modify Beck in view of Heller to incorporate a sensor interface having the claimed A/D converter. *Id.* (citing Sarrafzadeh ¶278). Thus, PO did not rebut that the combination of Beck and Heller renders the claimed sensor interface obvious.

Instead, PO attacks Beck in isolation and argues that A/D converters are not inherent to Beck. POR 61-62. This attack is irrelevant. *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1050 (Fed. Cir. 2019) (obviousness based on a combination cannot be overcome by attacking references individually). Regardless, PO is wrong. Sarrafzadeh2 ¶56; Ex.1032 73:5-21 (A/D convert is “an essential component”). PO asserts that “there are ways” to calculate a value from analog

sensors without first converting them to digital values, but neither PO nor Dr. Warren are able to identify a *single* such “way.” POR 62 (citing Warren ¶160). With no counterexample of accomplishing Beck’s measurements without an A/D converter, and Dr. Peeters admitting it is essential, Petitioner has satisfied its burden on inherency of an A/D converter in Beck. Pet. 51-52.

In any event, because PO does not dispute the obvious application of Heller’s sensor interface to Beck, PO’s inherency argument is moot.

G. Dependent claims 2, 3, 5, 9, and 10 are obvious.

PO argues that the Petition does not identify any structure for the GPS means of claim 9 and non-GPS means of claim 10, and “failed to demonstrate that these structures were common cell phone features as of the priority date.” POR 62-63. Not so. As mentioned in the Petition, the ’307 patent itself relies on Lovejoy for disclosure of structure for geolocation means, including GPS and non-GPS means. Pet. 60-61 (citing ’307 patent 17:21-24), 68-69. The Petition also cited to Lovejoy’s disclosure of “geolocating capabilities,” including “GPS or the radar-responsive tags” as disclosing GPS means and non-GPS means, respectively. Pet. 68 (quoting Lovejoy 4:32-37). PO does not address that disclosure. Nor does PO distinguish Lovejoy’s disclosure from the claimed structure as construed under ¶112(6). POR 62-63. PO merely recites the construction and asserts that the Petition did not identify “any structure of this type.” POR 63. To the contrary, the

Petition identified the structure to the exact level of detail that the '307 patent identified it.

PO does not separately dispute the obviousness of dependent claims 2, 3, and 5. POR 62.

Thus claims 2, 3, 5, 9, and 10 are obvious. *See* Pet. 65-69.

IV. Ground 1: Claims 1, 2, 5, 9, and 10 are obvious over Bandy

A. Bandy is by “another.”

To determine whether Bandy is “by another” under §102(e), the Board must (1) determine what portions of Bandy were relied on as prior art, (2) evaluate the degree to which those portions were conceived by Dr. Bandy, and (3) decide whether Dr. Bandy's contribution is “significant enough, when measured against the full” Bandy reference, to render him a joint inventor of the applied portions of Bandy. *Duncan Parking Techs., Inc. v. IPS Group, Inc.*, 914 F.3d 1347, 1358 (Fed. Cir. 2019). PO does not directly address *Duncan*, but appears to limit its dispute to factor (2), asserting that Peeters *alone* contributed *all* the applied portions of Bandy. POR 28-29. Note that §103(c) does not apply because Bandy was never wholly owned by Altivera. Ex.1032 26:13-18.

Regarding step (1), the Petition relies on Bandy's interrogation of RF-addressable sensors including protocols for doing so. *See, e.g.*, Pet. 23-24, 29. For [1k], the Petition cites to various passages about interrogation, including that

“RFID tag processor 356 includes *logic to interrogate and read RFID tag information* from RF addressable sensors.” Pet. 29 (quoting Bandy 13:1-13); *see also id.* (citing Bandy 16:41-51 (binary tree traversal protocol for communicating between sensor and reader)); *id.* 17-18 (quoting Bandy 5:1-11). For [1j], the Petition cites to Bandy’s disclosure of “communicating via air interface protocol with the population of RF addressable sensors 102.” Pet. 23-24 (quoting Bandy 5:6-18); *see also id.* 24 (quoting Bandy 5:24-30); *see id.* (relying on Bandy’s “air interface protocol” as the “wireless communication means” of limitation [1j]).

Regarding *Duncan* factor (2), Dr. Bandy testified that he contributed to interrogation of the RF-addressable sensors to Bandy. Ex.1030 21:13-15 (“The other important technology I was involved in developing was our interrogation protocol.”). He explained that his contributions included the claim 65/81 step of “interrogating the one or more RF addressable sensors to isolate an individual RF addressable sensor.” *See* Ex.1030 72:21-73:18, 77:22-78:7; *see also id.* 87:3-88:18 (Bandy column 5 disclosures relate to his contributions).

Dr. Peeters’s testimony about Dr. Bandy’s contribution to interrogation protocols is ambiguous at best. Dr. Peeters admitted Dr. Bandy alone contributed the binary tree traversal protocol, which is an interrogation protocol. Ex.1032 45:12-46:8. He also admitted Dr. Bandy contributed to Bandy’s claims 65, 81, and 83, each of which recite interrogation of RF-addressable sensors. Ex.2002 ¶18.

When asked about specific portions of claim 65, including interrogation, he could not distinguish contributions. Ex.1032 51:6-20 (“The word isolation [in the interrogating step] could be [Bandy’s] contribution.”), 51:21-52:7 (“I don’t recall”). This testimony contradicts his declaration, where he asserts that he was the sole contributor of the above-mentioned passages relating to interrogation. Ex.2002 14, 17-20.

For *Duncan* factor (3), Dr. Bandy’s contribution is “significant enough, when measured against the full” disclosures, to render him a joint inventor of these disclosures. *Duncan*, 914 F.3d at 1358. Indeed, PO does not dispute this point, despite having the burden of production. *Sanofi-Aventis U.S. LLC v. Immunex Corp.*, IPR2017-01879, Paper 88 at 10-11 (Feb. 14, 2019). There is no dispute that Dr. Bandy contributed significantly to interrogation in Bandy, including being the lone contributor of the only interrogation protocol in Bandy—the binary tree traversal protocol disclosed in column 16. Ex.1030 86:21-87:2; Ex.1032 45:12-20; *see* Pet. 29 (quoting Bandy 16:41-51). This “important technology” allowed interrogation of tags to “singulate the tag you want to be interrogated.” Ex.1030 21:13-18; Ex.1032 45:20-46:3; Sarrafzadeh2 ¶22. Dr. Peeters, in contrast, could not identify his contribution to interrogation beyond background knowledge. *E.g.*, Ex.1032 56:23-58:7.

None of PO's other exhibits corroborate Dr. Peeters's assertion that he was the sole contributor to the interrogation of RF-addressable sensors, including the interrogation protocol. Ex.2005 refers to "matching [Dr. Bandy's] RFID tag technology," supporting that the RFID aspects were contributed by Dr. Bandy. Ex.2005. Ex.2006 shows that Matrics was to contribute to "Low cost power up and read [i.e., interrogation] capabilities for an RFID chip." Ex.2006 2.

Dr. Bandy's declaration (which is inconsistent with his deposition testimony) is unreliable. He asserts that he did not contribute anything related to "sensor features" of the '307 claims (Ex.2001 ¶11), but conceded he never reviewed the '307 patent. Ex.1030 14:21-15:13. He only "vaguely" recalled the meetings discussed in his declaration (Ex.2001 ¶¶5-7; Ex.1030 43:22-44:1), and his recollection of these meetings came from Dr. Peeters himself (whom he considers a friend) (Ex.1030 91:16-18, 43:17-45:1 ("I think [Dr. Peeters] must have reminded me we had that meeting and how it all happened.")). That is insufficient to establish that Dr. Peeters alone contributed the cited portions of Bandy. Ex.2001 ¶11.

In sum, Bandy is "by another" and thus prior art.

B. Bandy renders obvious the "unique ID" of the remote wireless device.

The Petition showed that Bandy renders obvious the "unique ID" of the remote wireless device and PO's arguments are without merit. Pet. 23, 30-31.

PO does not dispute that a POSITA would have known that wireless devices contain unique IDs such as MAC addresses and/or IMEI numbers. POR 29-30.

PO's "Patent Outline" shows a "unique ID" was merely a "Technolog[y] provided by a cell phone." Ex.2006 2. Dr. Warren further asserted that a wireless device ID is inherent to RFID readers complying with international standards. Ex.1031 30:21-32:1; Ex.1032 73:22-75:9. Thus, disclosure of a "unique ID" of the remote wireless device is undisputed.

PO disputes, however, the Petition identified an "association between" the wireless device ID and the sensor ID. POR 30. PO is wrong. As with Ground 3, the Petition shows that Bandy discloses the association in the claimed manner—specifically, that the wireless device (having a unique ID) reads the sensor's unique ID as recited in claim 1. *See* Section III.D; Pet. 30-31. For example, when Bandy's sensor (sensor element) is activated by the wireless sensor reader (wireless device), and "the sensor 110 identifies itself (e.g., by providing its identification number) and provides the cell phone reader with the necessary information for analyzing the sensor output." Pet. 30 (quoting Bandy 10:19-24). This reading process of the sensor 110 by the wireless sensor reader creates an association between the wireless device and sensor element. Sarrafzadeh2 ¶¶24, 51. The wireless device is provided software related to the unique sensor ID. Pet. 31. The '307 patent's

silence on association further supports that obviousness. *See Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1339 (Fed. Cir. 2020).

Further, to the extent PO relies on Dr. Warren's assertion that the association is inherently done in the '307 patent, it is obvious in Bandy for the same reasons. *See* Ex.1031 49:17-51:18. Specifically, the server is able to provide the correct software for the correct sensor to the correct wireless reader, and therefore must, according to Dr. Warren, associate the IDs. Sarrafzadeh2 ¶24.

C. Bandy renders obvious the authentication limitation.

The Petition showed that Bandy renders obvious the authentication limitation. Pet. 30-31. PO argues that Bandy does not disclose this limitation under its flawed construction. POR 31. PO does not dispute the limitation under the plain meaning of the claim, which does not require authentication of the wireless device ID. To the extent PO implies that Bandy does not render obvious authentication of the sensor ID, PO is wrong.

As shown in the Petition, Bandy discloses that the sensor “provides the cell phone reader with the necessary information for analyzing the sensor output.” Pet. 30 (quoting Bandy 10:19-24). In some cases, the sensor can provide software for analysis, but in other embodiments, “[s]oftware may also be downloaded” remotely to “‘train’ the wireless device to recognize and analyze *that given type of RFID sensor.*” *Id.* (quoting Bandy 10:14-51). Thus, when a remote location (i.e.,

not the sensor) provides “necessary processing and analysis information” to the cellphone reader, the only necessary information from the sensor is “the ID of the RFID-sensor.” *Id.* (quoting Bandy 10:37-41). PO treats these disclosures in isolation and mischaracterizes them as not relating to use of the sensor ID to download the software from a remote server. When read in context, they render obvious the authentication limitation. Sarrafzadeh2 ¶27.

D. Dependent claims 2, 5, 9, and 10 are obvious.

PO does not separately dispute the obviousness of dependent claims 2, 5, 9, and 10. POR 33. Thus, these claims are obvious. Pet. 31-34.

V. Ground 2: Claim 3 is obvious in over Bandy in view of Heller.

The Petition showed a POSITA would have used Heller's well-known adhesive skin patch to affix Bandy's RF addressable sensor because Bandy explicitly teaches affixing sensor elements “proximate to the surface of the skin” including for sensors for diagnostic monitoring that “monitor certain conditions or characteristics such as the individual's vital functions.” Pet. 36-37.

PO does not dispute that the combination of Bandy and Heller discloses the subject matter of claim 3. PO attacks only the motivation to combine, arguing that Bandy discloses an “unrelated system directed to external cards or badges.” POR 33-34. PO does not address Bandy's disclosure of affixing diagnostic “sensor elements...proximate to the surface of the skin” to monitor “vital functions.”

Bandy 19:56-20:10. PO attacks a strawman based on chemical or gas sensors. POR 34. Bandy's use of "badges" or "smart cards" with sensor elements is no bar to combination and does not make Bandy incompatible. Sarrafzadeh2 ¶29. To the contrary, a POSITA would have recognized that Bandy's goal of affixing the sensor elements proximate to the surface of an individual's skin would be perfectly compatible with conventional techniques of Heller's skin patch.

VI. Conclusion

The Board should find all challenged claims unpatentable.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Petitioner's Reply complies with the word count limitation of 37 C.F.R. § 42.24(c)(1) because it contains 5,599 words using Microsoft Word's counting feature, excluding the cover page, signature block, and the parts of the Petitioner's Reply exempted by 37 C.F.R. § 42.24(c).

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that on this 21st day of January, 2025, a true and correct copy of the foregoing **Petitioner's Reply and all Exhibits** were served by electronic mail on Patent Owner's lead and backup counsel at the following email addresses:

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