

Filed: March 24, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WAVELYNX TECHNOLOGIES CORP.,
Petitioner,

v.

ASSA ABLOY AB,
Patent Owner.

Case No. IPR2023-00730
Patent 7,439,862

PATENT OWNER'S PRELIMINARY RESPONSE

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EX2001	Declaration of Stuart Lipoff
EX2002	Curriculum Vitae – Stuart Lipoff
EX2003	Order Regarding Claim Construction – <i>HID Global Corp. v. Farpointe Data, Inc.</i> , No. 8:10-cv-01954-JVS-RNB, Dkt. 58 (C.D. Cal. Nov. 17, 2011).
EX2004	Order Regarding Cross Motions for Summary Judgment Regarding Infringement and Invalidity of '862 and '935 Patents – <i>HID Global Corp. v. Farpointe Data, Inc.</i> , No. 8:10-cv-01954-JVS-RNB, Dkt. 300 (C.D. Cal. Apr. 13, 2012).
EX2005	Plaintiffs' Opening Claim Construction Brief – <i>HID Global Corp. v. Farpointe Data, Inc.</i> , No. 8:10-cv-01954-JVS-RNB, Dkt. 29 (C.D. Cal. Sep. 30, 2011).
EX2006	Plaintiffs' Reply Claim Construction Brief – <i>HID Global Corp. v. Farpointe Data, Inc.</i> , No. 8:10-cv-01954-JVS-RNB, Dkt. 41 (C.D. Cal. Oct. 28, 2011).
EX2007	Summons and Proof of Service – <i>HID Global Corp. v. WaveLynx Techns. Corp.</i> , No. 1:22-cv-00362-GBW, Dkt. 7 (D. Del. Mar. 28, 2022).

I. INTRODUCTION

Patent Owner ASSA ABLOY AB (“Patent Owner”), pursuant to 37 C.F.R. § 42.107(a), hereby submits this Patent Owner Preliminary Response (“POPR”) to the *Inter Partes* Review (“IPR”) petition (“Petition”) filed by WaveLynx Technologies Corp. (“Petitioner”) regarding claims 1-7, 9-11, 13-20, 22-24, and 26 (the “Challenged Claims”) of U.S. Patent No. 7,439,862 (the “’862 Patent”). The Board should deny institution.

First, the Board should deny institution on the merits. *Infra* Section VIII. Petitioner’s Grounds are irreparably flawed, as they each assert references that ***do not provide any disclosures or teachings*** regarding how a person of ordinary skill in the art (POSA) should arrange multiple reader antennas, much less adopt the specifically claimed multi-antenna configurations that are the crucial to the claimed inventions. Unable to point to any evidence in the references, Petitioner relies entirely on their expert’s impermissible hindsight reasoning to manufacture new, multi-antenna, multi-transponder devices found nowhere in Conlin, Conlin ’677, Davis Presentation, or RFID Handbook. *See infra* Section VIII.B.1.d (addressing Petitioner’s new device for Ground 1), Section VIII.D.1.b (same for Ground 3). As the Board recently found, unsupported expert opinion used to supply a missing limitation is particularly problematic and cannot support a finding of obviousness.

Xerox Corp. v. Bytemark, Inc., IPR2022-00624, Paper 9 at 15-16 (P.T.A.B. Aug. 24, 2022) (precedential).

Petitioner tries to back-stop its deficient arguments by asserting that combinations with the Walton reference (Grounds 3-4) purportedly provide some of the claimed orientations of two reader antennas. But Walton does not disclose “first” and “second *reader* antenna[s]” for communicating with “first” and “second transponder[s],” respectively. *See* ’862 Patent, cls. 1, 5, 9, 14, 17, 20, 23. Instead, Walton describes a transmitting antenna and receiving antenna used together for communication with a single transponder. *Infra* Section VIII.C.1-2. As such, the relative orientations between Walton’s transmitting antenna and receiving antenna for a single transponder is not relevant to the placement and orientation of the two claimed reader antennas for two transponders. Put simply, Walton teaches a fundamentally different device that fails to remedy clear deficiencies in Petitioner’s other references.

Additionally, despite demonstrating great familiarity with the filings in *HID Global Corp. v. Farpointe Data, Inc.*, No. 8:10-cv-01954 (C.D. Cal.) (“*Farpointe* Litigation”)¹—where the ’862 Patent was previously asserted and its validity

¹ *See, e.g.*, EX1022 at ¶¶ 61-64 (Patent Owner answering Petitioner’s allegations relating to filings made in the *Farpointe* Litigation).

upheld—Petitioner neglects to mention that the *Farpointe* Court already extensively construed the Challenged Claims under the *Phillips* standard. *See infra*, Section VII. Petitioner neither explains why those constructions are wrong, nor analyzes the relied upon references using the *Farpointe* Court’s constructions.

Second, the *Fintiv* factors favor discretionary denial under 35 U.S.C. § 314(a). *Infra* Section IX. The ’862 Patent’s validity has already been upheld in prior district court litigation, and the patent will soon expire. Petitioner has not sought a stay in the parallel district court litigation (either in Delaware or after the transfer to Colorado), nor has it provided any *Sotera* stipulation to avoid duplicative or inconsistent proceedings. In fact, Petitioner advances Section 102(g) and 102(e) invalidity theories regarding Conlin and obviousness theories involving the Davis Presentation in district court that mirror its assertions here.

Third, the Board should discretionarily deny Grounds 3 and 4 under Section 325(d). *Infra* Section X. Petitioner claims to assert unconsidered references, but relies upon these references only for teachings that are cumulative of the disclosures that the Examiner considered and found insufficient to render the claims obvious.

Therefore, the Petition fails to demonstrate a reasonable likelihood of prevailing on any of the challenged claims, and the Board should deny institution on the merits, or alternatively discretionarily.

II. BACKGROUND

The '862 Patent is directed to novel “antenna array[s] for an RFID reader” that “include[] a first reader antenna tuned to operate at a first frequency and a second reader antenna tuned to operate at a second frequency different from the first frequency.” EX1001 at 2:62-66. The '862 Patent discloses multi-antenna array configurations that overcome significant problems in the art to achieve material benefits. *See generally id.* at 3:3-50 (summarizing preferred embodiments).

The inventors recognized that, although “[c]losely positioning the reader antennas 34, 38 within the reader housing 54 clearly reduces the size requirements of the reader housing,” doing so “without regard to their specific arrangement can cause interference between the reader antennas 34, 38 which can correspondingly diminish 65 the communication range.” EX1001 at 10:59-65. As the specification explains:

When two antenna coils are closely positioned with respect to one another within an array of multiple antenna coils, small capacitances termed “parasitic” or “stray” capacitances are also created between the antenna coils. The parasitic or stray capacitances of a given antenna coil in combination with the inductance of that antenna coil creates a “self resonance” effect, which, if unaccounted for in the antenna coil design, significantly reduces the strength of the magnetic field emanating from either antenna coil, thereby significantly reducing the communication range of either antenna coil.

Id. at 11:5-15.

The '862 Patent overcomes this and similar problems through its configuration of two-antenna arrays. In fact, the invention provides “multiple carrier frequency communication capabilities” *without* “the communication range between the RFID reader and the RFID transponders” being “significantly compromised by the expanded communication capabilities of the RFID reader.” *Id.* at 2:36-45. It provides “an RFID reader with multiple carrier frequency communication capabilities” which “remains *relatively compact* despite the expanded communication capabilities.”² *Id.* at 2:45-49. It also provides “multiple carrier frequency communication capabilities, wherein reader performance is *essentially the same*” regardless of “whether the RFID reader is communicating with an RFID transponder operating at the low carrier frequency or...the high carrier frequency.” *Id.* at 2:49-55.

III. THE CHALLENGED CLAIMS

Petitioner challenges independent claims 1, 9, 14, 17, 20, and 24, and dependent claims 2-7, 10-11, 13, 15-19, 22-23, and 26. These claims are not directed to generic RFID technology, as Petitioner suggests, but instead to novel multi-frequency antenna arrays RFID readers. For example, while not the sole point of

² Emphasis is added throughout unless noted otherwise.

novelty, each of these multi-frequency RFID readers have a particular antenna array configuration:

Claim 1	Requires that “the first and second antennas are oriented along axes that are <i>substantially parallel</i> to one another.”
Claim 9	Requires that “said first and second antennas are arranged in an <i>opposing</i> magnetic flux arrangement.”
Claim 14	Requires that “the first and second antennas are oriented along axes that are <i>substantially parallel</i> to one another” and “a signal generator <i>coupled</i> with said first and second reader antennas.”
Claim 17	Requires that “the first and second antennas are arranged in at least a <i>partially overlapping</i> arrangement <i>along proximate adjacent planes</i> ” and “receiver electronics <i>coupled</i> with said first and second reader antennas.”
Claim 20	Requires “loop antenna[s]” arranged such that “a first plane defined by the first area is <i>substantially orthogonal</i> to a direction of magnetic flux created through the first antenna, wherein a second plane defined by the second area is <i>substantially orthogonal</i> to a direction of magnetic flux created through the second antenna” and that “said first and second loops are arranged relative to one another such that a portion of the first area in the first plane <i>overlaps</i> a portion of the second area in the second plane.”
Claim 24	Requires “loop antenna[s]” arranged such that “first and second loops are arranged in an <i>opposing</i> magnetic flux arrangement where the direction of magnetic flux created through the first loop is <i>substantially parallel but opposite</i> to the direction of magnetic flux created through the second loop.”

See generally EX1001. The challenged dependent claims further limit the antenna features, including limitations relating to carrier frequency, configurations within reader housing, and antenna arrangement. *Id.*

IV. SUMMARY OF RELEVANT PROSECUTION HISTORY

The Petition is mistaken that “the examiner did not consider—the existence of, let alone details about any dual- or multi-frequency RFID readers.” Petition at 3. The Examiner initially rejected the claims on exactly this basis, only to allow them later after amendments that specified particular configurations for the multi-frequency antennas.

On December 28, 2007, the Examiner rejected pending claims 1-15, 17-18, and 20-26 of the '576 Application as obvious over Egbert (U.S. Patent No. 7,268,687), stating that it would have been obvious to a POSA based on Egbert to “include a first antenna tuned to operate and a first low carrier frequency and a second reader antenna tuned to operate at a high carrier frequency”:

an RFID system that operates at approximately 900 MHz. It shall be understood that one skilled in the art could reasonably extend the operation of RFID system 10 to other frequencies, for example, inductive loop RFID antennas operating at frequencies other than 13.56 MHz in the HF band, and to other bands, e.g., the Low Frequency (LF) band at 125 kHz to 138 kHz (col. 4, lines 3-51). Since Egbert teaches the use of an array of antennas operating together from a reader that can detect tags that emit both high and low frequencies, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a first antenna tuned to operate and a first low carrier frequency and a second reader antenna tuned to operate at a high carrier frequency to ensure that various tags that are within the reader area may be detected no matter what frequency is emitted by each tag.

EX1003 at 259.

In response, Applicant amended the claims to recite the particular antenna array configurations now found in the issued claims, EX1003 at 276-81 (amending, *inter alia*, independent claims 1, 5, 14, 17, 20 and 23), and then relied upon those amendments in arguing for patentability. *See id.* at 283-85. In doing so, Applicant highlighted the benefits that these claimed configurations provide for multi-frequency RFID readers:

The present invention provides a reader or array of antennas that can operate at two different carrier frequencies. The two different frequencies at which the antennas may operate include two commonly recognized frequencies used in the transponder art, namely a low frequency such as 125 kHz (*e.g.*, with proximity cards) and a high frequency such as 13.56 MHz (*e.g.*, with smart cards). The present invention provides a solution that allows both of these antennas to be operated in close proximity while minimizing the interference between the two antennas. More specifically, certain independent claims highlighted above recite embodiments of the invention which manage the interference between antennas operating at different carrier frequencies but which are positioned in close proximity. Moreover, if the antennas are located in a common reader housing, the ability to manage the interference between antennas become even more important. By managing the interference between antennas the size of the reader housing containing two such antennas can be kept to a relatively small size, thus increasing its appeal and value.

Id. at 285. The Examiner then allowed the claims. *See id.* at 307.

V. PRIORITY

The '862 Patent was filed on December 16, 2004, and claims priority as a continuation-in-part of Application No. 10/848, 246 (filed May 18, 2004). EX1001. In the parallel litigation, Patent Owner asserts priority to May 18, 2004 (and earlier to February 12, 2004) for at least certain claims of the '862 Patent.

For the reasons below, the Petition should not be instituted. But if it is instituted, Patent Owner reserves all rights to assert and present evidence supporting earlier priority dates.

VI. LEVEL OF ORDINARY SKILL IN THE ART

Solely for purposes of this Preliminary Response, Patent Owner does not dispute Petitioner's definition of a POSA.

VII. CLAIM CONSTRUCTION

Claims are given their plain and ordinary meaning in IPR proceedings. 37 C.F.R. §42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc).

Petitioner first asserts that “nominally 125 kHz” as used in dependent claim 2 is “defined” by the '862 Patent, but points to a disclosure in the specification that provides no such definition, let alone a clear and unambiguous one. Petition at 5 (citing EX1001 at 2:8-14). Regardless, there is no reason to construe “nominally 125 kHz” at this time, because Petitioner identifies no “controversy” regarding the term. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). The Board should also reject Petitioner's suggestion that “all other terms...be construed in accordance with their plain and ordinary meaning.” Petition at 5. Petitioners fail to mention, however, that certain terms of the '862 Patent were previously construed in the *Farpointe* Litigation. *See generally* EX2003

at 14-24 (construing the '862 Patent); EX2004 at 39, 41-42 (interpreting claim terms while analyzing the '862 Patent's validity). Of these constructions, three are material to the Petition's arguments.

A. “RFID Reader”

The *Farpointe* court found “RFID reader”—which each independent claim's preamble recites—limiting, and construed it as follows:

Term	Adopted Construction
“RFID reader” <i>Claims 1, 5, 9, 14, 16-20</i> ³	“an integral reader capable itself of generating exciter signals and reading transponder signals”

EX2004 at 39, 41-42.

³ The *Farpointe* Court's opinion addressed claims 1-6, 9-10, 13-14, 16-22 of the '862 Patent. *See id.* at 16 (identifying claims at-issue for infringement). In addressing invalidity, the court observed that “each claim requires an ‘RFID reader,’ and...two antennas ‘tuned to operate’ at different carrier frequencies.” *Id.* at 38; *see also id.* at 40 (applying the construction of “RFID reader” to claims reciting “[a]n antenna array for an RFID reader” to find no anticipation). The claims listed here correspond to those addressed by the court including the claim term.

The Board should adopt the *Farpointe* Court’s correct construction. “[A] preamble is limiting if it recites additional structure or steps underscored as important by the specification,...or provides necessary structure absent from the claim body.” *Neapco Drivelines LLC v. Am. Axle & Mfg., Inc.*, 847 F. App’x 856, 858 (Fed. Cir. 2021) (quotation omitted). Here, the term “RFID reader” does both.

The claimed inventions are directed to improvements for RFID systems that include “RFID readers” that communicate with “RFID transponders.” ’862 Patent at 1:21-30. The specification explains that the “RFID reader” has “expanded functional requirements” that enable this communication. *Id.* at 1:63-67 (“[T]he reader circuitry and programming are typically significantly larger and more complex” than the transponders). It likewise makes clear that the claimed multi-frequency antenna array configurations are part of the “RFID reader.” *Id.* at 2:60-3:50. The specification thus underscores the “RFID reader” as important to the claimed invention.

Notably, the bodies of the claims recite key features *other* than the “RFID reader” itself: a “first transponder” and “second transponder,” as well as the “first” and “second” antennas of the RFID reader with which “data communication” occurs. *See* EX1001. The preambles’ recitation of “RFID reader” thus implicates structure otherwise absent from the claim body.

Indeed, as the *Farpointe* Court noted, the specification describes the “RFID reader” as “contain[ing] its own circuitry as well as its own reader programming, which are cooperatively designed to ‘read’ the data contained in the transponder data signals received from the RFID transponder.” EX2004 at 39, 41-42 (citing ‘862 Patent at 1:60-63). It found “[t]he use of the phrases ‘its own circuitry’ and ‘its own reader programming’” particularly meaningful because they “suggest[] that the reader must be integrated and capable of performing reader functions independently.” *Id.* (explaining that this disclosure mirrored the specification’s description of an embodiment described across columns 3 and 4).

The *Farpointe* Court was therefore correct to find “RFID reader” limiting, and construe it to require “an integral reader capable itself of generating exciter signals and reading transponder signals.”

B. Antenna Configuration Limitations

The *Farpointe* court also issued rulings construing certain antenna configuration limitations, two of which are material here:

Term	Adopted Construction
“first and second antenna are oriented along axes that are substantially parallel to one another” <i>Claims 1 and 14</i>	the first and second antennas are oriented along longitudinal axes substantially equidistant from each other.
“first and second antennas are arranged in at least a partially overlapping	the first and second antennas arranged so that one antenna may be brought into contact with the other antenna

Term	Adopted Construction
arrangement on [along] proximate adjacent planes” <i>Claims 5 and 17</i>	at some point of rotation if one (or both) antenna (antennas) were rotated about its (their) respective center (centers) of mass , the antennas contained within respective planes before rotation in their fixed positions that are near, close, or contiguous
“said first and second reader antennas are arranged in an overlapping arrangement simultaneous with said opposing magnetic flux arrangement” <i>Claim 13</i>	“overlapping” arrangement” carries the same meaning as used in construed claim 5.

EX2003 at 14-24. Intrinsic evidence supporting these constructions can be found throughout the court’s opinion, *see id.*, and Patent Owner’s claim construction briefing in the *Farpointe* Litigation. *See generally* EX2005; EX2006.

Regarding the construction above for claims 1 and 14, the *Farpointe* Court rejected Farpointe’s attempt to interpret “substantially parallel” antenna axes as simply requiring each antenna to have “an axis of orientation that are separated from each other and do not intersect.” EX2003 at 15-17. As it explained, Farpointe’s construction improperly covered the specification’s description of Figure 5, which the ’862 Patent describes as showing a “perpendicular orientation”—not a “parallel” orientation, as in other figures. *Id.* at 16 (citing ’862 Patent at 13:39-43). The Court therefore clarified, consistent with the intrinsic evidence, that the “parallel” embodiments claimed are “oriented along *longitudinal* axes,” with “[t]he

longitudinal axis [being] the axis that is perpendicular to the plane defined by the antenna loop.” *Id.* at 16-17.

As for the above constructions for claims 5, 13, and 17, the *Farpointe* court noted that the ’862 Patent provided a detailed description of “[a] preferred antenna arrangement...termed an overlapping arrangement” found at 11:66 to 12:16, and crafted its construction around that description. *Id.* at 18-19. In doing so, the *Farpointe* Court rejected Farpointe’s attempt to “import limitations from the specification.” *Id.* at 18-19 (noting that “adjacent...provides for the possibility of contact between the planes”).

* * *

The Petition fail to mention these three constructions, let alone apply them. As discussed in more detail below, *infra* Section VIII, Petitioner’s failure to address these limitations, as properly construed by the Court, results in a failure of proof across the corresponding Challenged Claims. The Board should not endeavor to rectify the deficiencies resulting from Petitioner’s challenge not being “tethered adequately to the correct claim construction.” *United Microelectronics Corp. v.*

Lone Star Silicon Innovs. LLC, IPR2017-01513, Paper 10 at 9 (P.T.A.B. May 22, 2018).⁴

Specifically, although the Petition purports to analyze the preambles as if limiting, it does not argue—much less identify disclosures showing—that the embodiments it relies upon from the asserted references provide a reader “**capable itself of generating exciter signals** and reading transponder signals.” *See, e.g.*, Petition at 23 (asserting only that “Conlin discloses ‘a control reader’ that ‘operates at two distinct carrier frequencies’”), 62-63 (asserting only that “the easy-key System reader...includes an integral antenna” and that the Philips MIFARE reader also is “with [an] integral antenna”). Similarly, for limitation 1[c]’s and 14[c]’s “substantially parallel” requirement, Petitioner fails to identify disclosures indicating that the antennas should be “oriented along **longitudinal** axes” (“the axis that is perpendicular to the plane defined by the antenna loop”), and incorrectly analyzes the plane of antenna loops themselves. *See, e.g., id.* at 29-30, 65-68 (failing to even mention a longitudinal direction). The Petition likewise does not

⁴ *See also AVX Corp. v. Greatbatch, Inc.*, IPR2015-00710, Paper 9 at 6-12, 17-19 (P.T.A.B. Aug. 12, 2015) (adopting prior district court construction of term over parties’ differing proposals and denying petition for failure to show disclosures relating to properly construed limitation).

contemplate the rotatability of antennas about their center of mass, as required by the *Farpointe* Court’s constructions for claims 5, 13, and 17. *See, e.g., id.* at 32 (arguing only that each antenna is purportedly “disposed on the plane of a circuit board”), 69-71 (arguing only that the antennas purportedly “are on opposing sides of a slim circuit board”).

The Petition’s failure to present arguments addressing the *Farpointe* Court’s constructions is telling, particularly given that Petitioner was plainly aware of, yet actively chose to ignore, the *Farpointe* Court’s rulings. The Board should hold Petitioners to the arguments actually presented in the Petition, as it did in *United Microelectronics*, and reject any contention that “Petitioner’s obviousness arguments are equally applicable” under the *Farpointe* construction. *See United Microelectronics*, IPR2017-01513, Paper 10 at 9. “The Board is not required to ‘play archeologist with the record’ or endeavor to discover a challenge that might have been asserted had a petitioner identified the correct claim construction.” *Id.* (quoting *DeSilva v. DiLeonardi*, 181 F.3d 865, 866-67 (Fed. Cir. 1999)) (also citing 37 C.F.R. § 42.22(a)(2)—that a petition must include “[a] full statement of the reasons for the relief requested”).

As Petitioners knew of these constructions and chose to ignore them, any request from the Petitioner to belatedly address the *Farpointe* Court’s constructions in a Reply brief should be denied.

VIII. THE PETITION FAILS TO ESTABLISH A REASONABLE LIKELIHOOD THAT PETITIONER WILL PREVAIL ON AT LEAST ONE CLAIM

Petitioner has the burden to establish a reasonable likelihood that the claims of the '862 Patent are obvious. 35 U.S.C. § 314(a); *Harmonic, Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”). As discussed below, Petitioner failed to meet its burden.

Solely for purposes of this POPR, Patent Owner focuses its analysis primarily on the independent claims challenged. To the extent the Board decides to institute this Petition, Patent Owner reserves the right to present further argument relating to all Challenged Claims.

A. LEGAL STANDARDS

Patent claims are obvious “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 a POSA. 35 U.S.C. § 103(a) (2012); *see Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016). Critically, the use of hindsight is impermissible in the obviousness analysis. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). (recognizing “hindsight bias” and “*ex post* reasoning” as inappropriate); *see also Mintz v. Dietz & Watson*,

Inc., 679 F.3d 1372, 1379 (Fed. Cir. 2012); *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 36 (1966).

B. GROUND 1 DOES NOT ESTABLISH A REASONABLE LIKELIHOOD OF PREVAILING

Ground 1 asserts that U.S. Patent Publication No. 2005/0204167 (“Conlin”) renders claims 1-6, 14, 16-17, and 19-20 obvious. For the reasons below, Ground 1 fails to establish a reasonable likelihood of prevailing as to any challenged claim.

1. Independent Claim 1 and Dependent Claims 2-4

- a. 1[pre]: “An antenna array for an RFID reader comprising:”
- b. 1[A]: “a first reader antenna tuned to operate at a first low carrier frequency enabling data communication with a first transponder transmitting data signals at said first low carrier frequency”
- c. 1[B]: “and a second reader antenna tuned to operate at a second high carrier frequency different from said first low carrier frequency enabling data communication with a second transponder transmitting data signals at said second high carrier frequency

As discussed, *supra* Section VII, the *Farpointe* Court correctly found the “**RFID reader**” in claim 1 to be a limitation and construed it as “an **integral reader** capable itself of **generating exciter signals** and **reading transponder signals**.” Taken together with limitations 1[A] and 1[B], this language requires the “first” and

“second reader antenna[s]” to be components of an “antenna array” for an “integral reader capable itself of generating exciter signals and reading transponder signals.”

Petitioner argues that, assuming the preamble is limiting, Conlin nevertheless discloses a “control reader” and “antenna array.” *See* Petition at 23 (referring also to Term 1c). Petitioner then asserts that a POSA would have selected Conlin’s embodiment of “a base portion and an update portion,” and further that a POSA “would have been motivated to place the 125 kHz reader antenna in the update portion, and place the 13.56 MHz reader antenna in the base portion.” *Id.* at 26.

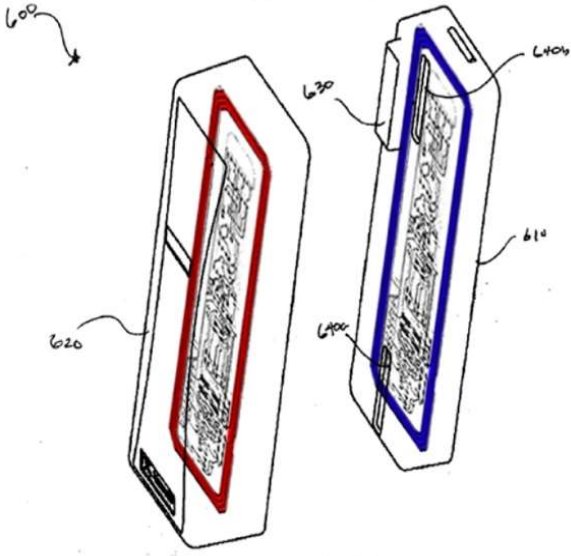
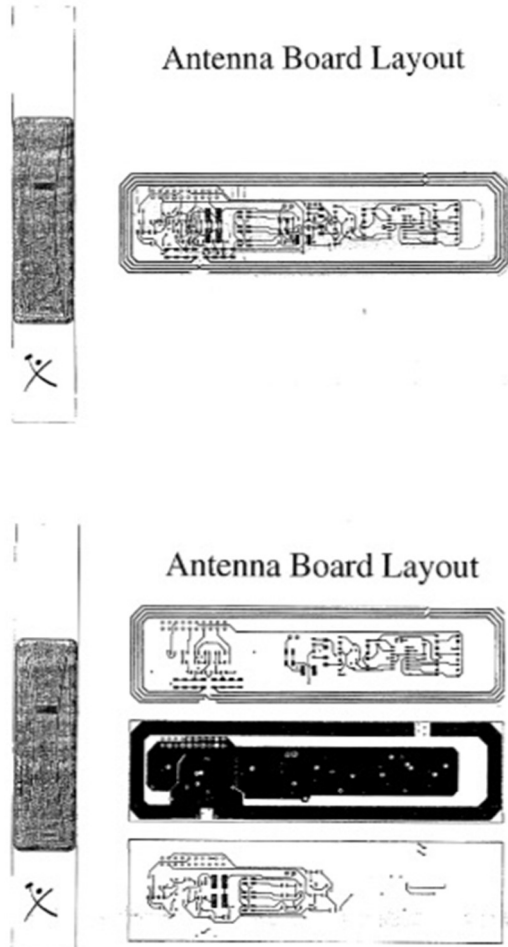
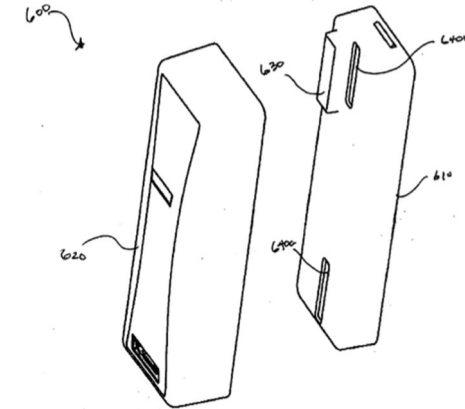
But the Petition does not specifically address whether or how the disclosed “antenna array,” purported “125 kHz reader antenna,” or purported “13.56 MHz reader antenna” are components of an integral reader that is “**capable itself of generating exciter signals.**” Conlin and Conlin ’667 are noticeably silent regarding where and how exciter signal generation occurs. EX2001 ¶¶43-51. In fact, the only mention of “signal” generation in either Conlin application is wholly unrelated to exciter signals. EX1006 at [0028] (discussing “access control device 140 send[ing] an electrical signal to operate the associated actuator”); EX2001 ¶50. Petitioners thus offer no evidence that Conlin’s multi-frequency access readers **generate an exciter signal**, instead of, *e.g.*, acting solely as a passive receiver system that reads transmitted signals. *See also* EX2001 ¶44.

Conlin's lack of any disclosure regarding signal generation by a reader is not surprising, because Conlin is *not* directed to solving the same problems as the '862 Patent. The '862 Patent focuses on improving the configuration of RFID reader components to overcome technical problems encountered with signal transmission and reading in multi-frequency RFID readers, *see supra* Section II, while Conlin focuses on a high-level implementation of multi-technology access control systems, for which including antennas operating at radio frequencies are merely one of many possibilities. *See, e.g.*, EX1006 at Abstract; EX2001 ¶¶45-49.

For these reasons, the Petition suffers from a failure of proof regarding limitation 1[pre], 1[A], and 1[B].

- d. **1[C]: “wherein the first and second antennas are oriented along axes that are substantially parallel to one another.”**

Petitioner concedes that neither Conlin nor Conlin '677 disclose any two-antenna configurations for a multi-frequency RFID reader. Instead of citing a purported configuration actually shown or described in either reference, the Petition manufactures an *entirely new device* by selecting two “antenna boards” from Conlin '677 and adding them into Conlin's Figure 6 with an arbitrarily selected size, orientation, and layout that (conveniently) purportedly lines up with the challenged claims:

Petition (at 30, 33)	Conlin '677 (EX1007 at 43-44)	Conlin (EX1006 FIG. 6)
 Figure 600 shows two perspective views of a rectangular device. The left view shows a red rectangular outline (620) on the front face. The right view shows a blue rectangular outline (610) on the back face. Other labels include 630, 640, and 650.	Antenna Board Layout  Figure 600 shows two perspective views of a rectangular device. The left view shows a red rectangular outline (620) on the front face. The right view shows a blue rectangular outline (610) on the back face. Other labels include 630, 640, and 650.	 Figure 600 shows two perspective views of a rectangular device. The left view shows a red rectangular outline (620) on the front face. The right view shows a blue rectangular outline (610) on the back face. Other labels include 630, 640, and 650. FIG. 6

The only way that Petitioner arrived at this manufactured device is by starting with the challenged claims and working backwards, the very definition of impermissible hindsight reasoning. *See KSR*, 550 U.S. at 421.

In particular, there are *no teachings* in Conlin or Conlin '677 to support an antenna arrangement with “axes that are substantially parallel to one another,” as claimed. Conlin’s discussion of Figure 6 (and related embodiments) provides nothing more than a vague statement that “it is also possible to include antennas, tuning networks, and appropriate RF reader electronics.” EX1006 at [0046]. As shown above, Conlin '677 does *not* show multiple “antenna boards” assembled in any particular configuration across the “update portion” and “base portion,” much less provide disclosures regarding how antennas across multiple “antenna boards” should be oriented relative to each other. EX1007 at 43-44; EX2001 ¶¶53, 55, 61.

If anything, Petitioner’s contrived device conflicts with Conlin’s disclosures. Petitioner places one of the “antenna boards” shown at EX1007 at 43-44 into the “**base portion 610**” of Figure 6. But the description preceding these images in Conlin '677 makes clear that the boards shown relate to the “Snap-on **cover**” (or “**update portion**”) of a reader—not to the “base portion.” *Id.* at 42 (“Snap-on covers containing ‘Antenna Board’”); EX2001 ¶59. In other words, Conlin fails to disclose any particular circuit board in the “base portion” and certainly does not disclose

reusing the same board from the update portion in the base portion nor does it disclose arranging the antennas in a parallel configuration. In any event, by inserting the same antenna board into both portions, Petitioner’s contrived device actually “would result in a single-frequency device.” EX2001 ¶60.

The Petition tellingly only cites to its expert declaration for the conclusory proposition that “the antenna on the flat circuit board in the base of the reader would be oriented along an axis that is substantially parallel to the axis of the other antenna provided on the flat circuit board in the update portion (snap-on cover).” Petition at 29. Yet, its expert cites *nothing* to support that opinion. EX1004 ¶ 111 (parroting language with no supporting citation to Conlin or Conlin ’677). Such unsupported assertions cannot support a finding of obviousness.⁵ *Xerox*, IPR2022-00624, Paper 9 at 15-16. Such assertions are “particularly problematic in cases where, like here, expert testimony is offered not simply to provide a motivation to combine prior-art teachings, but rather to supply a limitation missing from the [asserted] art.” *Id.* Petitioner does not point to *any* contemporaneous evidence suggesting that their

⁵ Even if such statements were sufficient, they do not address limitation 1[c] as correctly construed, which requires the two antennas to be “oriented along longitudinal axes *substantially equidistant* from each other.”

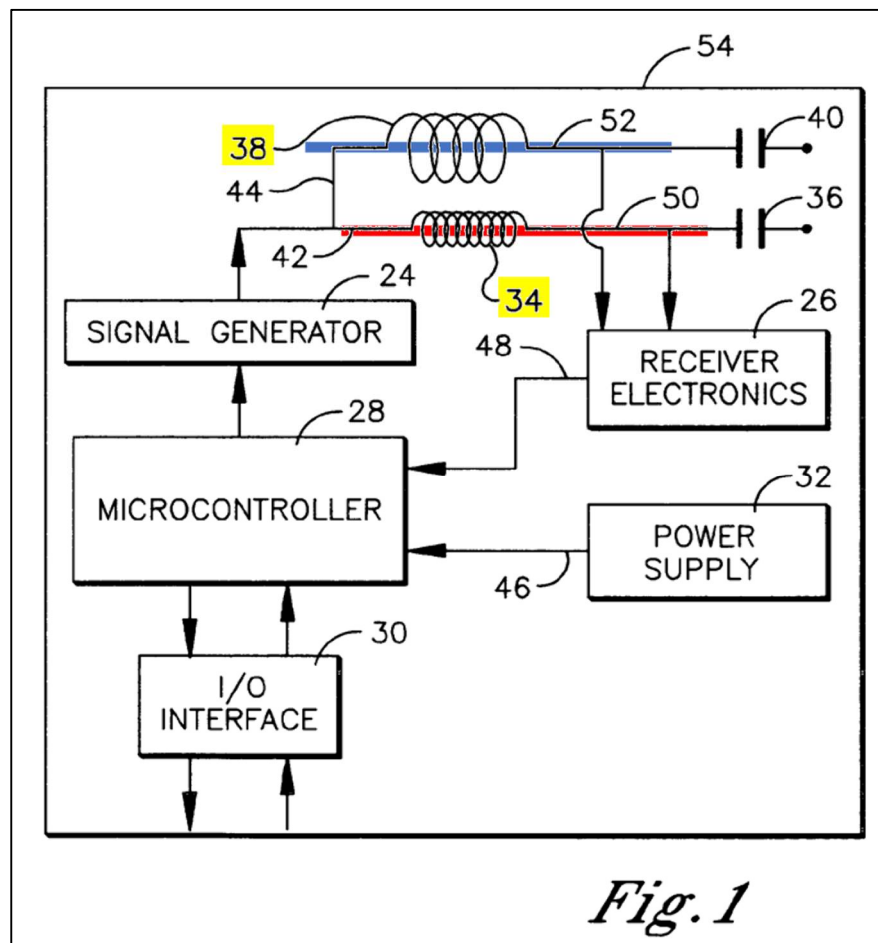
contrived device shown on page 30 of the Petition has any advantages over alternatively-oriented antennas without parallel axes.

Petitioner's arguments are also internally inconsistent. Petitioner and its expert reach their conclusion regarding limitation 1[C] by treating the Conlin '677 antenna boards as if they actually include 125 kHz and 13,56 MHz antennas, which in turn allows them to compare the orientation of the two antennas (which they mark in **blue** and **red**). But Petitioner elsewhere concedes that Conlin '677 does *not* "indicate exactly which frequency this antenna board is for." Petition at 27-28 (citing antenna boards shown by EX1007 at 43-44). In fact, to fill this gap, Petitioner's expert argues that a POSA would "design, test, and *adjust* the placement of various electrical components as needed" to obtain appropriate antenna board circuitry corresponding to claimed frequencies. EX1004 ¶¶ 93, 104-05; EX2001 ¶¶56-57 (explaining the difficulty involved in this task).

Petitioner cannot have it both ways. If a POSA would recognize Conlin '677's disclosures as so incomplete as to potentially necessitate "adjust[ing] the placement of various electrical components" on the antenna boards shown, then the POSA would likewise understand that the Conlin references lack sufficient information to teach a precise relative orientation of two antennas.

Lastly, Petitioner makes no effort to address the *Farpointe* court's clarification that the antenna "axes" claimed here must be "substantially equidistant"

along their “**longitudinal** axes,” *i.e.*, “the ax[e]s that [are] perpendicular to the plane defined by the antenna loop[s].” *Supra* Section VII.B (explaining how this construction comports with the specification’s description of what the different figures showed). As the *Farpointe* Court correctly noted, Figure 1 is instructive, as it depicts “reader antennas 34, 38...as being arranged in parallel adjacent to one another.” ’862 Patent at 10:25-27. The resulting longitudinal axes extend perpendicularly ***through*** the plane of each coil, and are equidistant from each other (as shown with red and blue annotations below):



The Petition does not attempt to identify these longitudinal axes in its new figure, and appears to mistakenly focus on the planes on which the antennas are purportedly provided (*i.e.*, the “flat circuit board in the base of the reader” being “substantially parallel” to the “flat circuit board In the update portion”). Petition at 29-30. An axis along the plane of an antenna is actually perpendicular to the claimed (longitudinal) axis of the antenna that extends perpendicular to the plane of the circuit board. Thus, even for Petitioner’s hindsight-generated device, the Petition fails to explain why a POSA may be motivated to adopt a multi-antenna configuration along parallel *longitudinal* axes. Petitioner’s asserted obviousness theory thus fails to establish limitation 1[c].

That Conlin and Conlin ’677 do not render the ’862 Patent obvious should come as no surprise, as the specific focus of the claimed inventions (particular advantageous RFID antenna array configurations to avoid interference that may result from multiple frequencies), are neither addressed nor suggested by those references.

As such, for the reasons provided above, Ground 1 fails to provide a reasonable likelihood of prevailing as to claim 1. Ground 1 thus likewise fails as to dependent claims 2-4, which depend from independent claim 1. EX1001.

2. Independent Claim 5 and Dependent Claim 6

Claim 5 differs from claim 1 by reciting limitation 5[C] (“wherein said first and second antennas are arranged in at least a partially overlapping arrangement on proximate adjacent planes”) in place of limitation 1[C]. For the same reasons set forth for limitations 1[pre], 1[A], and 1[B], *supra* Section VIII.B.1.a-c, Ground 1 fails as to the equivalent limitations in claim 5.

As with limitation 1[C], Petitioner improperly relies upon a hindsight-derived configuration where it takes two “antenna boards” from Conlin ’677 and arbitrarily arranges them into Conlin’s Figure 6 to purportedly meet the limitations of the claim. Petition at 32-33. But there is nothing in Conlin or Conlin ’677 to support Petitioner’s selected arrangement—no depictions showing or teachings explaining how antennas on multiple “antenna boards” should be oriented relative to each other. *See supra* Section VIII.B.1.d.

As discussed, Petitioner’s new figure conflicts with Conlin ’677’s description that the “antenna boards” shown at EX1007 at 43-44 are for the “Snap-on **cover**” (or “**update** portion”) of a reader—not the “base portion.” It is supported by nothing more than conclusory expert statements. EX1004 ¶¶ 121-22; *Xerox*, IPR2022-00624, Paper 9 at 15-16.

Petitioner also fails to cure its argument’s internal inconsistency that a POSA would lack sufficient clarity regarding what frequencies Conlin ’677’s depicted

antenna boards operate at, but nevertheless somehow view them as definite proof of the claimed multi-antenna configurations anyway. *See supra* Section VIII.B.1.d. If anything, Petitioner’s argument for limitation 5[c]—which incorrectly focuses on the orientation of the “antenna boards” generally—exacerbates the issue. *See* Petition at 122 (“When these antenna boards are arranged facing each other...they [*i.e.*, the antenna **boards**] are in at least partially overlapping arrangement.”). Claim 5[c] requires that the recited reader antennas themselves—not the circuitry board to which they are connected—is “arranged in at least a partially overlapping arrangement on proximate adjacent planes.” Thus, if a POSA would recognize a need to **modify** the antennas located on the antenna boards shown, as Petitioner’s expert indicates, (*see* EX1004 ¶¶ 93, 104-05), a POSA would have no reason to conclude that the modified antennas’ eventual orientation would mirror that of the boards, as Petitioner assumes. *See also* EX2001 ¶¶56-57.

Petitioner also fails to address the *Farpointe* Court’s construction of limitation 5[C]—that “the first and second antennas arranged so that one antenna may be brought into contact with the other antenna at some point of rotation if one (or both) antenna (antennas) were rotated about its (their) respective center (centers) of mass, the antennas contained within respective planes before rotation in their fixed positions that are near, close, or contiguous.” As discussed above, the *Farpointe* Court did so based on the ’862 Patent’s description of “[a] preferred antenna

arrangement...termed an overlapping arrangement.” *Supra* Section VII (discussing ’862 Patent at 11:66 to 12:16). Petitioner’s decision not to address the proper construction of this limitation—*e.g.*, its failure to address rotatability of the antennas about their centers of mass—results in a failure of proof as to limitation 5[C].

For the reasons provided above, Ground 1 fails to provide a reasonable likelihood of prevailing as to claim 5. Claim 6 depends on independent claim 5. EX1001. Ground 1 likewise fails as to dependent claim 6.

3. Independent Claim 14 and Dependent Claim 16

Claim 14 contains all the requirements of claim 1, and also requires limitation 14[D] (“a **signal generator** coupled with said first and second reader antennas”). For the same reasons provided above for limitations 1[pre], 1[A], 1[B], and 1[C], *supra* Section VIII.B.1.a-d, Ground 1 fails as to the equivalent limitations in claim 14.

Petitioner contends that limitation 14[D] is disclosed by a broad reference to “**analog front end circuitry**” in Conlin and Conlin ’667, which a POSA would purportedly understand “refers to a structure that includes a **signal generator**.” Petition at 34. This is simply incorrect. Conlin and Conlin ’667 are silent regarding whether relevant signal generation by the reader occurs, and, if it does, how. As noted above, the only mention of “signal” generation in either application is wholly unrelated to an RFID reader generating signals. EX1006 at [0028] (discussing

“access control device 140 send[ing] an electrical signal to operate the associated actuator”).

Petitioner’s only support for interpreting an “analog front end” to require signal generation is an unrelated and non-analogous reference (Nakagawa), which actually contradicts Petitioner’s position. Petition at 34 (citing EX1026 at 1:35-2:31, 3:19-48); EX1004 ¶ 131 (same). First, Nakagawa does not relate to RFID readers nor access control systems at all, but to “a terminal apparatus for a mobile communication system including a digital cellular portable telephone,” *i.e.*, cellphones. EX1026 at 1:14-20. Second, Nakagawa’s “analog front end” is not a signal generator. Instead, pre-existing signals are delivered to it, and converted from digital to analog or vice versa. *See, e.g., id.* at 1:64-2:1 (“The modulated digital voice ***is converted into analog data*** in the analog front end (AFE) of the AFE/RF circuit section 1605....”), 3:41-45 (“This signal is... delivered to the I/Q A/D converter 204 of the analog front end (AFE) 202.”). So, neither Conlin nor Conlin ’667 describe the claimed “signal generator,” nor does Nakagawa (a reference not even relied upon as part of the obviousness combination for this ground).

For the reasons provided above, Ground 1 fails to provide a reasonable likelihood of prevailing as to claim 14. Claim 16 depends on independent claim 14. EX1001. Ground 1 likewise fails as to dependent claim 16.

4. Independent Claim 17 and Dependent Claim 19

Claim 17 includes all the limitations of claim 14, except that in place of limitation 14[C], it recites a substantially identical limitation to claim 5[C], and that includes limitation 17[D] (“receiver electronics coupled with said first and second reader antennas”) in lieu of limitation 14[D].⁶ For the reasons provided above for claims 1, 5[C], and 14[D], Ground 1 fails to provide a reasonable likelihood of prevailing as to claim 17. *Supra* Sections VIII.B.1-3. Claim 19 depends on independent claim 17. EX1001. Ground 1 likewise fails for dependent claim 19.

5. Independent Claim 20

Claim 20 includes all of the limitation of claim 1, and additionally requires that each antenna be a “loop” antenna. Claim 20 additionally includes limitations 20[C] (“wherein a first plane defined by the first area is substantially orthogonal to a direction of magnetic flux created through the first antenna, wherein a second plane defined by the second area is substantially orthogonal to a direction of magnetic flux created through the second antenna”) and 20[D] “wherein said first and second loops are arranged relative to one another such that a portion of the first area in the first

⁶ The *Farpointe* Court construed these limitations of claims 5 and 17 together. *Supra* Section VII.

plane **overlaps a portion** of the second area in the second plane”) in lieu of limitation 1[C].

For the same reasons provided above for limitations 1[pre], 1[A], and 1[B], *supra* Section VIII.B.1.a-c, Ground 1 fails for the equivalent limitations in claim 20. Additionally, as to limitations 20[A] and 20[B], Petitioner is incorrect that “Conlin discloses a loop antenna that could be used with 125 kHz and 13.56 MHz reader antennas.” Petition at 37. As Petitioner elsewhere concedes, Conlin ’677 does **not** “indicate exactly which frequency this antenna board is for.” Petition at 27-28 (citing antenna boards shown by EX1007 at 43-44).

Petitioner is also incorrect regarding limitation 20[D] for the same reasons provided above for limitations 1[C] and 5[C]. *Supra* Sections VIII.B.1.d, VIII.B.2. To summarize, Petitioner concedes that neither Conlin nor Conlin ’677 disclose any two-antenna configurations for a multi-frequency RFID reader operating, and tries to overcome this deficiency by selecting two “antenna boards” from Conlin ’677’s “Snap-on cover” (or “update portion”) and arbitrarily arranging them into both the “update” **and** “base portions” of Conlin’s Figure 6, without any evidentiary support other than their expert’s conclusory opinions.

Further, even Petitioner’s made-up figure does not appear to meet the actual requirements of the claim. Petitioner positions the loop antennas so that they entirely overlap and generally asserts that the “loop antennas on separate planes...are

overlapping.” Petition at 38. But the claims, both on their face and as construed by the *Farpointe* Court,⁷ *supra* Section VII, do not merely recite that the “first” and “second area[s]” overlap—they more precisely require that “a ***portion*** of the first area...overlaps a ***portion*** of the second area.” Put differently, the claim requires a ***partial*** overlap of spanning “a portion” of each reader antenna that the Petition fails to address. Petitioner’s overbroad understanding of limitation 20[D] incorrectly renders the “a portion of” language “void, meaningless, or superfluous.” *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017).

For the above reasons, Ground 1 fails to provide a reasonable likelihood of prevailing as to claim 20.

C. GROUND 2 DOES NOT ESTABLISH A REASONABLE LIKELIHOOD OF PREVAILING

Ground 2 asserts that Conlin in view of U.S. Patent No. 4,600,829 (“Walton”) renders claims 7, 9-11, 13, 22-24, and 26 obvious. For the reasons discussed below,

⁷ The *Farpointe* Court construed the limitation to require “a ***portion*** of the area enclosed by the first reader loop antenna covers or is covered by a ***portion*** of the area enclosed by the second reader loop antenna as viewed along the longitudinal axis.” *See* EX2003 at 22-23.

Ground 2 fails to establish a reasonable likelihood of prevailing as to any of these challenged claims.

1. A POSA Would Lack Motivation to Combine Conlin with Walton to Reach the Claimed Inventions

As discussed above, Petitioner’s obviousness arguments for Conlin are predicated on a POSA beginning with Conlin’s embodiment of “a base portion and an update portion,” and further that a POSA somehow “would have been motivated to place the 125 kHz reader antenna in the update portion, and place the 13.56 MHz reader antenna in the base portion.” Petition at 26. The Petition specifically asserts that this embodiment would “search[] for cards of multiple frequencies and reads/transmits the data from the card,” *i.e.*, that the “update portion” and “base portion” are each reading and transmitting at their respective different frequencies.

But Walton teaches a fundamentally different approach. Walton’s “reader 12” includes a dedicated “coil antenna 20” for “radiat[ing] an electromagnetic field” with “flux lines 40 [that] reach the identifier section 14 when the identifier section is physically brought within [its] proximity,” *i.e.*, a first antenna only for transmitting. EX1023 at 4:9-13. The other “reader antenna coil 24” in Walton’s reader, however, “is adapted to receive modulated radio frequency signals from the identifier section 14,” *i.e.*, a second antenna only for receiving. *Id.* at 3:57-59. Instead of two *reader* antennas that each enable data communication with a different transponder at a

different frequency, Walton uses “separate coils for transmitting and receiving” together to communicate with a single transponder. *Id.* at 2:39-49 (explaining that “the two directions of communication are isolated from one another”); EX2001 ¶79.

That Walton lacks first and second “reader antenna[s]” and describes communicating with only one transponder belies the notion that a POSA would have motivation to combine it with Conlin to reach the claimed invention. *Id.* ¶¶ 80-82. A POSA could only reach the claimed inventions by impermissibly “us[ing] hindsight reconstruction to pick and choose among isolated disclosures” in these references. *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). As in *Fritch*, the obviousness argument here is predicated on taking an isolated, narrow teaching (separate receiving and transmitting antennas for communicating with the same transponder), over-generalizing it (here, to all antennas), and then applying it to a different context than disclosed in the art (two reader antennas for communicating with separate transponders). *Id.* at 1265-66 (Board’s consideration of a grass edging device having a flexible mower strip was erroneous both by “extend[ing] that flexibility to the entire device” and applying it to a “landscape retainer”).

Applying Walton’s teachings in their proper context demonstrates that Petitioner’s proposed combination would not resolve the problem of interacting magnetic fields—it would **compound** it. EX2001 ¶81. Implementing Walton’s teachings into the Conlin embodiment would involve placing both a dedicated

transmitter antenna and a dedicated receiver antenna into the “update portion” (which Petitioner argues communicates with a first transponder at a first frequency), and both another dedicated transmitter antenna and another dedicated receiver antenna into the “base portion (which Petitioner argues communicates with a second transponder at a second frequency). *Id.* The Petition acknowledges this, and itself asserts that the Walton-Conlin combination would involve “placing *two or more antennas within each* of an update portion or a base portion.” Petition at 42 (emphasis added).

Thus, unlike Petitioner’s arbitrarily selected arrangements derived from Conlin ’677 and Conlin’s Figure 6—which depict only two antennas across the “update portion” and “base portion”—Petitioner’s proposed combination here involves at least *four* antennas whose magnetic fields would interact. EX2001 ¶81.

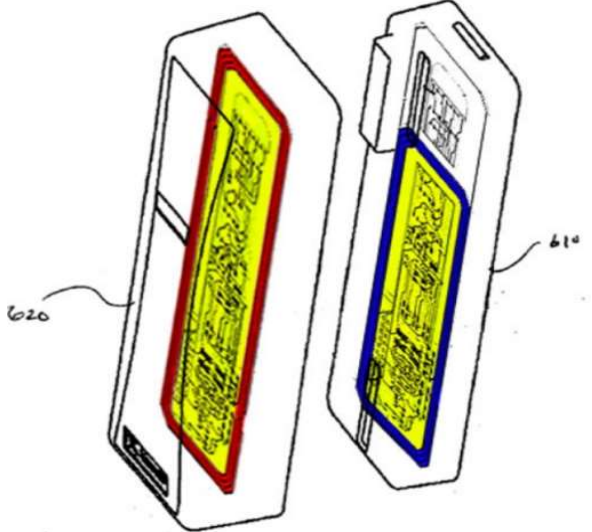
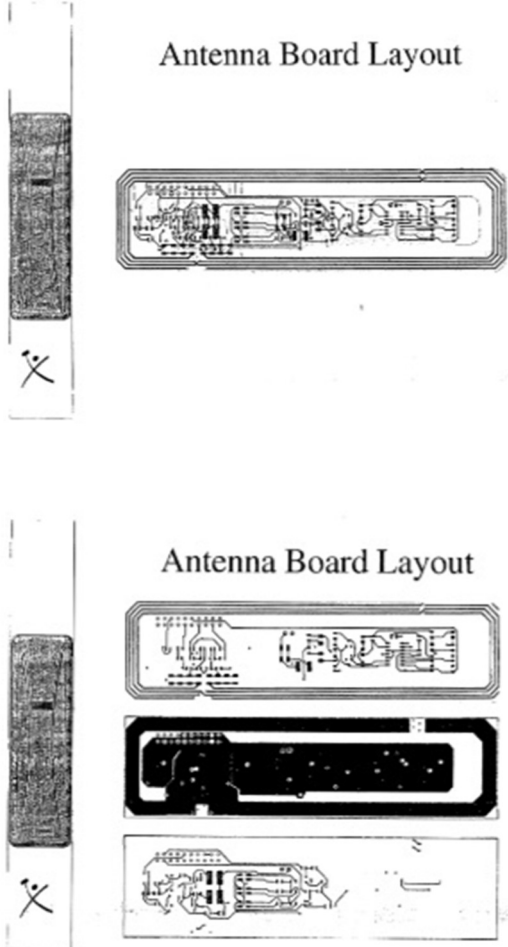
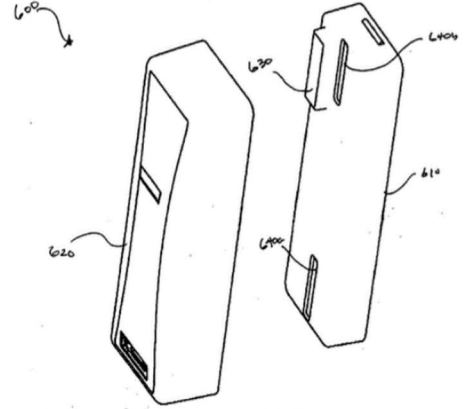
The Board should therefore reject Ground 2 for failure to establish motivation-to-combine.

2. Dependent Claim 7

Claim 7 depends on independent claim 5. EX1001. The Petition does not assert that Walton discloses any limitations of independent claim 5, and instead relies on Conlin and Conlin ’667. Because Conlin fails to render independent claim 5 obvious, *see supra* Section VIII.B.2, Ground 2 likewise fails as to dependent claim 7.

The Petition’s analysis of dependent claim 7—which requires “said first and second reader antennas are arranged relative one another such that **only a portion of said first area aligns with only a portion of said second area**”—is also deficient.

To reach its conclusion, Petitioner first relies upon the same hindsight reasoning discussed above (*e.g.*, in connection with limitations 1[C]). *Supra* VIII.B.1.d. Because neither Conlin nor Conlin ’677 disclose any two-antenna configurations for a multi-frequency RFID reader, the Petition again relies upon a manufactured disclosure that selects two “antenna boards” from Conlin ’677 and arbitrarily arranging them into Conlin’s Figure 6. Petition at 45.

Petition (at 45)	Conlin '677 (EX1007 at 43-44)	Conlin (EX1006 FIG. 6)
	Antenna Board Layout  Antenna Board Layout	 FIG. 6

Petitioner then relies upon more impermissible hindsight reasoning by selectively plucking Walton’s discussion of antenna positioning and applying it to Conlin, without reconciling the fact that Walton’s antenna positioning solved a different problem for a fundamentally different embodiment. The combination of Conlin and Walton would, as Petitioner initially acknowledges, involve “placing two or more antennas *within each* of an update portion or a base portion.” Petition at 42 (emphasis added). As discussed in Section VIII.C.1, this would compound interference problems in a multi-transponder system with two “reader antenna[s]” and provide no motivation “to modify the antennas in the update portion and base portion...by shortening one of the antenna loops...in order to reduce the net magnetic flux through the longer antenna,” as Petitioner claims. *See id.* at 44.

It also would not result in a device that a POSA would understand to reflect one antenna operating at 125 kHz and a second antenna operating at 13.56 MHz. As Mr. Lipoff explains, Petitioner’s contrived device originates from “incorrectly insert[s] the same exemplary “antenna board” from EX1007 at 43 into both the “update portion” and “base portion.” EX2001 ¶59. “[R]educing a three-loop coil’s size”—as Petitioner does relative to its hypothetical device for claim 1—“would somewhat increase that antenna’s frequency, but the continuing similarities to the other antenna (*e.g.*, same number of antenna loops and shape) would suggest that

they operate at closer frequencies, not at starkly different frequencies, such as 125 kHz and 13.56 MHz.” *Id.* ¶ 60.

Petitioner’s reasoning thus fails as a matter of law. Obviousness “cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998). Walton does not contemplate multiple-transponder embodiments with two “reader antenna[s],” and does not have *any* disclosure suggesting that its antenna positioning approach could be used in Conlin’s different context, nor any disclosure that such use would be reasonably likely to succeed. *Supra* Section VIII.C.1.

Accordingly, Ground 2 provides no basis for a POSA to modify Conlin to reach the invention claimed in claim 7.

3. Independent Claim 9 and Dependent Claims 10-11, 13

Claim 9 mirrors claim 5, except that limitation 5[C] is replaced with limitation 9[C] (“wherein said first and second antennas are arranged in an opposing magnetic flux arrangement”). As discussed above, *supra* Section VIII.B.2, limitations 1[pre], 1[a], and 1[B] likewise share the common language between claims 5 and 9. Petitioner relies solely upon Conlin as purportedly disclosing the common limitations of claims 5 and 9. Petition at 47. For the same reasons provided above

as to limitations 1[pre], 1[A], and 1[B], *supra* Section VIII.B.1.a-c, Ground 2 fails as to the equivalent limitations in claims 5 and 9.

Ground 2 is also deficient as to limitation 9[C]. Petitioner advances arguments that mirror those it asserted for claim 7, which fail for the same reasons specified above. *Supra* Sections VIII.B.1.d (addressing Petitioner's reliance on Conlin's annotated Figure 6), VIII.C.2 (addressing Walton as applied to claim 7).

Claims 10-11 and 13 depend on independent claim 9. EX1001. Ground 2 likewise fails as to dependent claims 10-11, 13.

4. Dependent Claim 22

Claim 22 depends on independent claim 20. EX1001. The Petition does not assert that Walton discloses any limitations of independent claim 20. Because Conlin fails to render independent claim 20 obvious, *see supra* Section VIII.B.5, Ground 2 likewise fails as to dependent claim 22.

5. Independent Claim 23 and Dependent Claim 24

Claim 23 includes all limitations of claim 20, but recites limitation 23[C] ("wherein said first and second loops are arranged in an opposing magnetic flux arrangement where the direction of magnetic flux created through the first loop is substantially parallel but opposite to the direction of magnetic flux created through the second loop") in place of limitation 20[C]. The limitations common to claims 20 and 23 are also found in limitations 1[pre], 1[A], and 1[B].

The Petition does not assert that Walton discloses any limitations shared between claims 20 and 23. Thus, for the same reasons provided above as to limitations 1[pre], 1[A], and 1[B], *supra* Section VIII.B.1.a-c, Ground 2 fails as to the equivalent limitations in claim 23.

The Petition is also deficient as to limitation 23[C]. The argument here is predicated on a POSA making a further “modification to the arrangement described above with respect to Claim 7.” Petition at 64. Because Petitioner’s argument regarding reaching “the arrangement” of claim 7 is incorrect, its argument here fails as well. *See supra* Section VIII.C.2.

Petitioner’s argument for further modification only highlights the lacking disclosures of Conlin and Walton, and it cites *neither* for this limitation. Petition at 50-52 (relying exclusively on expert statements); *Xerox*, IPR2022-00624, Paper 9 at 15-16. And while Petitioner’s expert describes why “an opposing magnetic flux arrangement” may be advantageous, he does not identify any disclosure in Conlin, Walton, or any other contemporaneous art showing an appreciation or suggestion for that arrangement. That is legally insufficient— “common sense” arguments cannot supply a limitation “*missing* from the prior art” if it “plays a major role in the subject matter claimed,” as the antenna configurations here do. *See Arendi S.A.R.L.*, 832 F.3d at 1362.

Petitioner's argument here is untethered to anything in the Conlin and Walton references. Although neither Conlin nor Walton actually describes any two-antenna configurations for multi-frequency RFID systems, Petitioner asserts that the combination discloses limitation 23[C]. The Petition engages in at least three levels of extrapolation to do so: (1) deriving an arbitrarily selected multi-antenna configuration from Conlin's Figure 6 and Conlin '677's figures; (2) modifying that manufactured configuration further to provide differently-sized antennas; and (3) orienting the differently sized antennas in particular directions to achieve an opposing flux arrangement. This multi-level extrapolation belies Petitioner's arguments, and shows that Conlin and Walton do *not* provide disclosures that render the '862 Patent's claims obvious.

For the reasons provided above, Ground 2 fails to provide a reasonable likelihood of prevailing as to claim 23. Claim 24 depends on independent claim 23. EX1001. Ground 2 likewise fails as to dependent claim 24.

D. GROUND 3 DOES NOT ESTABLISH A REASONABLE LIKELIHOOD OF PREVAILING

Ground 3 asserts that RFID Handbook (EX1008) in view of Davis Presentation (EX1011) renders claims 1-6, and 14-20 obvious. For the reasons discussed below, Ground 3 fails to establish a reasonable likelihood of prevailing as to any of these challenged claims.

1. Independent Claim 1

a. Limitations 1[pre], 1[A], and 1[B]

In an extreme textbook example of applying improper hindsight, Petitioner argues that a POSA applying Davis Presentation would select the antenna from the easy-key System reader from Chapter 3 of RFID Handbook and the MIFARE® reader from Chapter 11 (almost three-hundred pages later in the handbook), and then combine them to form an antenna array meeting limitations 1[pre], 1[A], and 1[B]. Petition at 62-65. This position is flawed for three reasons.

First, Petitioner is incorrect that Davis Presentation teaches any multi-frequency antenna arrays for RFID readers. Davis Presentation more generally teaches that one possible migration strategy may involve “multi-*technology* readers []capable of reading two different technologies.” EX1011 at 21. Davis Presentation does not provide *any* teachings regarding how such readers should be designed. For example, Davis Presentation does not specify whether its contemplated multi-technology readers use the same antenna at different frequencies, different antennas at the same frequency that carry different data, the same antenna at the same frequency but with different orientations, or some other configuration. As such, the only way a POSA would interpret multi-technology to mean a multi-frequency antenna array using two different antennas would be if they started with the claims and impermissibly worked backwards. *See KSR*, 550 U.S. at 421.

Second, Petitioner does not identify any reason that a POSA would pluck antennas from two particular readers (easy-key System and MIFARE®) out of the hundreds of pages of disclosures provided throughout RFID Handbook. Petitioner offers conclusory statements that these are purportedly “suitable examples” of 125 kHz and 13.56 MHz readers, and that MIFARE® *seems to* provide sufficient room on “the other side of the circuit board to incorporate a low frequency antenna.” Petition at 61-62; EX1004 ¶ 227 (reiterating same). But neither Petitioner nor its expert provide any evidentiary support that these commercial products would actually be combinable or suitable *for* a multi-technology application contemplated by Davis Presentation.

Nothing about RFID Handbook’s surrounding disclosures discuss modifying these products, nor indicate they would be easily combinable in the manner Petitioner advances. If anything, the disclosures indicate the opposite. The RFID Handbook indicates that neither the easy-key System and MIFARE® have modularity, as each has “integral” antennas. EX1008 at 20, 92. This suggests to a POSA that the easy-key System’s antenna could not be easily removed and implemented on another reader. EX2001 ¶¶73-75.

Similarly, RFID Handbook explains later in Chapter 11 that “[d]ifferent types and designs of readers are available for different applications.” *Id.* at 95-97. Yet Petitioner provides no explanation as to why the easy-key System and MIFARE®

would be suitable for the multi-technology migration purpose Davis Presentation suggests, much less a multi-frequency antenna array. The RFID Handbook subsection on “Portable Readers,” for example, does not mention MIFARE® as an example of such a reader. *Id.* at 97. Given the lack of these supporting facts, Petitioner’s argument regarding these limitations amounts to impermissible “hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD*, 159 F.3d at 546.

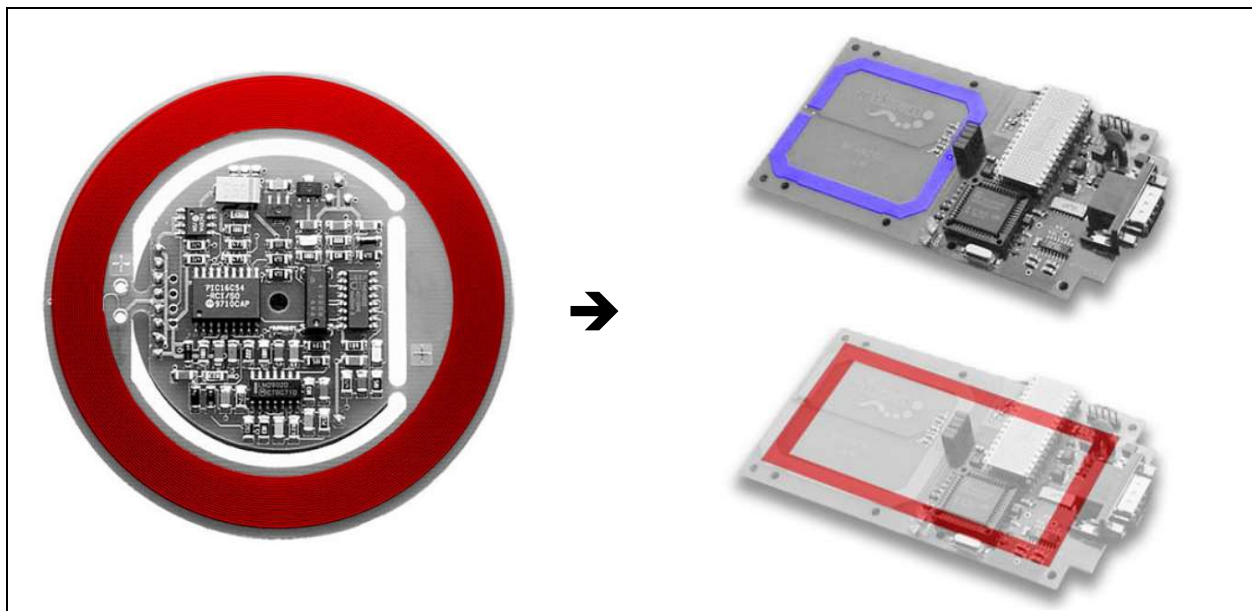
Petitioner glosses over these lacking disclosures regarding antenna arrays to bury the fact that Davis Presentation and RFID Handbook address fundamentally different problems than the ’862 Patent. As discussed above, *supra* Section II, the ’862 Patent’s multi-frequency antenna arrays address **interference issues** resulting from “[c]losely positioning the reader antennas 34, 38 within the reader housing 54 clearly reduces the size requirements of the reader housing” “without regard to their specific arrangement.” EX1001 at 10:59-65. Unlike that *specific* problem, Davis Presentation seeks to provide POSAs with high-level strategies for technology migration, and RFID Handbook merely serves as a general background reference.

Third, Ground 3 also fails because Petitioner does not address the requirement in the *Farpointe* Court’s construction that the antennas must be for a reader “capable itself of generating exciter signals and reading transponder signals.” *See supra* Section VII. RFID Handbook does not discuss how signal generation occurs for

either the easy-key System and MIFARE®. EX1008 at 20, 75, 80. 92; EX2001 ¶¶62-65. Petitioner therefore fails to meet its burden on this limitation. *United Microelectronics*, IPR2017-01513, Paper 10 at 9 (“The Board is not required to ‘play archeologist with the record’ or endeavor to discover a challenge that might have been asserted had a petitioner identified the correct claim construction.”).

b. Limitation 1[C]

Similar to Grounds 1 and 2, Petitioner concedes that neither Davis Presentation nor RFID Handbook disclose any two-antenna configurations for a multi-frequency RFID reader operating at both frequencies. Petitioner instead invents new annotated figures with antenna configurations with *no basis* in the asserted references. As one obvious example, Petitioner completely transforms size and shape of the circular easy-key System antenna into something unrecognizable:



To be clear, there are *no disclosures* in RFID Handbook or Davis Presentation that discuss the arrangement for a multi-frequency antenna array, much less show or describe on the one arbitrarily created by Petitioner. EX2001 ¶¶67-72. Despite RFID Handbook’s lengthy disclosure, Petitioner cites no instance where the RFID Handbook shows multiple antennas assembled in any particular configuration, nor provides teachings regarding how antennas should be oriented relative to each other. Instead, Petitioner again impermissibly employs “hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD*, 159 F.3d at 546.

Put simply, Petitioner seeks to supply this limitation using expert assertions that a POSA would simply know—despite the lack of any guidance from the references showing multi-antenna, multi-frequency configurations—that the two antennas should be oriented as being substantially parallel. Petition at 65-68 (repeatedly citing EX1004). Petitioner’s expert identifies three alternative *locations* on MIFARE® that the easy-key System antenna purportedly could be placed: (1) along the perimeter of its underside; (2) above the circuit board; and (3) along the interior perimeter of the housing. EX1004 ¶¶ 231-33. But he provides no supporting evidence as to why, in a multi-antenna configuration, placing the easy-key System antenna in those locations necessitates requires a parallel *orientation* to the MIFARE® antenna. Instead, he simply concludes it would be so, and provides his

own annotated figures showing it to be so. *Id.* ¶ 236. This testimony is not sufficient to establish a reasonably likelihood of Petitioner prevailing. *Xerox*, IPR2022-00624, Paper 9 at 15-16. Indeed, Mr. Lipoff explains why the RFID Handbook’s disclosures would not lead a POSA towards this hypothetical antenna configuration—“adding an additional radio-frequency antenna to the MIFARE reader would compound the interference issues already at play, and may demand revising the placement, shape, and orientation of the MIFARE reader’s existing 13.56 MHz antenna, its circuitry components, and/or a low-frequency antenna taken from the easy-key System.” EX2001 ¶¶73-75.

Lastly, Petitioner makes no effort to address the *Farpointe* Court’s clarification that the antenna “axes” claimed here must be “substantially equidistant” along their “**longitudinal** axes,” *i.e.*, “the ax[e]s that [are] perpendicular to the plane defined by the antenna loop[s],” *see supra* Section VII, and thus suffers from a failure of proof under that construction. Petitioner does not identify any longitudinal axes equidistant from each other disclosed by RFID Handbook and/or Davis Presentation, and cannot do so. As discussed, neither reference discloses any multi-antenna array configuration at all, and thus certainly do not disclose the longitudinal axes for antennas within such an array.

For the reasons provided above, Ground 3 fails to provide a reasonable likelihood of prevailing as to claim 1. Claims 2-4 depend (directly or indirectly) on

independent claim 1. EX1001. Ground 3 thus likewise fails as to dependent claims 2-4.

2. Independent Claim 5 and Dependent Claim 6

Claim 5 differs from claim 1 by reciting limitation 5[C] (“wherein said first and second antennas are arranged in at least a partially overlapping arrangement on proximate adjacent planes”) in place of limitation 1[C]. For the same reasons provided above as to limitations 1[pre], 1[A], and 1[B], *supra* Section **Error! Reference source not found.**, Ground 3 fails as to the equivalent limitations in claim 5.

As for limitation 5[C], Petitioner improperly relies upon the same hindsight-derived configuration as for with limitation 1[C]. *Supra* Section VIII.D.1.b.

Additionally, the *Farpointe* Court construed limitation 5[C] to mean that “the first and second antennas arranged so that one antenna may be brought into contact with the other antenna at some point of rotation if one (or both) antenna (antennas) were rotated about its (their) respective center (centers) of mass, the antennas contained within respective planes before rotation in their fixed positions that are near, close, or contiguous” based on the ’862 Patent’s description of “[a] preferred antenna arrangement...termed an overlapping arrangement.” *Supra* Section VII (discussing ’862 Patent at 11:66 to 12:16). As Petitioner makes no effort to apply this construction, its arguments suffer from a failure of proof.

For these reasons, Ground 3 fails to provide a reasonable likelihood of prevailing as to claim 5. Claim 6 depends on independent claim 5. EX1001. Ground 3 likewise fails as to dependent claim 6.

3. Independent Claim 14 and Dependent Claims 15-16

Claim 14 contains all the requirements of claim 1, and also requires limitation 14[D] (“a signal generator coupled with said first and second reader antennas”). For the same reasons provided above as to limitations 1[pre], 1[A], 1[B], and 1[C], *supra* Section **Error! Reference source not found.**, Ground 3 fails as to the equivalent limitations in claim 14.

Petitioner contends that limitation 14[D] is disclosed by RFID Handbook, but mischaracterizes the excerpt cited. Petition at 71-72. RFID Handbook teaches that “[r]eaders in all systems can be reduced to two fundamental functional blocks: the control system and the *HF interface*, consisting of a transmitter and a receiver.” EX1008 at 79 (italics in original). This is not a teaching that every antenna in every RFID system is necessarily coupled to a signal generator. Nor should that be implied for the proposed combination of MIFARE® and the easy-key System, as the cited passages of RFID Handbook does not describe multi-frequency antenna configurations, nor address how the HF interface may differ between multi-frequency and single-frequency configurations. *See id.* at 79-80. For this additional

reason, Ground 3 fails to provide Petitioner a reasonable likelihood of prevailing as to claim 14.

Claims 15-16 depend on independent claim 14. EX1001. Ground 3 likewise fails as to dependent claims 15-16.

4. Independent Claim 17 and Dependent Claims 18-19

Claim 17 includes all the limitations of claim 14, except that it place of limitation 14[C], it recites a substantially identical limitation to claim 5[C], and that includes limitation 17[D] (“receiver electronics coupled with said first and second reader antennas”) in lieu of limitation 14[D].⁸ For the reasons provided above for claims 1, 5[C], and 14[D], Ground 3 fails to provide a reasonable likelihood of prevailing as to claim 17. *Supra* Sections VIII.D.1-3.

Claims 18-19 depend on independent claim 17. EX1001. Ground 3 likewise fails as to dependent claims 18-19.

5. Independent Claim 20

Petitioner is correct that claim 20 includes all of the limitation of claim 1, and additionally requires that each antenna be a “loop” antenna. Claim 20 additionally includes limitations 20[C] (“wherein a first plane defined by the first area is

⁸ The *Farpointe* Court construed these limitations of claims 5 and 17 together. *Supra* Section VII.

substantially orthogonal to a direction of magnetic flux created through the first antenna, wherein a second plane defined by the second area is substantially orthogonal to a direction of magnetic flux created through the second antenna”) and 20[D] “wherein said first and second loops are arranged relative to one another such that a portion of the first area in the first plane overlaps a portion of the second area in the second plane”) in lieu of limitation 1[C].

For the same reasons provided above as to limitations 1[pre], 1[A], and 1[B], *supra* Section **Error! Reference source not found.**, Ground 3 fails as to the equivalent limitations in claim 20.

Petitioner is also incorrect regarding limitation 20[D] for the same reasons provided above for limitations 1[C] and 5[C]. *Supra* Sections VIII.D.1.b, VIII.D.2. To summarize, Petitioner concedes that neither RFID Handbook nor Davis Presentation disclose any two-antenna configurations for a multi-frequency RFID reader operating at both frequencies, and tries to overcome that deficiency by arbitrarily creating a device not found in the asserted prior art from the MIFARE[®] and the easy-key System using hindsight bias.

Further, even Petitioner’s arbitrary figure does not appear to meet the actual requirements of the claim. Petitioner positions the loop antennas so that the 13.56 MHz antenna originally found in the MIFARE[®] is entirely overlapped and generally asserts that the “loop antennas on separate planes...are overlapping.” Petition at 38.

But the claims, including as construed in the *Farpointe* Litigation,⁹ *supra* Section VII, do not recite that the “first” and “second area[s]” overlap—they more precisely require that “a ***portion*** of the first area... overlaps a ***portion*** of the second area.” Put differently, the claim requires a ***partial*** overlap of each of the two antennas that the Petition fails to address.

For the reasons provided above, Ground 3 fails to provide a reasonable likelihood of prevailing as to claim 20.

E. GROUND 4 DOES NOT ESTABLISH A REASONABLE LIKELIHOOD OF PREVAILING

Ground 4 asserts that RFID Handbook (EX1008) in view of Davis Presentation (EX1011) and Walton renders claims 7, 9-11, 13, 22-24, and 26 obvious. For the reasons discussed below, Ground 3 fails to establish a reasonable likelihood of prevailing as to any of these challenged claims.

⁹ The *Farpointe* Court construed the limitation to require “a ***portion*** of the area enclosed by the first reader loop antenna covers or is covered by a ***portion*** of the area enclosed by the second reader loop antenna as viewed along the longitudinal axis.” *See* EX2003 at 22-23.

1. A POSA Would Lack Motivation to Combine RFID Handbook and Davis Presentation with Walton to Reach the Claimed Inventions

For much the same reasons as discussed above in connection with Ground 2, *supra* Section VIII.C.1, a POSA would not find motivation to combine Walton with RFID Handbook and Davis Presentation to reach the claimed inventions.

Despite Petitioner’s contention, RFID Handbook and Davis Presentation fail to teach a POSA to combine single-frequency readers into a multi-frequency reader with two antennas for communicating with two transponders at different frequencies.

Petitioner’s flawed combination is exacerbated by adding Walton, which teaches a fundamentally different approach. Walton’s “reader 12” includes a dedicated “coil antenna 20” for “radiat[ing] an electromagnetic field” with “flux lines 40 [that] reach the identifier section 14 when the identifier section is physically brought within [its] proximity,” *i.e.*, a first antenna only for transmitting. EX1023 at 4:9-13. The other “reader antenna coil 24” in Walton’s reader, however, “is adapted to receive modulated radio frequency signals from the identifier section 14,” *i.e.*, a second antenna only for receiving. *Id.* at 3:57-59. Instead of two antennas that enable data communication with two different transponders operating at different frequencies, Walton uses theses “separate coils for transmitting and receiving” together to communicate with a single transponder. *Id.* at 2:39-49

(explaining that “the two directions of communication are isolated from one another”); EX2001 ¶79.

Accordingly, a POSA would recognize that applying Walton’s teachings to the purported multi-frequency reader would compound the problem of interacting magnetic fields by introducing multiple antennas for each frequency. *See, e.g.*, Petition at 42 (explaining that the Walton / Conlin combination would involve “placing two or more antennas *within each* of an update portion or a base portion”) (emphasis added); EX2001 ¶¶81-82. That Walton’s teachings relate to antennas for communicating with a single transponder system—rather than enabling communication with each of a “first” and “second transponder,” as claimed—only further contradicts any purported motivation to combine.

The Board should therefore reject Ground 4 for failure to establish motivation to combine.

2. Dependent Claim 7

Claim 7 depends on independent claim 5. EX1001. The Petition does not assert that Walton discloses any limitations of independent claim 5. Because RFID Handbook and Davis Presentation fail to render independent claim 5 obvious, *see supra* Section VIII.D.2, Ground 4 likewise fails as to dependent claim 7.

The Petition’s analysis of dependent claim 7—which requires “said first and second reader antennas are arranged relative one another such that **only a portion**

of said first area aligns with only a portion of said second area”— is also deficient.

To reach its conclusion, Petitioner first relies upon the same hindsight reasoning discussed above (*e.g.*, in connection with limitations 1[C]). *Supra* VIII.D.1.b. Because neither RFID Handbook nor Davis Presentation disclose any two-antenna configurations for a multi-frequency RFID reader, the Petition again relies upon a manufactured disclosure that arbitrarily rearranges the MIFARE® and the easy-key System antennas into an annotated figure. Petition at 79.

Petitioner then relies upon more impermissible hindsight reasoning by selectively plucking Walton’s discussion of antenna positioning and applying it to this purported multi-frequency reader, without reconciling the fact that Walton’s antenna positioning solved a different problem for a fundamentally different RFID embodiment. This fails as a matter of law. Obviousness “cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD*, 159 F.3d at 546. Walton does not contemplate multi-frequency systems using a “first” and “second” antenna to transmit and receive with a “first” and “second” transponder—it describes only two antennas dedicated to transmission to and receiving from a single transponder. *Supra* Section VIII.E.1. Combining Walton with the purported multi-frequency reader resulting from RFID Handbook and Davis Presentation would therefore

involve replacing the single-antennas provided by each of MIFARE[®] and the easy-key System with two or more antennas. As such, Walton provides no motivation to modify the orientation or overlap of the MIFARE[®] and the easy-key System antennas relative to each other.

Accordingly, Ground 4 provides no basis for a POSA to modify RFID Handbook and Davis Presentation further to reach the invention claimed in claim 7.

3. Independent Claim 9 and Dependent Claims 10-11, 13

Petitioner notes that claim 9 mirrors claim 5, except that limitation 5[C] is replaced with limitation 9[C] (“wherein said first and second antennas are arranged in an opposing magnetic flux arrangement”). As discussed above, *supra* Section VIII.B.2, limitations 1[pre], 1[a], and 1[B] likewise share the common language between claims 5 and 9. Petitioner relies solely upon RFID Handbook and Davis Presentation as purportedly disclosing the common limitations of claims 5 and 9. Petition at 79-80. For the same reasons provided above as to limitations 1[pre], 1[A], and 1[B], *supra* Section **Error! Reference source not found.**, Ground 4 fails as to the equivalent limitations in claims 5 and 9.

Ground 4 is also deficient as to limitation 9[C]. Petitioner advances arguments largely reflect those it asserted for claim 7, which fail for the same reasons specified above. *Supra* VIII.D.1.b (addressing Petitioner’s reliance on annotated drawings), VIII.E.2 (addressing Walton as applied to claim 7). Claims 10-11 and 13

depend on independent claim 9. EX1001. Ground 4 likewise fails as to dependent claims 10-11, 13.

4. Dependent Claim 22

Claim 22 depends on independent claim 20. EX1001. The Petition does not assert that Walton discloses any limitations of independent claim 20. Because RFID Handbook and Davis Presentation fail to render independent claim 20 obvious, *see supra* Section VIII.D.5, Ground 4 likewise fails as to dependent claim 22.

5. Independent Claim 23 and Dependent Claim 24

Claim 23 includes all limitations of claim 20, but recites limitation 23[C] (“wherein said first and second loops are arranged in an opposing magnetic flux arrangement where the direction of magnetic flux created through the first loop is substantially parallel but opposite to the direction of magnetic flux created through the second loop”) in place of limitation 20[C]. The limitations common to claims 20 and 23 are also found in limitations 1[pre], 1[A], and 1[B].

The Petition does not assert that Walton discloses any limitations shared between claims 20 and 23. Thus, for the same reasons provided above as to limitations 1[pre], 1[A], and 1[B], *supra* Section **Error! Reference source not found.**, Ground 4 fails as to the equivalent limitations in claim 23.

The Petition is also deficient as to limitation 23[C]. The argument here is predicated on a POSA making a further modification to the arrangement described with respect to Claim 7 so that “the current in one antenna run[s] in the opposite direction to the current in the other antenna.” Petition at 82. Because Petitioner’s argument regarding reaching the antenna arrangement to which this modification is made is incorrect, its argument for the modification fails as well. *See supra* Sections VIII.D.1.b (Claim 1[C]), VIII.E.2 (Claim 7).

Petitioner’s argument for further modification only highlights the lacking disclosures of RFID Handbook, Davis Presentation, and Walton, as it cites *none* for

this limitation. Petition at 82-83 (relying exclusively on expert testimony); *Xerox*, IPR2022-00624, Paper 9 at 15-16. And while Petitioner’s expert describes why “an opposing magnetic flux arrangement” may be advantageous, he does not identify any disclosure in RFID Handbook, Davis Presentation, Walton, or any other contemporaneous art showing an appreciation for that rationale. EX1004 ¶¶ 325-26.

For the reasons provided above, Ground 4 fails to provide a reasonable likelihood of prevailing as to claim 23. Claim 24 depends on independent claim 23. EX1001. Ground 4 likewise fails as to dependent claim 24.

IX. THE BOARD SHOULD DISCRETIONARILY DENY INSTITUTION UNDER 35 U.S.C. § 314(a)

A. FACTOR 1 FAVORS DISCRETIONARY DENIAL BECAUSE A STAY LIKELY WILL NOT BE GRANTED IN THE PARALLEL LITIGATION

Petitioner incorrectly states that this “factor is neutral.” Petition at 84. Petitioner has *not* made any effort to seek a stay, nor has Petitioner indicated its intent to do so. Aside from Patent Owner’s infringement allegations relating to the ‘862 Patent, the parallel litigation involves additional infringement assertions by Patent Owner involving other patents, and additional affirmative defenses beyond the Grounds asserted here:

Claim / Defense	Asserting Party
Infringement of the '862 Patent by WaveLynx "Ethos Readers"	ASSA ABLOY AB and HID Global Corp.
Invalidity of the '862 Patent under 35 U.S.C. § 102(g)(2)	WaveLynx Techs. Corp.
Unenforceability of the '862 Patent	WaveLynx Techs. Corp.
Infringement of U.S. Patent No. 8,943,562 by WaveLynx "Ethos Readers"	ASSA ABLOY AB and HID Global Corp.
Infringement of U.S. Patent No. 10,452,877 by WaveLynx "Ethos Readers"	ASSA ABLOY AB and HID Global Corp.

As such, a stay of the entire case is unlikely here. Factor 1 therefore favors discretionary denial.

B. FACTOR 2

Patent Owner agrees that, in the event of institution, a Final Written Decision is likely to issue before the parallel litigation reaches trial.

C. FACTOR 3 FAVORS DISCRETIONARY DENIAL.

Petitioner has not been diligent in seeking to institute proceedings, and waited to file the Petition until the last day permitted. EX2007. Although Petitioner is correct that little has occurred in the parallel litigation to date, the parties will begin making substantial investments in that proceeding shortly.

Patent Owner intends to proceed on its infringement claims regarding both of the other two asserted patents in the parallel litigation, which are asserted against the same accused products as the '862 Patent—WaveLynx's "Ethos Readers." As such, substantial investments in discovery and expert discovery will occur regardless of institution. Permitting WaveLynx to proceed here would only needlessly duplicate proceedings between the parties, and would be inefficient. Factor 3 therefore favors discretionary denial.

D. FACTOR 4 FAVORS DISCRETIONARY DENIAL

Here, the substantial overlap of issues weighs heavily in favor of discretionary denial. Although Petitioner asserts multiple invalidity theories in the parallel litigation, its first counterclaim seeks invalidity of the '862 Patent under 35 U.S.C. § 102(g) based on a prior invention by Michael Conlin, and under § 102(e) because that purported prior invention "is described in the '677 Application"—*i.e.*, the ***exact same*** "Conlin" provisional application it relies upon for Grounds 1 and 2. EX1031 ¶¶102-121. Its second counterclaim reiterates its reliance upon the '677 Application, and then also lists the ***exact same*** Davis Presentation it asserts in Grounds 3 and 4. *Id.* ¶¶124-25, 133-39.

Petitioner has not submitted a *Sotera* stipulation here, instead inequitably taking two bites at the invalidity apple. *Cf. Splunk, Inc. v. Sable Networks, Inc.*, IPR2021-01469, Paper 11 at (P.T.A.B. Mar. 10, 2022) (dismissing concerns about

parallel 102(g) art because Petitioner *had* provided *Sotera*-style assurances). If it cannot prevail before the Board, Petitioner is expected to recycle its arguments before the District Court seeking invalidity under Section 102(g). Factor 4 therefore favors denying the Petition.

E. FACTOR 5 FAVORS DISCRETIONARY DENIAL BECAUSE THE PARTIES ARE THE SAME

As Petitioner concedes, the parties here are the same as in the parallel litigation. Petition at 85. Factor 5 therefore favors denial of institution. *See Fintiv*, IPR2020-00019, Paper 15 at 15.

F. FACTOR 6 FAVORS DISCRETIONARY DENIAL

As of Petitioner's anticipated date for a Final Written Decision (September 2024), the '862 Patent would be roughly six months from the expiration date of the patent. Expending the Board's resources on a proceeding for a patent that will be imminently expiring weighs against institution.

This is particularly true because the Petition attempts to side-step the *Farpointe* Court's constructions and assert its Conlin-based invalidity theories in parallel forums. As described above, Petitioner repeatedly uses expert assertions to improperly infer disclosures of claim limitations where the asserted prior art is lacking. Contrary to Petitioner's assertion, the Grounds advanced here are anything but compelling, and their weakness on the merits *favors* discretionary denial.

For these reasons, the *Fintiv* factors support discretionary denial, and the Board should decline to institute under Section 314(d).

X. THE BOARD SHOULD DISCRETIONARILY DENY INSTITUTION OF GROUNDS 3 AND 4 UNDER 35 U.S.C. § 325(d)

Petitioner argues against discretionary denial of institution under Section 325(d) for Grounds 3 and 4 because they involve “another edition of the RFID Handbook” and because combinations with the Davis Presentation were “never before the Examiner.” Petition at 86. This argument is form over substance. *See, e.g., Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019- 01469, Paper 6 at 10 (P.T.A.B. Feb. 13, 2020) (instructing that the *Becton, Dickinson* factors “should be read broadly”). Grounds 3 and 4 advance obviousness arguments that are part-and-parcel with the rejections asserted by the Examiner—and already overcome—during prosecution.

When rejecting the claims as obvious, the Examiner first noted Egbert’s disclosure that “[t]he REID [*sic*] system 10 may operate at a common worldwide standard in the Industrial-Scientific-Medical (ISM) band centered at 13.56 MHz with an allowable frequency variance of +1-7 kHz.” EX1003 at 258-59. The Examiner then noted Egbert’s additional teaching of “inductive loop RFID antennas operating at frequencies...[within] other bands, e.g., the Low Frequency (LF) band at 125 kHz to 138 kHz (col. 4, lines 3-51).” *Id.* at 259. **Petitioner makes the exact**

same argument here—that the art discloses separate high and low frequency RFID readers, and cites the easy-key System reader and MIFARE® reader mentioned by the RFID Handbook as “suitable examples.” Petition at 61-62.

During prosecution, the Examiner stated that there was a motivation to combine the separate readers because “Egbert teaches the use of an array of antennas operating together from a reader that can detect tags that emit both high and low frequencies,” and concluded that the pending claims were obvious. EX1003 at 259. Here, **Grounds 3 and 4** cite the Davis Presentation for that **same** purported **motivation to combine separate, known readers into a single multi-frequency reader**. Petition at 61.

As discussed in Section IV, applicant overcame this rejection by (1) amending the claims to recite particular antenna configurations nowhere disclosed in the art; and (2) arguing against the purported motivation to reach the claimed inventions. Petitioner’s citation to different art for the exact same proposition amounts to presenting **substantially the same art** that was previously presented to the Office. Like Egbert, neither the RFID Handbook nor the Davis Presentation provide *any teaching* regarding how *antennas* might be *arranged* in a multi-frequency reader. *See, e.g., supra* Section VIII.D.1.b (analyzing limitation 1[C] for Ground 3). Put simply, these references are, at best, **cumulative of the same subject matter**

disclosed by Egbert that the **Examiner considered and found insufficient to render the issued claims obvious.**

Becton, Dickinson factors (a) and (d) demonstrate that Petitioner advances “substantially the same argument” here as that overcome during prosecution. There are no “material differences” between the disclosures of the asserted and previously-considered art, particularly given the substantial “overlap between the arguments made during examination and *the manner* in which Petitioner relies on the prior art”—*i.e.* to disclose generic high and low frequency readers and a purported motivation to combine them. *See Advanced Bionics*, IPR2019-01469, Paper 6 at 10. That the RFID Handbook’s prior edition was disclosed to the Examiner during prosecution further supports this conclusion under factor (c). *See id.*

Despite addressing Section 325(d) and acknowledging it to be at-issue, Petitioner offers no argument that “the Office erred in a manner material to the patentability of the challenged claims.” *See* Petition at 86-87. Thus, the Board should deny institution of Grounds 3 and 4 based on being cumulative to arguments already advanced (and ultimately overcome) in prosecution. *See, e.g., Risen (Suzhou) Pharm Tech. Co. Ltd., v. Alzheon, Inc.*, IPR2022-01200, Paper 14 at 26-31 (P.T.A.B. Jan. 9, 2023) (denying institution under Section 325(d) of obviousness ground and concluding that a reference “not previously presented to the Office” was “cumulative to other art in the examination record”); *Regeneron Pharms., Inc. v.*

Kymab Ltd., IPR2020-00389, Paper 7 at 10-11 (P.T.A.B. May 26, 2020) (“Petitioner’s reliance on [undisclosed] Morrison is largely cumulative of the arguments and findings the Examiner considered during prosecution based on” another reference).

XI. CONCLUSION

For the reasons set forth above, Patent Owner respectfully requests that the Board deny institution of this Petition.

Dated: June 12, 2023

Respectfully Submitted,

/ Dion M. Bregman /
Dion M. Bregman, Reg. No. 45,645

CERTIFICATE OF COMPLIANCE

I, the undersigned, certify that the above Patent Owner Preliminary Response complies with the applicable type-volume limitations of 37 C.F.R. § 42.24 (b)(1). Exclusive of the portions exempted by 37 C.F.R. § 42.24(a), this Petition, including footnotes, contains 13,342 words, as counted by the word count function of Microsoft Word. This is less than the limit of 14,000 words as specified by 37 C.F.R. § 42.24(a)(1)(i).

Dated: June 12, 2023

Respectfully Submitted,

/ Dion M. Bregman /
Dion M. Bregman, Reg. No. 45,645

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), lead counsel for Patent Owner hereby certifies that on June 12, 2023, a copy of this Patent Owner Preliminary Response was served to Petitioner's attorneys via their email correspondence addresses of record:

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