

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner,

v.

S.M.R INNOVATIONS LTD and Y.M.R TECH LTD,

Patent Owners.

IPR2024-01048

U.S. Patent 10,547,648

PATENT OWNERS' RESPONSE

Table of Contents

I.	Introduction	1
II.	Definition of a Person of Ordinary Skill in the Art.....	2
III.	Claim Construction	5
A.	Claim 1.....	5
B.	Claim 15.....	17
IV.	The Proposed Combinations Do Not Render the Challenged Claims Obvious.....	19
C.	Ground 1	19
1.	Claim 1	19
2.	Claim 5	36
3.	Claim 6	39
4.	Claim 15	42
5.	Claim 18	44
D.	Ground 2	44
1.	Claim 7	44

2.	Claim 11		45
3.	Claim 16		45
4.	Claim 19		45
E.	Ground 3		54
1.	Claim 8		54
2.	Claim 10		54
F.	Ground 4		54
1.	Claim 13		54
V.	Conclusion		54

PATENT OWNERS' EXHIBIT LIST

Exhibit Number	Description
2001	Second Amended Complaint, Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)
2002	Notices of Deposition of Petitioner's Witnesses in Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)
2003	Notices of Deposition of Patent Owners' Witnesses in Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)
2004	Docket Sheet for Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)
2005	Patent Owners' Preliminary Infringement Contentions in Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)
2006	Petitioner's Invalidity Contentions in Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)

2007	Scheduling Order in Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)
2008	Joint Claim Construction Statement in Civil Action No. 6:23-cv-479-ADA (W.D. Tex.)
2009	Declaration of Karl Ginter
2010	National Center for Education Statistics, Degrees in engineering and engineering technologies conferred by postsecondary institutions, by level of degree and sex of student: Selected years, 1949-50 through 2013-14
2011	National Center for Education Statistics, Degrees in computer and information sciences conferred by postsecondary institutions . . . 1964-65 through 2018-19
2012	Excerpts from the Declaration of Dr. Nathaniel Polish in Support of Defendant Apple Inc.’s Opening Markman Brief, <i>S.M.R Innovations LTD & Y.M.R Tech LTD v. Apple Inc.</i> , 6:23-cv-00479-ADA (W.D. Tex.), Dkt. 71-1

2013	Excerpts from the transcript of the deposition of Dr. Nathaniel Polish, conducted in connection with <i>S.M.R Innovations LTD & Y.M.R Tech LTD v. Apple Inc.</i> , 6:23-cv-00479-ADA (W.D. Tex.)
2014	Excerpts from <i>The Cambridge Grammar of the English Language</i> , Cambridge University Press, Cambridge, UK (2002)
2015	Excerpts from IEEE standard 802.15
2016	Technical Overview, HomeRF Working Group (available at https://www.cazitech.com/Technical%20HomeRF%20Overview.htm)
2017	“Transcoding free voice transmission in GSM and UMTS networks,” Stan Sančin, Grega Jakus, Sašo Tomažič, International Conference on Information Society 2011 (available at https://www.eventiotic.com/eventiotic/files/Papers/URL/a0f286ed-6b5d-471a-8f8d-d38bf2728af7.pdf)
2018	Declaration of Cortney S. Alexander

Plaintiffs S.M.R Innovations LTD and Y.M.R Tech LTD respectfully submit this Response to the Petition for Inter Partes Review of U.S. Patent No. 10,547,648.

I. Introduction

S.M.R Innovations and Y.M.R Tech are wholly owned by Oded Shmueli and Benny Yehezkel, respectively, the inventors of the patents-in-suit. EX2001 [Second Amended Complaint], ¶¶2-3. Professor Shmueli received a Ph.D. in Applied Mathematics from Harvard University and is an Emeritus Professor of Computer Science at the Technion University in Israel. *Id.*, ¶8. He is an inventor of more than 55 U.S. patents and has held positions at leading research laboratories such as IBM Research, AT&T Bell Labs, and MCC. He has co-founded several start-up companies, including an artificial-intelligence company where he serves as Chief Scientist. *Id.*, ¶¶9-10. Mr. Yehezkel holds a degree in Computer Science from the Technion University and an MBA from the Tel Aviv University. He has held executive positions with various technology companies. *Id.*, ¶¶12-13.

The patents-in-suit trace back to a conversation between Professor Shmueli and Mr. Yehezkel in October 2000 born out of the widespread use of cellular phones juxtaposed with their limited capabilities. *Id.*, ¶14. The state of affairs regarding handheld devices was then notably primitive. Mobile communication devices were emerging, but the idea of streaming media was still years away. Cellular phones could not accept streaming data or route a received stream to another electronic device. *Id.*, ¶15. As described in the patents-in-suit, Professor Shmueli and Mr.

Yehezkel recognized that “it would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device.” *Id.*, ¶18. Using the solutions of the patents-in-suit, for example, someone can route a call directed to his or her smartphone to a nearby computer or watch that is wirelessly linked with the smartphone. As another illustration, someone can be prompted by, for example, a watch that there is an incoming call via an associated smartphone. *Id.*, ¶21.

The inventors attempted to discuss their inventions with Apple in 2006. After reaching out to Steve Jobs, the inventors spoke with the assistant to Apple’s then-Senior Vice President with responsibility for the iPod (Jon Rubinstein), who instructed them to send Mr. Rubinstein a presentation regarding their technology and pending patent application. *Id.*, ¶205. The inventors suggested to Mr. Rubinstein that they hold a discussion regarding the benefits their technology would provide to Apple. While they received an email from an Apple employee indicating that Apple had received the presentation, Apple did not respond with any interest in licensing the inventors’ technology. *Id.*

II. Definition of a Person of Ordinary Skill in the Art

Patent Owners propose that a POSITA would have had a Bachelor’s degree in Computer Science, Computer Engineering, Electrical Engineering, or a related field in computing technology, and at least two years’ experience in wireless

communication and mobile devices, or equivalent education, research, experience, and knowledge. *See* EX2009, Declaration of Karl Ginter, ¶21.

While Petitioner's expert asserts that "most workers of ordinary skill in the art as of the earliest possibility priority date of July 25, 2002, would have had a master's degree in computer engineering, electrical engineering, or a related field, with at least 2 years of experience with wireless communications," he cites no evidence for his assertion that most workers of ordinary skill would have had a master's degree other than a generic reference to his experience. Statistics do not back that up. For example, statistics provided by the National Center for Education Statistics indicate that in 1999-2000, there were 2.8 times the number of bachelor's degrees award versus master's degrees in engineering and engineering technologies. EX2010. In 2000-2001, it was 2.7 times. *Id.* In 2001-2002, it was 2.8 times. *Id.* In 2002-2003, it was 2.5 times. *Id.* The statistics are similar for degrees award in computer and information sciences: In 1999-2000, 2.5 times the number of bachelor's degrees versus master's degrees. EX2011. In 2000-2001, it was 2.6 times. *Id.* In both 2001-2002 and 2002-2003, it was 2.9 times. *Id.* These numbers suggest that most people working in computer engineering and computer sciences did not have a master's degree. EX2009, Ginter Decl., ¶23. Petitioner's expert did not identify any specific evidence indicating that this was different in the specific field of the '648 patent. Patent Owners' expert testified that, based on his decades of experience, including the management of developers at the time with credentials similar to a Bachelor's

degree and a few years of development experience, he does not believe that most workers of ordinary skill in the art of the '648 patent would have had a master's degree. *Id.*, ¶22. In some cases, skilled programmers with whom he was familiar had not completed a college degree (in many cases either still being in school or having left school to pursue work opportunities). *Id.*

Moreover, Petitioner submitted a declaration from a different expert in connection with the district-court litigation. EX2012. That expert similarly asserted that a POSITA would have had “at least [a] master’s degree in computer engineering, electrical engineering, or a related field, and at least some experience with wireless communications.” He did not specify a particular number of years of experience, in contrast to Petitioner’s expert in this proceeding. *Id.*, ¶15. Petitioner’s litigation expert also noted that “additional education or experience might substitute for the above requirements.” *Id.* This is a typical acknowledgement that is lacking in the expert declaration submitted by Petitioner in this proceeding. During deposition of Petitioner’s litigation expert, he was asked, “How much practical experience would be necessary to make the bachelor’s degree sufficient education?” He responded, “I think generally a few years, so maybe two or three,” comparing that to a master’s degree (which he noted is “typically a two year program”) with “some practical experience.” EX2013 at 11:12-20. Thus, Petitioner’s litigation expert agreed that a bachelor’s degree plus two (or three) years of experience would meet the definition of a person of ordinary skill in the art.

III. Claim Construction

A. Claim 1

Claim 1(b) of the '648 patent recites, *inter alia*, “identifying one or more available devices compatible to handle the media content and connected to the LAN.” Claim 1(d) recites “wirelessly signaling *the one or more available devices* indicating an availability of a media content at the mobile device.” Thus, claim 1(d)’s reference to “one or more available devices” relies on claim 1(b) for antecedent basis. This means that the one or more available devices that are wirelessly signaled in claim 1(d) are the same one or more available devices identified in claim 1(b). While the Board’s Institution Decision preliminarily disagreed, stating that antecedent dependence “alone does not directly or implicitly require performing step 1b before step 1d,” Patent Owners respectfully submit that the principles of claim construction as applied by the Federal Circuit warrant their proposed interpretation of this claim language.

For example, in *Meade Instruments Corp. v. Yamcon, Inc.*, 197 Fed. Appx. 929 (Fed. Cir. Aug. 25, 2006), the Federal Circuit considered a dispute over the claim phrase “the provided data.” The Federal Circuit rejected the appellant’s argument that the claim term could be satisfied by “any abstract bit of data in the broadest sense of the term” because the claim phrase “the provided data” relied on an earlier claim element for antecedent basis:

The disputed limitation in claim 1 refers to "the provided data."

The antecedent basis in the claims for that "provided data" requires that it be taken from a database "containing data about the predetermined subject [i.e., celestial feature], the data being arranged in said database to be correlated with three-dimensional direction." Claim 15 contains a similar antecedent basis for "data."

Id. at 933-34. Based on this antecedent relationship, the Federal Circuit held that "the word 'data' in claims 1 and 15 refers to a preselected set of information that is entered into the database about predetermined celestial features and is then provided to the user during operation of the device." *Id.* at 934. For the same reason, in the '648 patent, the one or more available devices that are wirelessly signaled in claim 1(d) are the same one or more available devices identified in claim 1(b). *See Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1356 (Fed. Cir. 2003) ("the words 'the use' require antecedent basis; thus, 'the use' refers to a specific 'use' rather than a previously undefined 'use.'").

Moreover, "[a] claim requires an ordering of steps when the claim language, as a matter of logic or grammar, requires that the steps be performed in the order written, or the specification directly or implicitly requires an order of steps." *Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1398 (Fed. Cir. 2014) (determining that "establishing a connection between the wireless device and the server" needed to occur before "transmitting the contents of the mailbox from the server to the wireless device"); *see also Function Media, L.L.C. v. Google Inc.*, 708 F.3d 1310, 1320 (Fed. Cir. 2013) (concluding that a claim that recites "processing"

an "electronic advertisement" necessarily indicates that "the creation of the ad must happen before the processing begins"). While the Institution Decision cited *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363 (Fed. Cir. 2003), in which the Federal Circuit found that two claim steps did not impose a particular order, that case differed significantly from the instant facts. In particular, there was no antecedent-basis relationship between the two claim steps: "setting said boot selection flag" and "booting normally, if said testing automatically step indicates a normal boot sequence." *Id.* at 1367. Indeed, the two steps did not include any claim terms in common.

In *Hytera Communs. Co. v. Motorola Sols., Inc.*, 841 Fed. Appx. 210, 218 (Fed. Cir. Jan. 19, 2021), the Federal Circuit held that an antecedent-basis relationship between two claim steps provided grammatical evidence that the steps had to be performed in the order written: "in claim 7, each step of the method provides an antecedent basis for the steps that follow. That includes 'a' timeslot in the 'preparing' step, which grammatically provides antecedent basis for 'the' timeslot in the 'determining' step." *Hytera*, 841 Fed. Appx. at 218. The court rejected the argument that "the antecedent basis is not meaningful," holding that "the fact that the 'determining' step says 'the' when it could have said 'a' reinforces our conclusion that it is meant to come after the 'preparing' step." *Id.*

Petitioner has tried to distinguish *Hytera* by arguing that the steps in question "recited an exclusive one-to-one relationship" such that a second step exclusively

acted on the results of the first step. Paper 12, 3. This characterization is not consistent with *Hytera*'s discussion of this issue. Nowhere did *Hytera* indicate that its holding depended on a conclusion that the two steps in question—"preparing to transmit a particular payload type in a timeslot" and "determining whether the timeslot is a current desired timeslot for the TDMA system"—recited an exclusive one-to-one relationship. Moreover, nothing in those claim steps supports Petitioner's characterization.

Hytera is consistent with other Federal Circuit decisions. For example, in *Wi-Lan, Inc. v. Apple Inc.*, 811 F.3d 455 (Fed. Cir. 2016), the court similarly relied on antecedent basis as evidence that two steps needed to be performed in order:

The text of the asserted claims requires randomizing the modulated data symbols before combining them. Claim 1 recites a computing means that "*produce[s]* modulated data symbols corresponding to an invertible randomized spreading" and a means to combine that "*combine[s]* *the* modulated data symbols." . . . The text of the claim thus requires producing randomized symbols and then combining those randomized symbols.

Id. at 462 (emphasis in original). As it did with *Hytera*, Petitioner has incorrectly argued that the claim steps in *Wi-Lan* recited an exclusive one-to-one relationship. This argument is without support in *Wi-Lan*'s analysis. Paper 12, 3-4. Nowhere did the Federal Circuit indicate that it would be impossible for the steps to be performed in the opposite order (absent the use of antecedent basis). *Wi-Lan*, 811 F.3d at 462. In

fact, the Federal Circuit examined the specification to determine whether it “depicts or discusses the possibility of combining before randomizing.” *Id.* While the Court ultimately concluded the specification did not discuss combining before randomizing, the fact that it examined the specification for such disclosure shows that the court did not believe it would have been impossible for that to be the case. Thus, nothing in *Wi-Lan* indicates that the claims steps at issue necessarily recited an “exclusive one-to-one relationship.” Rather, the Federal Circuit’s decision relied heavily on the use of antecedent basis to conclude that the disputed steps imposed an order. *Id.*

The Federal Circuit applied the logic of *Hytera* and *Wi-Lan* to reach a similar result in *Medtronic v. Teleflex Life Scis. Ltd.*, 2024 U.S. App. LEXIS 6703 (Fed. Cir. Mar. 21, 2024):

We start with the claim language. Our focus is on the inserting and advancing the ICD step (step 1.f), which recites, in part, "inserting the [ICD] into and through the continuous lumen of the standard guide catheter alongside of the substantially rigid portion." . . . This language demonstrates that the flexible tip portion is advanced (step 1.e) before inserting the ICD. The claim language suggests this order by reciting inserting the ICD "alongside of *the* substantially rigid portion." *Id.* (emphasis added). Although not an ironclad rule, when the current step of a method claim refers to a previous step using the definite article "the," the claim language indicates that the previous step occurs sequentially before the current step. . . . Here, the antecedent

basis for the substantially rigid portion in the inserting and advancing the ICD step (step 1.f) is the substantially rigid portion in the inserting a substantially rigid portion and advancing the flexible tip portion steps (steps 1.d and 1.e). Thus, the logic of claim 1 demonstrates that the inserting and advancing the ICD step follows the advancing the flexible tip portion step.

Id. at *9-10.

The same is true here: The antecedent basis for “the one or more available devices” in claim 1(d) is the one or more available devices that are identified in claim 1(b). As the Federal Circuit stated in *Medtronic*, the logic of claim 1 demonstrates that wirelessly signaling the one or more available devices in claim 1(d) follows the identifying one or more available devices in claim 1(b).

The prosecution history makes this even clearer. The claim originally recited “wirelessly signaling *the* one or more devices.” The Examiner rejected the claim under 35 U.S.C. § 112, asserting that it was not clear whether this phrase referred to “the *one or more available devices* [recited earlier in the claim] or different one or more devices.” EX1002, 240 [Feb. 6, 2019, Office Action at 7]. In response, the inventors noted that the Examiner stated that it was “not clear whether the claimed ‘*one or more devices*’ indicates the one or more available devices or different one or more devices.” EX1002, 262 [June 6, 2019, Amendment at 7]. The inventors then addressed the Examiner’s concern by stating that they “amended the claim to recite ‘*one or more available devices*’ and not ‘*one or more devices*.’” *Id.* Thus, the

inventors confirmed that the language in this claim element referred to the one or more available devices identified in the earlier step. Stated differently, the inventors confirmed that in claim 1(d), the wireless signaling is directed specifically at the one or more available devices identified in claim 1(b). The inventors' amendment of the claim language confirms that claim 1(d) is not satisfied by mass-broadcasting a signal in the hopes that there is an available device somewhere out there. A POSITA would have understood this flow to be logical—a POSITA would have found it logical to signal one or more devices that are available (and compatible) about the availability of content at the mobile device (and not to broadcast signal all devices that were known). EX2009, ¶¶37, 41.

Patent Owners' interpretation is also consistent with the remainder of the claim. Claim 1(c) recites, "wirelessly communicating information to an intermediate routing device connected to the LAN for indirectly routing messages or media content to at least one of the one or more available devices via said intermediate routing device." Plainly, this must be done after an available device is identified. This provides further evidence in favor of Patent Owners' interpretation. *See Mformation*, 764 F.3d at 1399-1400 ("Further, we note that the other sub-steps in claim 1 inherently require an order-of-steps").

While the Institution Decision indicated that the specification does not "require performing the step of identifying devices as available before the step of wirelessly signaling those devices," it also went on to describe announcer 30 as "the

component that *identifies devices as available prior to the wirelessly signaling.*”

Institution Decision, 19 (emphasis added). This statement rightly acknowledges that the specification describes identifying one or more available devices before wirelessly signaling the one or more available devices about the availability of content at the mobile device. For example, the specification provides the following example in which the mobile device is plainly described as identifying an available device before signaling that device about content:

5. Option B:

- a. While ringing, the cell phone indicates on its display that a nearby phone is available
- b. The person approves the routing of the call to that nearby phone
- c. The nearby phone rings, or flashes to indicate the rerouted call

EX1001, '648 Patent, 11:62-67; EX2009, ¶38. In contrast, Petitioner did not point to any passage in the specification that expressly describes signaling an available device before the available device is identified. That supports Patent Ownes’ argument:

Tellingly, however, Hytera does not point to any figure or other part of the specification that discloses an embodiment in which the "preparing" step is performed after the "determining" step. Though we have repeatedly held that "it is . . . not enough that the only embodiments, or all of the embodiments, contain a particular limitation to limit a claim term beyond its ordinary meaning," . . . here, the only embodiments are consistent with the plain meaning of the claim in the order that is written, and we thus decline to construe the claim as allowing deviation

from that order.

Hytera, 841 Fed. Appx. at 218-19.

While the Institution Decision noted that the announcer device (like the scout device) is described as only “preferably provided,”¹ this does not prevent the specification’s examples from helping construe this claim language. *See Mformation*, 764 F.3d at 1400 (while noting that claims are not necessarily limited to a preferred embodiment (or even a sole disclosed embodiment), nonetheless noting that its conclusion that two claim steps needed to be performed in order was “consistent with the sole embodiment in the specification”); *Wi-Lan*, 811 F.3d at 462 (holding that the fact that “[n]o disclosure in the specification depicts or discusses the possibility of combining before randomizing” supported conclusion that claim steps imposed the disputed ordering).

Petitioner has argued that claim 1(d) could be performed before claim 1(b) because “[t]he claims do not preclude identifying or signaling additional unavailable devices, and there is no logical reason a device must be identified as available before being signaled.” Paper 12, 4. Aside from the fact that this ignores the logical flow of

¹ While the Institution Decision indicated that the specification describes the announcer device as the component that identifies devices as available, it is actually the scout device. EX1001, 8:16. Nonetheless, both the announcer device and the scout device are described as being “preferably provided.” *Id.*, 7:30-32.

the claim as actually recited (and the specification's examples), it also overlooks the inventors' amendment and response to the Examiner. EX2009, ¶39. Had Petitioner's reading been correct, there would have been no point in the inventors responding to the Examiner's rejection by amending the claim to recite "one or more available devices." *Id.*, ¶40. The claim element could have simply removed the word "the" so that the claim recited "wirelessly signaling one or more devices." That would have accomplished the reading applied in the Institution Decision. But the inventors did not take that approach. Instead, they specifically amended the claim to recite "wirelessly signaling the one or more available devices." This shows that the one or more devices that are wirelessly signaled are the device(s) that were identified by the mobile device as being available earlier in the claim. *Id.*

The Institution Decision stated that the specification does not require claim 1(b) and claim 1(d) to be mutually exclusive. While this statement referred to the specification rather than the claim language, Petitioner has since applied the Institution Decision's statement to the claim language itself, arguing that "there can be no order mandated of steps that may be performed simultaneously." Paper 12, 2. However, Petitioner has not explained how claim 1(b) and 1(d) could logically be performed simultaneously. The Petition did not argue for such an interpretation. Nothing in the specification or prosecution history suggests that "identifying one or more available devices compatible to handle the media content and connected to the LAN" and "wirelessly signaling the one or more available devices indicating an

availability of a media content at the mobile device” could be simultaneously performed. And even if claims 1(b) and 1(d) could be performed simultaneously, Petitioner’s proposed combination does not rely on simultaneous performance of claim 1(b) and claim 1(d). As discussed herein regarding claim 1, Petitioner’s proposed ground involves claim 1(b) being completed *after* the performance of claim 1(d). A POSITA would not have understood that claim 1(b) and 1(d) could be simultaneously performed for the reasons discussed above. EX2009, ¶41.

The Institution Decision also stated that, “[a]ccording to its plain meaning, limitation 1b does not appear to require identifying devices *as available*; the claim merely requires identifying ‘available devices.’ . . . In other words, the claim does not appear to require identifying (i.e., determining) whether devices are available but merely requires identifying devices that happen to be available.” Institution Decision, 19. However, according to grammatical precepts, there is no meaningful difference between the claim language, “identifying one or more available devices” and “identifying one or more devices as available.” In both phrasings, the term “available” acts as an adjective. In the claim language’s phrasing, “available” is an attributive adjective. “Attributive adjectives are those functioning as pre-head internal dependent in the structure of the NP [i.e., noun phrase],” such as the adjective “new” in the noun phrase “my new job.” EX2014, The Cambridge Grammar of the English Language (2002), 528. In the phrasing “identifying one or more devices as available,” the adjective “available” is a predicative complement.

“Predicative complements are dependents in clause structure, licensed by particular verbs.” as reflected in the following examples: (1) “This is new”; (2) “They seem suitable”; or (3) “We found it easy.” *Id.*

In either phrasing, “available” has the same effect. “Ordinary attributive adjectives can be used predicatively with the same sense: we can call these **ascriptive** adjectives since they can occur as complement to the verb *be* in its ascriptive sense.” *Id.*, 554. “Ascriptive attributive adjectives characteristically have the four properties illustrated summarily for *shy* in [3], whereas most attributive-only adjectives lack one or more of them”:

[3] i ENTAILMENT *X is a shy N* entails *X is an N* (e.g. *Tom is a shy man* entails *Tom is a man*).

ii SUBSET *A shy N* gives an answer to the question *What kind of an N is X?* (e.g. *A shy man* is an answer to the question *What kind of a man is Tom?*)

iii MODIFIABILITY *Shy* can itself be modified (e.g. *a very shy man*).

iv PRO-FORM *Shy* can modify the pro-form **one** (e.g. *Tom is the shy one*).

Id. The adjective “available” satisfies each of these properties for ascriptive adjectives. First, the statement that “Tom’s iPhone is an available device” entails that the iPhone is a device. Second, “an available device” is an answer to the question, “What kind of a device is Tom’s iPhone?” Third, “available” itself can be modified:

e.g., “an occasionally available device.” Fourth, “available” can modify the pro-form *one*: “Tom’s iPhone is the available one.” Thus, the claim language “identifying one or more available devices” has the same sense as “identifying one or more devices as available.” *Id.*

The Institution Decision interprets claim 1(b) as though it said, “identifying one or more devices that may or may not be available.” This effectively nullifies the term “available” and renders it superfluous. EX2009, ¶¶42, 43. For example, consider by analogy a parking lot attendant who is told to go into the lot and identify a blue car. If he looked off into a dark corner of the lot and said, “I can tell there’s a car over there, but I have no idea if it’s blue or not,” he would surely not have fulfilled the task. He would not have actually *identified* a blue car (even if the car happened to be blue). *Id.*, ¶43.

If claim 1(b) had the meaning proposed by the Institution Decision, then the inventors would not have amended claim 1(d) as they did. They would have instead amended the claim to recite “wirelessly signaling one or more devices.” EX2009, ¶44. While the inventors chose *not* to phrase claim 1(d) that way, that is how the Institution Decision interpreted the claim when it applied Zhang to claim 1(d) by stating that Zhang “1) discovers (identifies) connective available and unavailable helper servers, and *then* 2) sends (wirelessly signals) service requests to compatible available and unavailable helper servers.” Institution Decision, 19.

B. Claim 15

Claim 15(b) recites “a controller adapted to identify one or more available devices connected to a local area network (LAN) and compatible to handle the media content.” Claim 15(d) recites “wherein the controller is adapted to wirelessly signaling the one or more available devices indicating an availability of the media content at the mobile device.”

Because claim 15(d) relies on claim 15(b)’s recitation of “one or more available devices” for antecedent basis, claim 15(d) requires that the controller be adapted to wirelessly signal the one or more available devices identified by the controller. EX2009, ¶46; *see Meade Instruments Corp. v. Yamcon, Inc.*, 197 Fed. Appx. at 933-34 (rejecting argument that claim phrase “the provided data” could be satisfied by “any abstract bit of data” because the claim phrase “the provided data” relied on an earlier claim element for antecedent basis); *see also Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d at 1356. For the same reason, in the ’648 patent, claim 15(d) requires that the controller be adapted to wirelessly signal the one or more *available* devices identified by the controller.

That is confirmed by the back-and-forth between the Examiner and the inventors during prosecution discussed above regarding claim 1. The Examiner initially rejected claim 15 (application claim 19) on the same grounds as claim 1, and the inventors responded by amending claim 15 similarly to the amendment to claim 1 discussed above. EX1002, 240, 262. A POSITA would therefore understand that claim 15(d) requires that the controller be adapted to wirelessly signal the one or

more available devices identified by the controller. EX2009, ¶47. This understanding is also consistent with the specification, as also discussed regarding claim 1. *Id.*; EX1001, '648 Patent, 11:62-67.

While the Institution Decision indicated that the Board's preliminary understanding of "one or more available devices" was that it does not require identifying devices as available, Patent Owners respectfully submit that this is incorrect because it treats claim 15(b) as though it recited "identifying one or more available devices that may or may not be available." EX2009, ¶48. As discussed with respect to claim 1, from a grammatical standpoint, "available" carries the same sense whether used in the attributive position or in the predicate position. EX2014, 554.

IV. The Proposed Combinations Do Not Render the Challenged Claims Obvious

C. Ground 1

1. Claim 1

a. The Proposed Combination Does Not Account for All Elements of Claim 1

As discussed above regarding claim construction, Claim 1(b) patent recites, *inter alia*, "identifying one or more available devices compatible to handle the media content and connected to the LAN." Claim 1(d) recites "wirelessly signaling *the one or more available devices* indicating an availability of a media content at the mobile device." Thus, claim 1(d)'s reference to "one or more available devices" relies on claim 1(b) for antecedent basis. This means that the one or more available devices

that are wirelessly signaled in claim 1(d) are the same one or more available devices identified in claim 1(b). EX2009, ¶50.

Petitioner’s proposed combination does not teach or suggest at least claim 1(d). *Id.*, ¶51. The Petition asserts that Zhang teaches both claim 1(b) and claim 1(d). In setting out its assertion, Petitioner states that “*Zhang’s* mobile device performs the following key steps:

- (1) Device discovery: The handheld device identifies the nearby helper servers.
- (2) Service query: The handheld device queries the identified helper servers to determine if they are capable of providing the helper service.
- (3) Request transfer: The handheld device selects a helper server and delegates the task to it.
- (4) Remote control: The helper server returns a remote control interface description to the handheld device.

Petition, 22 (citing *Zhang*, 3:44-56, 6:40-44).

With respect to claim 1(b), Petitioner asserts that Zhang’s mobile device satisfies this claim element based on information it receives from helper servers in Zhang’s steps 2 and 3. In particular, Petitioner relies on a helper server’s *response* to a service request in Zhang’s step three in asserting that Zhang teaches claim 1(b):

In Zhang’s third step, “request transfer,” a helper server responds the service query, indicating its availability to handle the requested

service. Specifically, in response to the service query², the helper “server makes the admission decision S648 and informs the client whether its service request can be granted right away, has to be queued[,] or is denied (e.g. not enough total resource on the server or authentication failure) S646.” Zhang, 7:22-25, 7:58-60 . . .

In sum, Zhang’s mobile device performs this process to identify helper servers (devices) that are both available and compatible to handle the media content.

Petition at 15-16 (emphasis added). Thus, in Petitioner’s mapping, the proposed combination completes claim 1(b) only *after* the helper device responds to the mobile device’s service request (Zhang’s step three) by providing information about the helper device’s availability.

Petitioner argues that claim 1(d) is met by the service request itself that is sent by a mobile device to a helper device during Zhang’s step 3:

In general, Zhang teaches several “essential steps” the mobile device

² Petitioner incorrectly refers to a “service query” in this passage—in Zhang, a “service query” refers to the process of discovering whether a particular device offers a particular service. This service query is performed before a service request is made. Petitioner’s error is clear from the two passages it cites (Zhang at 7:22-25 and 7:58-60). This is expressly indicated in Petitioner’s quotation of 7:58-60: “Once a *service request* is accepted by a helper server S650, the client is notified S610 and can start transferring service data to the server S612.” Petition, 15 (quoting Zhang, 7:58-60) (emphasis added).

takes to interact with helper servers. First, the mobile device performs device discovery and “identifies the nearby helper servers.” Zhang, 3:44-48. Second, Zhang performs a “service query,” where the mobile device “queries the identified helper servers to determine if they are capable of providing the helper service.” Zhang, 3:49-51. Zhang teaches that if a located helper server “does offer the needed helper service, the handheld device requests the helper service S404.” Zhang, 4:1-8.

Regarding wirelessly signaling a helper server indicating an availability of a media content at the mobile device, Zhang teaches transmitting a service request to a helper server, and when a server accepts, a session is set up between a “helper client” (mobile device) and helper server using TCP. *A POSITA would have understood that wirelessly signaling a service request would have indicated the availability of media content at the mobile device.*

’648 Petition at 23 (emphasis added).

In sum, Petitioner argues that claim 1(b) is satisfied when Zhang’s helper server responds to a service request and that claim 1(d) is met by Zhang’s mobile device sending a service request. Thus, the action that Petitioner relies on for claim 1(d) is performed *prior to* an action Petitioner relies on for step 1(b).

That does not account for the claim language because (as discussed above) in claim 1(d), the device(s) that are wirelessly signaled are the device(s) that were *already* identified in claim 1(b). Since the mobile device has not identified an available device before sending the service request, the service request itself cannot (as Petitioner argues) constitute “wirelessly signaling the one or more *available*

devices indicating an availability of a media content at the mobile device,” as recited in claim 1(d). EX2009, ¶57. Separately, claim 1(d) cannot be performed before claim 1(b) is performed. *Id.*, ¶56. Petitioner’s argument is that Zhang wirelessly signals “the one or more *available* devices” before actually determining if they are available. This cannot be.

In its Institution Decision, the Board preliminarily concluded that even if claim 1(b) must precede claim 1(d), Zhang nonetheless satisfies these steps because it “1) discovers (identifies) connected available and unavailable helper servers, and then 2) sends (wirelessly signals) service requests to compatible available and unavailable helper servers.” *Id.* This mapping of Zhang to claim 1 relies on Zhang’s first two steps (alone) as satisfying claim 1(b), apparently taking the position that nothing in Zhang’s third step is necessary to map Zhang onto claim 1(b). For the reasons discussed regarding claim construction, the Institution Decision’s interpretation of claim 1 is incorrect. EX2009, ¶58.

Moreover, the Board’s reasoning was inconsistent with *Petitioner’s* mapping of Zhang to claim 1(b). Petitioner relied on Zhang’s steps 1-3 (not just steps one and two) in arguing that Zhang discloses claim 1(b). Specifically, Petitioner argued that Zhang’s third step satisfied claim 1(b)’s requirement of “identifying one or more *available* devices compatible to handle the media content and connected to the LAN”: “In *Zhang’s* third step, ‘request transfer,’ a helper server responds [to] the service query, indicating its *availability* to handle the requested service. Specifically,

in response to the service query, the helper ‘server makes the admission decision S648 and informs the client whether its service request can be granted right away, has to be queued[,] or is denied (e.g. not enough total resource on the server or authentication failure) S646.’” Petition, 15.

Nowhere did Petitioner argue that the “available” aspect of claim 1(b) was satisfied in Zhang’s first two steps. *Id.* at 14-16. That is why Petitioner relied on a helper server’s response to a service query in Zhang’s step three as allowing a mobile device to identify *available* devices. Thus, the Board relied on a different mapping of Zhang to claim 1(b) than that presented by Petitioner in the petition. This is not within the Board’s discretion. *See, e.g., Netflix, Inc. v. DivX, LLC*, 84 F.4th 1371, 1377 (Fed. Cir. 2023) (“We have likewise reprimanded the Board for finding a claim unpatentable based on theories not presented in the petition.”).

As the Federal Circuit has noted, “It is the petitioner that bears the burden of proof in IPRs.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (citing 35 U.S.C. § 316(e)). The Federal Circuit has rejected the proposition “that the Board is free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner during an IPR.” *Id.* at 1381. “[T]he Board must base its decision on arguments that were advanced by a party . . . [W]hile the PTO has broad authority to establish procedures for revisiting earlier-granted patents in IPRs, that authority is not so broad that it allows the PTO to raise, address, and decide unpatentability theories never presented by the petitioner and not supported

by record evidence.” *Id.* The Board is therefore not permitted to rely on a mapping of Zhang to claim 1(b) that was not advanced by Petitioner.

For the foregoing reasons, Petitioner’s proposed combination fails.

b. Petitioner Failed to Adequately Explain How the Proposed Combination Would Operate

Obviousness involves more than a motivation to modify the prior art to achieve the claimed invention. *See Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1375 (Fed. Cir. 2011) (noting that “[e]ven if the record showed some motivation” to modify the prior art, that did not suffice to establish obviousness). An obviousness determination requires an explanation as to (i) “why the prior art references would have worked together,” *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1335 (Fed. Cir. 2013), and (ii) why skilled artisans would “reasonably expect success in” making the modification. *Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017); *see also ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012) (similar). These showings are “a prerequisite to adequately explaining and supporting a conclusion” of obviousness. *Per. Web*, 848 F.3d at 994. Obviousness requires an evidence-based explanation of “*how* specific references could be combined” and “*how* any specific combination would operate or read on the asserted claims.” *ActiveVideo*, 694 F.3d at 1327. In *ActiveVideo*, the Federal Circuit held that the challenger failed to satisfy this standard:

We agree with the district court that the obviousness testimony by Verizon's expert was conclusory and factually unsupported. Although Verizon's expert testified that "[t]hese are all components that are modular, and when I add one, it doesn't change the way the other one works," . . . he never provided any factual basis for his assertions. ***The expert failed to explain how specific references could be combined, which combination(s) of elements in specific references would yield a predictable result, or how any specific combination would operate or read on the asserted claims.*** . . . This is not sufficient and is fraught with hindsight bias.

Id.; see also *Securus Technologies, Inc. v. Global Tel*Link Corp.*, IPR2015-00155, Paper 30 at 17 (PTAB Apr. 7, 2016) (“The cursory assertion that the prior-art references are drawn from the same broadly characterized field provides insufficient analysis concerning why and how a person of ordinary skill in the art would have modified or combined the prior art in the manner asserted, and inadequately articulates reasoning with some rational underpinning to support the legal conclusion of obviousness.”) (quot. omitted).

Petitioner acknowledges that “*Zhang* does not expressly describe an arrangement in which media is first streamed to the mobile device and is then re-routed to a helper server.” Petition, 18. Thus, for claim 1(e), Petitioner asserts that “a POSITA would have been motivated to modify *Zhang* pursuant to *Pasanen* to receive a telephone call on the mobile device (from the telephone network) and to reroute the audio to a helper server (e.g., a wireless speaker/microphone).” *Id.*;

EX1003, ¶123. Petitioner also asserts that “a POSITA would have been motivated to implement *Zhang* pursuant to *Fillebrown*’s use of a wireless router to indirectly route messages or media content to one or more available devices.” *Id.*, 19. Specifically, Petitioner asserts that the combination would have involved routing the phone call from the mobile device to a helper server “using IEEE 802.11 or HomeRF.” Petition, 22; EX1003, ¶96.

Petitioner asserts that Pasanen teaches a mobile device that can receive a phone call over a GSM cellular network. EX1003, ¶132. Petitioner also asserts that Pasanen teaches that the mobile device may transmit a phone call to a wireless audio interface 12 with a microphone and an earpiece. *Id.*, ¶122.

Pasanen teaches that the mobile device communicates with peripheral devices over a personal local area network. EX1006, 3:39-48. A POSITA would have understood this as a reference to a wireless personal area network (PAN or WPAN), which can be characterized by typically having a master server and a plurality of associated devices, as described in IEEE standard 802.15 (WPAN/Bluetooth). EX2009, ¶61; EX2015, §6.2.3.3, p. 42 (*see* Fig. 12). Consistent with this, Pasanen’s mobile device is referred to as a server. EX2009, ¶61; EX1006, 4:20-26. A modern example utilizing a PAN is a phone using Bluetooth to send data to Bluetooth-enabled devices. EX2009, ¶61.

The server 1 of Pasanen has a server device that is connected to a “long distance link” such as a GSM network used in some mobile telephony systems at the

time. The server 1 also utilizes a “short range radio network,” which is described as a two-channel (uplink and downlink) frequency-linked pair (duplex separated).

EX1006, 5:16-35. In this context, “frequency-linked” means that a first channel is assigned a radio frequency and the second channel is assigned a second frequency that is offset a fixed amount from the first channel. EX2009, ¶62. Content may be received by the server from an external network and forwarded to a personal local area network device. *Id.*; EX1006, 9:28-30 (telecopy), 13:51-55 (call).

A POSITA would have understood that Pasanen does not disclose transmitting data from a mobile device to a peripheral device using 802.11 or HomeRF. EX2009, ¶63. As a first example, Pasanen describes wireless local area networks as generally having “star” or “ring” topologies (from the server). EX1006, 2:1-6. However, a ring topology is not compatible with 802.11 or Home RF because 802.11 and HomeRF both operate using transmissions on one or more radio frequency(ies) that can be received by any receiver tuned to those radio frequency(ies). EX2009, ¶63.

As a second example, Pasanen describes a full-duplex transmission technique (EX1006, 5:17-32), whereas 802.11 and HomeRF utilize half-duplex techniques. EX2009, ¶64. In Pasanen, each personal local area network is assigned a frequency pair, and a device may participate in more than one personal local area network at a

time. EX1006, 6:62-67.³ Alternatively, devices are assigned a unique frequency pair with the server. EX1006, 14:37-40. Devices of a particular personal local area network may share a frequency pair and operate using a collision avoidance mechanism. EX1006, 8:51-56, 9:10-21, 14:37-42. Pasanen describes a receiver and a frequency-linked transmitter which operates on a plurality of frequency pairs. A POSITA would therefore have understood that Pasanen describes a full-duplex technique and not the very different half-duplex technique. EX2009, ¶64; EX1006, 5:16-21.

In contrast, 802.11 and HomeRF utilize a half-duplex technique in which uplink and downlink time slots are interleaved on the same frequency. EX2009, ¶65. For example, 802.11 operates as a “party line” controlled by the hub (or wireless access point) where all devices receive and transmit on the same frequency (a channel in 802.11 parlance) once they join the network. *Id.* The hub mediates joining the network. *Id.* In 802.11, each transceiver of a device can only be joined to/participate in a single 802.11 local area network at a time (i.e., it is not possible for a device to simultaneously be associated with multiple networks simultaneously as in the IEEE standard 802.15). *Id.* A device using 802.11 would utilize a transceiver tuned to one channel frequency at a time, listening and transmitting on the same

³ While Pasanen discloses that certain devices may only belong to a single network, that is described as a characteristic of the device, not the network. EX1006, 6:62-67.

channel. *Id.* A modern implementation for this limitation is where a user wanting to connect to an 802.11 (WiFi) network selects the SSID of the network that he wishes to associate with, authenticates (if required), and then is associated with and may participate in the network. *Id.* Thus, 802.11 is a half-duplex technique that uses CSMA/CA techniques for collision detection and avoidance. *Id.* HomeRF is likewise a half-duplex scheme, utilizing a combination of 802.11 FH and DECT transmission schemes. *Id.*; EX2016, p. 2 (top left slide). 802.11 is discussed above, and DECT is a variant of TDMA (Time Division Multi-Access). EX2009, ¶65; EX2016, p. 2.

As a third example, Pasanen describes using analog transmission over infrared (IR) or wireless (AM or FM) transmission technologies. EX1006, 12:36-46. A POSITA would have understood Pasanen's analog nature based on, for example, the following statement: "The demodulated signal is obtained from the audio line of the short-distance link module of the peripheral device." EX1006, 11:62-64; EX2009, ¶66. A POSITA would also have understood that Pasanen discloses a full-duplex analog transmission mechanism from the paired receive and transmit channels and the circuit descriptions disclosed in Pasanen. EX2009, ¶66.

For example, Pasanen's Fig. 4a is a circuit diagram showing an analog signal going from the receiver/detector directly to the speaker of server 1 (element 1b). *Id.*, ¶67. Speakers of such devices were analog devices that converted an analog waveform into sound, so the signal from the detector to the speaker would therefore likewise be analog. *Id.* The detector is not identified as a D/A converter, so the input

to the detector from the receiver is likewise analog. *Id.* Moreover, that Pasanen is describing a full-duplex analog transmission mechanism is apparent from the description of Pasanen's Fig. 4b, which states that "a frequency modulated signal is formed, led to the first input of the mixer **49** of the transmitter. The frequency of the local oscillator **16c** of the short-distance link module of the peripheral device is led to the second input of the mixer **49**. Thus, from the output of the mixer, a frequency-modulated signal with the frequency of the transmission channel of the short-distance link module of the peripheral device is obtained and further amplified by the high-frequency amplifier **50**." EX1006, 12:22-30; EX2009, ¶67.

IR, AM, and FM technologies were used in devices such as TV remote controls. EX2009, ¶68. Pasanen expressly describes using frequency modulation to encode an analog signal. EX1006, 11:15-17. As discussed above, Pasanen is clear that it supports analog radio using an analog frequency modulation (FM) scheme. EX1006, 12:43-46; EX2009, 68. Analog transmissions encode the signal directly in the transmitted waveform without framing, packetizing, or other overhead. EX2009, ¶68. IR, AM, and FM techniques typically use a continuous signal waveform. *Id.* An FM wireless microphone is an example of an audio signal sent over RF, where the signal is encoded directly in the waveform. Some wireless microphones use the 2.4 GHz band, which directly interferes with 802.11 channels in the same band. *Id.*

In contrast to Pasanen's approach, 802.11 and Home RF utilize digital frames (802.11) or time slices (Home RF) rather than continuous analog transmission

techniques. EX2009, ¶69. Neither Pasanen’s infrared transmissions nor its analog RF transmissions are compatible with 802.11’s or HomeRF’s utilization of digital frames. *Id.* Were someone to attempt to do so, Pasanen’s analog transmissions would interfere with the digital transmissions of the 802.11 network, causing the network to change channels to avoid the interference. *Id.* For example, a POSITA would have been familiar with the fact that wireless microphones—analogue RF devices—often cause interference in the 2.4 GHz band utilized by 802.11. *Id.* While HomeRF is more resilient to interference than 802.11 because of its frequency hopping, it still involves a digital signal that requires sharing the communications frequency between participants rather than an analog signal. *Id.* Nor does Pasanen disclose a transceiver of the type used by 802.11 or HomeRF. *Id.* Thus, Pasanen’s full-duplex, analog technique for transmitting a cellular phone call to a wireless audio interface is incompatible with 802.11 or HomeRF. *Id.*

As noted earlier, Petitioner concedes that Zhang does not disclose receiving a phone call and sending it to a helper server over an 802.11 or HomeRF network. Nor does Petitioner point to anything in Zhang disclosing the type of content processing that would have been necessary to make this possible. Modifying Zhang in the manner proposed by Petitioner and its expert (*see* EX1003, ¶¶123-24) would require a technique called transcoding, in which a signal is converted from one format to another. EX2009, ¶70. A white paper titled, “Transcoding free voice transmission in GSM and UMTS networks” describes GSM encoding and the technical challenges

involved in transcoding. EX2009, ¶70; EX2017 Section 2, ¶1 (“Because of different supported voice encoding schemes when passing from the radio to the core network and reverse, transmitted voice must be transcoded.”).

For example, a widely used standard for encoding digital audio is G.711. In G.711, the input is sampled and converted to a digital signal (pulse code modulation). EX2009, ¶71. G.711 encodes audio into digital audio at 64kb/s. *Id.* The over-the-air encoding used by GSM is different from G.711. GSM uses a telephony-compatible encoding scheme (e.g. full rate, half rate, enhanced full rate, and adaptive multi-rate) for compression and adaptation to over-the-air signal conditions. *Id.*; EX2017, Section 2, ¶1. When a GSM phone call is received at a cellular phone, the GSM stack identifies the voice packets being sent and converts them to an analog audio stream. EX2009, ¶71. The demodulated analog audio stream is what is routed to a cell phone speaker (e.g., Pasanen’s speaker 1b in Figure 4a). *Id.* Analog audio signals would be directly compatible with Pasanen’s analog transmission network layer and require no transcoder. *Id.*

However, in order for a GSM phone call to be sent digitally over an 802.11 or HomeRF network (as is the case under Petitioner’s proposed combination), raw digital signals from the GSM receiver (which would be encoded in their telephony encoding scheme) would require transcoding to a digital audio format compatible with the intended recipient. EX2009, ¶72. Thus, the rate-sensitive encoding of the voice transmission over GSM would have to be transcoded into a format

recognizable by the receiving device. *Id.* For example, the analog audio output of the phone call that would normally go to the speaker would have to be sampled into digital form and transcoded to the desired media format (e.g., G.711 or MP3). *Id.*

While Petitioner's expert asserts that "modifying *Zhang-Fillebrown* per *Pasanen*'s teachings would have utilized *Zhang-Fillebrown*'s existing hardware" (EX1003, ¶124), neither Zhang nor any of the other references in the proposed combination refer to such a transcoding process nor provide the necessary hardware/software. EX2009, ¶73. This is not surprising since none of the references contemplates receiving a cellular call on a mobile phone and routing it over an 802.11 or HomeRF network. *Id.* Thus, Petitioner's expert is incorrect to the extent he suggests that either Zhang or Fillebrown discloses a mobile device that contains hardware configured to receive a cellular call and perform the necessary transcoding such that it could be sent out over an 802.11 or Home RF network. *Id.*

Petitioner's expert also states that "a POSITA would have been able to utilize and implement *Pasanen*'s teachings in a WLAN with hardware already utilized by the *Zhang-Fillebrown* combination. But as discussed above, Pasanen does not teach that its mobile device includes the necessary hardware/software to transcode a cellular phone call and send it over an 802.11 or HomeRF network. EX2009, ¶74. Moreover, Pasanen's structures are not compatible with an 802.11 or HomeRF implementation. *Id.*

Thus, modifying a mobile device to receive a cellular phone call and send it

over an 802.11 or HomeRF network would require something that (1) decoded the over-the-air encoding of a GSM module into audio and (2) reencoded the audio into a digital form for transmission within an 802.11 or HomeRF frame (in other words, transcode it). EX2009, ¶75. Because the proposed combination does not address this shortcoming in the cited references or otherwise attempt to explain how the cited references could have been combined such that the proposed combination would actually work, Petitioner has failed to establish that claim 1 is obvious. *Id.*, ¶¶76-78.

The shortcoming in Petitioner's explanation of its proposed combination is particularly important given the state of the art in the relevant timeframe of the '648 patent as described by Petitioner's own litigation expert. When asked about the streaming of audio during that timeframe, he testified that while there had been some effort to stream on-demand audio (like voicemail), there was little in the way of streaming live audio: "I built applications in that period of time for a variety of different customers using on-demand audio where you would connect up to something and it would -- it would play voicemail and audio messages. But there really wasn't -- there wasn't much going on in -- in real-time audio. It was usually easier for people to dial in with their phones and just -- and just listen to audio over the phone than it was to listen to it over the computer." EX2013, 31:2-12.

Petitioner's expert was then asked about the status of sending real-time audio from a mobile device to another device in 2002. He responded, "So everything I was talking about before with respect to the real-time streaming, I was talking about from

a server to a -- a client device of some sort, probably, that's involving a -- a desktop computer as the client. There certainly wasn't -- *I'm not aware of anybody doing real-time streaming from a mobile device in this timeframe.*” *Id.* at 32:25-33:6 (emphasis added). When asked “Why not?” he went on to testify, “At least, lack of computing power on the devices, lack of bandwidth available to the devices, lack of storage on the devices. The -- this is -- this is pre-smartphone. There really weren't -- there really wasn't a lot on the mobile devices that could handle - that could handle media.” *Id.* at 33:8-13.

This testimony from Petitioner’s litigation expert regarding the state of the art further demonstrates the shortcoming in Petitioner’s argument that it would have obvious to combine Zhang-Pasanen-Fillebrown such that a mobile device could receive a cellular phone call and send it over an 802.11 or HomeRF network.

2. Claim 5

Claim 5 depends from claim 1. Petitioner’s proposed combination fails for the reasons discussed regarding claim 1.

Moreover, Petitioner’s proposed combination fails to render obvious the additional recitations of claim 5: “The method of claim 1, wherein the media content is a phone call; further comprising routing the phone call to the one or more available devices in response to a receipt of a response to the signaling received from the one or more device.” EX2009, ¶80.

Petitioner’s analysis of claim 5 is almost entirely conclusory, stating for

example, that “[a] POSITA would have understood that a phone call would have been routed to an available device after receipt of a response to the signaling received from the one or more available devices (e.g., wireless audio interface 12) in accordance with the mapping above.” Petition, 32-33. Petitioner cites its analysis of claim 1 and Paragraph 126 of the declaration of its expert in support of this conclusory statement. Petitioner’s section on claim 1 spans about 23 pages. Such a generic citation is insufficient for Petitioner to carry its burden:

As for Petitioner's complaint that "citing a page number [of ABYSS and Denning] was the finest level of granularity possible," this argument also ignores the problem identified with those particular citations in our Decision. In particular, the precise problem with the citations to ABYSS that we identified was that many of the Petition's citations to ABYSS were to nearly the entire article. See Dec. 7 ("***The analysis of what the Petition identifies as the first of six elements of claim 1 spans a little more than one page of the Petition, but cites to 56 paragraphs of the Sherman Declaration, 11 pages of the 13-page ABYSS reference, and at least 16 pages of internal sections of the Petition.***" (emphasis added)). Thus, we did not demand a greater level of granularity than the article permitted, we merely expected that Petitioner identify with particularity what parts of the article it was relying on. And we explained that omnibus citations to almost the entire article do not meet that expectation.

Apple Inc. v. ContentGuard Holdings, Inc., IPR2015-00440, Paper No. 13 at 5 (PTAB Dec. 21, 2015) (emphasis added); *see also Boragen, Inc. v. Syngenta*

Participations AG, IPR2020-00124, Paper 16 at 19 (PTAB May 5, 2020) (“Nor do vague citations to testimony of Petitioner's declarants, without any adequate explanation in the Petition itself, suffice to demonstrate persuasive reasons for combining the art.”).

The single cited paragraph of Petitioner’s expert declaration does not show that the proposed ground satisfies the additional recitations of claim 5. EX2009, ¶82. Paragraph 126 of Petitioner’s expert declaration contains virtually the same text as the Petition itself. This paragraph contains only a single additional sentence that attempts to address the specific recitation of claim 5 that requires “routing the phone call to the one or more available devices in response to a receipt of a response to the signaling received from the one or more device”: “A POSITA would have understood that Zhang's signaling is provided through several ‘essential steps’ that the mobile device takes to interact with helper servers, where in one step Zhang performs a ‘service query,’ where the mobile device ‘queries the identified helper servers to determine if they are capable of providing the helper service.’” EX1003, ¶126.

Zhang’s service query fails to account for the additional recitation of claim 5 because Zhang’s mobile device did not route content to a helper server in response to a receipt of a response to a service query. EX2009, ¶83. Rather, Zhang discloses that its mobile device would use the various helper servers’ responses to a service query to determine where to send a service request. EX1004, 3:48-54, 6:40-44. Petitioner’s

expert acknowledges this. *See* EX1003, ¶100.

For this additional reason, Petitioner’s proposed combination for claim 5 fails. EX2009, ¶84.

3. Claim 6

Claim 6 depends from claim 1. Petitioner’s proposed combination fails for the reasons discussed regarding claim 1.

Moreover, Petitioner’s proposed combination fails to render obvious the additional recitations of claim 6: “The method of claim 1, wherein the media content is a phone call; further comprising routing the phone call to the one or more available devices while the phone call is ongoing using the mobile device.”

Petitioner relies on the combination of Zhang-Fillebrown-Pasanen, stating that “[a] POSITA would have been motivated to provide the user an option to invoke the helper server when the phone call is ongoing, providing the user control of whether and when to use the wireless speaker/microphone, rather than the mobile device’s native input/output.” Petition, 33. However, in discussing claim 8 (which Petitioner addressed in a different proposed ground of unpatentability), Petitioner’s expert conceded that Zhang-Fillebrown-Pasanen did not disclose allowing the user to select which audio device to send a phone call to, and therefore proposed adding Rofheart to the combination. EX1003, ¶177 (“[I]n the case where the media content is a phone call, *Zhang-Fillebrown-Pasanen* would have been modified per *Rofheart*’s teachings to select a device to route the phone call to (e.g., wireless audio interface). . . . a

POSITA would have understood that *the ability to have the user select which audio device to send a phone call (e.g., wireless audio interface) would have advantageously improved the Zhang-Fillebrown-Pasanen combination.*”) (emphasis added); see also *id.*, ¶182 (“Modifying *Zhang-Fillebrown-Pasanen* in view of *Rofheart*’s teachings of user selection would have been the use of a known technique of selecting one or more of a plurality of helper servers or other remote devices to which to route media content (e.g., phone call) to improve *Zhang-Fillebrown-Pasanen* in the same way as *Rofheart*. **A POSITA would have recognized the benefit of providing users control to select one or more of a plurality of devices, rather than always connecting to the first identified available compatible device, as taught by Zhang**, beneficially permitting users control of which device will handle the call.”) (emphasis added).

Here, Petitioner does not simply argue that a POSITA would have been motivated to combine *Pasanen-Zhang-Fillebrown*, but that it would have been obvious to modify them to “provide the user an option to invoke the helper server when the phone call is ongoing,” functionality it has acknowledged these references do not provide. EX2009, ¶89. Thus, Petitioner effectively argues that it would be “common sense” to modify *Zhang-Pasanen-Fillebrown* to include functionality not provided in any of those references. The Federal Circuit has rejected similar arguments: “common sense is typically invoked to provide a *motivation to combine*, not to supply a missing claim limitation.” *Avendi S.A.R.l. v. Apple Inc.*, 832 F.3d

1355, 1361 (Fed. Cir. 2016); *In re Zurko*, 258 F.3d 1379, 1383 (Fed. Cir. 2001) (reversing Board’s decision that adopted examiner’s unsupported assertion that claim limitation missing from cited references was ‘basic knowledge’ and it ‘would have been nothing more than good common sense’ to combine the references). Similarly, in *K/S HIMPP v. Hear-Wear Technologies, LLC*, 751 F.3d 1362, 1365 (Fed. Cir. 2014), the Federal Circuit held that “the Board was correct to require record evidence to support an assertion that the structural features of claims 3 and 9 . . . were known prior art elements. The patentability of claims 3 and 9 with the limitation ‘a plurality of prongs that provide a detachable mechanical and electrical connection’ presents more than a peripheral issue.” *Id.* at 1365.

The testimony of Petitioner’s litigation expert demonstrates that the ability to route a phone call to another device while the call is ongoing is not a mere peripheral limitation (especially in the relevant timeframe). Petitioner’s litigation expert testified that in the relevant timeframe of the ’648 patent, he was “not aware of anybody doing real-time streaming from a mobile device in this timeframe” given the limitations of such devices in that “pre-smartphone” era. EX2013, 32:25-33:13. This testimony regarding the state of the art provides further evidence against Petitioner’s conclusory argument that it would have been obvious to modify Zhang-Pasanen-Brown to provide the user an option to invoke the helper server when the phone call is ongoing.

Petitioner’s expert also incorrectly asserted that “[i]mplementing the proposed

combination such that a phone call is ongoing when the user routes audio to a helper server is also necessary to support Zhang’s ‘seamless’ mobility embodiment, where ‘continuity’ is maintained across multiple devices while media is streamed.”

EX1003, ¶127. Zhang’s description of the seamless-mobility embodiment includes no statement that the user has control over the transition between helper servers; rather, Zhang’s description indicates that the transition between helper servers happens automatically as the user moves: “In an alternative embodiment supporting seamless mobility, state information is retained when the user moves causing a change in servers.” EX1004, 10:58-60. A POSITA would have understood Pasanen to mean that the transition between helper servers occurred without user intervention and instead occurred as a result of the user moving, for example, between rooms. EX2009, ¶90-91. Thus, Petitioner’s expert was incorrect in asserting that Zhang’s seamless-mobility embodiment requires implementing the proposed combination in a way that provides the user an option to invoke the helper server when the phone call is ongoing.

For this additional reason, Petitioner’s proposed combination for claim 6 fails. EX2009, ¶92.

4. Claim 15

a. The Proposed Combination Fails to Account for All Elements of Claim 15

Claim 15(b) recites, *inter alia*, “a controller adapted to identify one or more

available devices connected to a local area network (LAN) and compatible to handle the media content.” Claim 15(d) recites, “wherein the controller is adapted to wirelessly signal[] the one or more available devices indicating an availability of the media content at the mobile device.” As discussed regarding claim construction, claim 15(d) requires that the one or more available devices that are wirelessly signaled are the one or more available devices identified in claim 15(b). EX2009, ¶94.

Petitioner relies on its arguments regarding claim 1(d) for claim 15(d). *See* Petition, 43. Under Petitioner’s mapping, Petitioner asserts that Zhang’s service request (step three of Zhang’s process) satisfies claim 1(d) and therefore claim 15(d). As discussed regarding claim 1, when Zhang sends out the service requests, it does not know whether the helper server(s) to which it sends the service request(s) are available or not. Thus, Petitioner’s argument is that Zhang wirelessly signals “the one or more *available* devices” without having identified them as available. This does not satisfy the language of claim 15(d) because it does not involve wirelessly signaling *the one or more available* devices that were identified as available by the mobile device. EX2009, ¶96. Since the mobile device has not identified a device as being available before sending the service request, the service request itself cannot (as Petitioner argues) constitute “wirelessly signaling the one or more *available* devices indicating an availability of a media content at the mobile device.” *Id.*, ¶97.

As discussed regarding claim construction, during prosecution, the inventors

amended claim 15 in response to the Examiner's § 112 rejection to clarify that the one or more devices that are wirelessly signaled are the one or more available devices that were identified by the mobile device. EX1002, 240, 262. Petitioner's proposed ground incorrectly treats claim 15(d) as though the inventors had instead amended claim 15 to recite "wirelessly signaling one or more devices" without requiring that they be the one or more available devices that were identified by the mobile device. EX2009, ¶98.

b. Petitioner Failed to Adequately Explain How the Proposed Combination Would Operate

Additionally, Petitioner has failed to show that claim 15 is obvious because, for the reasons discussed regarding claim 1, it failed to adequately explain how the cited references could be combined such that the proposed combination would actually work. EX2009, ¶99. Petitioner proposes combining Zhang, Fillebrown, and Pasanen in the same way for claim 15 as for claim 1, such that a mobile device could receive a cellular phone call and send it to another device over an 802.11 or HomeRF network (*see, e.g.*, Petition, 36, 39, 40, 43). It therefore suffers from the same deficiency as Petitioner's proposed ground regarding claim 1. *See* § IV(C)(1)(b).

5. Claim 18

Claim 18 depends from claim 15. Petitioner's proposed combination fails for the reasons discussed regarding claim 15. EX2009, ¶100.

D. Ground 2

1. Claim 7

Claim 7 depends from claim 1. Petitioner's proposed combination fails for the reasons discussed regarding claim 1. EX2009, ¶101.

2. Claim 11

Claim 11 depends from claim 1. Petitioner's proposed combination fails for the reasons discussed regarding claim 1. EX2009, ¶102.

Moreover, the recitations of claim 11 are similar to the recitations of claim 19(d). Petitioner's proposed combination fails regarding the additional recitations of claim 11 for the same reasons discussed regarding claim 19(d). EX2009, ¶103.

3. Claim 16

Claim 16 depends from claim 15. Petitioner's proposed combination fails for the reasons discussed regarding claim 15. EX2009, ¶104.

4. Claim 19

a. The Proposed Combination Fails to Account for All Elements of Claim 19

Independent claim 19 is written from a different perspective than the '648 patent's other independent claims. For example, whereas claim 15 is directed to a "mobile apparatus for informing a device about an availability of media content," claim 19 is directed to "a device for informing a user about an availability of media content at a mobile device." In other words, claim 15 focuses on a mobile device that informs another device about an availability of media content at the mobile device. Claim 19, on the other hand, focuses on the (secondary) device that is informed about availability of media content at the mobile device and, in turn, informs the user

of the secondary device about such media content.

When claim 19 speaks of informing a user about the availability of media content at the mobile device, it indicates that the media content is available to be rerouted from the mobile device to the user's device. EX2009, ¶107. This is reflected, for example, in claim 19(b), which recites that the device includes instructions for "communicating information to an intermediate routing device connected to a local area network (LAN) for indirectly receiv[ing] messages or media content routed from one or more available devices connected to the LAN via the intermediate routing device." In other words, the user's device communicates information to an intermediate routing device that allows the device to receive media content routed from another device (e.g., the mobile device) connected to the LAN. EX2009, ¶107. This is consistent with the specification. *Id.*; (citing EX1001, 1:22-26; 4:26-46; 9:46-50).

Claim 19(c) recites instructions allowing the user's device to receive a signal from the mobile device indicating an availability of a media content at the mobile device. Claim 19(d), in turn, recites instructions by which the device informs its user about availability of media content at the mobile device. Since the user of the (secondary) device is informed about *availability* of media content at the mobile device, it means that the media content has not yet been rerouted to the user's device from the mobile device. EX2009, ¶110. It is *available* for rerouting to the user's device, but it has not yet been rerouted. *Id.* (This arrangement provides practical

benefits, including, for example, affording the device's user the opportunity to choose whether to accept the media content.) *Id.*, ¶111.

This is consistent with the specification, including, for example, the embodiment described at '648 patent col. 12, lines 1-10. EX2009, ¶112. In that embodiment, when a call comes into a cell phone (corresponding to the mobile device recited in claim 19), the nearby phone (corresponding to the user's device recited in claim 19) rings to indicate that a call is coming into the cell phone. The '648 patent also specifically discloses that such an arrangement allows the user of the secondary device the choice to accept media content (e.g., audio content comprising a phone call): "As a further example, an incoming phone call directed at a land/fixed line may be rerouted to a mobile device, thus, effectively using the mobile as a cordless phone. Such a technique may ease acceptance of a phone call in a hotel lobby, at a colleague's office, at a restaurant and in many other settings." *Id.* at 5:18-23; EX2009, ¶112.

Petitioner's proposed combination involved four references. None of them seeks to inform the user of a device about media content (such as a phone call) that is available for rerouting from another device. Petitioner's proposed combination relied on Zhang as its base reference. In Zhang, the helper device (**not a user**) makes the decision on whether to admit, deny, or queue a service request. This is reflected in the Petition:

In Zhang's third step, "request transfer," a helper server responds the

service query, indicating its *availability* to handle the requested service. Specifically, in response to the service query, the helper “server makes the admission decision S648 and informs the client whether its service request can be granted right away, has to be queued[,] or is denied (e.g. not enough total resource on the server or authentication failure) S646.” Zhang, 7:22-25, 7:58-60.

Petition, 15. *See also* EX1003 (stating, in arguing that it would have been obvious to combine Zhang and Rofheart (which is not part of this proposed ground), that “***A POSITA would have recognized the benefit of providing users control to select one or more of a plurality of devices, rather than always connecting to the first identified available compatible device, as taught by Zhang***, beneficially permitting users control of which device will handle the call.”) (emphasis added).

Petitioner also acknowledged that Zhang does not disclose claim 19(d)’s recitation of “third program instructions executable by the processor to inform the user of said device about an availability of a media content at the mobile device with one or more of the following: flash light, ring, and play a loudspeaker sound.” Instead, Petitioner argued it would have been obvious to modify Zhang based on Skinner to achieve this claim element.

Skinner teaches using a sensor to “detect[] the occurrence of an event and notifying a user of the event as well as the nature of the event.” Skinner, Abstract. For example, the detected event could be “the receipt of a signal (as for example, a telephone ring signal).” Skinner at 4:13-20, 4:38-42. Skinner teaches that the

message could be sent to other communication devices by a controller associated with the sensor. Skinner at 5:9-31, 5:63-6:6. The messages can be presented to the communication devices by, for example, the following means: “audible (such as a series of beeps or audible speech); visual (such as a text message or a flashing light); mechanical (such as vibrations); and electrical (ESD) sensory-based.” Skinner, 6:34-39. Thus, while Skinner teaches using a sensor to detect that a phone has rung, Petitioner points to nothing in Skinner disclosing that a phone call will still be available at the original phone when the notification is received by a communication device. Skinner certainly does not teach routing a phone call from a device that originally received the call to another device. Thus, Skinner’s notification does not teach that a phone call is available at the original phone for routing to another communication device.

Accordingly, in the proposed combination, when Zhang’s mobile device sends a service request to a helper device asking it to accept routing of a phone call, the helper device would make the decision to accept, deny, or queue that request. EX2009, ¶114-19. The Petition does not state otherwise. Thus, any flashing or ringing at the helper device (per Skinner’s teaching) would not notify a user that media content is currently *available* at the mobile device. EX2009, ¶119. Rather, in the proposed combination, the flashing or beeping would be notifying the user that the phone call had *already been accepted by the user’s device. Id.* This is consistent with Petitioner’s expert’s acknowledgement that Zhang teaches “*always connecting*

to the first identified available compatible device.” Id.; EX1003, ¶182.

At that point, the media content would no longer be available at the mobile device—it would have already been routed to the user’s device. EX2009, ¶120.

Similarly, if the helper device denied the request, any flashing or beeping would not notify the user of the availability of the phone call because the device would have already turned down the service request and the phone call would no longer be available to the helper device. *Id.* Thus, the proposed combination does not teach or suggest “third program instructions executable by the processor to inform ***the user of said device about an availability*** of a media content at the mobile device.” *Id.*, ¶121. Nor does Petitioner propose modifying Zhang or the other references to provide this capability. *Id.*

The Institution Decision stated that the Board preliminarily disagreed with Patent Owner’s argument “because, for example, the event that triggers the flashing or ringing could be the incoming service request (rather than the incoming media content following acceptance of the service request).” Institution Decision, 24. However, nowhere in Petitioner’s discussion of claim 19(d) did it propose that its combination of references would involve an incoming service request triggering flashing or ringing. *See* Petition, 55.

Petitioner’s analysis for claim 19(d) referenced its analysis of claim 1(d). Claim 1(d) does not require informing a user about an availability of a media content at the mobile device via a flash light, ring, or a loudspeaker sound. While Petitioner

did discuss Zhang’s service request in the context of claim 1(d), the petition made clear that this service request is an electronic communication *between the mobile device and a helper server*; it is not *a flashing, ringing, or sound to inform a user* of the helper server about the availability of content at a mobile device. For example, Petitioner described Zhang’s service request this way: “The [service] request may contain the following information for the server admission control: the MIME type of the user data, the requested service on the data (e.g. displaying, printing or storing), a flag indicating whether the actual data or a URL will follow, the length of the data in bytes, the expected duration of the service, and optionally, authentication information.” Petition, 23-24. Nowhere did Petitioner suggest that a service request would trigger the helper server to “inform the user of said device about an availability of a media content at the mobile device with one or more of the following: flash light, ring, and play a loudspeaker sound,” as recited in claim 19(d).

Petitioner’s discussion of claim 19(d) also referenced its discussion of claims 7, 11, 15, 16, and claim 19(Pre). Its discussion of these claim elements did not mention Zhang’s “service request.” They certainly did not describe triggering a flashing or ringing based on a service request. As noted above, the Federal Circuit has rejected the proposition “that the Board is free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner during an IPR.” *In re Magnum Oil Tools*, 829 F.3d at 1381.

The Institution Decision also included the following statement regarding claim

19:

We also note that Zhang teaches that the mobile device retains state information. Ex. 1004, 10:48–63. When the mobile device moves, causing a change in helper servers, state information is passed to the new helper server so that it can resume providing the helper service to the data indicated in the saved state information. *Id.* Thus, it appears that Zhang’s media content remains available at the mobile device, even after the media content has been routed to the first helper server, because other helper servers are able to later obtain the media content from the mobile device.

Institution Decision, 24. The passage in Zhang referenced here does not undermine Patent Owners’ argument on claim 19(d). EX2009, ¶123. For example, this comment does not explain how the mobile device’s retention of “state information” would mean that the media content itself remained available at the mobile device. *Id.* Zhang’s description of the seamless-mobility embodiment appears to describe an automatic process: “In an alternative embodiment supporting seamless mobility, state information is retained when the user moves causing a change in servers.” EX1004, 10:58-60; EX2009, ¶123. Thus, even if Petitioner had made an argument on this claim limitation based on Zhang’s seamless-mobility embodiment (as discussed below, it did not), this would not cure the problem. EX2009, ¶123. Under Petitioner’s combination, any flashing or the like would indicate that the content had already been routed to the new helper server, not that content was available at the mobile device. *Id.*

In any case, the Board provides no citation to the petition tying its comments to any argument advanced by the Petitioner. Neither the Petitioner's discussion of claim 19(d) nor the other claims that involve informing the user about the availability of media content at the mobile device (claims 7 and 11) mentioned Zhang's teaching about the retention of state information by the mobile device. While this teaching of Zhang was mentioned in Petitioner's discussion of claim 1(d), that claim element does not involve informing the user about the availability of media content at the mobile device by flashing, ringing, or the like. Petitioner's discussion of claim 1(d) does not indicate that Zhang's teaching about retention of state information is somehow relevant to claim 19(d) or informing the user about the availability of media content at the mobile device by flashing, ringing, or playing a sound. As noted above, the Board's discretion does not extend to adopting arguments on behalf of petitioners that could have been, but were not, raised by the petitioner. *In re Magnum Oil Tools*, 829 F.3d at 1381.

b. Petitioner Failed to Adequately Explain How the Proposed Combination Would Operate

Additionally, Petitioner has failed to show that claim 19 is obvious because, for the reasons discussed regarding claim 1, it failed to adequately explain how the cited references could be combined such that the proposed combination would actually work. EX2009, ¶124. Petitioner proposes combining Zhang, Fillebrown, and Pasanen in the same way for claim 19 as for claim 1, such that a mobile device could

receive a cellular phone call and send it to another device over an 802.11 or HomeRF network (*see, e.g.*, Petition, 51, 55-56). It therefore suffers from the same deficiency as Petitioner's proposed ground regarding claim 1. While Petitioner's proposed combination for claim 19 also includes Skinner, Petitioner's discussion of Skinner did not relate to the deficiencies discussed herein regarding how the proposed combination would receive a cellular phone call and send it to another device over an 802.11 or HomeRF network. *See* § IV(C)(1)(b).

E. Ground 3

1. Claim 8

Claim 8 depends from claim 1. Petitioner's proposed combination fails for the reasons discussed regarding claim 1. EX2009, ¶125.

2. Claim 10

Claim 10 depends from claim 1. Petitioner's proposed combination fails for the reasons discussed regarding claim 1. EX2009, ¶126.

F. Ground 4

1. Claim 13

Claim 13 depends from claim 1. Petitioner's proposed combination fails for the reasons discussed regarding claim 1. EX2009, ¶127.

V. Conclusion

For the foregoing reasons, all grounds of the petition should be denied.

Dated: May 5, 2025

Respectfully submitted,

/Cortney S. Alexander/
Reg. No. 54,778
Cortney S. Alexander
Kent & Risley LLC
5755 N Point Pkwy, Ste 57
Alpharetta, GA 30022
(404) 855-3867
(770) 462-3299 (fax)
cortneyalexander@kentrisley.com

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Patent Owners certify that the foregoing Patent Owners' Response contains 13,467 words, excluding the portions exempted by 37 C.F.R. § 42.24(a)(1), as measured by the word-processing software used to prepare the document.

/Cortney S. Alexander/
Reg. No. 54,778
Cortney S. Alexander
Kent & Risley LLC
5755 N Point Pkwy, Ste 57
Alpharetta, GA 30022
(404) 855-3867
(770) 462-3299 (fax)
cortneyalexander@kentrisley.com

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(a) and (b), I certify that on the date indicated below, a true and accurate copy of the foregoing document was served on the following counsel for Petitioner via e-mail, pursuant to Petitioner's consent to e-mail service:

Paul R. Hart (Reg. No. 59,646)

paul.hart@eriseip.com

PTAB@eriseip.com

Adam P. Seitz (Reg. No. 52,206)

adam.seitz@eriseip.com

PTAB@eriseip.com

Kevin Rongish (Reg. No. 78,716)

kevin.rongish@eriseip.com

PTAB@eriseip.com

Dated: May 5, 2025

/Cortney S. Alexander/

Cortney S. Alexander

Reg. No. 54,778

Cortney S. Alexander

Kent & Risley LLC

5755 N Point Pkwy, Ste 57

Alpharetta, GA 30022

(404) 855-3867

(770) 462-3299 (fax)

cortneyalexander@kentrisley.com