

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REOLINK INNOVATION INC. AND
SHENZHEN REOLINK TECHNOLOGY CO., LTD.,
Petitioner,

v.

THROUGHTTEK CO., LTD.,
Patent Owner.

Case IPR2024-01193
Patent No. 10,602,448

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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I. INTRODUCTION

The Patent Owner Response (“POR”) relies upon attorney argument rather than any evidence to advance its limited rebuttals to Grounds 1-3. For Ground 1, Patent Owner (“PO”) concedes independent claim 19 is anticipated, and PO’s attorney argument for the remaining independent claims disputes whether Zhang’s server “generates” the claimed apparatus wakeup packet. POR, 5-18. To do so, the POR sidestepped Zhang’s teaching in paragraphs [0066] (“may modify”) and [0078]-[0082] (construction of a “packet”) and never rebutted the expert testimony regarding such teaching. EX1003, ¶¶58-62. For Grounds 2-3, there is no dispute that each of the obviousness combinations would have provided all claim elements. Instead, PO’s attorney argument only raises rigid lack-of-motivation contentions—all of which are contrary to the flexible post-KSR approach and the unrebutted testimony in the record. POR, 19-39. PO’s attorney argument ignores plainly articulated benefits that would have been recognized by a person of ordinary skill. *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1379 1379-81 (Fed. Cir. 2023) (“a person of ordinary creativity, not an automaton”).

II. CLAIM CONSTRUCTION

The POR alleges that five phrases “require interpretation.” POR, 3-4. Oddly, one of the phrases (“connection information”) never appears in any claim. Worse yet, for four of those five phrases, the POR never actually relies on the purported

constructions to resolve any controversy related to Grounds 1-3. *Google Inc. v. Intellectual Ventures II LLC*, 701 Fed. Appx. 946, 956 (Fed. Cir. 2017) (“do not require construction” for purposes of “resolv[ing] the parties’ patentability arguments”). Only one phrase—the “feature flag” term for dependent claims 8, 16, and 23—is relied upon by PO to purportedly distinguish the prior art. Petitioner addresses this flawed construction first.

“feature flags”

PO’s attorney argument contends that this two-word phrase “feature flags” should import lengthy substitute terminology. POR, 4 (attempting to import “a software development and product experimentation technique that turns certain functionality on and off during runtime, without deploying new code”). Critically, there is no dispute that this substitute terminology is entirely absent from the claims/specification. EX1101, ¶12. The POR does not cite to a single instance in the intrinsic records nor any testimony to support its construction. Instead, the POR refers to an unauthenticated URL without any evidence that a POSITA would have referred to “optimizely.com” back in 2016 (if it existed at all).

Moreover, this construction is directly contradicted by the specification and the context of other claim language. EX1001, 10:32-33, 11:16-18, FIG. 13. First, it is inconsistent with the actual claim language, which requires only that the feature flag “indicates that the running state of the second apparatus is the sleep state.” *See*

Claims, [8], [16], [23]; EX1101, ¶13. Next, this construction is inconsistent with claim 24 (depending from claim 23), which states that the claimed feature flag must be “located at a header of the sleep login packet.” EX1101, ¶13. An indicator of a running state located in “a header” of the sleep login packet would not be limited to “a software development and product experimentation technique” that turns certain functionality on and off “during runtime, without deploying new code.” *Id.* (citing to EX1001 cols. 10-11 and FIG. 13). Rather, the specification contemplates that the feature flag can be merely a single bit in a header to indicate whether the packet is a “sleep login packet” or a “normal login packet.” EX1001, FIG. 13, 10:5-20, 10:32-33; 10:56-11:18; EX1101, ¶13. Nothing in the intrinsic evidence suggests, let alone requires, PO’s proposed importation. *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 874-875 (Fed. Cir. 2004) (“nor can it be used to rewrite[] the chosen claim language”).

Remaining constructions are erroneous and unnecessary

The remaining four constructions are introduced but never relied upon to dispute any of Grounds 1-3. Accordingly, the Board need not resolve them. Even so, PO’s attorney arguments invite reversible error, if adopted.

First, PO attorney argument contends that the phrase “wakeup request packet” should import the further unwritten requirements of “a device identifier(Unique identification UID) of a connection target and a network location indicating a source

of the packet namely connection information of the first apparatus.” POR, 3. First, such language need not be imported. This interpretation is surely inconsistent with the actual claim language, which recites that the wakeup request packet can simply “comprise a device identifier of a second apparatus.” *See* Elements [1a.i], [11d]; EX1101, ¶8. At most, the POR cites to cols. 2-3 for its effort to import this limitation from the specification, but these paragraphs plainly describe a mere “embodiment.” EX1001, 1:65-2:13 (“embodiment”), 3:34-4:3 (“embodiments”), 13:27-36; EX1101, ¶¶7-8. It is legal error to import a mere “embodiment” into a claim. *IQRIS Techs. LLC v. Point Blank Enters.*, 130 F.4th 998, 1003-04 (Fed. Cir. 2025) (“not inclined to import limitations from the preferred embodiments into the claimed invention”).

Second, PO’s attorney argument demands that the claimed “apparatus wakeup packet” should import requirements such that it “[c]ontains the device ID, wakeup information *and connection information*.” POR, 3. Again this is improper because the imported text is inconsistent with the actual text of claim 1, which only requires the “apparatus wakeup packet” to “contain[] the device identifier of the second apparatus from the wakeup request packet and the obtained wakeup information.” *See* Elements, [1c.i], [11e]; EX1101, ¶9. Furthermore, the POR never cites any specification support for these imported limitations, and certainly no language in the specification that amounts to lexicography or disclaimer. *Hill-Rom Servs*, 755 F.3d

1367, 1371-73.

Third, PO's attorney argument regarding the term "connection information" is outlandish because this two-word phrase never appears in any claim at all. EX1101, ¶10. Even if it did appear in a claim, PO's attorney argument seeks to erroneously import an "embodiment" set forth in cols. 3-4 in which the connection information (introduced at col. 3) can include "a network (IP Address)" (next paragraph at col. 4). EX1001, 3:34-4:8; 13:27-36; EX1101, ¶10. The POR never alleges that this FIG. 1A-B "embodiment" in cols. 3-4 somehow amounts to lexicography or disclaimer, and thus it must not be imported. *IQRIS*, 130 F.4th at 1003-04.

Lastly, PO's attorney argument demands that the term "wake up information" should import lengthy substitute terminology. POR, 4 (attempting to import "device-specific static data" that is "supplemental to the general information HD and device identifier ID"). As an initial matter, the '448 patent never once uses the term "device-specific static data" at all, let alone in connection with the term "wake up information." EX1001, 5:43-48, FIG. 7; EX1101, ¶11. Further, the '448 patent never states that the "wake up information" is "supplemental to" the general information HD and device identifier ID. EX1101, ¶11. There are simply no hallmarks in the specification that would mandate importation to rewrite the claims.

SuperGuide, 358 F.3d at 874-875 (“not a substitute for, nor can it be used to rewrite, the chosen claim language”).

III. GROUND 1: ZHANG ANTICIPATES THE CHALLENGED CLAIMS

The POR does not dispute that Zhang discloses nearly all of the elements of the challenged claims. Rather, the POR argues that Zhang fails to disclose a single element in the independent claims and then one other element recited in a few dependent claims. In doing so, the POR relies on bare attorney argument alone.

A. Zhang Teaches Elements [1c], [11c.iv]

PO’s attorney argument contends that Zhang fails to disclose Element [1c] (and, similarly, Element 11c.iv) because Zhang’s server does not “generate” an apparatus wakeup packet according to the wakeup request packet and the wakeup information. *See* POR 6-13. Mr. Kardashov analyzed Zhang’s teachings and provided two different reasons why Zhang provides a straightforward teaching of this element. EX1003, ¶¶58-62 (citing Zhang’s teaching at [0066] and [0078]-[0082]), Pet., 12-16; EX1101, ¶¶14-21. The POR presented no evidence to rebut this testimony, and instead collapsed both of Mr. Kardashov’s detailed reasons into a single (flawed) strawman where “Zhang merely forwards” the packet. POR, 12.

First, as a threshold matter, such bare attorney argument is not enough under the law. *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009) (“unsworn attorney argument . . . is not evidence”); *Enzo Biochem, Inc. v.*

Gen-Probe, Inc., 424 F.3d 1276, 1284 (Fed. Cir. 2005) (“Attorney argument is no substitute for evidence.”); *see also Wasica Fin. GmbH v. Cont'l Auto. Sys.*, 853 F.3d 1272, 1284 (Fed. Cir. 2017) (“it was reasonable for the Board to accept [] expert testimony over [] bare attorney argument”). Mr. Kardashov testified about Zhang’s teaching at paragraph [0066] (“may modify”) and its context within earlier paragraphs [0063], [0018], [0054], and [0056] so as to explain why this express “modifying”:

results in the generation of a new outgoing wakeup message (the claimed apparatus wakeup packet) because the outgoing wakeup message includes information not present in the incoming wakeup message.

EX1003, ¶59 (“must also include ...”); *see also id.*, ¶60 (“second reason” that Zhang’s server “generates at least one new outgoing packet”); EX1101, ¶¶15-21. No evidence in the record disputes these facts centered upon Zhang’s teaching. PO’s lack of evidence is telling. And fatal.

Second, even if the POR proffered rebuttal evidence (which it did not), PO’s theory that Zhang’s server “merely forwards” the wakeup packet never squarely addresses Zhang’s literal text *See* POR, 12. PO’s attorney argument fails to grasp what occurs at Zhang’s server in paragraphs [0066] (“may modify”) and in paragraphs [0078]-[0082] (new packet with new “header”)—either one of which requires the server to generate a new packet. EX1003, ¶59 (“first reason”), ¶60 (“second

reason”); EX1101, ¶¶16-17. For example, there is no dispute Zhang expressly discloses that the server can “modify” the wakeup message “before sending the wakeup message to the [sleep-enabled] computer.” EX1004, [0066]. A server “modifying” an incoming message before sending a new outgoing packet (carrying the newly modified content) is more than “merely forwarding” the incoming message. EX1101, ¶¶16-19. Here, Zhang’s server modifies the incoming message to produce a new packet (with new information absent from the incoming message), which a POSITA would have readily recognized as generating that new packet. EX1101, ¶19 (citing to EX1003, ¶59 and EX1004, [0066]). This is enough under the law. Yet, even for the embodiments where Zhang’s server does not “modify” the incoming message (as disclosed at [0066]), Zhang nevertheless teaches that the server constructs a new packet each time it sends a wakeup message to the sleep-enabled computer. EX1101, ¶20 (citing to EX1003, ¶60 and EX1004, [0078]-[0082] (new packet with new “header”)). Again, Element [1c] (and [11c.iv]) simply describes a wakeup “packet” that is generated, not an entirely novel “message”

authored from whole cloth. EX1101, ¶20. The POR beats upon a strawman rather than squarely addressing the claim language and Zhang’s actual teaching.¹

Eventually, PO’s attorney argument shifts to a confusing position—that Zhang’s server “supplements” a previously generated apparatus wakeup request packet. POR, 12-13. This position suffers from two recognizable flaws.

First, again this “supplements” argument is untethered from any evidence in the record:

Even if the wakeup message is modified as Petitioner alleges to add an additional IP address, the server still does not **generate** the apparatus wakeup packet request message as claimed because it only supplements the apparatus wakeup request that has been previously generated at the host with a connection address or host ID and wakeup information.  **No citation to evidence.**

Id. (color annotation added). The law is clear that such “bare” attorney is not sufficient to rebut actual testimony evidence. *Wasica*, 853 F.3d at 1284; *Gemtron*, 572 F.3d at 1380; *Enzo Biochem*, 424 F.3d at 1284.

¹ The POR inaccurately summarizes Zhang in relation to the ’448 patent, making grandiose assumptions (e.g., that the ’448 patent provides “more elegant solution”) and incorrect assertions (e.g., that Zhang does not disclose “smartphones”). POR., 6-9. These statements are expressly contradicted by Zhang’s teaching. EX1004, [0032]-[0033] (can include a “smart phone”), [0009]-[0010], [0061]-[0066].

Second, there is overwhelming evidence that belies PO's attorney argument here. Never once does PO contemplate the dispositive fact that, in order to "supplement" an incoming message, Zhang's server ultimately generates a new outgoing packet with the newly supplemented message content. EX1101, ¶21. From a technical perspective, the POR never explained any meaningful difference between the server "generating" the "apparatus wakeup packet" and the server "supplement[ing]" the incoming message when constructing the outgoing apparatus wakeup packet. EX1101, ¶21; Pet., 14-15; EX1003, ¶¶60-61. The actual outgoing "packet" from Zhang's server is still always constructed/generated by the server. *Id.* This is particularly true in the disclosed embodiment where the network address information is not included in the wakeup request packet. EX1003, ¶59 ("first reason"), ¶60 ("second reason"). PO's bare attorney argument is simply not enough to overcome the weight of uncontroverted evidence.

Finally, PO's attorney argument contends that Zhang's outgoing message is not generated "according to" the wakeup request packet and wakeup information. POR, 13 (citing to no evidence). But the overwhelming evidence plainly demonstrates that Zhang's outgoing wakeup packet is generated in a manner that uses both the wakeup information and the information supplied by the wakeup

request packet. EX1003, ¶¶62-63 (“because it uses both”), ¶61; EX1101, ¶22.² Fatally, the POR does not dispute this dispositive fact. PO’s bare attorney argument oddly complains that such information “is unchanged” when Zhang’s server constructs the outgoing packet (POR, 13), but the vague “according to” phrase in the claim was never amended in this proceeding to mandate such a narrow view. EX1101, ¶22. The Board should not rewrite the claim where PO waived its opportunity to do so.

Accordingly, Zhang discloses Elements [1c] and [11c.iv], and the POR does not dispute that Zhang discloses all other elements of claims 1 and 11.³ EX1101, ¶¶23-25.

B. Zhang Teaches Claims [8], [16], [23]-[25]

² The POR (p. 15) appears to rely upon a similar “according to” argument for Element [11c.iv]. POR, 15. As discussed, the uncontroverted evidence shows why this argument is misplaced. EX1101, ¶23; EX1003, ¶¶81, 62.

³ The POR (p. 11) initially implies that Zhang fails to disclose Element [1c.i], but then never addresses this element again. Regardless, this premise neglects the evidence in the Petition. Pet., 16 (Element [1c.i]); EX1003, ¶63. The parties do not dispute the content of Zhang’s outgoing wakeup message (the claimed “apparatus wakeup packet”), only where the packet is “generated.” EX1101, ¶25.

PO's attorney argument for dependent claims 8, 16, and 23⁴ is premised entirely upon PO's erroneous construction for "feature flags." POR, 4 ("software ... technique that turns certain functionality on and off during run time, without deploying new code") and 13-14 ("a software tool that allows the code to be disabled"). But the actual language of these claims never mandates that the two-word phrase "feature flag" must be rewritten to import these constraints. *Supra* §II. After PO's flawed construction is properly set aside, Zhang discloses Elements [8]/[16]/[23] for the reasons established in the Petition. *See, e.g.*, Pet. 20; EX1003, ¶¶70. For example, Zhang's CMD field indicates a type of message including when the type of message is a registration message. EX1004, [0080]. This registration message indicates to Zhang's server that the sleep-enabled computer system "remains in a sleep mode." EX1004, [0057]-[0058], [0080]; *see also* EX1003, ¶¶70, 109; EX1101, ¶26.

But even if PO's improper construction was applied, PO overlooked why Zhang's teaching nevertheless discloses Elements [8]/[16]/[23]. *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1380-84 (Fed. Cir. 2023). First, PO's bare attorney argument merely "submits"—without any explanation or evidence—that Zhang's

⁴ Claims 24-25 depend from claim 23, and PO relies upon the same flawed argument for these dependent claims.

command field (CMD) in [0080] is “not equivalent to” the feature flag described in the ’448 patent. This makes no sense. The evidence plainly establishes that Zhang’s CMD field in the “‘secure wake over internet’ header” is nearly identical to, if not more functional than the single-bit flag in the header of the ’448 patent’s preferred embodiment. EX1001, FIG. 13 (showing the feature flag “SF” as a bit within a header for a packet), 10:5-20, 10:32-33; 10:56-11:18. To the extent the ’448 patent’s preferred embodiment falls within the scope of PO’s erroneous construction, so too does Zhang’s teaching for the registration message. EX1101, ¶27. Second, PO’s attorney argument never addresses the fact that Zhang’s “registration message” may include information that is “updated or changed,” such as an updated “nonce” to thereby turn off the security functionality of the old nonce (and turn on the security functionality of the new nonce). EX1004, [0058] and [0080]. This teaching likewise falls within the scope of PO’s erroneous construction. POR, 4 (“turns certain functionality on and off”); EX1101, ¶27.

IV. GROUND 2: A POSITA WOULD HAVE BEEN MOTIVATED TO IMPLEMENT THE ZHANG-ZILL COMBINATION

Even if Zhang did not teach all elements of the challenged claims (which it does), the predictable Zhang-Zill combination would surely provide all elements while achieving several known benefits. Pet., 34; EX1003, ¶¶112-119; EX1101, ¶28. The POR never disputes that the Zhang-Zill combination would provide every

element of the independent claims. *See* POR, 19-33.⁵ Rather, PO's attorney argument merely contests the motivations-to-combine articulated in Mr. Kardashov's testimony. Pet. 36-39; EX1003, ¶¶112-119. In doing so, the POR rests entirely upon "bare attorney argument" alone, which is not enough on this record. *Wasica*, 853 F.3d at 1284; *Gemtron*, 572 F.3d at 1380; *Enzo Biochem*, 424 F.3d at 1284.

Beyond PO's lack of rebuttal evidence, the POR only cemented PO's erroneous understanding of the law. *See* POR, 22-23. Namely, PO's attorney argument starts from the overly rigid test that the motivation-to-combine must be expressed within the four corners of the prior art publication or must bodily incorporate the secondary reference. *Id.* (complaining the proposed motivation is "absent from prior art" and that "Zill does not explain why," and demanding incorporation of the "objectives of Zill"). This is contrary to mandatory precedent:

The motivation-to-combine analysis is a flexible one. "[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *KSR*, 550 U.S. at 420 (emphasis added). And "[a] person of ordinary skill is also a person of ordinary

⁵ Patent Owner's attorney argument attempts to distinguish Zill alone, but Ground 2 is not based upon Zill alone. *See* POR 21-22; EX1101, ¶29.

creativity, not an automaton.” *Id.* at 421. So, “in many cases[,] a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420. That’s why the motivation-to-combine analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 418.

Additionally, “universal” motivations known in a particular field to improve technology provide “a motivation to combine prior art references *even absent any hint of suggestion* in the references themselves.” *Intel*, 21 F.4th at 797-99 (cleaned up) (emphasis in original) [].

... And if there's a known technique to address a known problem using “prior art elements according to their established functions,” then there is a motivation to combine. *Intel*, 21 F.4th at 799-800. And we specify *address* a known problem because “[i]t's not necessary to show that a combination is the *best* option, only that it be a *suitable* option.” *Id.* at 800.

Intel Corp. v. PACT XPP Schweiz AG, 61 F.4th 1373, 1379-80 (Fed Cir. 2023) (emphasis in original).

All of PO’s arguments against Ground 2—every single one—runs afoul of this precedent.

- A. A POSITA would have been motivated to implement the Zhang-Zill combination to allow the server to facilitate remote wakeup from legacy requesting computing systems**

PO's attorney arguments fail to recognize the advantages for improved compatibility with legacy devices by applying Zill's suggestion for generating wakeup packets at Zhang's server. EX1101, ¶¶30-32; *see* POR, 23-24. The evidence cited in the Petition demonstrated that Zhang's requesting computer would operate complex security software (e.g., encryption software) due to the sensitive information in the query request/reply and wakeup message. Pet., 36-37 (citing EX1003, ¶113 and EX1004, [0061]-[0062], [0064]-[0065], [0077]). Mr. Kardashov articulated the known benefit of moving this logic to the server, which would allow Zhang's method to accommodate more types of requesting computing systems (e.g., "legacy remote hosts"). EX1003, ¶113 (citing EX1005, [0111] and EX1004, [0077]); EX1101, ¶30. Under the law, PO's "bare attorney argument" cannot rebut this weighty evidence. *Wasica*, 853 F.3d at 1284; *Gemtron*, 572 F.3d at 1380; *Enzo Biochem*, 424 F.3d at 1284.

PO's attorney argument never actually contests Mr. Kardashov's testimony, instead arguing this advantage is not expressly linked within the four corners of Zill to "generating" of the wakeup packet. POR, 23-24. This is askew from both the law and from the articulated reasoning from Mr. Kardashov. *Intel*, 61 F.4th at 1379-80 (a motivation-to-combine can exist "even absent any hint of suggestion in the references themselves"). Further, PO's attorney argument ignores what a POSITA would have recognized from Zill's explanation at paragraph [0111] that the server

“facilitate[s] remote wake up of target host for all legacy remote hosts.” EX1005, [0111]; EX1101, ¶31. PO’s restricted view of Zill is improper. *Alivecor, Inc. v. Apple Inc.*, 130 F.4th 1006, 1015 (Fed. Cir. 2025) (“To restrict each reference’s teachings to the particular way ... would improperly fail to read these references for all that they disclose”).

Next, PO’s attorney argument alleges that Zhang alone can replicate this known benefit by “providing a legacy host with a security key.” POR, 23-24. First, a security key is the exact type of the sensitive information that requires the requesting computer to operate complex security software. EX1101, ¶32; *see also* Pet. 36-37; EX1003, ¶113. Thus, the articulated benefit would not be replicated. EX1101, ¶32. Second, the mere fact that an alternative modification might achieve a benefit does not mean the Zhang-Zill combination ceases to be a “suitable option” with that known benefit. *Intel*, 61 F.4th at 1379-80 (“not necessary to show ... the *best* option, only ... a *suitable* option”).

B. A POSITA would have been motivated to implement the Zhang-Zill combination to improve the security for waking up the sleep-enabled computer

The Petition’s “second” motivation was plainly articulated by Mr. Kardashov. Pet., 37 (citing to EX1003, ¶¶114-115 (“having the server generate the wakeup message improves the security”)); EX1101 ¶¶33-35. The POR addresses this second

reason out of order, and misses the point by relying upon legally erroneous tests. POR, 26.

First, PO's attorney argument erroneously tests whether Zill discloses within its four corners "teachings regarding security" or "claims regarding the security." POR, 26. Again, this test is contrary to law. *Intel*, 61 F.4th at 1379-80; *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1322 (Fed. Cir. 2005) ("need not be in the form of prior art"). Moreover, it ignores the express teachings in Zill explaining that the server can "facilitate authentication... for the purpose of providing limited access to remote wake up of target host." EX1005, [0111] ("facilitate determining the trust or authentication ... by resolution server"); *see also* [0040]; EX1101 ¶34.

Next, PO's attorney argument turns to the erroneous test of whether "Zhang's suggested encryption methods are deficient," which again runs afoul of precedent. *Intel*, 61 F.4th at 1379-80 ("not necessary to show ... the **best** option, only ... a **suitable** option"). This argument also fails to recognize that Zhang's encryption methods are consistent with Zill's suggestions for moving the "apparatus wakeup packet" generation step to the server. EX1101, ¶35. While Zhang's encryption technique may be effective for improving the security of a message delivered *over a network*, it does not eliminate the storage of sensitive information at an end-user computer. EX1101, ¶35; EX1003, ¶115 ("better protected against physical ... based

attacks”). In short, even with encryption, it would still be advantageous to manage/isolate the most sensitive information at a server for the reasons articulated by Mr. Kardashov. EX1003, ¶¶114-115.

PO’s attorney argument also demands bodily incorporation of “Zill’s use of separate messages to the target server.” POR, 27. Such a theory is contrary to law. *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012). There is no dispute that the Petition properly noted both the “suggestion” that a POSITA would have recognized from Zill’s conventional practice and the predictable benefits that would have motivated a POSITA to implement such an improvement in Zhang. Pet., 37 (citing EX1003, ¶¶114-115). That is more than sufficient under the law. *Intel Corp.*, 61 F.4th 1373 at 1379-81.

C. A POSITA would have been motivated to implement the Zhang-Zill combination to reduce the quantity of messages containing sensitive information

The POR addressed the Petition’s “third” motivating reason, but characterized it as the “second proffered reason.” POR, 24-25. PO’s attorney argument relies upon two mistaken assumptions (1) Zhang provides its own solution to reduce such messages and (2) the combination with Zill serves to increase the overall load. *Id.* Both assumptions never dispute the actual motivation articulated in the Petition: “advantageously reduce the quantity of messages *containing sensitive information*.” Pet. 37-38 (emphasis added); EX1003, ¶¶114-115; EX1101, ¶¶36-38.

Thus, Mr. Kardashov’s testimony about why the Zhang-Zill combination “would eliminate the sending of authentication nonce and other sensitive context from Zhang’s query reply messages and Zhang’s incoming wakeup messages” remains entirely un rebutted. *Wasica*, 853 F.3d at 1284 (“expert testimony over [] bare attorney argument”); *Gemtron*, 572 F.3d at 1380. The POR cites to Zhang’s optional embodiment mentioned at [0065], but misses the point. POR, 25. First, the test is not whether the Zhang-Zill combination provides the “best option” compared to Zhang’s option in [0065], but instead the legal question is whether the Zhang-Zill combination was a “suitable option” that achieves a known benefit. *Intel*, 61 F.4th at 1379-80. Moreover, PO overlooks that the embodiment outlined in Zhang’s paragraph [0065] would still require the requesting computer to send an initial wakeup message to the server bearing “all of the necessary information” (e.g., all of the sensitive information). EX1004, [0065]; EX1101, ¶37. In contrast, in the Zhang-Zill combination, at least some of the sensitive information (e.g., the nonce) is isolated within the server and never part of any message from the requesting computer. EX1101, ¶37; EX1003, ¶¶113-115 (“better protected against...”).

Additionally, PO’s attorney argument that the combination with Zill serves to increase the overall load relies on a legal error—demanding bodily incorporation of the Zill. See POR, 24-25 (relying upon incorporation of Zill’s embodiment that “transmit[ts] multiple packets from the server to the sleeping target computer”). No

such bodily incorporation was proposed in the Petition nor demanded by law. *Mouttet*, 686 F.3d at 1332. Instead, the Petition properly noted the “suggestion” that a POSITA would have recognized from Zill’s conventional practice and the predictable benefits that would have motivated a POSITA to implement such an improvement in Zhang. Pet., 38 (“reduce the quantity of messages containing sensitive information”); EX1003, ¶¶114-115; EX1101, ¶38. That is sufficient under the law, especially where the POSITA is not a mindless “automaton.” *Intel*, 61 F.4th at 1379-81.

D. A POSITA would have been motivated to implement the Zhang-Zill combination because the server can include optimized hardware to efficiently complete tasks

The Petition articulated why a POSITA would have recognized the advantage stemming from the fact that “the server can include optimized hardware to efficiently complete tasks.” EX1003, ¶117, Pet., 39. Indeed, that Petition specifically noted additional computational and power resources for Zhang’s original solution “in comparison to [Zhang-Zill’s] server-based wakeup message generation.” *Id.*; EX1101, ¶¶39-41. Here again, the POR presents bare attorney argument (pp. 27-30) against this testimony evidence, which is not enough under the law. *Wasica*, 853 F.3d at 1284; *Gemtron*, 572 F.3d at 1380.

Moreover, for the hardware example in which the server interacts with “mobile devices” (Pet., 39), PO’s attorney argument incorrectly alleges that Zill

“never teaches or discloses that the remote host or trusted remote host may be mobile.” POR, 29-30. Zill belies PO’s premise. Zill’s use of the term “host” includes mobile devices such as “*a tablet personal computer (PC) device, a Smartphone, and/or a personal digital assistant (PDA).*” EX1005, [0035]; EX1101, ¶40. In short, both Zhang and Zill expressly contemplate a mobile device as the requesting device and a POSITA would have recognized the well-known hardware constraints of such mobile devices (processing, power, etc.) and the known advantages of moving processing/operations to the server. Pet. 39; EX1003, ¶117; EX1101, ¶41. The POR’s rigid view of Zhang and Zill is contrary to what a POSITA would have recognized. *Alivecor*, 130 F.4th at 1015 (improper “[t]o restrict each reference’s teachings to the particular way”).

V. GROUND 3: A POSITA WOULD HAVE BEEN MOTIVATED TO IMPLEMENT THE LIU-ZHANG COMBINATION

For Ground 3, the POR simply repeats the same motivation-to-combine errors noted above. There is no argument the Liu-Zhang combination would somehow lack any element of the independent claims. POR, 33-39; EX1101, ¶42.⁶ Rather,

⁶ Oddly, the POR assumes that “[c]laim 11 is not challenged by the combination of Liu and Zhang.” POR, 39. The Petition, however, plainly challenged claim 11 under Ground 3. Pet., 1, 46, 67-69; EX1101, ¶43. The POR (p. 39) also repeats the “feature flag” argument for claim 16, which is addressed above in Section III.B.

PO's attorney argument merely contests the motivations articulated by Mr. Kardashov. Pet. 49-52; EX1003, ¶¶139-141. The POR rests entirely upon "bare attorney argument" alone, which is not enough to rebut Mr. Kardashov's sworn testimony on these issues. *Wasica*, 853 F.3d at 1284; *Gemtron*, 572 F.3d at 1380; *Enzo Biochem*, 424 F.3d at 1284. Beyond that shortcoming, PO's attorney argument applies an overly rigid approach—contrary to *KSR* and *Intel*. *Supra*, pp. 14-15.

A. A POSITA would have understood how to implement the Liu-Zhang combination to improve the security

The Petition's "first" motivation was plainly articulated by Mr. Kardashov. Pet., 50-51 (citing to EX1003, ¶139 ("an additional 'provision of security'")). The POR concedes that this motivation is accurate. POR, 36 ("may be advantageous"). From this candid admission, however, PO's attorney argument turns to a number of errors. EX1101, ¶44-47.

First, the POR demands that the Liu-Zhang combination cannot be considered unless it includes the fully bodily incorporation of "*all* relevant teachings of Zhang." POR, 36-37. This theory begs the Board to effectively overrule *Intel* (quoted above at pp. 14-15) and *Mouttet*. See 61 F.4th at 1379-81; 686 F.3d at 1332. The Board should not adopt such error. Also, this theory is premised on PO's faulty assumption that Liu's "clients are not optimized for the processing steps that are required by Zhang's invention." POR, 35-36. Of course, PO's assumption ignores that Zhang

expressly contemplates a similar mobile client like that of Liu, and that Liu is not limited solely to mobile devices. EX1004, [0032]-[0033]; EX1006, [0047] (“not limited thereto”); EX1101, ¶45. Moreover, PO’s assumption ignores what is being modified in the Liu-Zhang combination. Pet. 49-50 (client device would simply use a “user-selected human-readable ID” and a “password”); EX1003, ¶138. A POSITA would have understood that, by the relatively late time frame leading up to 2016, such ID/password functionality would have been predictably used on various types of computing systems including Liu’s mobile devices and other contemplated devices. EX1101, ¶46.

Second, PO’s attorney argument contends that a POSITA would have avoided implementing encryption on Liu’s “heartbeat messages” and “beacon messages.” POR, 37-38. First, this argument is askew from what is articulated in the Petition. Nothing in the Petition requires imposing Zhang’s encryption techniques to Liu’s “heartbeat messages.” Pet., 49-51. Regardless, even if the encryption technology incrementally “increased the load of the processors” (POR, p. 38), no evidence in the record indicates that this concern outweighs the admitted advantage of additional security measures. EX1003, ¶139; EX1101, ¶47. The Federal Circuit has repeatedly held that a motivation to combine can exist even where the combination, though achieving benefits in one area, requires tradeoffs in another. *E.g., Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016)

(“[a] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.”); *Intel*, 61 F.4th at 1379-80 (“not necessary to show ... the **best** option, only ... a **suitable** option”).

B. A POSITA would have understood how to implement the Liu-Zhang combination to improve the user experience

Mr. Kardashov testified regarding a “second” motivation for the Liu-Zhang combination. Pet., 51 (citing to EX1003, ¶140 (“predictably improve the user experience ... because it would be easier for the user to remember”)). The POR again concedes that this motivation is accurate. POR, 38 (“may improve the user experience”). From this admission, however, the POR turns to an erroneous legal theory that wedges the POSITA into a mold of mindless automaton. POR, 38 (“must be engineered”). But the POSITA is an engineer of “ordinary creativity.” *Intel*, 61 F.4th at 1379-81. PO’s argument here aligns with the same error the Federal Circuit recently rejected in *Alivacor*. See 130 F.4th at 1015 (“There was, thus, nothing improper in the Board’s determination that such an artisan would have found it obvious to use [the software improvement] in connection with [primary computer system], even if this precise use is not expressly disclosed in either”). By the relatively late time frame leading up to 2016, a POSITA would have understood how to predictably implement Zhang’s suggested ID/password improvement with Liu’s system, thereby improving the user experience. EX1101, ¶¶48-49.

VI. CONCLUSION

For the reasons discussed above and in the Petition, Petitioner submits that all the Challenged Claims are unpatentable.

Respectfully submitted,

Dated: July 15, 2025

/Michael T. Hawkins/

Michael T. Hawkins, Reg. No. 57,867
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402

Attorney for Petitioner

CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petitioner's Reply to Patent Owner's Response totals 5,512, which is less than the 5,600 allowed under 37 CFR § 42.24.

Respectfully submitted,

Dated: July 15, 2025

/Michael T. Hawkins/
Michael T. Hawkins, Reg. No. 57,867
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402

Attorney for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on July 15, 2025, a complete and entire copy of this Petitioner's Reply to Patent Owner's Response and its exhibits were provided via email to the Patent Owner by serving the correspondence email address of record as follows:

Justin I. King, Registration No. 50,464
WPAT, P.C.
8230 Boone Blvd. Suite 405
Vienna, Virginia, 22182
Tel: (703) 639-0151x100
jking@wpat.com
service@wpat.com

Andrew C. Aitken, Registration No. 36,729
Aitken Law Offices
6701 Democracy Blvd
Bethesda, Maryland 20817
Tel: (301) 537-3299
acaitken@aitkenlawoffices.com

/Crena Pacheco/
Crena Pacheco
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
pacheco@fr.com