

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

Inter Partes Review Case No. IPR2024-01048
U.S. Patent No. 10,547,648

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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I. INTRODUCTION

Patent Owner's ("PO") Response ("POR") focuses on the same arguments the Board expressly rejected at institution and the Director implicitly rejected, denying PO's Request for Director Review. PO continues to insist that Claim 1(b) must be performed before 1(d). The Board correctly found that no order is mandated by the claim language or the intrinsic record and that *Zhang's* process satisfies these disputed steps. The Board also found PO's narrow view of the claims would not impact the outcome because *Zhang* also satisfies these steps even if an order is required. The POR provides the Board no reason to find otherwise.

PO's critiques related to these limitations also fail for an additional reason that emerged during cross-examination of PO's expert. PO's expert advocated a much broader interpretation of the claim term "available" in both elements 1(b) and 1(d) than that adopted by the Board at institution, newly arguing that identifying an available device does not require confirming that the device is free to receive media. Under this interpretation, *Zhang* also satisfies the disputed steps even if an order is mandated.

The remainder of the POR is largely focused on unclaimed implementation details underlying how the proposed combination would work, arguing that the Petition failed to establish that *Zhang's* hardware was capable of transcoding audio. These arguments are both legally and technically without merit. PO is simply wrong

that *Zhang's* hardware is deficient. Although neither *Zhang* nor the Challenged Patent provide any low-level details about transcoding, both implicitly rely on the well-developed nature of transcoding at the time, *Zhang's* hardware is HomeRF-compliant, which means it includes both hardware and software to support transcoding voice.

II. STEPS 1(B) AND 1(D) DO NOT REQUIRE SPECIFIC ORDER

A. None of the Claim Language, Specification, or Prosecution Mandates an Order

As the Board correctly held at institution, steps 1(b) and 1(d) should not be construed to require a specific order. Paper 8, 18-19. “Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one.” *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003) (internal quotation marks removed). Courts must “look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written[,]” and then “look to the rest of the specification to determine whether it ‘directly or implicitly requires such a narrow construction.’” *Id.* at 1369-70.

Logically and grammatically, no order is mandated. 1(b) recites “identifying one or more available devices compatible to handle the media content and connected to the LAN” while 1(d) recites “wirelessly signaling the one or more available devices indicating an availability of a media content at the mobile device[.]”A

natural read of the language covers a mobile device signaling a device indicating available media content and the device's response indicating it is available to handle the media. Thus, steps 1(b) and 1(d) can be performed as part of the same inquiry and response process—neither one entirely preceding the other.¹

Turning to the intrinsic record, neither the specification nor the prosecution mandate an order. Starting with the specification, PO points to the described Scenario 3, Option B (Ex. 1001, 11:62-67) as an alleged example of identifying an available device before signaling. POR, 12. In this example, a mobile device receives a cellular call, indicates on its display that a nearby phone is available, and routes the call to that available nearby phone. Ex. 1001, 11:62-67. The patent says nothing about *how* the mobile device identified the nearby phone (e.g., 1(b)), and it does not describe signaling the available device to indicate available media (e.g., 1(d)). Instead, the call is simply routed to the available phone at the user's request. Accordingly, this example shines no light on whether 1(b) and 1(d) must occur in order. Scenario 3, Option A—an example PO's expert agrees is consistent with the

¹ PO also incorrectly asserts that 1(c) further mandates the steps performed in order. POR, 11. There is no dispute that the recited routing device must serve as an intermediary between the mobile device and at least one available device, but there is no reason the latter has to be identified as “available” before communicating information to the intermediary.

scope of Claim 1—is more informative to the meaning of Claim 1. Ex. 1036, 68:7-16. There, a mobile device receives a cellular call, the user points the phone toward a nearby phone, and the cellular phone detects that the nearby phone is busy. Ex. 1001, 11:46-60. Then, the user points the cellular phone at a second device, discovers that the second device is available, and then reroutes the call to the second device. *Id.* Accordingly, the mobile device (1) signals nearby devices individually before knowing whether they are available and (2) reroutes the call to the first device that indicates it is in fact available. Because this example signals a device before identifying it as available, it directly contradicts PO’s ordered steps theory.

PO next incorrectly alleges that the prosecution mandates ordered steps. POR, 10-11. Prosecution can indicate a required order where the “prosecution history indicat[es] a surrender of any other order of steps.” *Altiris*, 318 F.3d at 1371; *see also Azurity Pharms., Inc. v. Alkem Lab’ys Ltd.*, 133 F.4th 1359, 1366 (Fed. Cir. 2025). There was no such surrender here. Instead, the Applicant simply corrected a poorly drafted claim in response to the Examiner identifying ambiguity. Correcting this error via amendment merely confirmed the devices in 1(d) are the same devices as found in 1(b)—an issue on which the parties agree. This amendment mandates nothing about the order in which the steps must be performed.

B. Antecedent Basis Is Not Determinative of Specific Order

PO also argues that order is required because “in claim 1(d), the device(s) that are wirelessly signaled are the device(s) that were *already* identified in claim 1(b).” Paper 15 (“Patent Owner Response” or “POR”), 22 (emphasis in original); *see id.*, 5. The arguments made by PO are similar to those advanced and rejected by the panel in *Apple Inc. v. Seven Networks, LLC*, No. IPR2020-00156, Paper 10 (PTAB June 15, 2020). In *Seven Networks*, the “Patent Owner argue[d] ‘[t]he Federal Circuit regularly finds that an earlier element providing antecedent basis for a later element strongly indicates the elements must be practiced in the order recited.’” *Seven Networks*, 31. The board rejected this premise, finding that “[i]n the Federal Circuit cases cited by Patent Owner, not one specifically mentions antecedent basis as providing a ‘strong indicat[ion]’ of sequential order. Rather, *the court engages in extensive analysis to determine if logic dictates a sequential order without relying on antecedent basis as a strong indicator, if any.*”² *Id.* at 31. The board in *Seven Networks* observed that the decisions cited by the patent owner mandate a specific order not because of “a simple antecedent basis test[,]” but because a particular sequence was logically required. *Id.* at 32. Here too, PO largely advocates a simple antecedent basis test.

² All emphases added unless noted otherwise.

In support of its argument, PO cites to a series of cases it contends refute the Board’s preliminary finding that “antecedent dependence ‘alone does not directly or implicitly require performing step 1b before step 1d[.]’” POR, 5 (*citing* Paper 8, 18). None of these cases actually refute the Board’s conclusion. At best, these cases show that an antecedent basis *can be* useful when determining a logical order, though not determinative. For example, in both *Hytera* and *Wi-Lan*, sequencing was inherent because the method steps recited an exclusive one-to-one relationship between elements in two different steps. Antecedent basis was properly used to determine if the claims logically required order—the step that prepares to transmit in *a timeslot*, must logically be performed prior to determining if *the timeslot* is a current desired timeslot. *Hytera*, at 218-219. *Wi-Lan* similarly found “produc[ing] modulated data symbols” must be performed before “combin[ing] the modulated data symbols” because the modulated symbols are randomized upon being produced, and therefore must be randomized before being combined. *See Wi-LAN*, at 462. In each case, a second step exclusively acts on the result of the first step. *Medtronic* is further off base. There, physical characteristics of the claimed device mandated a specific order, and the specification ascribed benefits to that order.

At institution, the Board performed the “extensive analysis” required and found that nothing in the express language, specification, or prosecution history

requires the claims to be performed sequentially. Paper 8, 18-19. PO presents the Board no reason to deviate from that finding.

C. Claim 1’s Confusing Use of Antecedents Undermines PO’s Theory

Further undermining PO’s position that antecedent basis mandates an order, the claims include two antecedent issues that are in direct tension—one involving the devices and a second involving the media content. PO focuses entirely on step 1(b) reciting “one or more available devices” and 1(d) reciting “the one or more available devices[.]” insisting this means 1(b) must complete before 1(d) can begin. But these limitations also both recite “media content[.]” Confusingly, the claim reverses the antecedent order for the “media content”:

1(pre): A method of informing a device about an availability of **media content** at a mobile device connected to a local area network (LAN), comprising:

1(b): identifying **one or more available devices** compatible to handle **the media content** and connected to the LAN;

1(d): wirelessly signaling **the one or more available devices** indicating an availability of **a media content** at the mobile device;

’648 Patent, Claim 1.

The claim’s use of antecedents is confusing. Generally, “a claim term should be construed consistently with its appearance in other places in the same claim[.]” *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001). Further, antecedents generally connect a first instance of a term to later instances by using

“the” before the subsequent recitations of that term. In Claim 1, however, the preamble recites “media content” with no article, 1(b) recites “the media content[.]” suggesting that it derives antecedent basis from the preamble, but then 1(d) reverts back to “a media content[.]” Asked about this antecedent tension in Claim 1, PO’s expert suggested the preamble and 1(b) are referring to general compatibility, while 1(d) is referring to a specific media content available at the mobile device. Ex. 1036, 51:22-58:18. This attempt to resolve the claim’s tension fails. The preamble recites “informing a device about *an availability of media content at a mobile device*[.]” Claim 1(d) recites, “indicating *an availability of a media content at the mobile device*[.]” Both are unambiguously describing a specific media content that is currently available at the mobile device and should therefore be interpreted to be describing the same media content.

Given the confusing and contradictory nature of the claim’s structure, antecedent basis cannot support mandating that steps 1(b) and 1(d) are performed in order.

III. THE PROPOSED GROUND SATISFIES THE CLAIMS UNDER ALL PROPOSED INTERPRETATIONS

Under any reasonable construction Petitioner has satisfied its burden to demonstrate the claims are obvious. The combination satisfies the steps (1) if no order is required, (2) under the Board’s understanding of the claim language if an

order is required, and (3) under PO's newly proffered interpretation of "available" regardless of whether an order is required. *Zhang* conducts an initial "device discovery" process in which the mobile device identifies helper devices actively connected to the network and their media type compatibility. Petition, 12, 15; Ex. 1037, ¶¶6-12 (detailing *Zhang's* device discovery process, which determines the existence and capabilities of helper devices). Next, *Zhang's* "service query" step queries whether the identified devices are free and available to service the request. Petition, 12, 14-15. Finally, after a device responds that it is free to service the request, *Zhang's* "request transfer" step routes its available media to that available helper device. *Id.*

First, if no order is required of limitations 1(b) and 1(d), as the Board correctly held at institution, *Zhang's* "device discovery" and "service query" (both the service request and response) satisfy the claimed steps, teaching a mobile device that signals at least one available device indicating available media content and identifies that said device is available and compatible to handle the media content.

Second, even if 1(b) must precede 1(d), under the Board's interpretation that 1(b) need not confirm availability, but need only identify devices that may be

available,³ *Zhang's* “device discovery” process identifies all devices connected to the network before the “service query” process signals them indicating available media content. Paper 8, 19. *Zhang's* process has identified one or more compatible devices that may be available (step 1(b)) *before* it signals that device indicating available media content (step 1(d)). *Id.*

Finally, under PO's newly advanced interpretation of “available,” *Zhang* satisfies the claims regardless of whether an order is required. On cross-examination, PO's expert explained that identifying an “available” device requires nothing more than identifying a device turned on, connected to the network, and able to communicate with the mobile device. Ex. 1036, 78:5-14, 83:1-8, 111:1-9, 111:24-113:7. If the Board were to adopt this construction, *Zhang's* “device discovery” process unquestionably identifies active devices able to communicate, satisfying PO's broad interpretation of 1(b), *before* its “service query” process signals the device to indicate available media.

³ The Board observed that “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.” Paper 8, 19.

A. The Board Correctly Determined That *Zhang* Satisfies 1(b) and 1(d) Even if an Order Were Mandated

Attempting to challenge the Board’s observation that “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[.]” PO insists that grammatical precepts require interpreting “identifying one or more available devices” to mean “identifying one or more devices as available.” POR, 15-17. PO’s grammar arguments ignore that, in the phrase “identifying one or more devices as available,” *available* acts upon the verb *identifying*. In other words, you are affirmatively *identifying the availability* of the devices. Yet, in the claimed phrase “one or more *available devices*,” *available* modifies the noun “devices.” There, you are *identifying devices*, and one or more of those identified devices is an *available device*. This is precisely the interpretation observed correctly by the Board at institution.

The Board’s interpretation is also consistent with the intrinsic record. As discussed above, the described Scenario 3, Option A, confirmed to be “consistent with claim 1 of the ’648 Patent” by PO’s expert, comprises (1) a mobile device receiving a cellular call, (2) the mobile device signaling a first nearby phone and learning that phone is busy, (3) the device then signaling a second nearby phone, and (4) the device routing the call to the second nearby phone upon learning it is

available. Ex. 1001, 11:46-60; Ex. 1036, 68:7-16. Accordingly, the mobile device (1) signals nearby devices individually before knowing whether they are available and (2) reroutes the call to the first device that indicates it is in fact available. Because this example involved signaling a device before identifying it as available, it aligns with the Board's interpretation.

1. The Board Properly Held that Zhang Discloses 1(b) and 1(d) Even if an Order is Mandated

PO incorrectly argues that the Board exceeded its authority by determining that 1(b) is satisfied by *Zhang* even if an order is required. POR, 23-24. PO misinterprets the Board's analysis and misapplies the law. Starting with the Board's decision, the Board did not, as PO suggests, institute this proceeding based on a claim interpretation and prior art mapping that Petitioner could have, but failed to advance. Quite the opposite. The Board rejected PO's interpretation of the claims that would mandate 1(b) precede 1(d). It then observed that, even if PO's interpretation were adopted, *Zhang's* process satisfies it. This observation was simply the Board rejecting PO's overly narrow claim interpretation and observing that the claims would still be invalid even if PO's interpretation were correct.

Turning to the law, a petitioner is permitted to respond to arguments raised in a patent owner response by elaborating on arguments made in the petition. *See Apple Inc. v. Andrea Elecs. Corp.*, 949 F.3d 697, 705 (Fed. Cir. 2020). Indeed, the Federal

Circuit has held, if the “Board adopts a new claim construction following institution, an IPR petitioner must have adequate notice and an opportunity to respond under the new construction. In particular, the petitioner must be afforded a reasonable opportunity in reply to present argument and evidence under that new construction.” *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1383 (Fed. Cir. 2023). The same is true where a patent owner’s papers advance a claim construction not anticipated by the Petitioner. *Id.* at 1383-1384. PO cannot be heard to complain that the Petition did not address an argument Petitioner had no notice that PO would make. *Id.* The Federal Circuit has also held that a petitioner is permitted to respond to a patent owner’s arguments, relying on the same prior art and embodiments. *See Corephotonics, Ltd. v. Apple Inc.*, 84 F.4th 990, 1009 (Fed. Cir. 2023); *see also Rembrandt Diagnostics, LP v. Alere, Inc.*, 76 F.4th 1376, 1383-84 (Fed. Cir. 2023). That is precisely the scenario here. Even assuming an order were required, the proposed combination satisfies the claims relying on the same art and the same embodiments discussed in the Petition. This is wholly proper under Federal Circuit precedent.

B. Zhang Satisfies the Claims Under PO’s Construction of Available

The Petition construed “available” to mean “devices that are free and able to receive a routed signal” consistent with the position taken in litigation, and the Board adopted this interpretation in the ID. While Petitioner continues to believe this

interpretation is correct, on cross-examination, PO's expert advocated a far broader interpretation—that 1(b) merely requires identifying a device “that it is physically there and able to be communicated with,” not that the device is immediately available to receive media. Ex. 1036, 78:5-14; *see id.*, 83:1-8, 111:1-9, 111:24-113:7. Under this broader interpretation of “available” as advocated by PO's expert, *Zhang* satisfies Claims 1(b) and 1(d) even if an order is required.

Zhang's “device discovery” process unquestionably identifies active devices able to communicate, satisfying PO's broad interpretation of 1(b), *before* its “service query” process signals the device to indicate available media and confirm the device is instantaneously available to service the request, satisfying 1(d). Indeed, *Zhang* describes a “device discovery” process in which the mobile device confirms the helper servers’ “existence and capabilities.” Ex. 1037, ¶9 (quoting *Zhang*, 6:21-27). Only after confirming helper devices’ existence and capabilities does *Zhang* then perform the service query process in which those previously discovered devices are informed of available media content and the mobile device learns which is immediately available to service the request. *Id.* Accordingly, under PO's new broad view of 1(b), *Zhang* teaches 1(b) and 1(d) even if an order is mandated. *Id.*, ¶¶5-12.

IV. PO'S CRITICISMS OF UNCLAIMED IMPLEMENTATION DETAILS UNDERLYING THE PROPOSED COMBINATION ARE WITHOUT MERIT

A. PO's Lengthy Discussion of *Pasanen's* Hardware is Irrelevant to the Proposed Combination

As the Board recognized in its Institution Decision, the proposed combination relies exclusively on *Zhang-Fillebrown's* hardware, not *Pasanen's*. Paper 8, 21. Specifically, as PO concedes, the combination uses *Zhang-Fillebrown's* existing hardware and networking.⁴ POR, 34; Petition, 30-32 (citing Ex 1003, ¶¶123-124). Indeed, PO's expert confirmed this on cross-examination. Ex. 1036, 86:3-87:24 (confirming the combination relies on *Zhang's* mobile device, helper server device, and network). *Pasanen* is used exclusively to teach the specific use case of receiving a phone call on *Zhang's* cellular phone and passing it through to an audio helper server, or speaker. Petition, 30. In other words, *Pasanen* is not cited for any teaching relevant to hardware, but rather for what it teaches or suggests about how *Zhang's* existing hardware could be used.

Despite the proposed combination turning entirely on *Zhang-Fillebrown's* devices and networking, PO dedicates a significant portion of its Response to *Pasanen's* hardware and communications. POR, 26-33. In this discussion, PO seeks

⁴ The combination relies prominently on *Zhang's* hardware and networking, pointing to *Fillebrown* as support for *Zhang's* network utilizing a central routing device.

to distinguish the hardware and communication mechanisms described in *Pasanen* from those used by *Zhang-Fillebrown*. *Id.* While Petitioner disagrees with many of PO's (and its expert's) interpretations of *Pasanen*, the entire discussion is irrelevant to this proceeding because the proposed combination—as PO and its expert concede—does not rely on *Pasanen*'s hardware or communication mechanisms.

B. The Petition Described the Proposed Combination's Implementation Commensurate with the Level of Detail in the Challenged Patent

Beyond its misplaced focus on *Pasanen*'s hardware, PO alleges that Petitioner failed to adequately discuss transcoding—an unclaimed implementation detail underlying the proposed combination. POR, 32 (“Modifying Zhang in the manner proposed . . . would require a technique called transcoding, in which a signal is converted from one format to another.”), 34-35 (alleging (1) that *Zhang*'s mobile device would require an ability to decode a received cell phone call into audio and “reencoded the audio into a digital form for transmission within [Zhang's network] (in other words, transcode it)” and (2) that Petitioner failed to establish that Zhang's mobile device had this capability). PO's argument fails at least because (1) the claims do not require transcoding and (2) this argument is essentially a challenge to the enablement of the proposed combination, and the Petition describes the proposed combination in as much detail as the Challenged Patent and is thus presumptively enabled.

1. Transcoding is an Unclaimed Implementation Detail

The Challenged Claims do not require transcoding in any form. Rather, the challenged claims merely require “wirelessly communicating information[.]” *See, e.g., ’648 Patent* Claim 1. In fact, nowhere in the Challenged Claims does the ’648 Patent discuss encoding, decoding, or transcoding as PO appears to suggest. To the extent PO is suggesting that transcoding is required of the claims, it is wrong.

2. The Petition Provides the Same Level of Detail Regarding Transcoding as the Challenged Patent

Even if the Board were to consider relevant the implementation details of transcoding, the Petition adequately addresses them. PO’s attack is essentially an argument that the proposed combination is not enabled. But the specification itself confirms that any necessary “transcoding” would be so well understood that no disclosure is necessary. In particular, to the extent that *Zhang* requires transcoding, so too would the embodiments of the ’648 Patent because it requires transforming media to meet the requirements of a receiving device.⁵ But the specification does not provide any details regarding the hardware or methodology for transcoding as

⁵ The ’648 Patent discloses, at a high level, transforming media to accord with the requirements of a receiving device. Ex. 1001, 2:50-59, 3:55-59, 6:49-7:25, 9:56-10:9. The patent fails to describe any implementation details, teaching only that software packages to transform media were “well known and commercially available.” *Id.*, 5:4-6.

criticized by PO in its response. This is further emphasized by the fact that PO does not cite a single disclosure from the '648 Patent supporting its argument that transcoding is required. *See* POR, 33-35. Instead, the specification offers high-level descriptions that presume a POSITA would understand how to implement the described functionality based on common knowledge and existing technology.

That the '648 Patent does not itself disclose the alleged implementation details of transcoding reinforces that such a concept was well-understood, routine, and conventional at the time of the invention. Indeed, the absence of detail in the specification demonstrates that a POSITA would have no difficulty implementing the described functionality using known techniques. *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1339 (Fed. Cir. 2020) (“The specification [] is entirely silent on [claimed function,]...suggesting that a person of ordinary skill in the art was more than capable of selecting between the known methods of accomplishing this.”); *Omega Liner Co., Inc, v. Buergofol GMBH*, IPR2023-01372, Paper 85, 47 (Mar. 14, 2025) (where a component served a similar function as in the prior art, the patent’s silence on specific implementation details indicated that overcoming them was an exercise of ordinary skill in the art). As such, PO cannot fault the Petition for omitting a detailed discussion of both what is unclaimed and what the '648 Patent presumes is well known.

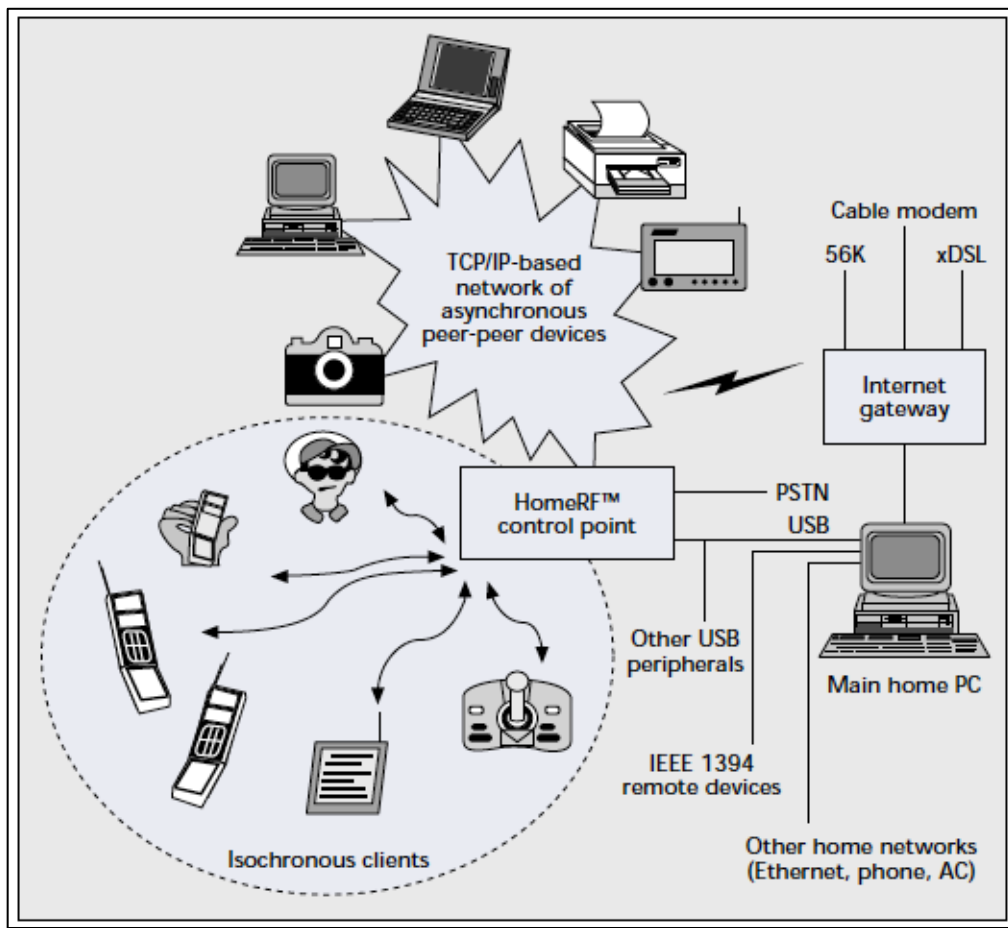
C. *Zhang's* HomeRF-compatible Devices Include CODECs to Transcode Voice Communications

The Petition expressly relied on *Zhang's* embodiment in which its mobile device and helper servers are networked pursuant to the HomeRF standard. PO's entire criticism, in relevant part, boils down to its observation that *Zhang's* mobile device "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)." POR, 35. PO suggests that the Petition failed to establish that *Zhang's* hardware was so capable.⁶ *Id.*, 34-35. But *Zhang's* hardware was indeed capable of transcoding this audio. Indeed, PO expressly admits that mobile phones (e.g., *Zhang's* cellular phone) were equipped with the ability to decode received cellular voice data in order to play the audio via the phone's speaker. *Id.*, 22. Thus, the only open question is

⁶ PO quotes Petitioner's expert from the parallel litigation to suggest that hardware in 2002 did not stream "real time audio" from a mobile device due to bandwidth limitations. POR, 35-36. But the proposed combination turns on rerouting a phone call, rather than real-time audio streaming. As the HomeRF discussion herein establishes, the relevant technology for phone calls was well-established in the relevant timeframe. Further, PO's HomeRF exhibit teaches that voice call bandwidth requirements are substantially less than digital audio. Ex. 2016, 3; *see also* Ex. 1037, ¶22 (addressing distinct bandwidth requirements and HomeRF support for networked voice calls as of the priority date).

whether *Zhang's* mobile device was capable of reencoding the audio into a digital form for transmission within an 802.11 or HomeRF frame. It was. HomeRF devices are specifically designed to support toll quality voice calls and include audio coding capabilities to implement this functionality.

Petitioner's expert, Dr. Kiaei, explains that HomeRF was a wireless local area network (WLAN) that specifically supports DECT (Digital Enhanced Cordless Telecommunications)—a well-known telephony standard for transmitting digital phone call audio. Ex. 1037, ¶¶13-14. Depicted below, HomeRF systems included a “control point” as an intermediary routing device to route toll quality voice calls to wireless nodes, such as wireless headsets. *Id.*, ¶15.



Id. Dr. Kiaei explains that HomeRF-compatible devices include hardware and software for transcoding audio to support these voice calls. *Id.*, ¶¶16-18 (explaining that HomeRF devices include ADPCM (Adaptive Differential Pulse Code Modulation) audio encoding). PO's expert confirmed that ADPCM is indeed one of the audio encoding schemes compatible with DECT wireless phone call connections. Ex. 1036, 100:2-17. Dr. Kiaei further explains that HomeRF has a native DECT networking protocol that enables the central control point to track devices that are available and compatible to handle voice calls. Ex. 1037, ¶19. Finally, Dr. Kiaei

explains that voice call data is interleaved with non-voice data in HomeRF frames, from which he explains that HomeRF-compatible devices, including *Zhang*'s mobile phone and audio helper device, would include all the hardware and software to facilitate rerouting a voice call over *Zhang*'s network. *Id.*, ¶¶20-21.

In sum, *Zhang*'s HomeRF-compliant devices included the necessary audio transcoding functionality to support the proposed combination.

V. PO'S ARGUMENTS REGARDING THE REMAINING CLAIMS ARE WITHOUT MERIT

A. Claim 5

The Petition established that, as set forth in the Claim 1 mapping, *Zhang* routes media to an audio helper server "in response to a receipt of a response" from that server indicating it is free to receive the media. PO first criticizes the Petition's reliance on Claim 1's discussion and then argues the Petition failed to show that *Zhang* sends media "in response to" the helper server's response. POR, 36-39.

First, the Petition's reliance on its Claim 1 discussion was entirely proper given the close relationship between Claims 1 and 5. *See Bruker Spatial Biology, Inc. v. 10x Genomics, Inc.*, IPR2024-00526, Paper 14, 23 (PTAB Aug. 23, 2024) (finding cross-references proper given close relationship between the claim elements discussed). Claim 1 is directed to signaling devices that are available to handle media content, while Claim 5 adds the concept of actually routing the media responsive to

a device's confirmation that it is in fact available. The Petition addressed both steps in a comprehensive discussion of *Zhang's* process when mapping Claim 1.

Second, PO is simply wrong that the Petition failed to account for Claim 5's "in response to a receipt of a response" requirement. The Petition described *Zhang's* "service query" process in which a service request is sent to a helper server to determine if it is available to handle specific media content. Petition, 14-15. Then, in *Zhang's* "request transfer" process, when the "helper server responds the service query, indicating its *availability* to handle the requested service[.]" *Zhang's* mobile device routes the media to the confirmed available device. *Id.*, 15 ("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.") (quoting *Zhang*, 7:58-60).

B. Claim 6

Claim 6 requires routing the phone call "while the phone call is ongoing[.]" The Petition established that *Zhang's* "seamless" mobility embodiment, where "continuity" is maintained across multiple devices, requires routing an ongoing phone call to a new device as the user moves through the environment. Petition, 33. The Petition also established that a user would benefit from testing the audio quality (i.e., while the call is ongoing) before rerouting a call to the helper server for improved audio quality. *Id.* (observing that the ability to route while the call is ongoing already exists in *Zhang's* seamless mobility feature).

PO's criticism confusingly conflates Petitioner's mapping from Claims 8 and 10, which rely on the *Rofheart* reference. POR, 39-41. For Claims 8 and 10, the Petition established that a POSITA would be motivated to modify *Zhang* pursuant to *Rofheart* such that a user would choose a preferred device from all available devices, rather than rely on *Zhang*'s native process of automatically using the device that is identified as available. Petition, 56-63. PO argues that the Petition's reliance on *Rofheart* for allowing a user to choose from multiple available devices is an implicit admission that *Zhang* does not support allowing the user to select whether to invoke a helper server at all. POR, 39-41. PO's argument is non-sensical. As the Petition established, *Zhang*'s native teachings support routing media to a helper server in the middle of an ongoing session, at least in support of its "seamless" mobility feature. And, there's no legitimate dispute that *Zhang*'s device provides the user opportunities to engage the device via a user interface. *See, e.g., Zhang*, 3:55-60 (describing a graphical user interface through which a user interacts with the handheld device in the context of utilizing a helper server). These features are all that Petitioner's mapping for Claim 6 require. It is of no moment that *Zhang* doesn't allow a user to choose from multiple available devices, as mapped for Claims 8 and 10.

In sum, PO ignores the meaningful difference between choosing *when* data is sent to an available device (Claim 6) and choosing *which* specific device to send data to (Claim 8).

C. Claim 19

Claim 19 similarly requires routing media content from a mobile device to a second/receiving device, but 19(d) adds the concept of providing the receiving device's user an indication (e.g., ringing) when the media is available at the mobile device. In the proposed combination, *Zhang's* audio helper device is modified pursuant to *Skinner* such that a user is informed (e.g., via ringing) when the call is routed from *Zhang's* mobile device. Petition, 44-47.

PO argues that 19(d) requires ringing the receiving device *before* the media has been rerouted. POR, 45-54. It points to the '648 Patent at 12:1-10 as alleged support, but that example unambiguously teaches the opposite: i.e., that a call "is automatically routed to an available nearby phone" before "the nearby phone rings . . . to indicate the rerouted call." *Id.*, 47. The only other intrinsic support PO identifies related to the unclaimed concept of indicating an available call so that the user can choose whether to accept rerouting. *Id.* As the Board correctly observed at institution, "nothing in claim 19 that requires providing the user with the ability to choose whether to accept" rerouting. Paper 8, 24. The Board also correctly rejected PO's view that ringing the receiving device when the call is routed means the media

is no longer available at the mobile device, having already been rerouted. *Id.* This is particularly true in the context of the proposed combination's phone call in which media routed *through* the mobile phone continues to be "available" at the mobile device throughout the call.

VI. OTHER CLAIMS

PO's arguments targeting Claims 7, 8, 10, 11, 13, 15, 16, and 18 are duplicative of those discussed above. These claims are obvious in view of the prior art for at least the same reasons discussed above and in the Petition.

VII. CONCLUSION

For the reasons above, the challenged claims are obvious.

Respectfully submitted,

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COUNSEL FOR PETITIONER

APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 10,547,648 (“’648 Patent”)
Exhibit 1002	Prosecution History for the ’648 Patent (“’648 File History”)
Exhibit 1003	Declaration of Dr. Sayfe Kiaei (“Dec.”)
Exhibit 1004	U.S. Patent No. 7,536,182 to Zhang (“Zhang”)
Exhibit 1005	U.S. Patent App. Pub. No. 2001/0053134 to Fillebrown et al. (“Fillebrown”)
Exhibit 1006	U.S. Patent No. 6,587,450 to Pasanen (“Pasanen”)
Exhibit 1007	U.S. Patent No. 6,703,930 to Skinner (“Skinner”)
Exhibit 1008	U.S. Patent No. 7,058,414 to Rofheart et al. (“Rofheart”)
Exhibit 1009	U.S. Patent App. Pub. No. 2003/0061493 to Angelo et al. (“Angelo”)
Exhibit 1010	U.S. Patent App. Pub. No. 2002/0178279 to Janik et al. (“Janik”)
Exhibit 1011	International Publication No. WO 01/74024 to Hartmaier et al. (“Hartmaier”)
Exhibit 1012	European Patent Application No. EP1132847 to Han et al. (“Han”)
Exhibit 1013	U.S. Patent App. Pub. 2002/0102998 to Lin (“Lin”)
Exhibit 1014	U.S. Patent No. 7,580,005 to Palin (“Palin”)
Exhibit 1015	U.S. Patent App. Pub. No. 2003/0110234 to Egli et al. (“Egli”)
Exhibit 1016	U.S. Patent No. 6,910,068 to Zintel et al. (“Zintel”)
Exhibit 1017	Bluetooth Core Specification version 1.1 (“Bluetooth V1.1 Core Spec.”)
Exhibit 1018	U.S. Patent No. 6,901,273 to Lutnaes (“Lutnaes”)
Exhibit 1019	U.S. Patent App. Pub. No. 2002/0141548 to Boda (“Boda”)
Exhibit 1020	International Publication No. WO 02/19152 to Bergman et al. (“Bergman”)
Exhibit 1021	Matthew S. Gast. <i>802.11 Wireless Networks The Definitive Guide</i> . O’Reilly & Associates. April 2002. (“Gast”)
Exhibit 1022	U.S. Patent No. 6,925,108 to Miller et al. (“Miller”)
Exhibit 1023	Jim Geier. <i>Wireless LANs</i> . 2 nd Edition. Sams Publishing. July 2001. (“Geier”)
Exhibit 1024	U.S. Patent No. 6,212,282 to Mershon (“Mershon”)
Exhibit 1025	U.S. Patent No. 6,526,287 to Lee (“Lee”)
Exhibit 1026	U.S. Patent App. Pub. No. 2002/0101367 to Geiger et al. (“Geiger”)
Exhibit 1027	U.S. Patent App. Pub. No. 2002/0186770 to Jawerth et al. (“Jawerth”)

Exhibit 1028	U.S. Patent App. Pub. No. 2003/0013438 to Darby (“ <i>Darby</i> ”)
Exhibit 1029	U.S. Patent App. Pub. No. 2003/0139966 to Sirota et al. (“ <i>Sirota</i> ”)
Exhibit 1030	<i>S.M.R. Innovations Ltd. v. Apple Inc.</i> , 6:23-cv-00479, D.I. 50 (“[Proposed] Agreed Scheduling Order”) (W.D.Tex. Jun. 7, 2024)
Exhibit 1031	U.S. Patent No. 7,346,135 to Narasimhan (“ <i>Narasimhan</i> ”)
Exhibit 1032	Affidavit of Nathaniel E. Frank-White concerning <i>BluetoothSpec</i>
Exhibit 1033	U.S. Patent No. 5,956,681 to Yamakita (“ <i>Yamakita</i> ”)
Exhibit 1034	U.S. Patent App. Pub. No. 2002/0174208 to Morlitz (“ <i>Morlitz</i> ”)
Exhibit 1035	<i>S.M.R. Innovations Ltd. v. Apple Inc.</i> , 6:23-cv-00479, D.I. 80 (“Amended Order Granting Motion to Transfer Venue”) (W.D.Tex. Nov. 14, 2024)
Exhibit 1036	Deposition of Karl Ginter
Exhibit 1037	Supplemental Declaration of Dr. Sayfe Kiaei
Exhibit 1038	HomeRF Specification Revision 2.0 dated 7 May 2001. The HomeRF™ Technical Committee.
Exhibit 1039	Kevin J. Negus et al. “HomeRF: Wireless Networking for the Connected Home.” IEEE Personal Communications. February 2000.

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. §42.24 that the foregoing Petitioner's Reply to Patent Owner's Response, excluding any table of contents, mandatory notices under 37 C.F.R. § 42.8, certificates of service or word count, or appendix of exhibits, contains 5,536 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: August 11, 2025

BY: /s/ Paul R. Hart
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COUNSEL FOR PETITIONER

**CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105**

Pursuant to 37 C.F.R. §§ 42.6, the undersigned certifies that on August 11, 2025 a complete and entire copy of this Reply to Patent Owner's Response including exhibits was provided to Patent Owner via Email:

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