

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMAZON.COM SERVICES LLC,

Petitioner,

v.

SMART SPEAKER LLC,

Patent Owner.

Patent No. 12,316,706

Filing Date: May 28, 2024

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Inventors: Yehuda Binder and Benjamin Maytal

Title: SYSTEM AND METHOD FOR SERVER BASED CONTROL

PATENT OWNER'S RESPONSE

Case No. IPR2026-00146

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LIST OF EXHIBITS

Exhibit No.	Description of Document
2001	Plaintiff's Disclosure of Asserted Claims and Infringement Contentions in <i>Smart Speaker LLC v. Amazon.com Servs. LLC</i> , Case No. 2:25-cv-00707-JRG (E.D. Tex.), dated September 16, 2025
2002	Defendant's Invalidity and Subject Matter Eligibility Contentions in <i>Smart Speaker LLC v. Amazon.com Servs. LLC</i> , Case No. 2:25-cv-00707-JRG (E.D. Tex.), dated December 9, 2025
2003	Federal Register, Vol. 90, No. 199, dated Friday, October 17, 2025
2004	Second Amended Docket Control Order (Dkt. 33) in <i>Smart Speaker LLC v. Amazon.com Servs. LLC</i> , Case No. 2:25-cv-00707-JRG (E.D. Tex.), dated October 29, 2025
2005	Letter to Amazon.com, Inc. re May Patents Ltd. Patent Portfolio, dated July 23, 2024
2006	Appeal Statistics, Patent Trial and Appeal Board, dated October 31, 2025
2007	Patent Trial and Appeals Board (PTAB) data at a glance December 2025
2008	Declaration of Michael Shamos

I. INTRODUCTION

On November 21, 2025, Amazon.com Services LLC (“Petitioner”) filed a petition (Paper 2, “Petition” or “Pet.”) for *inter partes* review of U.S. Patent No. 12,316,706 (EX1001, the “’706 Patent”), challenging Claims 1–29 (the “Challenged Claims”) as obvious across sixteen grounds resting on two prior-art foundations: Lim (EX1005) for Grounds 1–8, and the combination of Williams (EX1006) and Lim for Grounds 9–16. Trial has been instituted on all grounds. Patent Owner Smart Speaker LLC (“Patent Owner”) submits this Response, supported by the Declaration of Dr. Michael Shamos (Ex. 2008), and respectfully requests that the Board issue a final written decision confirming the patentability of all Challenged Claims.

First, Grounds 1–8 rely on Lim as the primary reference, but Lim does not disclose the claimed “*first message*” or “*second message*.” Claim 1 requires the client device to receive, from the server device, “*first and second messages, in response to the sending of the captured first and second human voice data*”; to operate “*the first actuator in response to the received first message*”; and to send “*a control message*” to the controlled device “*in response to the received second message*.” Lim’s server is a speech-recognition engine: it returns recognition data—*e.g.*, confirming that the user said “Samsung”—and the client device’s own pre-programmed app logic then determines what to do next. That is not a server-generated “*message*” that causes the recited operations. The Petition’s alternative

mapping—Lim’s “command code data”—fares no better: it is a pre-existing, static codeset that is merely retrieved from a database, not a “*message*” received “*in response to*” the sending of captured voice data. And FIG. 6, the workflow on which the Petition rests its “*second message*” theory, discloses no server generating or sending any message at all. Ex. 2008, ¶¶ 46-52.

Second, Grounds 9–16 rely on the Williams-Lim combination, but Williams’s “services 218” are the delivery of informational content—*e.g.*, ordering groceries, identifying songs, or answering questions—not server-generated “*messages*,” and Williams’s sole mention of device control, in a single aspirational sentence of paragraph [0051], discloses no messaging path or function. On the Petition’s own mapping, moreover, whatever Williams sends goes to the wrong device: the Petition maps the “*second message*” as information sent to the *controlled* device, concedes that Lim must supply the client device’s receipt of the “*second message*,” and concedes that Lim must supply the client-device-to-controlled-device “*control message*” path. Further, the proposed combination lacks any coherent, reference-grounded motivation: Williams already delivers its services directly from the server to the home devices, and inserting the client device as a command relay creates a three-hop architecture found in neither reference. Ex. 2008, ¶¶ 53-60.

Third, the grounds directed to the dependent claims, Grounds 2–8 and 10–16, each fail for additional and independent reasons. None of the **seven** secondary

references is cited for or remedies the failures of the two grounds directed at independent Claim 1. The Petition repeatedly reaches outside its stated grounds to purportedly supply claimed elements—*e.g.*, the claimed sensor types from Fraden, the claimed locally stored and typed addresses from Doherty, Roberts, and Yadav, the claimed cellular connectivity from Wang, and the claimed “*sounder*” from Sinclair. Additionally, the motivations to combine are merely generic assertions, *e.g.*, “obvious to try,” “expanding the capabilities,” “improve the usability,” without the articulated, reference-grounded reasoning the law requires. And several of the mappings do not address the actual claim language at all, *e.g.*, Claim 3’s requirement that “*the first message is received in response to the sent sensor data*,” and Claim 24’s requirement that the claimed light source be “*the first actuator*”—the actuator operated “*in response to the received first message*.” Ex. 2008, ¶¶ 62-73.

As every ground rests on one of these two defective foundations, because the missing limitations are common to every Challenged Claim, and because the grounds directed to the dependent claims independently fail, Petitioner has not proven that any Challenged Claim is unpatentable.

II. THE ’706 PATENT

The ’706 Patent, titled “System and Method for Server Based Control,” issued on May 27, 2025, from an application filed on May 28, 2024, and claims priority to a provisional application filed on January 9, 2012, which Petitioner treats as the

earliest effective filing date only for purposes of this proceeding. '706 Patent, 1; Pet. at 3. Independent Claim 1 recites “[a] client device for use with a Wireless Local Area Network (WLAN) in a building” and “with a controlled device that comprises a second actuator in the building.” The claimed client device comprises “a WLAN transceiver for communicating over the WLAN,” “a microphone for capturing first and second human voice data,” and “a first actuator in the client device,” and is configured to perform a defined sequence of operations. '706 Patent, Claim 1; Ex. 2008, ¶¶ 26-29.

Claim 1's configured-to clause recites that sequence. The client device sends, “over the Internet via the WLAN, the captured first and second human voice data to an Internet-connected server device external to the building” (Element 1[D][1]); receives, “from the server device over the Internet via the WLAN, first and second messages, in response to the sending of the captured first and second human voice data” (Element 1[D][2]); operates “the first actuator in response to the received first message” (Element 1[D][3]); and sends, “to the controlled device over the WLAN, a control message in response to the received second message” (Element 1[D][4]). The client device is also “addressable in the WLAN and in the Internet using an Internet Protocol (IP) address” (Element 1[E]). '706 Patent, Claim 1; see Pet. at ix. This architecture places the client device at the center of the control scheme: the server generates and sends distinct “messages” to the client device in response to

distinct voice commands, and those messages cause the client device both to operate its own actuator and to relay a “*control message*” to a separate controlled device over the WLAN. Ex. 2008, ¶¶ 28-29.

The specification describes this networked control architecture. As the Petition acknowledges, the specification describes “a router,” a first device in the building “operative to transmit a digital data corresponding to the sensed voice to the router,” and a second device that “may be operative to execute actuator commands received from the router,” with a “control server” that “may be operative to produce actuator commands in response to [a] voice processor output”; FIG. 19 depicts a high-level flowchart of a “controller involving voice processing.” Pet. at 2-3 (quoting ’706 Patent, 32:25–38, 32:57–33:13, 55:64–65). The specification also identifies a display as an exemplary actuator: “[a]n actuator may be a display for presentation of visual data or information, commonly on a screen.” ’706 Patent, 25:33–38. Ex. 2008, ¶ 30.

III. THE CITED PRIOR ART

A. Lim (EX1005)

Lim describes methods for the setup and configuration of “controlling devices such as universal remote controls.” EX1005, [0007]. To that end, “a controlling device may be provisioned with means to receive voice input from a user, e.g., a microphone,” so that in a setup mode the device “may solicit spoken appliance

descriptive information, for example brand and model number,” to be matched to command data. *Id.* In the FIG. 4 setup workflow, “at step 402 the controlling device may prompt the user to speak the brand name of the appliance,” and “[t]his and subsequent prompts for voice input may take the form of an illuminated LED and/or ‘speak’ symbol, a displayed text or image, a synthesized spoken message” and the like. *Id.*, [0027]. “The resulting spoken syllables may be digitized and presented to a speech recognition means for processing,” and “all or part of said speech recognition processing . . . may be performed by programming resident on a remote server 500 accessible via a network 502 such as the Internet or PSTN,” to which “access . . . may be . . . via a local network connection 508, such as WiFi or Bluetooth, through a gateway device such as a router (not illustrated).” *Id.* Ex. 2008, ¶¶ 31-32.

Once an appliance has been identified, the corresponding “command code data”—“data which serves to define the necessary control protocols and command values for use in transmitting command signals to controllable appliances”—may be provisioned to the controlling device, including by “downloading of a complete set of command code data into the controlling device from an off-platform database of codesets located” for example “on a remote server 500.” EX1005, [0020], [0030]. In use, “the controlling device 100 may be capable of transmitting commands to the appliances, using any convenient IR, RF, Point-to-Point, or networked protocol 120,

to cause the appliances to perform operational functions.” *Id.*, [0017]. Lim’s FIG. 6 operational workflow is discussed in Section VI.A below. Ex. 2008, ¶¶ 33-34.

B. Williams (EX1006)

Williams describes an audio-based system for a home in which an interface device 116 captures audio and conveys audio-based information over a network 114, which “may thus include” the Internet, to an application engine 118 and cloud-based applications 120 that may be implemented by a server 400. EX1006, [0015], [0021]–[0022], [0052]. The applications “may use the information from the event notifications 216 to initiate or customize services 218 on behalf of users,” and “[s]uch services may be provided through any of the media devices 106 located in the home, as well as through other application devices 220.” *Id.*, [0036]. Williams’s examples of services 218 are the provision of information or content to the user—*e.g.*, interpreting a spoken grocery order, identifying a song and offering related content, or answering a question such as “What’s the recipe for deviled eggs?” *Id.*, [0044]–[0050]. Williams’s only reference to controlling devices is the single sentence pair of paragraph [0051], discussed below, and Williams does not disclose how that potential control is accomplished. Ex. 2008, ¶¶ 35-38.

C. Wittenberg (EX1008)

Wittenberg, U.S. Patent No. 7,529,677, is cited only in Grounds 2 and 10, against dependent Claim 2. Pet. at 6–7. According to the Petition, Wittenberg’s

remote processor “analyzes audio signals received at the remote processor to determine whether the person issuing the voice command is authorized to issue the command” by “comparing the characteristics (e.g., frequency spectrum, speech patterns, etc.) of the audio signal to stored voice information.” Pet. at 49–50 (quoting EX1008, 5:61–6:6). Wittenberg thus adds an authorization check to voice-command processing

D. Gruber (EX1009)

Gruber, U.S. Patent Pub. No. 2012/0265528, is cited in Grounds 3 and 11 against dependent Claims 3–4 and 11. Pet. at 6–7. Gruber describes a virtual assistant that “uses context information to supplement natural language or gestural input from a user.” EX1009, Abstract. Gruber’s example sources of context include device sensors and “signatures of connected networks,” such as “MAC addresses of network access points.” *Id.*, [0218]–[0225]. In Gruber, context serves the interpretation of the user’s input.

E. Benesty (EX1010)

Benesty, which includes excerpts of the *Springer Handbook of Speech Processing*, is cited in Grounds 4 and 12, against dependent Claims 7–8. Pet. at 6–7. The Petition quotes Benesty’s survey observations that “microphone arrays have the ability to offer directional gains that can significantly improve the quality of signal pickup in reverberant and noisy environments,” and that “beam scanning and

time delay estimation (TDE)-based localization methods are the two most widely used approaches” for “speech source localization.” Pet. at 55–56 (quoting EX1010, 1021, 1044).

F. Goldsmith (EX1040)

Goldsmith, which includes excerpts of the textbook *Wireless Communications*, is cited in Grounds 5 and 13 against dependent Claims 13–15. Pet. at 6–7. The Petition quotes Goldsmith’s survey of wireless protocols stating that the Bluetooth and Zigbee specifications are “designed to be compliant with the IEEE 802.15 standards,” and its descriptions of the 802.11 family, the ISM bands, and cellular standards. EX1040, 601-602; Pet. at 57-60.

G. Chatterjee (EX1012)

Chatterjee, U.S. Patent Pub. No. 2013/0052946, is cited in Grounds 6 and 14 against dependent Claims 17–19 and 22. Pet. at 6–7. Chatterjee describes “a system and method for providing home automation using a mobile device,” in which household appliances, *e.g.*, ovens, dishwashers, refrigerators, HVAC, are controlled via a device controller integrated into the appliance devices and directed from the user’s mobile device. Pet. at 60–61 (quoting EX1012, Abstract, [0012]).

H. Rosenberger (EX1013)

Rosenberger, U.S. Patent No. 8,340,975, is cited in Grounds 7 and 15 against dependent Claims 24–25. Pet. at 6–7. Rosenberger concerns “speech-recognizing

control devices that respond to oral commands from a system user to produce a desired effect or result,” where the device itself recognizes a trigger phrase and command against “a known vocabulary or grammar stored in the speech pattern memory 14,” and its “multi-colored LED status light 34” indicates the device’s states and modes. Pet. at 63–64 (quoting EX1013, 1:7–13, 8:8–16, 8:20–32).

I. Rossing (EX1014)

Rossing, which includes excerpts of the *Springer Handbook of Acoustics*, is cited in Grounds 8 and 16 against dependent Claims 9 and 26–28. Pet. at 6–7. The Petition draws from Rossing the physics of microphones and loudspeakers. Pet. at 66–69 (quoting EX1014, 757–759, 763, 765, 903, 18, 309).

IV. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner proposes that a person of ordinary skill in the art (“POSITA”) “would have a bachelor’s degree in electrical engineering, computer engineering, or equivalent, and two years of experience working on remote device control and/or networked devices,” and that “[a]n advanced graduate degree may make up for the work experience indicated above.” Pet. at 4 (citing EX1002, ¶¶ 50–52). For purposes of this Response, Patent Owner applies Petitioner’s definition. Dr. Shamos likewise applies Petitioner’s definition. Ex. 2008, ¶¶ 23–24.

V. CLAIM CONSTRUCTION

Petitioner contends that no claim construction is necessary and claim terms

carry their plain and ordinary meaning. Pet. at 4–5. Patent Owner agrees that the Board need not construe any term to resolve this proceeding because, as demonstrated below, the Petition fails under any reasonable interpretation of the claims, including Petitioner’s own reading.

VI. PETITIONER HAS NOT PROVEN BY A PREPONDERANCE OF THE EVIDENCE THAT ANY CHALLENGED CLAIM IS UNPATENTABLE

In an instituted *inter partes* review, “the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.” 35 U.S.C. § 316(e). “To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) so-called secondary considerations where in evidence. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1537 (Fed. Cir. 1983). The Board has held that a failure to identify the differences between the claimed subject matter and the prior art is fatal to an

obviousness challenge. *See Apple, Inc. v. Contentguard Holdings, Inc.*, IPR2015-00355, Paper 9 at 9–10 (P.T.A.B. June 26, 2015). The Board must sufficiently explain and support the conclusions that the prior-art references disclose all the elements recited in the challenged claims and that a skilled artisan not only could have made, but would have been motivated to make, the combination in the way the patent claims, with a reasonable expectation of success. *Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017); *Los Angeles Biomedical Rsch. Inst. at Harbor-UCLA Med. Ctr. v. Eli Lilly & Co.*, 849 F.3d 1049, 1067 (Fed. Cir. 2017). The combinability determination requires a plausible rationale as to why the prior-art references would have worked together. *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1335 (Fed. Cir. 2013). Absent some articulated rationale, a “common sense” finding is no different than a mere conclusory statement that a combination “would have been obvious.” *In re Van Os*, 844 F.3d 1359, 1361 (Fed. Cir. 2017).

A. Grounds 1-8: Petitioner Has Not Shown that Lim Discloses “receiving, from the server device over the Internet via the WLAN, first and second messages, in response to the sending of the captured first and second human voice data” (Element 1[D][2]), “operating the first actuator in response to the received first message” (Element 1[D][3]), or “sending, to the controlled device over the WLAN, a control message in response to the received second message” (Element 1[D][4])

Claim 1 requires that the client device be configured for “receiving, from the server device over the Internet via the WLAN, first and second messages, in response

to the sending of the captured first and second human voice data"; for *"operating the first actuator in response to the received first message"*; and for *"sending, to the controlled device over the WLAN, a control message in response to the received second message."* '706 Patent, Claim 1; *see* Pet. at 32, 38, 42. Together, these limitations define a voice-command architecture in which the server generates and sends distinct *"messages"* to the client device in response to distinct voice commands, and those messages cause the client device both to operate its own actuator and to relay a *"control message"* to a separate controlled device. Lim does not disclose this architecture. Ex. 2008, ¶¶ 46-52.

1. Lim's Server Provides Recognition Data, Not Actuator-Directing *"messages"*

The Petition maps the *"first message"* to speech-processing results assertedly returned by Lim's remote server 500 during the FIG. 4 setup-and-configuration workflow. Pet. at 32–35. In that workflow, the user speaks a brand name at step 402, and "[t]he resulting spoken syllables may be digitized and presented to a speech recognition means for processing" that "may be performed by programming resident on a remote server 500." EX1005, [0027]. The Petition then asserts that the server returns "speech processing result(s)" to the client device, and that the client device operates its actuator—display, speaker, or LEDs—by presenting the next prompt in the setup sequence. Pet. at 33–35, 38–41; EX1002, ¶¶ 113–119, 125–129.

But Lim does not disclose the server returning any “*message*” to the client device in the FIG. 4 workflow. Paragraphs [0027]–[0030] describe voice input being sent to the server for speech recognition and then proceed directly to what the client device does next—without identifying any data object or communication transmitted from server to client device in between. The Petition and Dr. Houh fill this gap by inference: “[i]t would have been obvious that speech processing results (i.e., first message and second message) are generated by the server and sent from the server back to the client device.” Pet. at 32; *see* EX1002, ¶¶ 115, 119. What those “speech processing result(s)” are, the Petition can only guess: they “may be the recognized speech (e.g. text strings), a result of analyzing the recognized speech (e.g. semantic processing to determine meaning and adequacy of the speech), and/or information associated with the next prompt.” Pet. at 34.

Further, even assuming a result were returned that could be mapped to the claimed “*first message*,” Lim does not disclose “*operating the first actuator in response to the received first message*,” as Element 1[D][3] requires. The client device’s actuator operation—displaying or sounding the next prompt—is determined by its own pre-programmed app logic, not by any server message. The server’s contribution at each stage is, at most, a recognition outcome, and the client device’s local firmware then decides what to do with it: if recognition fails, step 402 may be repeated “in order to solicit additional identifying information from the user”

(EX1005, [0028]); once a brand is identified, “at step 406 the user may be prompted to provide spoken appliance type and/or model number information” (*id.*, [0029]); and so on through the further prompts of blocks 410 and 414 (*id.*, [0029]–[0030]). Indeed, the Petition’s own theory for Element 1[D][3] is that “the speech processing result(s) is needed to determine what next prompt to display or otherwise output,” so the purported result is one input to the client device’s own determination. Pet. at 41. A “*message*” the claim makes the cause of the actuator’s operation cannot be recast as raw data for the client device’s independent decision-making. In Lim, the server functions as a speech-recognition engine that returns recognition data, and the client device’s own software logic determines what actuator operation, if any, to perform. Ex. 2008, ¶ 47.

2. Lim Does Not Disclose a “*second message*” from the Server in Response to “*second human voice data*”

The Petition offers two alternative mappings for the “*second message*,” and neither satisfies the claim. Pet. at 35–37, 42–45; EX1002, ¶¶ 120–124, 130–135.

First, the Petition maps the “*second message*” to “the speech processing result(s) from the speech recognition server that allows the controlling device to determine whether to proceed to the next action 610” in FIG. 6—that is, “recognized speech (e.g. text strings)” or “result[s] of further analyzing the recognized speech.” Pet. at 35, 43. The Petition’s own framing demonstrates why this cannot be the

claimed “*second message*”: a recognition result that merely “allows the client device to determine whether to proceed to block 610” is an **intermediate** processing step—the functional equivalent of a yes/no gate that the client device evaluates locally. That is not a server-generated “*message*” in response to which the client device is configured for “*sending, to the controlled device over the WLAN, a control message,*” as Element 1[D][4] requires. *Id.* at 43. Ex. 2008, ¶ 48.

Second, the Petition maps the “*second message*” to the “command code data” downloaded from the server at block 610 of FIG. 6. Pet. at 35–36, 43–44. That mapping fails for two reasons. The command code data is not received “*in response to the sending of the captured . . . second human voice data,*” as Element 1[D][2] requires: it is a pre-existing, static codeset—drawn from “a library of codesets suitable for commanding the functional operations of various types of appliances of multiple manufactures and/or models”—that is merely retrieved from a database, whether by “downloading the data itself” or by “supply of a pointer to an entry in a local database.” EX1005, [0024], [0036]; *see id.*, [0020], [0022], [0030]. Lim’s system is, at bottom, an app-based universal remote control: the user configures which appliance to control through a setup dialogue, and the app downloads the appropriate codeset from a database. A database-retrieval operation delivering pre-packaged IR/RF codes is not the server generating and sending a “*message*” in response to processing voice data. Ex. 2008, ¶ 48.

And FIG. 6—the workflow on which the Petition rests the “*second message*” mapping—does not itself disclose any server generating or sending messages at all. FIG. 6 depicts a workflow on the client device: solicit the function name (step 604), determine whether the function is uniquely identified (step 606), provision the “indicated command code data” (step 610), and transmit the command (step 614), and “at step 614 the provisioned data may be utilized to transmit the desired command to the target appliance.” EX1005, [0035]–[0036]. The server’s only roles in this workflow are as an off-screen speech-recognition engine and as a database from which codesets may be downloaded. There is no disclosure of the server generating or sending any “*message*” to the client device—let alone a “*second message*” received “*in response to*” the sending of “*second human voice data*.” Ex. 2008, ¶ 49.

3. The Petition’s Reliance on References Outside Ground 1 Cannot Carry Petitioner’s Burden

The Petition’s own mapping confirms that Lim alone does not disclose the claimed “*messages*.” To support the inference that speech-processing results flow back from the server, the Petition asserts that “at the time of the invention, remote speech processing servers routinely transmit results related to speech recognition back to the requesting device,” citing three references **outside** Ground 1—Gruber (EX1009), Chang (EX1036, 307), and Tu (EX1037, 2367)—and repeats those

citations when defining what the purported “result(s)” might be. Pet. at 32, 34. Dr. Houh’s Declaration does the same. EX1002, ¶¶ 115, 119, 131. The pattern repeats at Element 1[D][4], where the proposition that Lim’s “networked protocol 120” reaches WiFi-enabled home appliances rests on Chatterjee (EX1012, [0018]) and Doherty (EX1007, 321)—again, references outside Ground 1. Pet. at 44–45. Ex. 2008, ¶ 50.

Ground 1, however, is based on Lim alone. Petitioner may not supply a missing limitation from references outside the ground, and the Board may not adopt a multi-reference theory that Petitioner did not raise. 37 C.F.R. § 42.104(b)(4); July 31, 2025 Stewart Memorandum; *Magnum Oil*, 829 F.3d at 1380-81. Nor can generalized “common knowledge” or expert say-so substitute for the required disclosure. *Id.* at 1380. As framed, Ground 1’s showing for the “*message*” limitations is a multi-reference obviousness theory disguised as a single-reference § 103 ground. And even taken on its own terms it fails, because none of the outside references is asserted, much less shown, to disclose the claimed “*first message*” or “*second message*” in combination with Lim. On this record, Petitioner has not shown that Lim discloses, or that Ground 1 renders obvious, at least Elements 1[D][2], 1[D][3], and 1[D][4]. Ex. 2008, ¶ 50.

4. Ground 1's Showings for Claims 10 and 12 Rest on Doherty and Roberts, References Outside the Ground

Ground 1 also challenges dependent Claims 10 and 12, and its showings for those claims reach outside the ground as well. Claim 10 adds “*a volatile or non-volatile memory for storing the IP address,*” and Claim 12 requires that the IP address be “*a static or dynamic Internet Protocol (IP) address that is IPv4 or IPv6 type address.*” ’706 Patent, Claims 10, 12. For Claim 10’s storing limitation, the Petition offers Lim’s generic memory disclosures and then supplies the claimed storage from purported general knowledge: “[i]t was common knowledge that a networked device locally stores its IP address,” citing Doherty (EX1007, 211, Figure 10-44, 265). Pet. at 47-48. For Claim 12, Petitioner similarly asserts that “it was well-known that Internet Protocol (IP) addresses are either static or dynamic, and are IPv4 addresses,” citing Roberts (EX1029, 127) and Doherty (EX1007, 277). *Id.* Neither Doherty nor Roberts, however, is a Ground 1 reference. Pet. at 6–7. Supplying the claimed locally stored, typed IP address from references outside the ground is precisely what 37 C.F.R. § 42.104(b)(4) and the Stewart Memorandum prohibit, and the Board may not adopt the unraised theory on Petitioner’s behalf. *Magnum Oil*, 829 F.3d at 1380-81. Ex. 2008, ¶ 51.

5. All Other Grounds Relying on Lim Fail for the Same Reasons

Claims 5–6, 10, 12, 16, 20–21, 23, and 29 are challenged in Ground 1

alongside Claim 1, and each incorporates all of Claim 1's limitations. Because Petitioner has not shown that Lim discloses at least the "*first message*," "*second message*," and "*control message*" limitations of Claim 1, Ground 1 fails as to every claim it challenges. Grounds 2–8 rely on Lim in combination with, respectively, Wittenberg, Gruber, Benesty, Goldsmith, Chatterjee, Rosenberger, and Rossing, to challenge dependent claims. Pet. at 49–69. None of those secondary references is cited for, or remedies, Lim's failure to disclose the "*message*" limitations of independent Claim 1. Ex. 2008, ¶ 52. Grounds 1–8 therefore fail in their entirety.

In sum, Lim's server is a speech-recognition engine that returns recognition data upon which the client device's own app logic acts. Neither of the Petition's "*second message*" mappings—a locally evaluated recognition gate and a static, database-retrieved codeset—satisfies the claim. Further, FIG. 6 discloses no server-sent message at all. And the Petition's resort to references outside Ground 1 confirms the gaps those references cannot fill. Petitioner has not proven by a preponderance of the evidence that any claim challenged in Grounds 1–8 is unpatentable. The additional, ground-specific defects of Grounds 2–8 are addressed in Sections VI.C through VI.I, below.

B. Grounds 9-16: Petitioner Has Not Shown that the Williams-Lim Combination Discloses “receiving, from the server device over the Internet via the WLAN, first and second messages, in response to the sending of the captured first and second human voice data” (Element 1[D][2]), or “sending, to the controlled device over the WLAN, a control message in response to the received second message” (Element 1[D][4])

Claim 1 requires the client device to be configured for “receiving, from the server device over the Internet via the WLAN, first and second messages, in response to the sending of the captured first and second human voice data,” and for “sending, to the controlled device over the WLAN, a control message in response to the received second message.” ’706 Patent, Claim 1; see Pet. at 86, 91. These limitations require two distinct, server-generated “messages” received by the “client device”—the second of which causes the client device to relay a “control message” to a separate controlled device over the WLAN. Williams discloses neither, and the Petition’s combination with Lim cannot supply what is missing. Ex. 2008, ¶¶ 53-60.

1. Williams’s “services 218” Are the Delivery of Informational Content, Not the Claimed “second message”

The Petition’s mapping rests on Williams’s disclosure that the server “processes” the audio-based information and as a result “may . . . initiate or customize services 218,” and that “[s]uch services may be provided through any of the media devices 106 located in the home, as well as through other application devices 220.” Pet. at 88 (quoting EX1006, [0027], [0036]). But in Williams,

“services 218” are the substance of the service itself—content delivered to and experienced by the user—not “*messages*” received by a “*client device*” that cause the operations Claim 1 recites. Williams’s own examples confirm as much: interpreting a spoken grocery order and recording “a shopping list that the user can view on their smartphone” (EX1006, [0044]); identifying a song and “provid[ing] information about related articles, offer[ing] samples, suggest[ing] related music and playlists, or present[ing] information allowing the user to purchase individual music tracks” (*id.*, [0047]); and answering questions by “emailing or otherwise providing a recipe” (*id.*, [0048]). *See id.*, [0044]–[0050]. In each instance, what the system delivers is information content. Ex. 2008, ¶ 54. “Such services may be provided through any of the media devices 106 located in the home, as well as through other application devices 220.” EX1006, [0036]. Ex. 2008, ¶ 55.

FIG. 2 confirms the deficiency. Its arrows from applications 120 to media devices 106 and application devices 220 depict the general availability of services through home devices—the user experiences the service via a particular device—not a distinct “*second message*” generated in response to a voice command and received by the *client device* so as to trigger a relayed “*control message*.” EX1006, [0036], FIG. 2; Ex. 2008, ¶ 54. Williams simply does not disclose any data object, communication, or signal satisfying the claimed “*second message*.”

2. Paragraph [0051] Is Aspirational and Discloses No Server-Generated Control “message”

The Petition asserts that Williams’s system “may accept spoken commands from a user regarding on-premises devices, and may respond by interacting with such devices through available network connections,” resting on paragraph [0051]. Pet. at 76–77, 80 (quoting EX1006, [0051]). Paragraph [0051], however, merely states that an application “might also be designed to allow a user to control various on-premises devices and equipment.” EX1006, [0051]. That passage tells the reader **what** the system might do—*i.e.*, accept voice commands and interact with devices—but says nothing about **how**. It is silent on whether the server generates any “message,” what form it would take, how the *client device* would receive it, or what “control message” would follow. Yet those are precisely the elements Claim 1 requires. A statement that a system “may respond by interacting with such devices through available network connections” identifies no message and provides nothing of the specific server-to-client-device-to-controlled-device sequence that Claim 1 requires. And the only device interaction Williams actually describes is the provision of “services 218” that, as discussed above, comprise informational content and not “messages.” Ex. 2008, ¶ 55.

A statement that a system “may respond by interacting with such devices through available network connections” identifies no message and provides nothing

of the specific server-to-controlled-device communication that Claim 1 requires. And the only device interaction Williams actually describes is the provision of “services 218” that, as discussed above, comprise informational content and not “*messages*.” *Id.*, ¶ 55.

3. The Petition’s Mappings Send the “*second message*” to the Wrong Device and Concede the Gaps, Falling Back to Lim

The Petition’s Ground 9 mapping does not track Claim 1. For Element 1[D][2], which requires the “*client device*” to receive the “*second message*,” the Petition points to services 218 flowing from server 400 to the *controlled* devices: “A POSITA would have understood that providing services 218 to a controlled device (e.g. media devices 106, application devices 220) involves sending information (second message) to the controlled device.” Pet. at 89 (citing EX1002, ¶ 355). Petitioner’s mapping is thus not a mapping to the claimed receipt of the “*second message*” by the *client device*. The Petition then concedes the gap: “To the extent that Williams does not disclose that the client device receives its second message, Lim discloses this claim.” *Id.* at 89–90. The Petition makes the same concession at Element 1[D][4]: “To the extent that Williams does not disclose that the control message is sent from the client device, Lim discloses this.” *Id.* at 92. These concessions are dispositive of Williams’s own disclosure and they reduce Ground 9 to Lim. But Lim does not disclose those limitations for the reasons shown in Section

VI.A. Ex. 2008, ¶ 56.

The concessions reflect Williams’s actual architecture. In Williams, services 218 flow directly from the cloud server (*i.e.*, applications 120 running on server 400) to the media devices 106 and application devices 220. EX1006, FIG. 2, [0036], [0042]. The interface device 116, the purported “*client device*,” is a voice-capture and audio-playback endpoint. There is no arrow, no data flow, and no textual description in Williams of the interface device 116 relaying control commands to other home devices. Williams’s own design makes it unnecessary to route control through the client device, because the server already communicates with the home devices directly. Ex. 2008, ¶ 56.

4. The Petition’s Relay Rationale Rests on References Outside Ground 9 and on Conclusory Assertions, Not on the References

To bridge the gap between Williams’s “services” and a control “*message*,” the Petition inserts the parenthetical “(e.g. a control message related to the service 218)” and asserts that sending such information is “consistent with common implementations,” citing three references **outside** Ground 9, specifically, Van der Meulen (EX1019, 3:19-22, 6:23-27), Wittenberg (EX1008, Claim 1), and Chatterjee (EX1012, [0012]). Pet. at 89, 91. Dr. Houh’s Declaration does the same. EX1002, ¶¶ 355, 366. Counting the outside references, Ground 9 is in actuality a five-reference obviousness combination disguised as a two-reference ground. Petitioner

may not supply a missing limitation from references outside the ground, and the Board may not adopt the unraised multi-reference theory on Petitioner's behalf. 37 C.F.R. § 42.104(b)(4); July 31, 2025 Stewart Memorandum; *Magnum Oil*, 829 F.3d at 1380-81. Ex. 2008, ¶ 57.

The proposed combination also lacks a coherent motivation. The Petition proposes restructuring Williams so that “the server 400 sends information (e.g., related to services 218) for controlling controlled devices to the client device (rather than the controlled devices), which in turn transmits commands to the controlled devices,” asserting that this would “predictably simplify network management and improve reliability and security,” make the system “easier to scale, troubleshoot, and manage,” and “yield predictable results of enhancing the security, reliability and scalability of the system.” Pet. at 71–72 (citing EX1002, ¶¶ 287–290); *see id.* at 90. But Williams's architecture achieves exactly the opposite of what the rationale assumes: the server's already *direct* communication with the controlled devices is the simpler, more reliable architecture. Inserting the interface device 116 as an intermediary adds a hop, a failure point, and connection-management burdens that Williams's design does not have—dismantling Williams's existing server-to-device path and replacing it with a three-hop architecture found in neither reference. The Petition never explains why a POSITA, starting from Williams's system, would take that step. Further, the boilerplate “obvious to try” is entirely unsupported. *Id.* at 72;

KSR, 550 U.S. at 421. Absent an articulated, reference-grounded rationale, the assertions of “predictable results” are no different than a mere conclusory statement that the combination “would have been obvious.” *In re Van Os*, 844 F.3d at 1361; *see Innogenetics, N.V. v. Abbott Lab’ys*, 512 F.3d 1363, 1373 (Fed. Cir. 2008); Ex. 2008, ¶¶ 58-59.

5. All Other Grounds Relying on the Williams-Lim Combination Fail for the Same Reasons

Ground 9 challenges Claims 1, 5–6, 10, 12, 16, 20–21, 23, and 29, each of which incorporates the limitations above. Grounds 10–16 rest on the same Williams-Lim foundation and add one secondary reference each—Wittenberg, Gruber, Benesty, Goldsmith, Chatterjee, Rosenberger, and Rossing—to address dependent-claim features. Pet. at 94–100. None of those references is cited for, or remedies, the combination’s failure to disclose the “*first message*,” “*second message*,” and “*control message*” limitations of Claim 1. Ex. 2008, ¶ 60. Ground 9’s showings for Claims 10 and 12, moreover, incorporate the same Doherty and Roberts material as Ground 1’s and fail for the same outside-the-ground reason. Pet. at 93; *supra* § VI.A.4. Grounds 9–16 therefore fail in their entirety.

In sum, Williams’s “services 218” are informational content, not the claimed “*second message*”; paragraph [0051] is aspirational and discloses no messaging path; the Petition maps the “*second message*” to the wrong device and concedes that

Lim must supply the disputed limitations, which Lim does not disclose; and the relay rationale rests on references outside Ground 9 and on conclusory assertions. Thus, Petitioner has not proven by a preponderance of the evidence that any claim challenged in Grounds 9–16 is unpatentable. The additional, ground-specific defects of Grounds 10–16 are addressed in Sections VI.C through VI.I, below.

6. Ground 9 Does Not Disclose The Limitations of Claims 27 or 29

Further, Claim 29 is only challenged in Ground 9. Claim 29 depends from Claim 27, which depends from Claim 1. While the Petition challenges Claim 29 (Pet. at 94), the Petition does not challenge Claim 27. Therefore, the Petition is defective as to Claim 29. The prior art cited for Ground 9 does not disclose the limitations of Claims 27 or 29. EX2008, ¶ 61.

C. Grounds 2 and 10 Do Not Show that Claim 2 Is Unpatentable

Ground 2 challenges Claim 2 over Lim and Wittenberg (EX1008); Ground 10 challenges the same claim over Williams, Lim, and Wittenberg. Pet. at 49–50, 94–95. Claim 2 depends from Claim 1 and adds that “*the server device is configured for processing the first and second human voice data using a voice recognition algorithm for identifying a voice of a specific person.*” ’706 Patent, Claim 2. Claim 2, however, is not further obvious over Wittenberg. Ex. 2008, ¶ 62.

Wittenberg does not disclose the limitation Claim 2 adds. The claimed algorithm is “*for identifying a voice of a specific person*”—determining who is speaking. Wittenberg’s voice recognition answers a different question: its function is “to determine whether the audio signal has been supplied by an authorized user.” EX1008, Abstract. The passage the Petition quotes describes the same authorized-or-not determination, “comparing the characteristics . . . of the audio signal to stored voice information to determine whether the audio signal voice matches that of an authorized user.” Pet. at 49–50 (quoting EX1008, 5:61-6:6). A match at most tells the system that the speaker is one of its authorized users, but it does not identify which specific person is speaking, and Wittenberg discloses no use or output of any speaker’s individual identity. Neither the Petition nor Dr. Houh explains how an authorized-or-not determination disclosed in Wittenberg performs the claimed identification. *Pers. Web Techs.*, 848 F.3d at 994. Ex. 2008, ¶ 62.

Further, the proffered motivation—“to achieve greater security”—does not bridge the gap. Pet. at 50, 95. On Wittenberg’s own disclosure, security is achieved by the authorization gate itself, so the rationale supplies no reason to build the claimed personal identification. *Magnum Oil*, 829 F.3d at 1380; *In re Van Os*, 844 F.3d at 1361. In sum, Wittenberg determines whether a speaker is authorized, not who the speaker is. Thus, Petitioner has not shown by a preponderance of the evidence that Claim 2, challenged in Grounds 2 and 10, is unpatentable.

D. Grounds 3 and 11 Do Not Show that Claims 3–4 and 11 Are Unpatentable

Ground 3 challenges Claims 3–4 and 11 over Lim and Gruber (EX1009); Ground 11 challenges the same claims over Williams, Lim, and Gruber. Pet. at 50–54, 95–97. Grounds 3 and 11 each fail for the reasons discussed below.

1. The Petition Does Not Show that “*the first message is received in response to the sent sensor data,*” as Claim 3 Requires

Claim 3 adds three requirements: the client device further comprises “*a sensor that outputs sensor data that responds to a physical phenomenon*”; the client device is “*further configured for sending to the server device, via the WLAN over the Internet, the sensor data*”; and “*the first message is received in response to the sent sensor data.*” ’706 Patent, Claim 3. The Petition attempts to map the first two requirements and then stops. The Petition states that Gruber discloses that a device “may have one or more sensors” that “can provide sources of contextual information,” and that such context “can be communicated among distributed components such as client 1304 and server 1340.” Pet. at 51 (quoting EX1009, [0218]–[0225], [0366]–[0367]). The proposed combination, in turn, “would capture sensor data (e.g. temperature, location) using one or more sensors (e.g. as taught by Gruber/Lim) in the controlling device and transmit such data and/or related information to Lim’s server (e.g. remote server 500), which can use the captured

sensor data as contextual information as taught by Gruber to supplement speech processing.” *Id.* at 52; *see id.* at 96 (Ground 11: “to supplement audio processing”). Nowhere, however, does the Petition identify any disclosure that the “*first message*”—the message Claim 1 requires the client device to receive “*in response to the sending of the captured*” first human voice data—is also “*received in response to the sent sensor data*.” In Gruber, sensor-derived context serves “to supplement speech processing”—*i.e.*, the interpretation of the user’s input. Pet. at 52. Assisting interpretation is not a disclosure that the responsive message is received in response to the sensor data. Ex. 2008, ¶ 63.

2. Claim 4’s Sensor Types Come from Fraden, a Reference Outside Both Grounds

Claim 4 requires that the sensor be “*a thermoelectric sensor that responds to a temperature or to a temperature gradient of an object using conduction, convection, or radiation,*” or “*a photoelectric sensor that responds to a visible or an invisible light or gamma rays.*” ’706 Patent, Claim 4. Gruber’s contribution is a generic list, *i.e.*, “an accelerometer, compass, GPS unit, . . . light sensor, thermometer, . . . and the like” providing “the current light level, temperature and other environmental measures.” Pet. at 53 (quoting EX1009, [0225], [0222]). A “thermometer” is not a disclosure of a “*thermoelectric*” sensor that operates “*using conduction, convection, or radiation,*” and a “light sensor” is not a disclosure of a

“*photoelectric*” sensor responsive to “*invisible light or gamma rays*.” To bridge that gap, the Petition offers a single sentence: “A POSITA would have understood that photoelectric sensors are common light sensors and thermoelectric sensors are common temperature sensors.” Pet. at 53. That sentence, however, is not supported by Lim, Williams, or Gruber, but by Fraden (EX1030, 116, 466), a reference outside of both grounds. Pet. at 53. Under 37 C.F.R. § 42.104(b)(4) and the Stewart Memorandum, an outside reference and expert say-so may not supply the claimed sensor types, and the Board may not adopt a Lim-Gruber-Fraden (or Williams-Lim-Gruber-Fraden) combination that the Petition never asserted. *Magnum Oil*, 829 F.3d at 1380-81. Ex. 2008, ¶ 64.

3. Claim 11’s Showing Rests on POSITA Assertion and Two More References Outside the Grounds, Not on Gruber

Claim 11 requires that “*the client device is further addressed by a Media Access Control (MAC) layer address that is MAC-48, Extended Unique Identifier (EUI) EUI-48, or EUI-64 address type*.” ’706 Patent, Claim 11. For that limitation, the Petition does not rely on what either named reference discloses—it relies on what was purportedly well-known: that “networked devices are associated with MAC addresses that are MAC-48, EUI-48 or EUI-64 type,” citing Doherty (EX1007, 99, 166) and Yadav (EX1026, 2:50-59), neither of which is a Ground 3 or Ground 11 reference. Pet. at 54, 96. Thus, here again, the claim element is supplied, if at all, by

Petition's expert's purported generalized knowledge and references outside the grounds—precisely what 37 C.F.R. § 42.104(b)(4) and the Stewart Memorandum prohibit. *Magnum Oil*, 829 F.3d at 1380-81. Ex. 2008, ¶ 65.

In sum, the Petition does not show Claim 3's sensor-responsive "*first message*"; it supplies Claim 4's sensor types from Fraden; and it supplies Claim 11's device-identifying MAC address from POSITA assertion, Doherty, and Yadav. Thus, Petitioner has not proven by a preponderance of the evidence that any claim challenged in Grounds 3 and 11 is unpatentable.

E. Grounds 4 and 12 Do Not Show that Claims 7–8 Are Unpatentable

Ground 4 challenges Claims 7–8 over Lim and Benesty (EX1010); Ground 12 challenges the same claims over Williams, Lim, and Benesty. Pet. at 54–56, 97. Claim 7 depends from Claim 1, and Claim 8 depends from Claim 7.

Claim 8 requires that the multiple microphones of Claim 7 be "*arranged as a directional microphones array operative to estimate a number, magnitude, frequency, Direction-Of-Arrival (DOA), distance, or speed of a phenomenon impinging the microphones array.*" '706 Patent, Claim 8. The Petition quotes Benesty's survey statements that "microphone arrays have the ability to offer directional gains that can significantly improve the quality of signal pickup in reverberant and noisy environments," and that "beam scanning and time delay

estimation (TDE)-based localization methods are the two most widely used approaches” for “speech source localization.” Pet. at 55–56 (quoting EX1010, 1021, 1044). What the Petition does not show is the claimed capability in the proposed combination: a client device whose array is “*operative to estimate*” the recited parameters. The Petition goes no further than merely placing “multiple microphones as taught by Benesty” in the client device “to capture and process human voice data, yielding the predictable results of effectively improv[ing] audio capturing.” Pet. at 56; *see id.* at 97 (same for Ground 12). But while capturing voice data with multiple microphones is covered by Claim 7, Claim 8’s estimation capability is neither mapped to the combined system nor explained. The Board must be able to find that the combination discloses all the elements as claimed, and a “predictable results” assertion cannot supply the missing showing. *Pers. Web Techs.*, 848 F.3d at 994; *Magnum Oil*, 829 F.3d at 1380. Ex. 2008, ¶ 66.

The motivation offered, *i.e.*, that a POSITA would have looked to Benesty for microphone-related techniques “to, for example, implement/improve the audio signal capturing and processing in Lim,” at most describes consulting the handbook, but falls short for providing an actual reason to build the claimed estimating array into Lim’s controlling device or Williams’s interface device 116. Pet. at 54–55. Benesty surveys certain techniques that existed, but the Petition identifies no design need in Lim or Williams that the claimed directional array would answer, and no

reason grounded in the references to select it. *In re Van Os*, 844 F.3d at 1361. In sum, Grounds 4 and 12 inherit the failures of Grounds 1 and 9 and never show Claim 8’s “*operative to estimate*” limitation in the proposed combination. Thus, Petitioner has not proven by a preponderance of the evidence that either claim challenged in Grounds 4 and 12 is unpatentable.

F. Grounds 5 and 13 Do Not Show that Claims 13–15 Are Unpatentable

Ground 5 challenges Claims 13–15 over Lim and Goldsmith; Ground 13 challenges the same claims over Williams, Lim, and Goldsmith. Pet. at 56–60, 97–98. Each claim depends from Claim 1 and specifies the client device’s wireless connectivity, *e.g.*, a WLAN according to the enumerated IEEE 802.11 standards (Claim 13), a WLAN using “*an unlicensed radio frequency band that is an Industrial, Scientific and Medical (ISM) radio band*” (Claim 14), and a client device “*further configured for communicating over a cellular telephone network*” of the recited 3G or 4G types (Claim 15). ’706 Patent, Claims 13–15.

1. Goldsmith’s Protocol Survey Does Not Disclose the Configured Claimed System, and the “Obvious to Try” Assertion Is Unsupported

For Claim 13, the Petition first re-cites Lim’s disclosure that access to the network “may be via a local network connection 508, such as WiFi or Bluetooth,” and then quotes Goldsmith’s survey: 802.11b, and the “[t]wo additional standards in

the 802.11 family were developed to provide higher data rates than 802.11b.” Pet. at 57–58 (quoting EX1005, [0027]; EX1040, 15–16). For Claim 14, it reproduces Goldsmith’s table of “unlicensed radio frequency spectrum allocations in the U.S.” *Id.* at 58–59 (citing EX1040, 22–23). But Claim 1 requires more of the claimed WLAN than that its protocol exist: the WLAN is the network through which the client device sends captured voice data toward, and receives the claimed “*messages*” from, an Internet-connected server, and over which it sends the “*control message*” to the controlled device. A textbook survey establishing that 802.11a/b/g and the ISM bands existed does not show the claimed client device configured to perform those operations over any of them. The combination rationale is that “it would have been obvious to try combining the wireless communication techniques of Goldsmith (e.g. WLAN over IEEE 802.11b, 802.11a, and/or 802.11g) with the teachings of Lim without requiring much effort and with a reasonable expectation of success” and, for Ground 13, “obvious to try combining the wireless communication techniques of Goldsmith (e.g. 802.11b WLAN and cellular 3G network) with the teachings of Williams-Lim.” Pet. at 58 and 98. “Obvious to try” has force only “[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions.” *KSR*, 550 U.S. at 421. The Petition identifies no design need in Lim or Williams, nor a finite set of identified solutions, nor any reason to select any particular standard—it simply walks through the claims’ own lists. Ex.

2008, ¶ 67.

**2. Claim 15’s Cellular Connectivity Comes from Wang,
a Reference Outside Both Grounds**

Claim 15 requires that the client device be “*further configured for communicating over a cellular telephone network*” of the recited 3G or 4G types. ’706 Patent, Claim 15. The Petition quotes Goldsmith’s descriptions of W-CDMA, GSM, and EDGE, and then, because nothing in Lim, Williams, or Goldsmith configures the claimed client device for cellular communication in the claimed system, adds that “home appliances with cellular connectivity were well-known,” citing Wang (EX1031, Claims 14-16, 18) —yet another reference outside both grounds. Pet. at 59–60; *see id.* at 6–7. Supplying the claimed cellular connectivity from an outside reference is what 37 C.F.R. § 42.104(b)(4) and the Stewart Memorandum prohibit. *Magnum Oil*, 829 F.3d at 1380-81. Ex. 2008, ¶ 68.

In sum, Goldsmith’s survey merely shows that the recited network types existed; it does not show the claimed system configured with any of them. And the potentially relevant disclosure in the prior art—*i.e.*, cellular-connected home appliances—comes from a reference outside the grounds, under an “obvious to try” label that *KSR* does not permit on this record. Thus, Petitioner has not proven by a preponderance of the evidence that any claim challenged in Grounds 5 and 13 is unpatentable.

G. Grounds 6 and 14 Do Not Show Claims 17–19 and 22 Are Unpatentable

Ground 6 challenges Claims 17–19 and 22 over Lim and Chatterjee (EX1012); Ground 14 challenges the same claims over Williams, Lim, and Chatterjee. Pet. at 60–63, 98–99. Claims 17–19 and 22 depend from Claim 16 and specify the appliance in which “*the controlled device*” is integrated, *e.g.*: food storage, handling, or preparation (Claim 17), heating food (Claim 18), refrigeration and kitchen appliances (Claim 19), and cleaning (Claim 22). ’706 Patent, Claims 16–19, 22.

Chatterjee, however, at most just discloses the existence of certain types of appliances. Pet. at 61–62 (quoting EX1012, [0012], [0014]). The claims, however, require more of the “*appliance*”: it houses “*the controlled device*”—the device that must receive the client device’s “*control message*” over the WLAN and that “*comprises a second actuator.*” The Petition never explains how Chatterjee’s appliances would be integrated into Lim’s system, in which the controlling device transmits IR, RF, or networked-protocol commands from a downloaded codeset (*supra* § VI.A), or into Williams’s system, in which the server delivers informational “services 218” directly to the home devices (*supra* § VI.B). And Chatterjee itself, as the Petition describes it, controls its appliances through a “[d]evice controller” that “may be a device or module electronically coupled to the home appliance device”

and directed from the user’s mobile device—“a system and method for providing home automation using a mobile device”—not through the claimed server-message-to-client-relay sequence. Pet. at 60–61 (quoting EX1012, Abstract, [0012]). Ex. 2008, ¶ 69.

Further, the motivation to combine offered is simply “such that Lim can be used to control the home automation devices of Chatterjee, therefore expanding the capabilities of Lim with a reasonable expectation of success” and, for Ground 14, the statement that combining “would improve and expand the capabilities of Williams-Lim in the same way.” Pet. at 62–63, 98–99. An aspiration to expand capabilities simply restates a desire to combine without providing an actual reason to do so, which is insufficient. *Magnum Oil*, 829 F.3d at 1380; *In re Van Os*, 844 F.3d at 1361. In sum, to the extent certain of the appliances of Claims 17–19 and 22 appear in Chatterjee, the claimed system does not: no ground reference shows the claimed “*control message*” sequence operating “*a second actuator*” in any of them, and no articulated reason supports the combination. Thus, Petitioner has not proven by a preponderance of the evidence that any claim challenged in Grounds 6 and 14 is unpatentable.

H. Grounds 7 and 15 Do Not Show that Claims 24–25 Are Unpatentable

Ground 7 challenges Claims 24–25 over Lim and Rosenberger (EX1013);

Ground 15 challenges the same claims over Williams, Lim, and Rosenberger. Pet. at 63–65, 99. Claim 24 requires that “*the first actuator*”—the actuator that Claim 1 requires the client device to operate “*in response to the received first message*”—be “*an electric light source for converting an electrical energy into light.*” Claim 25 depends from Claim 24 and recites species such as LEDs.

Rosenberger’s light, however, does not do what the claims require. In Rosenberger, the “multi-colored LED status light 34” belongs to a self-contained speech-recognizing control device that performs its own recognition: “[u]pon receiving and recognizing a speech trigger phrase,” “the device beeps, changes its status light 34 or plays a prerecorded or synthesized audio message” to “prompt the user to say one of the speech commands from a known vocabulary or grammar stored in the speech pattern memory 14.” Pet. at 63–64 (quoting EX1013, 8:8–16, 8:20–32). As such, the light of Rosenberger indicates the device’s own, locally determined “device states and modes.” *Id.* But Claim 24’s light source is “*the first actuator,*” and Claim 1 requires the client device to operate the first actuator “*in response to the received first message*”—the message received from the remote server in response to the sending of the captured first human voice data. A light that reflects local device state “as taught by Lim/Rosenberger” is not shown to operate in response to any server-sent message, and neither the Petition nor Dr. Houh identifies any disclosure that it would. The mapping does not address the claim as written. Ex.

2008, ¶ 70.

Further, the proffered motivation to combine is entirely generic: “to improve the usability of the device.” Pet. at 65, 99. The Petition does not say what usability problem the light would solve, or why a POSITA designing Lim’s controlling device or Williams’s interface device 116 would add Rosenberger’s status light, other than that the claims recite one. *Id.*; *In re Van Os*, 844 F.3d at 1361. In sum, Rosenberger’s status light answers to the device’s own speech recognition, not to a “*first message*” received from a server over the Internet, and no articulated reason supports adding it. Thus, Petitioner has not proven by a preponderance of the evidence that either claim challenged in Grounds 7 and 15 is unpatentable.

I. Grounds 8 and 16 Do Not Show that Claims 9 and 26–28 Are Unpatentable

Ground 8 challenges Claims 9 and 26–28 over Lim and Rossing (EX1014); Ground 16 challenges the same claims over Williams, Lim, and Rossing. Pet. at 65–69, 99–100.

Regarding Claim 9, the Petition argues that “[a] POSITA would understand that the claim refers to a standard microphone.” Pet. at 65-66; *see id.* at 99–100 (Ground 16: “the claim 9 refers to a standard microphone and claims 27-28 refers to a standard speaker”). Claim 9, however, recites specific microphone constructions and operating principles—“*an omnidirectional, unidirectional, or bidirectional*

microphone that is based on the sensing an incident sound-based motion of a diaphragm or a ribbon,” or “a condenser, an electret, a dynamic, a ribbon, a carbon, or a piezoelectric microphone.” ’706 Patent, Claim 9. Neither Lim nor Williams discloses anything about its microphone’s construction. Pet. at 65–67. And Rossing—from which the Petition quotes that “[c]ommon to virtually all microphones ever made is a diaphragm,” along with descriptions of ribbon, condenser, electret, carbon, and piezoelectric microphone types—establishes only that such microphones existed. *Id.* at 66–67 (quoting EX1014, 757–759, 309). The Petition never identifies which microphone the combined system would use, or why; looking to Rossing “for details and techniques” is merely a description of consulting a reference book, not a reason to configure the claimed device with any recited construction. *id.* at 65; *Magnum Oil*, 829 F.3d at 1380; *In re Van Os*, 844 F.3d at 1361. Ex. 2008, ¶ 71.

Claim 26 requires that “*the first actuator is a motion actuator that causes a linear or rotary motion.*” ’706 Patent, Claim 26. The Petition’s only theory is that the primary system’s speaker is the claimed “*motion actuator*” because Rossing describes a loudspeaker as a device in which “the electrical energy is converted to mechanical energy, specifically the movement of a diaphragm.” Pet. at 68 (quoting EX1014, 763); *see id.* at 99–100. On Petitioner’s logic, every Claim 27 “*sounder*” (which produces sound precisely by moving a diaphragm or equivalent element) is

also a Claim 26 “*motion actuator*,” collapsing the two claims and reading their distinct actuator categories out of the claims. Different claims are presumed to have different scope. The remaining Rossing citations supply only the observations that loudspeakers involve “linear motion” and that a moving coil “can move axially.” *Id.* at 68 (quoting EX1014, 903, 18). The Petition identifies no other candidate motion actuator in either combination. Ex. 2008, ¶ 72.

The mapping for Claims 27–28 have an additional defect. To show the claimed “*sounder*,” the Petition asserts that “a POSITA would have understood that a speaker is a sounder for converting an electrical energy to sound waves,” resting in part on Sinclair (EX1018, 122)—once again, a reference outside both grounds. Pet. at 68; 37 C.F.R. § 42.104(b)(4). And for Claim 28’s specific requirements, the Petition offers Rossing’s general observation that “many of the same transduction methods that have been used in microphones have at least been tried for loudspeakers including magnetic (also known as dynamic), piezoelectric, and condenser,” with no reason to select any of them for the combined system. Pet. at 69 (quoting EX1014, 763). But Rossing’s general survey of what has “at least been tried” is not a showing of what the combination actually discloses, and the Stewart Memorandum forbids supplying the element from a reference outside the ground. *Magnum Oil*, 829 F.3d at 1380-81. Ex. 2008, ¶ 73.

In sum, the Petition rewrites Claim 9 to a “standard microphone,” maps Claim 26 by collapsing it into Claims 27–28, and supports Claims 27–28 with an outside reference and a general survey. Thus, Petitioner has not proven by a preponderance of the evidence that any claim challenged in Grounds 8 and 16 is unpatentable.

VII. CONCLUSION

For the foregoing reasons, Petitioner has not proven by a preponderance of the evidence that any of Claims 1–29 of the ’706 Patent is unpatentable. Patent Owner respectfully requests that the Board issue a final written decision confirming the patentability of all Challenged Claims.

Respectfully submitted,

Dated: July 29, 2026

By: /Peter Lambrianakos /
Peter Lambrianakos (Reg. No. 58,279)
Fabricant, Rubino & Lambrianakos LLP
411 Theodore Fremd Avenue,
Suite 206 South
Rye, New York 10580
Tel. 212-257-5797
Fax. 212-257-5796
Email: plambrianakos@frlip.com

CERTIFICATE OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned PATENT OWNER'S RESPONSE has 10,239 words in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft Word for Office 365.

Respectfully submitted,

July 29, 2026

By: /Peter Lambrianakos /
Peter Lambrianakos (Reg. No. 58,279)
Lead Counsel for Patent Owner
Fabricant, Rubino & Lambrianakos LLP
411 Theodore Fremd Avenue,
Suite 206 South
Rye, New York 10580
Tel. 212-257-5797
Fax. 212-257-5796

CERTIFICATE OF SERVICE

A copy of the foregoing PATENT OWNER'S RESPONSE and Exhibit 2008
have been served on Petitioner's counsel of record as follows:

Alex S. Yap
Email: Amazon_SmartSpeaker_IPRs@mofo.com
E-mail: AYap@mofo.com
Mehran Arjomand
E-mail: MArjomand@mofo.com
MORRISON & FOERSTER LLP
707 Wilshire Blvd., Suite 6000
Los Angeles, CA 90017

Yunan Yuan
E-mail: AYuan@mofo.com
MORRISON & FOERSTER LLP
755 Page Mill Road
Palo Alto, CA 94304-1018

Attorneys for Amazon.com Services LLC

July 29, 2026

By: /Peter Lambrianakos /
Peter Lambrianakos (Reg. No. 58,279)
Lead Counsel for Patent Owner