

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., and
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner

v.

ZOPHONOS INC.,
Patent Owner

Case IPR2026-00085
U.S. Patent No. 11,900,016

**PATENT OWNER PRELIMINARY RESPONSE
UNDER 37 C.F.R. § 42.107(a)**

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2001	File History of U.S. Application No. 18/084,081
2002	Invalidity Contentions, <i>Zophonos Inc. v. Samsung Elecs. Co., Ltd.</i> , Case No. 2:25-cv-00752 (E.D. Tex. Jan. 19, 2026)
2003	Goldstein Comparison Chart
2004	Declaration of Justin D. Mathew, Ph.D. in Support of Patent Owner's Preliminary Response
2005	<i>Curriculum Vitae</i> of Justin Mathew, Ph.D.
2006	<i>Sound Level Measurement, Monitoring, Management, and Documentation in Music Venues</i> , WORLD HEALTH ORG. (May 2020), accessed at https://cdn.who.int/media/docs/default-source/documents/health-topics/deafness-and-hearing-loss/monograph-on-sound-level-measurement-management-and-documentation-in-music-venues.pdf?sfvrsn=69990849_5
2007	<i>BOSE Announces the QuietComfort 20 Headphones: The Most Versatile Bose Headphones Ever</i> , GSTYLE MAG. (JUNE 4, 2013) https://gstylemag.com/2013/06/04/bose-announces-the-quietcomfort-20-headphones-the-most-versatile-bose-headphones-ever
2008	Saswati Sarkar, Farooq Unjum & Ratul Guha, <i>Optimal Communication in Bluetooth Piconets</i> , 54 IEEE TRANS'NS ON VEHICULAR TECH. 2 (March 2005), accessed at: https://repository.upenn.edu/bitstreams/2a1197f4-ff50-45ef-9060-fc05b302651b/download
2009	Andrew N. Rimell et al., <i>Design of digital filters for frequency weightings (A and C) required for risk assessments of workers exposed to noise</i> , INDUSTRIAL HEALTH (Sept. 13, 2014) https://pmc.ncbi.nlm.nih.gov/articles/PMC4331191/pdf/indhealth-53-021.pdf

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2010	Nick Hunn, <i>Introducing Bluetooth LE Audio</i> , (Jan. 2022) accessed at: https://www.bluetooth.com/wp-content/uploads/2022/01/Introducing-Bluetooth-LE-Audio-book.pdf
2011	Chucri A. Kardous, <i>Noise Dosimeters</i> , Nat'l Inst. For Occupational Safety and Health, (Oct. 2007), accessed at: https://stacks.cdc.gov/view/cdc/188701/cdc_188701_DS1.pdf
2012	John R. Foster et al., <i>Sound-level measurements and calculations of safe noise dosage during EPI at 3 T</i> , 12 J. MAGNETIC RESONANCE IMAGING 157 (Jul. 2000).
2013	Peter M. Rabinowitz, <i>Noise-Induced Hearing Loss</i> , AM. FAM. PHYSICIAN (May 1, 2000) https://www.aafp.org/pubs/afp/issues/2000/0501/p2749.html
2014	<i>Occupational Noise Exposure</i> , OSHA (last updated Dec. 12, 2008) https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.95
2015	Brian Fligor, <i>Recreational NIHL: A Summary of the Evidence</i> , AUDIOLOGY ONLINE, (October 31, 2011) https://www.audiologyonline.com/articles/recreational-nihl-summary-evidence-800
2016	Nikita Varshney & Sukhwinder Singh, <i>Embedded Speech Recognition System</i> , Int'l J. Adv. Rsch. In Electrical, electronics, and Instrumentation Engineering, (April 2014) accessed at: https://www.rroij.com/open-access/embedded-speech-recognition-system.pdf
2017	<i>Soundhawk is a 'smart hearing aid' that cuts through annoying background noise to help you hear more clearly</i> , THE NEXT WEB (June 24, 2014), https://thenextweb.com/news/soundhawk-smart-hearing-aid-cuts-annoying-background-noise-help-hear-clearly

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2018	Rabinowitz, et al., <i>The Dose Response Relationship between In Ear Occupational Noise Exposure and Hearing Loss</i> , Occup. Environ., (July 2013) https://pmc.ncbi.nlm.nih.gov/articles/PMC4075944/
2019	<i>Noise Exposure Computation</i> , OSHA (last updated Dec. 12, 2008) accessed at: https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.95AppA
2020	Interim Processes Memo for PTAB Workload Management Memorandum (March 2025).

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I. INTRODUCTION

The Director should deny institution of *inter partes* review because Petitioner has not met its burden to show a reasonable likelihood that any of claims 32-44 (the “challenged claims”) of U.S. Patent No. 11,900,016 (the “’016 patent”) are unpatentable. All of Petitioner’s challenges fail to demonstrate that the challenged claims are unpatentable.

First, the Petition includes widespread fatal legal and technical flaws stemming from Petitioner’s application of Goldstein⁸⁷³ (hereinafter referred to as “Goldstein”) and Newham to the challenged claims. Petitioner significantly misconstrues the technical disclosures of these references. Yet what is more problematic is that Petitioner improperly relies on references and declarant testimony not included in the Grounds to gap-fill the deficiencies of the actually applied art. Furthermore, Petitioner heavily relies on conclusory, unsupported statements from its declarant throughout the Petition to satisfy claim terms, which violates the Board’s procedures and regulations and dooms the Petition’s purported obviousness theories. These deficiencies also cascade into Petitioner’s challenges of the dependent claims. Thus, Petitioner’s invalidity challenges include fundamental flaws that alone are warrant denial of the Petition.

Second, Petitioner’s challenge to claim 32 under Ground 2A contains additional foundational defects. In particular, Petitioner’s application of the

combination of Goldstein, Newham, and Chaudhri also relies on technical misunderstandings of the applied references that are improperly supplemented by conclusory declarant testimony. Petitioner sets forth a sound pressure level (SPL) dosage value obviousness theory that is of a different character than the recited *aggregate[]* of the *monitored parameter*. Petitioner also conflates the recited *output device* with the *computing device* in its mapping, resulting in an inconsistent and contradictory application of the references to claim 32. None of these deficiencies is remedied by Petitioner's conclusory—and often inaccurate—relied-upon declarant statements, which itself is a violation of Rule 104(b). Accordingly, Petitioner significantly fails to establish the references disclose each and every element of claim 32, and denial of the Petition is warranted for this additional reason.

Third, Petitioner combines different embodiments of Goldstein for some of its challenges without providing the required obviousness rationale to combine embodiments within a single reference. Petitioner does not even acknowledge that it is improperly picking and choosing from different embodiments of Goldstein to satisfy the claims. Accordingly, the Petition runs afoul of current PTAB precedent and guidelines for combining different embodiments of a single reference. Such omission is fatal to the affected challenges.

For at least these reasons, Petitioner has not met—and cannot meet—its burden to show a reasonable likelihood that the challenged claims are unpatentable. Accordingly, the Director should deny institution.

II. BACKGROUND OF THE TECHNOLOGY

The challenged patent arises from an innovative technology directed to audio monitoring and manipulation systems for a variety of audiological environments. EX1001, 1:19-25. Leading up to the '016 patent, “sound systems [were] designed to be used in a specific environment.” EX1001, 1:31-33. And regardless of the environment, audio quality and acoustic treatment were typically controlled by a combination of human intervention, audio software, and hardware. EX1001, 1:43-47. However, audio outputs within these systems could not be effectively managed due to “improper calibrations of signal propagation and signal degradation, as well as unwanted harmonics and soundwave reflections.” EX1001, 1:51-54; *see also* 1:55-57 (describing additional drawbacks of prior-existing systems). Accordingly, systems prior to the filing of the '016 patent could not appropriately manage and manipulate sound in a manner that produced clear, high-fidelity output while prioritizing the hearing health of listeners. EX1001, 5:50-56.

These issues are compounded in sound systems utilizing the devices existing by the priority date of the '016 patent. *See* EX1001, 2:24-37. Indeed, developments in the audio engineering field were “expected to shift a smart device’s feature set,

and how a smart device communicates with both the user (interface) and the network (including other smart devices).” EX1001, 10:64-11:2. As such, conventional systems lacked the modularity needed to implement audio manipulation functionality across an ecosystem of devices. *See* EX1001, 11:7-13.

III. OVERVIEW OF THE '016 PATENT

To address these numerous deficiencies, the '016 patent presents a novel and innovative technique for audio manipulation and sound management among a variety of computing devices. *E.g.*, EX1001, 19-25; 4:66-27. At its core, the '016 patent describes a means of “autonomously collect[ing] audio data via a series of integrated devices” and “adjust[ing] system outputs accordingly,” such that sound is both intelligible to the user and protective of the user’s health. *See, e.g.*, 8:30-36; 9:19-56. These noise control functions may also include customizable user functions “to ensure that both the audio perceived by them, and the audio perceived by their device is in accordance with some predetermined parameters/settings.” EX1001, 8:37-41.

The '016 patent advances an innovative architecture that facilitates complex audio management and manipulation functionality across a variety of computing devices. This architecture, reproduced below, is wholly unique and enables a single computing device (or multiple computing devices) to both sense audio energy within a specific cluster of devices and adjust the output of connected output

devices to ensure high quality, high fidelity, and nonhazardous output. *E.g.*,
EX1001, 17:45-53; 17:62-18:3.

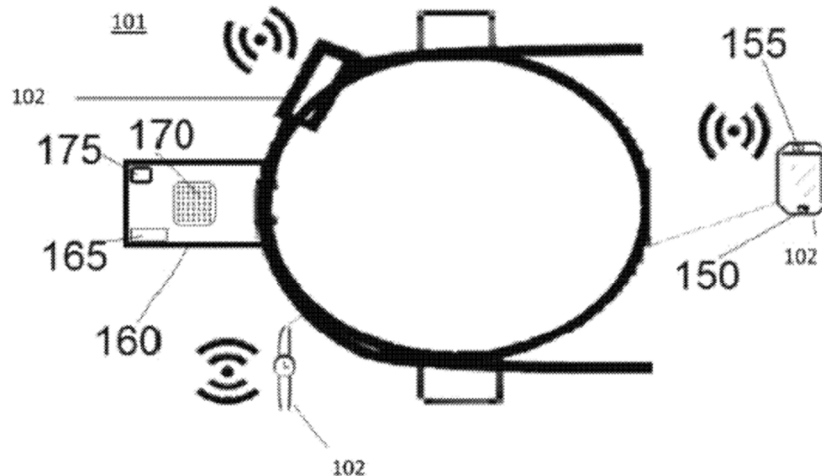


FIG. 1

EX1001, FIG. 1.

A computing device within the '016 patent's claimed *cluster of at least one computing device* “determine[s] whether or not the input signals match a set of predefined thresholds.” EX1001, 13:16-17. If a *sound sensing mechanism* of the respective computing device detects a sensed energy, the device “determines if the predefined threshold ... is breached,” such as a frequency or magnitude threshold. EX1001, 13:22-24; 14:16-20. If the threshold is breached, the primary computing device may “communicate its signal measurements to other devices within its cluster and the receiving device will conduct the same audio measurements to

confirm the threshold breach.” EX1001, 13:25-30. Altering a “dynamic range of the sensed audio help[s] sound(s) sit consistently in an audio mix (accomplished by removing sudden peaks).” EX1001, 17:10-16. And doing so also “eliminate[s] any audio in the predetermined hazardous range.” EX1001, 17:16-18.

Thus, to address the issues of prior art and improve sound management and manipulation systems, the '016 patent claims a novel way of controlling and altering sounds from sensed energies detected among a variety of computing devices. Specifically, the challenged independent claims—claims 32 and 39—recite, among other features, “*at least one cluster of at least one computing device that senses sound, wherein the at least one computing device “detect[s] a sensed energy” and “monitor[s] one or more parameters selected from the group of (i) an amplitude of the one or more sounds and (ii) a frequency of the one or more sounds, wherein at least one of the monitored one or more parameters is aggregated over time.”* EX1001, claims 32 and 39. The claimed computing device can “*vary[] an output of the at least one output device*”—as recited in claim 39—or “*receive an input from a user for manually adjusting a volume*”—as recited in claim 32. The claimed computing device may “*determin[e] if at least one of the monitored one or more parameters falls outside of a predetermined threshold,*” “*alter[] one or more of the one or more sounds so that at least one of the monitored one or more parameters does not fall outside of the predetermined*

threshold,” and “output[] the one or more sounds on the at least one output device.” See EX1001, claims 32 and 39.¹ The dependent claims of the ’016 patent further describe these innovative audio functionalities.

Accordingly, the ’016 patent describes and claims a novel system that provides audio management and manipulation functions for computing devices and output devices operating within a cluster. EX1001, 17:10-18. This implementation facilitates a personalized system of hearing protection for audio listeners. EX1001, 17:10-18. This audio manipulation and communication was a substantial improvement to the systems existing before the priority date of the ’016 patent.

IV. PROSECUTION HISTORY

During prosecution, the ’016 patent received one non-final Office Action in which several claims—none of which are challenged in the instant proceeding—were rejected under 35 U.S.C. § 112(a). EX1004, 188-196. The claims not rejected, such as the challenged claims, were deemed to contain allowable subject matter. EX1004, 191. To overcome the § 112(a) rejection, Patent Owner canceled the rejected claims, as well as other claims, to place the respective application in a

¹ Claim 32 also recites “transmitting an alert to the at least one output device that the one or more sounds includes the frequency or the amplitude inside of the predetermined threshold,” as will be discussed further below. EX1001, Claim 32.

condition for allowance. EX1004, 214-241.

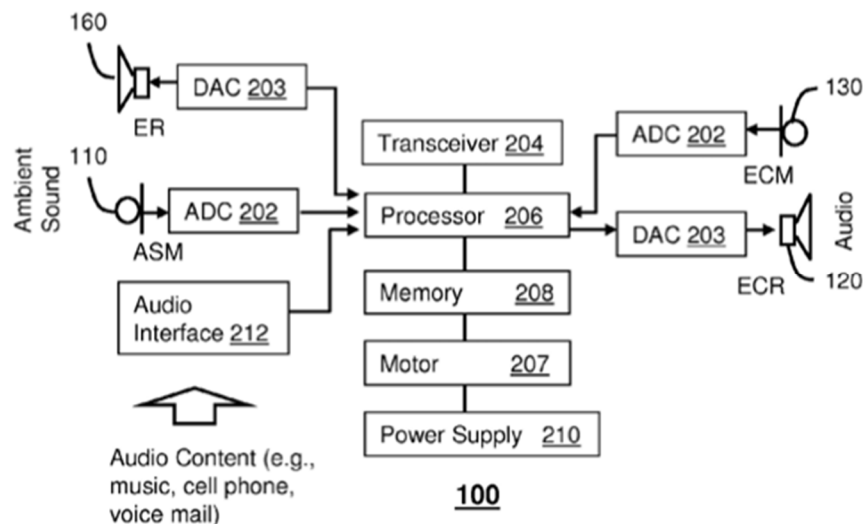
V. OVERVIEW OF THE APPLIED ART

A. Goldstein

Goldstein describes “a method and device for personalized hearing.”

EX1005, ¶6. In particular, Goldstein describes an earpiece device 100 including “an Ambient Sound Microphone (ASM) [110] to capture ambient sound, an Ear Canal Receiver (ECR) [120] to deliver audio to an ear canal [140], and an ear canal microphone (ECM) [130] to measure a sound pressure level within the ear canal.”

EX1005, ¶7. The earpiece “monitor[s] a sound pressure level both inside and outside an ear canal and enhance[s] spatial and timbral sound quality while maintaining supervision to ensure safe reproduction levels.” EX1005, ¶25. An architecture of the disclosed earpiece is depicted below:

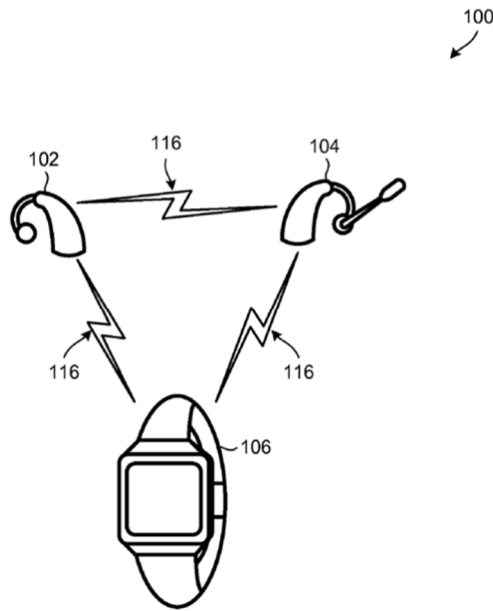


EX1005, FIG. 2.

Goldstein indicates that its method “can be implemented in a single earpiece, a pair of earpieces, or headphones.” EX1005, ¶31.

B. Newham

Newham describes a system for “balanc[ing] power consumption among wireless devices operating in a master-slave configuration by exchanging master and slave roles in a manner that is less noticeable to a user.” EX1006, ¶3. Newham “establish[es] a first communication link between a first wireless node and a second wireless node.” EX1006, ¶4. Newham swaps master and slave roles without requiring “that the communication link between the existing master device (e.g., a first earpiece) and the source device (e.g., media player) be terminated.” EX1006, ¶28. Newham’s “composite electronic device 100 may include a first earpiece 102, a second earpiece 104, and a wrist display 106” with wireless links that are “established at the factory so that the user perceives the composite electronic device 100 as a single component.” EX1006, ¶41. This system is reproduced below:

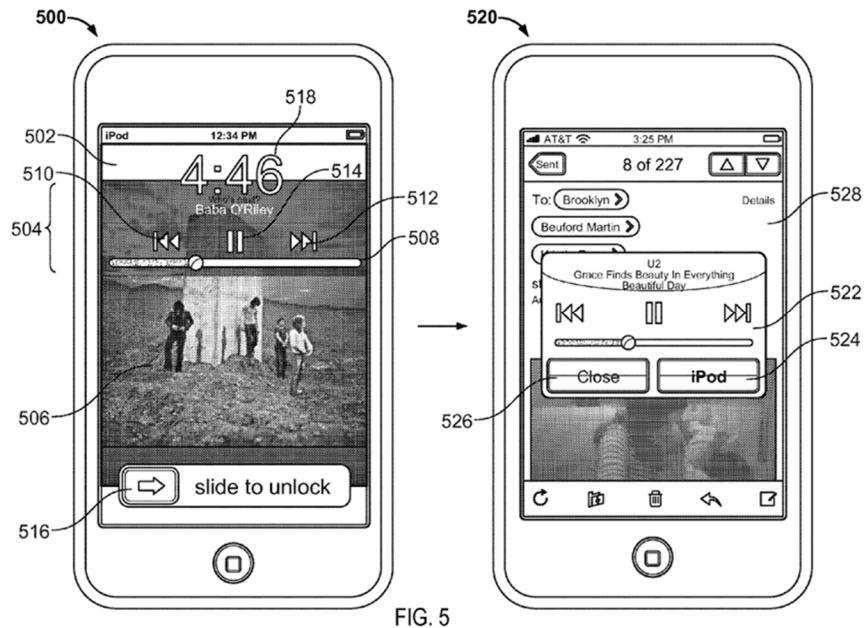


EX1006, FIG. 1.

C. Chaudhri

Chaudhri teaches “an audio file interface” that “display[s] a current view in a user interface of the mobile device.” EX1008, ¶4. The interface “receiv[es a] first user input requesting that an audio interface be displayed, and display[s] the audio interface as an overlay in the user interface.” EX1008, ¶4. Chaudhri’s interface may reflect a Graphical User Interface (GUI) by which “the touch-sensitive display 102 may present display objects related to various phone functions.” EX1008, ¶33. Chaudhri describes “the HUD [heads-up display] audio interface 504 includes the following user interface elements: a volume slide control 508, a reverse track control 510, a forward track control 512, and a pause/play control 514.” EX1008, ¶74. “[A] user can select and slide an indicator of the volume slide control 508 to

change the volume level of the device 100 or 101 for a particular audio file playing on the device.” EX1008, ¶75. Chaudhri’s touchscreen interface is reproduced below:



EX1008, FIG. 5.

VI. PERSON OF ORDINARY SKILL IN THE ART

At this stage of the proceeding, solely for purposes of this Preliminary Response, Patent Owner does not dispute Petitioner’s level of skill for a person of ordinary skill in the art (POSITA). Pet., 18-19. Patent Owner reserves the right to contest Petitioner’s level of skill for a POSITA should trial be instituted.

VII. CLAIM CONSTRUCTION

In an inter partes review, claims are “construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). All claim terms must be given their ordinary and customary meaning as understood by a POSITA at the time of the invention, in light of the specification and prosecution history of the patent. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc).

None of the arguments below relies on the construction of any specific claim term. Thus, no express construction is required for the Director to deny institution. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms ... that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). Patent Owner reserves the right to contest Petitioner’s implicit or explicit constructions should trial be instituted.

VIII. LEGAL STANDARDS

The Petition must identify, with particularity, the grounds and evidence that support finding the claims unpatentable. 35 U.S.C. § 312(a)(3). Petitioner must “specify where each element of the claim is found in the [relied upon] prior art patents.” 37 C.F.R. § 42.104(b)(4)). To comply with Rule 104(b)(4), the Petition

may not rely on expert testimony, common sense, or other “general knowledge” evidence to supply a missing claim limitation. Enforcement and Non-Waiver of 37 C.F.R § 42.104(b)(4) Memorandum (Acting Director Stewart, July 31, 2025) (“Rule 104(b) Memo”).

The Board makes its determination regarding institution based on what the Petition actually presents and not what it could have reasonably presented had it been drafted differently. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (holding that the Board is not “free to adopt arguments on behalf of petitioners that could have been, but were not, raised by petitioner during [the post-grant proceeding]”). The Board cannot “deviate from the grounds in the petition and raise its own” theories of invalidity. *Sirona Dental Sys. GmbH v. Institute Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018).

IX. ARGUMENT AGAINST INSTITUTION

Petitioner’s obviousness analysis of the challenged claims is crammed with numerous critical technical and legal flaws, many of which alone would favor denying institution. First, throughout the Petition, Petitioner’s own explanation of the applied references almost admits the references fail to teach each and every element of the challenged claims. In an attempt to remedy these technical deficiencies, Petitioner turns to unsupported by evidence, conclusory statements from its declarant and references not in the Grounds to fill gaps. Using a declarant

in this way violates Rule 104(b) and fatally destroys the Petition's obviousness theory of the challenged claims. And this is made worse by the fact that the Petition requires the Board to consider references *not included in the Grounds* to further gap-fill the deficiencies of the applied combinations. Additionally, Petitioner combines different embodiments of Goldstein without providing a motivation-to-combine rationale. And finally, Petitioner's application of the applied references towards the independent and dependent claims is changes theories based on what feature is being addressed, which make the arguments internally inconsistent and contradictory. These issues extend to all Grounds.

Additional deficiencies extend to the elements specific to claim 32 (Ground 2A).

Due to these pervasive technical and legal flaws, Petitioner has not met its burden to show a reasonable likelihood that any of the challenged claims is unpatentable.

A. All Grounds: Petitioner Fails to Adequately Show that the Applied References Teach Each and Every Element of the Challenged Claims

The Petition fails to establish a reasonable likelihood that any of the challenged claims is rendered obvious by the applied art.

1. Petitioner's application of the cited art to the independent claims includes numerous legal and technical flaws.

Petitioner's analysis of independent claims 32 and 39 is rife with logical

inconsistencies, improper reliance on expert testimony gap-filling and reliance on documents to support arguments when those documents are not found in the Grounds, and fundamental errors and mid-stream change in theories in the purported mapping of the references to the features of the claims. Therefore, Petitioner fails to meet its burden on institution to show a reasonable likelihood the challenged claims are unpatentable.

a. The Petition fails to establish Goldstein-Newman teaches the claimed “output device” in both independent claims.

Independent claims 32 and 39 recite “*at least one output device*” that is in communication with “*at least one computing device.*” The Petition relies on a fundamental misunderstanding of Goldstein, improper expert testimony, and an insufficient motivation to combine the cited references to support its allegation that Goldstein-Newham teaches this claimed feature. *See* Pet., 18-25 (claim 39[c]); *see also* Pet., 53-54 (pointing to the analysis of claim 39[c] for the “*output device*” recited in claim 32[c]).

First, regarding the claimed “*output device,*” Petitioner asserts, through its expert, Dr. Kyriakakis, that a POSITA *would have understood* Goldstein’s disclosure in paragraph 30 “to encompass earpiece 100 being in a master-slave arrangement with ... the other earpiece.” Pet., 18 (citing EX1002, ¶96). Petitioner’s obviousness theory for the “*output device*” hinges on its allegation that

Goldstein discloses a slave earpiece (including, as explained below, for its deficient reason to combine Goldstein-Newham). But that is not what Goldstein discloses. Goldstein describes that earpiece 100 can represent “a family of devices” configured in a master-slave arrangement, “for example, **a mobile device and an earpiece.**”² EX1005, ¶30. Goldstein separately describes its embodiments can be implemented in a single earpiece or “a pair of earpieces.” *See, e.g.*, EX1005, ¶¶31, 42. Thus, Goldstein distinguishes between “a pair of earpieces” and its “family of devices” configured in a master/slave relationship, such as a mobile device and an earpiece. EX2004, ¶¶40-41. Nowhere does Goldstein disclose an earpiece in a master-slave relationship **with another earpiece.**

Second, the Petition improperly relies on declarant testimony to support its deficient mapping. Petitioner’s sole support for its allegation that Goldstein teaches the alleged second “slave” earpiece is a conclusory statement from its declarant that, in his opinion, “a person of ordinary skill in the art would have understood” Goldstein’s disclosure of an earpiece to be in “a master-slave arrangement” with another earpiece. Pet., 18; EX1002, ¶96. Petitioner’s expert does not provide any additional supporting evidence for this naked assertion. In contrast, Dr. Mathew explains that a POSITA would not have understood Goldstein to disclose earpieces

² Emphasis added throughout unless otherwise noted.

in a master-slave relationship because such a relationship is of a different character than the example mobile device-earpiece relationship. EX2004, ¶¶42-43. Further, Goldstein distinguishes between its family of devices (such as a mobile device acting in a master relationship to communicate sound to a slave earpiece device) and a pair of earpieces. EX2004, ¶43. Petitioner's reliance on declarant testimony for a claim element, rather than disclosure in a prior art patent or publication, runs afoul of the requirements of Rule 104(b) and, thus, cannot be the basis for institution. *See* Rule 104(b) Memo.

Last, Petitioner's flawed analysis of Goldstein infects its reason to combine Goldstein with Newham. Petitioner admits that Goldstein "does not focus on the implementation details relating to how the pair of earpieces ... would operate in a master-slave arrangement" but alleges that a POSITA thus would have been motivated to look for information on how to implement Goldstein's pair of earpieces in such an arrangement. Pet., 18-19, 23. Petitioner further alleges a POSITA would have had a reasonable expectation of success because both Goldstein and Newham disclose earpiece systems that "operate in a master-slave arrangement." Pet., 24. But, as described above, Goldstein does *not* disclose earpieces in a master-slave relationship.

Thus, the Petition’s entire reason to combine Goldstein with Newham disintegrates, and Petitioner fails to meet its burden to provide adequate reasoning to support its proposed combination. EX2004, ¶44.

Because the Petition fails to establish Goldstein discloses an earpiece in a slave relationship—relied upon to meet the claimed “*output device*”—and does not provide a sufficient reason to combine Goldstein with Newham, Petitioner does not establish a reasonable likelihood of success in prevailing with respect to independent claims 32 and 39. EX2004, ¶45.

b. Petitioner’s obviousness analysis of the claimed “sound sensing mechanism” violates 35 U.S.C. § 312(a)(3) and Rule 104(b)(4).

Claim elements 39[b][i] and 32[b][i] recite “*a sound sensing mechanism, configured to: detect a sensed energy, wherein the sensed energy comprises one or more sounds; and monitor one or more parameters selected from the group of (i) an amplitude of the one or more sounds and (ii) a frequency of the one or more sounds.*” Petitioner’s obviousness analysis of these claim elements is fundamentally deficient and fails to meet the requirements of 35 U.S.C. § 312(a)(3) and Rule 104(b) because: (1) Petitioner improperly gap-fills the deficiencies of Goldstein with Goldstein864, which is *not* included in any of the Grounds; and (2) Petitioner wrongly asserts that Goldstein inherently teaches what is described in Goldstein864.

First, Petitioner admits that Goldstein itself “does not expressly disclose” how SPL is measured. Pet., 16. In an attempt to remedy the deficiencies of Goldstein, Petitioner improperly relies on Goldstein864—a reference that is not used in any of the Grounds—to support its position. Pet., 16 (indicating “Goldstein864 is **but one example of a reference** known to [a] POSITA that explains the formula for SPL.”). Such reliance on Goldstein864 is entirely improper and violates the Board’s regulation that a petition must identify the “specific statutory grounds . . . on which the challenge to the claim is based and the patents or printed publications relied upon for each ground.” 37 C.F.R. § 42.104(b)(2); *see also Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (holding that challenges to claim elements based solely on attorney argument “is not evidence”). Because Petitioner does not include Goldstein864 as one of the references in its Grounds, *see* Pet., 2, the Director should not consider any teachings from this reference.

Second, Petitioner’s obviousness theory appears to actually be an inherency theory, but Petitioner fails to explicitly call it that because its arguments and evidence cannot meet the high bar to establish inherency under the law. Petitioner admits that Goldstein864 is “not part of the unpatentability ground,” yet asserts that it “is used to demonstrate a POSITA’s knowledge.” Pet., 16 n.6. Petitioner’s obviousness theory tries to lower the high bar needed to establish inherency while

advancing the notion that the SPL formula in Goldstein⁸⁶⁴, which includes “a reference pressure” and “the root mean squared pressure amplitude in a measured pressure wave,” measures the same parameters that are recited in the claim (“(i) amplitude of the one or more sounds and (ii) a frequency of the one or more sounds). Pet., 16-17. Yet Petitioner fails to explain how these claimed parameters are *necessarily present* in Goldstein or elsewhere. See *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1194–96 (Fed. Cir. 2014) (describing that inherency in obviousness theories must explain how the missing limitation is *necessarily present* in the applied art). Petitioner’s barebones analysis does not meet this standard. Instead, Petitioner merely regurgitates its declarant’s opinions and alleges “SPL is a well-understood and well-defined concept in the art.” Pet., 17; EX1002, ¶89. Simply asserting that a POSITA **would have thus understood** that Goldstein⁸⁶⁴ satisfies a limitation missing from Goldstein does not explain how this limitation is *necessarily present* in Goldstein.

Moreover, Petitioner’s analysis ignores that a POSITA would understand there are other formulas that may be used to calculate a sound pressure level, as indeed is explicitly disclosed in Goldstein⁸⁶⁴. Dr. Mathew explains that SPL, when measured in decibels, is used to provide a loudness measurement and may be calculated using different weighting filters to highlight different frequency ranges. EX2004, ¶47. SPL dB, dB(A) (*i.e.*, A-weighting), and dB(C) (*i.e.*, C-Weighting)

can have different meanings and values. EX2004, ¶47. Indeed, Goldstein864 explicitly describes that sound pressure level may be calculated as a weighted value “to better emulate the sound as received at the ear” and describes a formula, different than that set forth in Equation 1, to calculate sound pressure level using weighted values. EX1010, 12:45-58, EX2004, ¶47. Thus, Petitioner and its declarant are flatly incorrect that Goldstein must necessarily measure SPL using the formula set forth in Equation 1 of Goldstein864. EX2004, ¶47.

For these reasons, Petitioner clearly fails to meet the standards set forth by 35 U.S.C. § 312(a)(3) and Rule 104(b)(4). A Petition “must specify where each element of the claim is found in the prior art patents or printed publications relied upon mean[ing] that ... expert testimony, common sense, and other evidence that is not ‘prior art consisting of patents or printed publications’ ... may not be used to supply a missing claim limitation.” Rule 104(b) Memo. Yet Petitioner does exactly what it is not permitted to do. Petitioner leverages conclusory support not included within the Grounds of the Petition to gap-fill the deficiencies of the primary Goldstein reference. Thus, the Petition fails to identify “with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3).

Petitioner does not establish a reasonable likelihood of success in prevailing with respect to independent claims 32 and 39. EX2004, ¶48.

c. Goldstein-Newham does not disclose “varying an output” of the “output device.”

Independent claims 39 and 32 recite “*varying an output of the at least one output device.*” Claim elements 39[d], 32[d]. Earlier in its mapping, Petitioner relies on Newham’s slave earpiece to teach the claimed “output device” limitation. Pet., 21, 25 (relying on the second earpiece (slave earpiece) as the output device outputting audio received from the master earpiece). Petitioner fails to show that Goldstein-Newham teaches *varying an output* of the slave earpiece.

Petitioner alleges Goldstein’s earpiece “selectively filter[s] out the measured noise from the ambient sound” and “mix[es] the audio content with the filtered sound to produce filtered audio.” Pet., 29 (quoting EX1005, ¶29). Petitioner then alleges that Goldstein-Newham teaches the claimed varying because “the first earpiece 100 is configured to . . . adjust a level of filtered ambient sound played by the second earpiece.” Pet., 30. But the first earpiece in Newham’s master-slave arrangement merely operates as a middleman device that relays audio originating from a third device. *E.g.*, EX1006, ¶53; EX2004, ¶¶50-51. Petitioner again relies on a conclusory (and incorrect) statement from its declarant alleging that a “POSITA would therefore have recognized that the processor 206 of first earpiece 100 would similarly adjust (e.g., decrease/increase) a level of the filtered sound

that is provided via both the first earpiece 100 and the second earpiece 100.” Pet.,

30. More importantly, even if correct, based on Petitioner’s prior mapping of the *second* (slave) earpiece to the claimed output device (Pet., 21, 25), Petitioner’s obviousness theory that focuses on varying output from the first earpiece utterly fails to explain how the combination teaches varying the output from the second earpiece. In fact, Petitioner expressly acknowledges that the second earpiece does not adjust audio in the ear canal. Pet., 30 (“a second earpiece 100 operating as a slave device would not . . . adjust the audio in the ear canal.”).

Accordingly, Petitioner fails to meet its burden in showing Goldstein-Newham discloses varying an output of an output device and thus does not establish a reasonable likelihood of success in prevailing with respect to independent claims 32 and 39. EX2004, ¶52.

d. Petitioner fails to establish Goldstein-Newham teaches the claimed “*altering ... one or more sounds.*”

Claim element 39[e][ii] recites, “*if at least one of the monitored one or more parameters falls outside of the predetermined threshold, altering one or more of the one or more sounds so that at least one of the monitored one or more parameters does not fall outside of the predetermined threshold.*” Claim elements 32[e][ii]-[iii] recite similar features.

Petitioner's obviousness theory fails to show, for multiple reasons, that the Goldstein-Newham combination teaches *altering one or more sounds* based on a determination that “*one of the monitored one or more parameters falls outside of the predetermined threshold.*”

Petitioner notes any adjustment of an SPL in Goldstein relies on “whether an SPL Dose threshold is exceeded.” Pet., 36; *see also* EX1005, ¶49, FIG. 6.

Petitioner's own analysis makes clear that Goldstein-Newham does not teach “altering ... one or more sounds” based on a determination that an SPL exceeds an Effective Quiet level. Pet., 36. Rather, for any adjustments to be made in Goldstein's system, the SPL Dose must be exceeded. EX1005, ¶49.

Goldstein describes that any adjustment to a level of filtered audio is predicated on the ***SPL Dose*** exceeding a threshold, ***not the SPL***. *See* EX1005, FIG. 6 (reproduced below)

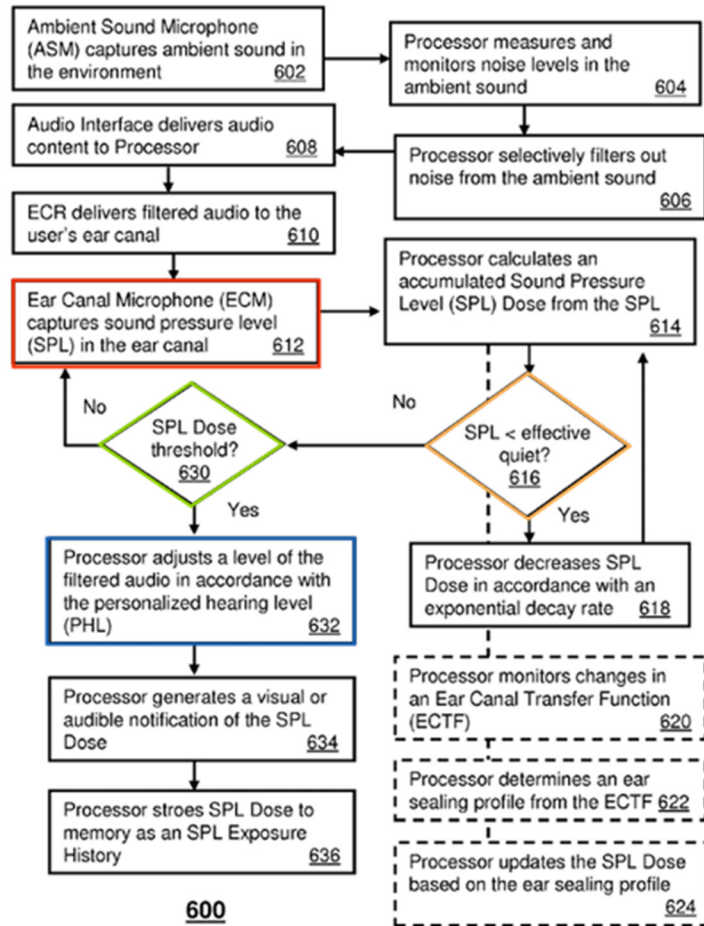


FIG. 6

EX1005, FIG. 6 (annotated by Patent Owner).

While Goldstein compares an SPL to an Effective Quiet level (orange), any adjustment to filtered audio (blue) is determined based on the SPL Dose threshold (green). Indeed, an SPL could exceed the Effective Quiet level (orange) but remain unadjusted (red) when the SPL Dose threshold is not exceeded (green). Thus, Goldstein teaches that filtered audio is adjusted only if the SPL Dose—which is not mapped to the claimed one or more monitored parameters—exceeds a threshold. *See* Pet., 15, 17. Nor does the SPL Dose teach the claimed monitored

“one or more parameters” (based on which the sounds are altered) because it is a percentage measurement of a time-weighted average for sound pressure exposure. *See* EX1005, ¶45.

Petitioner does not explain, and cannot, why the SPL Dose meets the claimed feature that the monitored one or more parameters are “*an amplitude*” or “*a frequency*” (32[b][i]/39[b][i]). Rather, the Petition first maps the monitored parameters to the SPL and then hopes the Director does not notice when the Petition switches theories midstream to rely on the SPL Dose. *See infra* Section IX.A.1.e.iii.

Because Petitioner’s erroneous reading of Goldstein fails to disclose “*altering one or more of the one or more sounds*” in the manner prescribed by the claims, Petitioner does not establish a reasonable likelihood of success in prevailing with respect to independent claims 32 and 39. EX2004, ¶¶53-59.

e. Petitioner Contradicts its Own Application of Goldstein-Newham to the Independent Claims Throughout the Petition.

Throughout the Petition, Petitioner contradicts its own application of Goldstein-Newham to the various claim elements of the independent claims. There are numerous examples where Petitioner’s mapping is inconsistent or alternates between theories, including for the following claim elements: “*at least one cluster*,” “*sensed energy compris[ing] one or more sounds*,” and “*at least one of*

the monitored one or more parameters ... fall[ing] outside of the predetermined threshold.”

i. Petitioner’s mapping of Goldstein to the claimed “*at least one cluster*” alternates theories throughout the Petition to meet the different features.

In addition to the issues explained above, Petitioner’s alternating theories of mappings are even more obvious in the Petition’s analysis of the claimed *computing device*, operating within a *cluster*, that is in communication with the *output device*.

Petitioner first alleges that a POSITA would understand Goldstein’s first earpiece 100—Petitioner’s alleged *computing device*—to be in wireless communication with a slave second earpiece 100—Petitioner’s alleged *output device*. Pet., 12-13. Petitioner alleges these components form *at least one cluster* via a connection to a Newham’s mobile device. *See, e.g.*, Pet., 12-13 (indicating **“Goldstein873 teaches a pair of earpieces communicatively connected to a mobile communication device (‘at least one cluster’)** including at least a first earpiece 100 having a processor 206 utilizing computing technologies such as a microprocessor, ASIC, and/or DSP (‘of at least one computing device’).”); *see also* Pet., 52 (Petitioner’s obviousness theory for claim element 39[a], which was adopted for claim element 32[a]).

Without acceding to Petitioner’s deficiencies of this mapping—*see supra* Sections IX.A.1.a-IX.A.1.d—Petitioner’s mapping with respect to these claim elements contradicts its alternative mapping of the claimed “*cluster*” later in the Petition for claim elements 32[d] and 39[d]. For these claim elements, Petitioner points to Goldstein’s first earpiece—Petitioner’s alleged *computing device*—to be in wireless communication with a slave second earpiece 100—Petitioner’s alleged *output device*. *E.g.*, Pet., 29-30. In other words, in its first mapping for claim element 39[a], Petitioner maps the *at least one cluster to the mobile device and the earpiece*, and then switches theories, without explanation, for element 39[d] when it maps the *at least one cluster* to Goldstein’s first earpiece 100 communicatively linked to the second earpiece 100.

The following table illustrates this inconsistency:

Claim Element	Petitioner’s Analysis for Claim Element 39[a]	Petitioner’s Analysis for Claim Element 39[d]
“at least one cluster of at least one computing device”	“Goldstein873 teaches a pair of earpieces communicatively connected to a mobile communication device (‘at least one cluster’) including at least a first earpiece 100 having a processor 206 utilizing computing technologies such as a microprocessor, ASIC, and/or DSP (‘of at least one computing device’).” Pet., 13.	“Goldstein873-Newham combination teaches the first earpiece (‘the at least one computing device’) ... wherein the first earpiece 100 is configured to establish a wireless communication link with a second earpiece 100 (‘for connecting to the at least one cluster’).” Pet., 30.

Petitioner simply ignores its continuous alternating of theories in mapping and relies on the Board, and Patent Owner, to either miss this strategy or decipher which part of the Goldstein-Newham combination allegedly teaches the claims.

ii. Petitioner’s mapping of Goldstein to the claimed *sensed energy* alternates theories throughout the Petition to meet the different features.

Petitioner also conflates the claimed *sensed energy compris[ing] one or more sounds* to different measured sounds in Goldstein. *Compare* Pet., 14-15 and EX1005, ¶43, *with* Pet., 31-34 and EX1005, ¶¶46-47; *see also* EX1001, claim elements 32[b][i]/39[b][i], 32[e][iv]/39[e][iii] (reciting the emphasized claim language).

Early in the Petition, Petitioner relies on Goldstein to allege “the ASM 110 [of the first earpiece] captures ambient sound in the environment” to purportedly disclose the claimed *sensed energy*. Pet., 14; *see also* EX1005, ¶43 (alleging the “[a]mbient sound can correspond to environmental noise such as wind noise, traffic, car noise, or other sounds including alarms and warning cues” corresponds to the “*one or more sounds*”). The Petition also alleges that the sound exposure levels corresponding to pass-through ambient sound and filtered audio captured by Goldstein’s ECM discloses the *sensed energy compris[ing] one or more sounds*. Pet., 15; EX1005, ¶44.

Yet later in the Petition, Petitioner alleges the filtered sound outputted by Goldstein's ECR discloses the '016 patent's *sensed energy*. Pet., 36, 38. Petitioner fails to show how the computing device detects the already filtered environmental noise already outputted and adjusted to the user's ear. This new theory presents yet another alternative theory that is again an inconsistent mapping within the Petition.

A table is included below for illustrative purposes:

Claim Element	Petitioner's Analysis for Claim Element 39[b][i]	Petitioner's Analysis for Claim Element 39[e][ii]/[iii]
"a sensed energy compris[ing] one or more sounds"	"[T]he ASM 110 [of the first earpiece] captures ambient sound in the environment" which includes "environmental noise such as wind noise, traffic, car noise, or other sounds including alarms and warning cues." Pet., 14 The ECM "detect[s] sound exposure levels within the ear canal 140 ... corresponding to pass-through ambient sound and filtered audio." Pet., 15.	"[T]he filtered sound delivered to the user's ear canal by the ECR." Pet., 36. "[T]he adjusted filtered sound to be delivered to the ear canal of the user." Pet., 38.

Petitioner simply forces the Board and Patent Owner to accept that the *sensed energy* must be the ambient sound detected by Goldstein's Ambient Sound Microphone 110 or the sound exposure level detected by Goldstein's Ear Canal Microphone 130 in one part of the Petition. And that the *sensed energy* can just be the filtered sound delivered to the user's ear in another part of the Petition without

explaining why. Petitioner’s failure to address these inconsistencies is again fatal to the Petition.

- iii. **Petitioner’s mapping of Goldstein to the recited “*monitored one or more parameters*” that falls outside of a “*predetermined threshold*” changes from the earlier mappings in an attempt to satisfy the claimed features.**

Additionally, Petitioner’s characterization of Goldstein for the *predetermined threshold* of the *monitored one or more parameters* recited in 39[e][ii] is inconsistent with its characterization of Goldstein for 39[b][i].³

Earlier in the Petition, Petitioner mapped the “monitored one or more parameters” to be the “amplitude of one or more sounds.” Pet., 15-17 (analyzing claim element 39[b][i]). Petitioner does not establish that Goldstein⁸⁶⁴’s Equation 1 for measuring SPL is necessarily present in Goldstein and, as a result, fails to establish that Goldstein monitors an amplitude of a sensed energy. Pet., 16-17; *but see supra* Section IX.A.1.b (pointing out the errors with Petitioner’s allegation that Goldstein teaches the claimed *amplitude*). Yet, Petitioner’s mapping of Goldstein to subsequent claim elements twists which parameter Goldstein is monitoring in view of a *predetermined threshold*.

³ The same is also true for claim elements 32[e][iii] and 32[b][i], as these claim elements are substantially similar to their claim 39 counterpart elements.

Petitioner alleges that if the SPL exceeds a threshold in Goldstein's system, it is adjusted to be below an Effective Quiet level. Pet., 35-36; *see also* Pet., 60 (adopting the prior analysis of claim element 39[e][ii] for its analysis of 32[e][iii]). And yet, for claim elements 32[e][iii] and 39[e][ii], Petitioner's application of Goldstein to the challenged claims suddenly changes. Petitioner alleges that "an amplitude of the filter sound" is adjusted once "SPL ... exceed[s] the Effective Quiet level **and** ... an SPL Dose threshold has been exceeded." Pet., 36. In other words, Petitioner's mapping of the "amplitude" changes theories, without any explanation or acknowledgement, to require a combined threshold in which both the SPL must exceed the Effective Quiet level **and** SPL Dose must exceed the SPL Dose threshold to be exceeded before any action is taken.

A table is included below to illustrate this inconsistency.

Claim Element	Petitioner's Analysis for Claim Element 39[b][i]	Petitioner's Analysis for Claim Element 39[e][ii]/[iii]
" <i>monitor[ed]one or more parameters</i> " that are determined to " <i>fall outside of a predetermined threshold.</i> "	A POSITA would thus have understood SPL to be a function of amplitude (i.e., the root mean squared pressure amplitude in a measured pressure wave) captured using a transducer (such as ASM 110 or ECM 130)." Pet., 18, EX1002, ¶89.	"[T]he Goldstein873-Newham combination teaches, responsive to determining that a captured amplitude of a sound exceeds a predetermined value ... that causes a corresponding SPL to exceed the Effective Quiet level and that an SPL Dose threshold has been exceeded , adjusting a level of the filtered sound delivered to the user's ear canal by the ECR." Pet., 36.

Petitioner makes no effort to explain why its theories of mapping change midstream. This is clearly done to mask the deficiencies of applying Goldstein to the claims, and requires the Board to perform mental gymnastics for the Petitioner's mapping to work. According to Petitioner, the recited "*predetermined threshold*" must include a combined threshold of the Effective Quiet level **and** the SPL Dose threshold and the *monitored one or more parameters* must include both the SPL and the SPL Dose.

The Petitioner "is master of its complaint" and has a responsibility to make its challenges plain and clear. *SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 363 (2018);

see NearMap U.S., Inc., v. Eagle View Techs., IPR2024-00716, Paper 9 at 13

(PTAB Oct. 24, 2024); *see also* 37 C.F.R. § 42.104 (“The petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon.”). Contradictory and paradoxical claim mappings deviate from this requirement and further reinforces Petitioner’s inability to establish a reasonable likelihood of success in prevailing with respect to independent claims 32 and 39.

* * *

Petitioner’s obviousness theory for the independent claims includes numerous fatal technical and legal flaws. Accordingly, the Petition fails to establish a reasonable likelihood that the independent claims of the ’016 patent are rendered obvious. Institution should therefore be denied.

2. Petitioner’s challenges to the dependent claims are deficient for additional reasons.

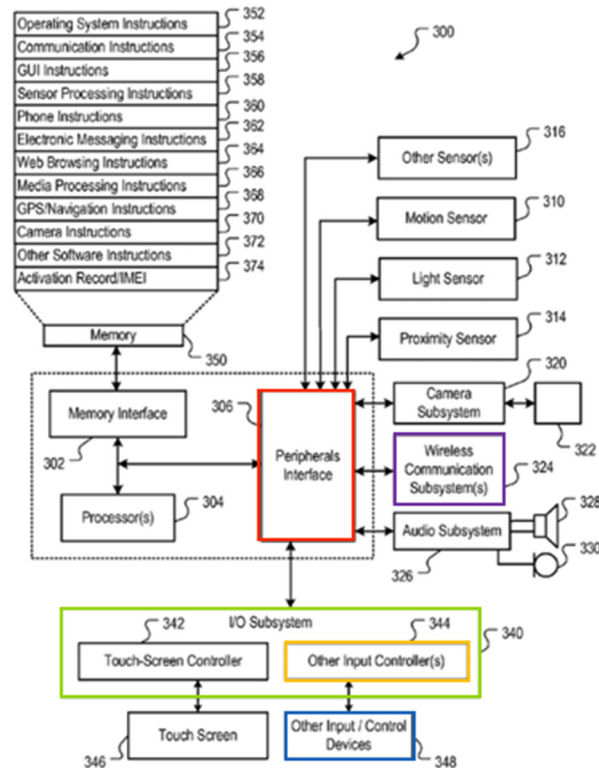
Petitioner’s obviousness theory for the challenged dependent claims additionally includes inaccurate technical assessments, inconsistent claim mappings, and a detrimental reliance on declarant testimony. The Petition’s deficient analysis of the dependent claims further confirms Petitioner’s inability to establish a reasonable likelihood of invalidating any of the challenged claims. Institution should be denied.

a. Petitioner fails to meet its burden to show Chaudhri teaches the claimed *interfacing mechanism* of claim 33.

Petitioner's obviousness theory for the claimed *interfacing mechanism* fails for at least two reasons. Petitioner fails to show that the combination renders obvious: (1) the *network adapter* recited in claim element 33[b] and (2) the *at least one input mechanism* recited in claim elements 33[c]-[d].

First, Claim 33[b] recites “*a network adapter, configured to transmit and receive electronic information through both wired and wireless communication.*” Petitioner alleges Chaudhri's peripherals interface—via its connection to various sensors, devices, and subsystems—discloses the claimed *network adapter*. Pet., 61-63 (citing EX1009, ¶¶55, 57, 60). But Petitioner's obviousness theory fails because Chaudhri's described peripherals interface is not “configured to transmit and receive[] data via a wired connection by virtue of its connection to the USB port.” Pet., 63. Chaudhri does not disclose receiving and transmitting electronic information through wired and wireless communications **via the peripherals interface**.

Chaudhri's system, as cited by Petitioner, is depicted below:



EX1008, FIG. 3 (annotated by Patent Owner).

FIG. 3 of Chaudhri depicts other input controllers 344 (yellow) coupled to other input/control devices 348 (blue) via a USB port. EX1008, ¶¶59, 60. Contrary to Petitioner's assertions, Chaudhri does not describe its peripherals interface 306 as being connected to a USB port. Instead, Chaudhri's other input controllers 344 are connected to the USB port. EX1008, ¶¶59, 60. Chaudhri also describes the I/O subsystem 340 (green)—via the other input controllers 344—as the component configured to transmit and receive data via a wired connection. EX1008, ¶¶59, 60. Similarly, Chaudhri only describes its wireless communication subsystem 324

(purple) as performing wireless transmission and reception functionality. EX1008, ¶57. Chaudhri makes **no mention** that its peripherals interface is configured to perform these functions. Petitioner’s conclusory assertion, parroting its declarant, that “[a] POSITA **would have understood** that peripherals interface 306” is configured to perform the recited wired and wireless functions by virtue of its connection to subsystems is not supported by Chaudhri’s disclosure. Pet., 63. Petitioner, therefore, fails to meet its burden in rendering claim 33 obvious for at least this reason.

Second, claim elements 33[c] and 33[d] recite *at least one input mechanism configured to: ... vary the output of the at least one output device*. See EX1001, Claim 33. Petitioner adopts its analysis of claim element 32[e][iv] as rendering claim element 33[d] obvious and, in doing so, inherits the same deficiencies of that analysis. See *infra* Section IX.B. Moreover, Petitioner fails to show how the “touch screen interface” of Chaudhri varies the output of the *output device*. Compare Pet., 64-65 and EX1008, ¶60, with EX1001, 12:59-61 (indicating the audio control source includes input mechanism 186). Instead, Chaudhri only describes adjusting the volume of the mobile device (i.e., Petitioner’s alleged interfacing mechanism). EX1008, ¶¶74-75. Nowhere does Chaudhri describe adjusting the volume of anything comparable to Goldstein’s earpiece. See, e.g., EX1008, ¶¶60, 74-75. Goldstein similarly does not describe receiving audio adjustments from a mobile

device, and instead only contemplates adjusting volume based on stimuli captured by the components of the earpiece or simply, without any further explanation, from a “user.” EX1005, ¶¶4, 42-52, FIG. 6; *see also* Pet., 54-58 (Petitioner’s initial motivation-to-combine rationale for the Goldstein-Newham-Chaudhri combination). Petitioner’s allegations that Chaudhri teaches this claim element fall flat; there are no teachings from Chaudhri, Goldstein, or elsewhere that describe varying the output of an output device. Nor does Petitioner present reasons why or how Chaudhri’s touch screen varies such an output. Petitioner therefore fails to meet its burden in rendering claim 33 obvious for at least this additional reason.

Petitioner’s analysis does not fully and clearly explain how the combination of Goldstein, Newham, and Chaudhri renders obvious claim 33. Therefore, Petitioner fails to provide a reasonable explanation for institution of this dependent claim.

b. Petitioner’s obviousness theory for Claim 36 both fails to render claim 36 obvious and once again relies on alternating theories, resulting in an inconsistent mapping of Goldstein.

Dependent claim 36 recites “*wherein the predetermined threshold equates to a frequency or an amplitude determined to pose a risk of harm to a user's hearing capabilities.*” Petitioner’s analysis of this element is flawed because: (1) Petitioner’s mapping of Goldstein to the claim does not render claim 36 obvious and (2) Petitioner’s analysis of claim 36 inherits the internal inconsistencies of

Petitioner's obviousness theory of the independent claims. *See supra* IX.A.1; *see, e.g.,* Pet., 14-17, 36-38 (Petitioner's mapping of the claimed *predetermined threshold*).

i. Petitioner's mapping of Goldstein to claim 36 does not render the claim obvious.

Petitioner's obviousness theory for claim 36 is fatally flawed because it relies on declarant testimony, as opposed to the applied art from the Grounds. Even so, Petitioner's application of Goldstein to claim 36 fails to teach the claim.

Petitioner's obviousness theory of claim 36 again parrots conclusory statements from its declarant for this claim. Petitioner's declarant opines "[a] POSITA **would thus have understood** the Effective Quiet Level to be a predetermined threshold for which exposure to sound levels exceeding it may result in permanent hearing loss." Pet., 65-66; EX1002, ¶¶210-212. But as Dr. Mathew discusses, a POSITA would not have understood the Effective Quiet level to be the predetermined threshold for which exposure to sound levels exceeding it may result in permanent hearing loss because an Effective Quiet level is not a ubiquitous hearing loss indicator. *See* EX2004, ¶62 (describing multiple additional audio and acoustical metrics for determining a risk of hearing loss).

Not only does this analysis violate Rule 104(b) by relying on declarant testimony, rather than the disclosures from a prior art patent or publication, to try to satisfy a claim element, it is also contradicted by the reference itself. Goldstein

describes that it is the SPL Dose, *not* the Effective Quiet level, that may be measured to “assess an acceptable level of sound exposure” as it “relates to sound exposure and sensorineural hearing loss.” EX1005, ¶44.

Thus, Petitioner fails to establish claim 36 would have been obvious over Goldstein-Newham.

ii. Petitioner’s obviousness theory of claim 36 once again alternates theories causing internal inconsistencies in the obviousness theory for the challenged independent claims.

As discussed above, Petitioner relies on Goldstein’s adjustment to indicate that **both** the SPL (the alleged *monitored parameter*) and the SPL Dose (a percentage) must deviate from respective thresholds. *See supra* Section IX.A.1.b; Pet., 14-17.

Indeed, Goldstein requires two respective thresholds for the SPL and SPL Dose—which are two distinct measurements—must be exceeded to adjust any audio delivered to a user. EX1005, ¶¶43, 49. Unlike Petitioner’s mapping, the Effective Quiet level cannot itself be the alleged *predetermined threshold* because such a parameter can be exceeded without resulting in an adjustment to the output of the output device.

Petitioner does not map SPL Dose to the monitored one or more parameters recited in the claims, nor can it because the SPL Dose results in a percentage and not an amplitude. *See* EX1005, ¶45.

* * *

Accordingly, Petitioner fails to satisfy its burden in presenting the invalidity of claim 36.

c. Petitioner’s obviousness theory for Claim 37 fails to show why filtering a user’s voice discloses equalizing the *sensed energy*.

Claim 37 recites “*wherein the computer-executable instructions further include steps selected from the group consisting of: panning the sensed energy; and equalizing the sensed energy.*” Similar to the deficiencies identified for claim elements 32[b][i]/39[b][i], *see* Sections IX.A.1.b-c, Petitioner introduces a new reading just for this dependent claim and then improperly equates the new reading using Goldstein’s filtered user speech as the claimed *sensed energy*. *See* Pet., 66-67.

Here, Petitioner introduces another new mapping of the claimed “*sensed energy*”—from a different embodiment of Goldstein discussed in further detail below, *see infra* Section IX.C—espousing that the filtered “sound of the user’s voice captured at the ASM” also equates to the claimed *sensed energy*. Pet., 66 (quoting EX1005, ¶60). Petitioner, in its discussion of the independent claims,

indicates that Goldstein's earpiece detects two distinct sensed energies, (1) environmental noise such as wind noise, traffic, car noise, or other sounds including alarms and warning noises via the earpiece's ASM and (2) "sound exposure levels within the ear canal 140 ... corresponding to pass-through ambient sound and filtered audio." Pet., 14-15; *see also* EX1005, ¶¶44-47. Yet here Petitioner cites user speech. But Goldstein illustrates that "environmental noise" is distinct from detected user speech. *See* EX1005, ¶43 (describing the earpiece processor as distinguishing between the user's voice and the environmental noise).

Petitioner's own reading of Goldstein fails to render obvious claim 37. Goldstein discloses equalizing **the audio output delivered** to the user's ear canal. To do so, the earpiece's processor "compare[s] the spectrum captured at the ASM 110 with the spectrum at the ECM 130, and equalize[s] for the difference." EX1005, ¶60. Therefore, to perform an equalization, Petitioner's reading of Goldstein requires measuring **two distinct sounds**—the sound external to the user's ear canal via the ASM and the sound internal to the user's ear canal via the ECM—and equalizing audio content that is entirely distinct from Petitioner's previously identified sensed energies. EX1005, ¶¶60-61, FIG. 7. The Petition is entirely silent on these discrepancies.

Because Petitioner newly introduces Goldstein's filtered user speech and then improperly equates Goldstein's filtered user speech to the claimed *sensed*

energy, Petitioner fails to provide a reasonable expectation of invalidating claim 37 and institution should be denied.

d. Petitioner improperly re-writes Claim 38 and still fails to show its fictitious read of Claim 38 is obvious.

Claim 38 recites “*an in-ear device, wherein an audio output of the in-ear device auto-adjusts based on signal energy sensed within a cluster or surrounding clusters.*” Petitioner’s obviousness analysis for this claim element is deficient for several reasons.

First, Petitioner improperly rewrites claim 38. Petitioner interprets claim 38 “as if claim 32 were written as ‘... at least one output device including an in-ear device, wherein an audio output of the in-ear device auto-adjusts based on signal energy sensed within a cluster or surrounding clusters, the at least one output device including.’” Pet., 68. But claim 32 recites a “system comprising . . . at least one output device,” and claim 38 recites, the “system of claim 32, further comprising: an in-ear device” Thus, Petitioner rewrites claim 38 as if the output device of claim 32 includes the in-ear device of claim 38.

Such rewriting is improper because a petitioner cannot rewrite claim language; only reviewing courts correct “obvious minor typographical and clerical errors in patents.” *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357

(Fed. Cir. 2003). Even if Petitioner may provide an alternative claim construction,⁴ re-writing claim language is allowable only if “(1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification; and (2) the prosecution history does not suggest a different interpretation of the claims.” *Novo Indus.*, 350 F.3d at 1354. The error must be “evident from the face of the patent,” *Grp. One, Ltd. v. Hallmark Cards, Inc.*, 407 F.3d 1297, 1303 (Fed. Cir. 2005). Petitioner’s analysis ignores such requirements and instead relies on conclusory statements from its expert. *See Pet.*, 67-68 (alleging “a POSITA would have understood the plain and ordinary meaning of this claim to encompass” the alternative claim language). Petitioner’s reliance on its declarant does not allege the alternative claim construction corrects an obvious typographical or clerical error. Nor does Petitioner’s declarant explain how the correction is not subject to reasonable debate based on the claim language and specification of the ’016 patent or provide any contemplation of the ’016 patent’s prosecution history. Accordingly, Petitioner’s improper rewriting of the claim language by itself is fatal to Petitioner’s obviousness analysis.

Second, Petitioner’s mapping of Goldstein to even rewritten claim 38 is

⁴ Note that in its claim construction section, Petitioner explicitly declared that “no express constructions of the claims are necessary.” *Pet.*, 9-10.

fundamentally deficient. Petitioner leverages Goldstein to map the earpiece device as the *in-ear device* and the sound exposure level as teaching the claimed *signal energy sensed within a cluster or surrounding clusters*. Pet., 68-69. However, Petitioner had already mapped these characteristics of Goldstein earlier in the Petition. *See, e.g.*, Pet., 12-15, 28-30 (Petitioner’s mappings of the *computing device*, *output device*, and *sensed energy*). Without an explanation as to why a component of Goldstein’s disclosure satisfies multiple claim features, Petitioner fails to point out “with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3).

Because Petitioner rewrites claim 38 to advance inconsistent and contradictory claim mappings, Petitioner fails to provide a reasonable expectation of prevailing.

e. Petitioner’s obviousness theory again advances a mapping of Goldstein that does not teach Claim 40 and is inconsistent with its prior application of Goldstein to the challenged claims.

Claim 40 recites “*wherein the sensed energy originates from an environment or from an in-ear device paired with the system.*” Petitioner’s obviousness theory: (1) relies on an application of Goldstein that does not render claim 40 obvious; and (2) advances a mapping of Goldstein that is inconsistent with Petitioner’s prior analysis of the independent challenged claims.

i. Petitioner’s obviousness theory does not teach Claim 40.

Petitioner alleges paragraphs 43 and 44 of Goldstein teach this claim. Pet., 39. For instance, Petitioner alleges that Goldstein’s “ASM 110 captures ambient sound in the environment” and separately describes that Goldstein’s “ECM 130 captures sound exposure level in the ear canal 140 attributed at least in part to pass-through ambient sound [] and filtered audio.” Pet., 39 (quoting EX1005, ¶¶43-44). Yet these mappings fail for this claim for similar reasons discussed with respect to claim element 39[e][ii]. *See supra* Section IX.A.1.d.

First, Goldstein simply does not describe adjusting ambient sound received by its earpiece 100’s ASM 110 by monitoring a frequency or amplitude of the ambient sound and determining it exceeds a threshold (nor does Petitioner rely on Goldstein as doing so) EX1005, ¶¶43-44, 49. Second, while Goldstein describes adjusting filtered audio captured by its earpiece 100, it adjusted only if the SPL Dose—which is not mapped to the claimed one or more monitored parameters—exceeds a threshold. *See* Pet., 15, 17; EX1005, ¶49.

Therefore, Petitioner’s mapping of the ambient sound and sound exposure level captured by distinct components of Goldstein’s earpiece 100 cannot and does not render claim 40 obvious.

ii. Petitioner's obviousness theory for Claim 40 relies on an internally inconsistent and unworkable mapping of Goldstein.

Petitioner's application of Goldstein to the challenged independent claims contradicts its mapping of Goldstein to Claim 40.

For the independent claims, Petitioner alleges Goldstein's captured ambient sound (detected by the ASM) **and** sound exposure level (the captured pass-through ambient sound and filtered audio detected by the ECM) as teaching *the sensed energy*. See Pet., 14-15; see also *supra* Section IX.A.1. And when analyzing independent claim 39—including, for example, the claim elements under 39[e]—Petitioner **only** maps Goldstein's sound exposure level as the *sensed energy*. See Pet., 30-38. As a result, Petitioner's obviousness theory only manipulates the sound exposure level detected by Goldstein's Ear Canal Microphone 130. For that reason, Petitioner cannot rely on the captured ambient sound as teaching the *sensed energy* recited in Claim 40. Petitioner simply makes no attempt to describe how Goldstein's earpiece manipulates the ambient sound received from its ASM to remedy this internal inconsistency. Petitioner simply lumps these two distinct sounds, captured by two distinct components of Goldstein, together hoping the Board would not notice.

Thus, Petitioner relies on an internal inconsistency regarding its mapping of Goldstein to the challenged claims as an attempt to teach claim 40 (it does not).

Compare Pet., 30-38, *with* Pet., 39-40.

* * *

Petitioner thus fails to provide a reasonable expectation of prevailing with respect to claim 40.

f. Petitioner’s obviousness theory for Claim 43 relies entirely on information outside of the applied art listed in the Grounds and violates Rule 104(b).

Claim 43 recites “*wherein at least one output device comprises a smart speaker.*” Goldstein does not disclose this functionality. *See* Pet., 41-44. Instead, Petitioner simply regurgitates the generic structural components of Goldstein and relies entirely on its declarant and Goldstein864, a reference not included in the Grounds, to fill in the gaps. Pet., 41-44.

Similar to its analysis of claim element 39[b][i], Petitioner’s obviousness theory appears to actually be an inherency argument masked under an obviousness veil to avoid the higher threshold needed to establish inherency. Petitioner tries to covertly smuggle an inherency argument past Patent Owner and the Board by alleging that Goldstein’s earpiece may be used as a “smart device,” but relies on Goldstein864, a reference not included in the Grounds, as allegedly disclosing such functionality. Pet., 44 (citing to EX1010, 8:30-38, not Goldstein for this argument).

Petitioner again fails to explain how Goldstein864's teachings are *necessarily present* in Goldstein or elsewhere. *See PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1194–96 (Fed. Cir. 2014) (describing that inherency in obviousness theories must explain how the missing limitation is *necessarily present* in the applied art). Instead, Petitioner simply asserts that because Goldstein864 discloses “smart device” capabilities, “[a] **POSITA would have understood**” Goldstein also discloses these functions. Pet., 44. Petitioner's declarant, parroted by Petitioner, simply asserts this to be true because both systems “perform[] complex computing tasks that also have a speaker component to output sounds.” Pet., 44; EX1002, ¶157. Relying on such conclusory statements not incorporated into the references cited in the Grounds is improper and violates Rule 104(b) and 35 U.S.C. § 312(a)(3). *See Deeper, UAB*, IPR2018-01310, Paper 7 at 25 (citing *In re Magnum Oil*, 826 F.3d. 1364, 1380 (Fed. Cir. 2016) (indicating a petitioner cannot use mere conclusory statements satisfy its burden to prove obviousness)).

And as Dr. Mathew explains that a POSITA would not have understood Goldstein to inherently include a “smart speaker” because the applied Goldstein references involve different implementations and objectives, one for personalized hearing (Goldstein) and another for ear-health monitoring (Goldstein864). *See* EX1005, ¶2; EX1010, 1:12-15; EX2004, ¶67.

Accordingly, Petitioner fails to provide a reasonable expectation of prevailing on this claim, further reinforcing the notion that institution should be denied.

Petitioner's analysis of the dependent claims is rife with fatal technical and legal errors, each of which taken alone would be enough to sink the Petition. Thus, Petitioner fails to establish a reasonable likelihood of success in prevailing in this proceeding and institution should be likewise denied.

B. Ground 2A: Petitioner's Application of Goldstein, Newham, and Chaudhri to Claim 32 Fails to Render Obvious Claim 32

Petitioner's obviousness theory for the claim elements unique to claim 32 also contains numerous foundational technical and legal errors. *First*, Petitioner fails to show how Goldstein teaches *aggregat[ing] one of the monitored one or more parameters ... over time*. Claim element 32[b][1]. And *second*, Petitioner's reading of Chaudhri is based on a technical misunderstanding of Chaudhri's functionality within the proposed combination and fails to teach *receiving an input from a user for manually adjusting a volume*, claim element 32[e], and *transmitting, to the at least one output device, an alert*, claim element 32[e][ii]. Accordingly, Petitioner further fails to establish a reasonable likelihood of prevailing with respect to claim 32.

1. **Petitioner fails to show how Goldstein teaches “*wherein at least one of the monitored one or more parameters is aggregated over time*” as recited in Claim Element 32[b][i].**

Claim 32 recites “*wherein at least one of the monitored one or more parameters is aggregated over time.*” EX1001, Claim element 32[b][1]. Goldstein does not explicitly disclose this feature. Instead, Petitioner merely alleges “[a] POSITA would have understood SPL Dose is a value derived by aggregating SPL values over time and thus a time aggregate of amplitudes.” Pet., 53.

Goldstein teaches that SPL Dose is a “**percentage of a maximum time-weighted** average for sound pressure level exposure” resembling “an individual's cumulative exposure to sound pressure levels over time.” EX1005, ¶45.

Notwithstanding the notion that Goldstein does not disclose SPL Dose being an amplitude, *see supra* Section IX.A.1.c, Petitioner fails to identify how a percentage value is an “*aggregate[]*” of a monitored parameter (e.g., amplitude). Indeed, as Dr. Mathew opines, a POSITA would not have understood that SPL Dose is a value derived by aggregating SPL values over time because SPL Dose is merely a percentage of time over which a person is exposed to harmful noises. EX2004, ¶71. Deriving a time-weighted average is of a different character than “aggregating” any monitored parameter. *Id.* Thus, Petitioner’s obviousness theory again relies on its declarant to inadequately supplement the deficiencies of Goldstein, violating Rule 104(b). *See* Rule 104(b) Memo.

Accordingly, Petitioner fails to provide a reasonable expectation of prevailing with respect to claim element 32[b][i].

2. Petitioner's application of Goldstein, Newham, and Chaudhri to claim elements 32[e]-[iii] once again has numerous deficiencies.

For its obviousness theory for the claim elements 32[e]-32[e][iii], Petitioner proposes numerous deficient constructions of Goldstein, Newham, and Chaudhri that fail to disclose the challenged claim elements. For example, Petitioner fails to show how the combination of Goldstein-Newham-Chaudhri teaches: (1) *receiving an input from a user for manually adjusting a volume*; and (2) *transmitting, to the at least one output device, an alert*.

Regarding (1), Petitioner starts with Goldstein's earpiece connected to a media player. Petitioner's allegations rely on Chaudhri's touchscreen device as disclosing *manually adjusting a volume* of an earpiece (mapped to the claimed *computing device*). Pet., 54-56. Although Chaudhri discloses adjusting a volume on the mobile device, nowhere does Chaudhri disclose using the touch screen to adjust the volume of the earpiece connected to the mobile device. EX1008, ¶¶33, 39. Chaudhri is directed to how audio functionality is *displayed* to a user, not how audio functionality is *adjusted* by a user. *See, e.g.*, EX1008, Abstract; *see also id.*, ¶¶60, 74-75. Goldstein does not describe *how* a *user*—and, more specifically, a user's mobile device—adjusts volume to the earpiece. Pet., 55; *see also* EX1005,

¶4 (stating, “people are frequently exposed to noise pollution from [electronic devices]” to which a “user may even turn up the volume to hear the audio over the background noises”). Since Goldstein-Newham does not disclose how volume is manually adjusted by a user and Chaudhri’s alleged implementation details fail to disclose adjusting a volume on Goldstein’s earpiece, Petitioner’s obviousness theory boils down to its declarant’s conclusory statements on the combination itself. *See* Pet., 56-58. As such, Petitioner’s argument for claim element 32[e] is based entirely on information outside of the applied art of the Grounds and is fatal to the Petition. *See* 37 C.F.R. § 42.104(b)(2); *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (holding that challenges to claim elements based solely on attorney argument “is not evidence”); *see also supra* Section IX.A.2.a (noting a similar deficiency to Petitioner’s analysis of the independent claims).

Regarding (2), the Petition fails to indicate how Goldstein discloses *transmitting, to the at least one output device, an alert*. Pet., 59-60. Petitioner merely relies on its declarant to opine that a POSITA would have recognized it would have been obvious to transmit an alert to the speakers of Goldstein’s earpiece if the predetermined value is exceeded. Pet., 59-60. Here, Petitioner conflates and improperly switches its mapping of *output device* to the *computing device*, as the audio warning is sent to “each of earpieces 100.” Pet., 60.

Petitioner's obviousness theory therefore requires the output device to transmit the alert to itself, which is not what claim 32 recites. Petitioner also relies entirely on its declarant to establish the crux of the obviousness theory. Pet., 59-60 (describing a POSITA would have recognized it would have been obvious to transmit the alert). Again, this reliance on declarant testimony, which is not incorporated into the grounds, to supply a missing claim limitation, violates Rule 104(b). *See* Rule 104(b) Memo. Finally, even Petitioner's declarant misreads Goldstein, which fatally affects the motivation to modify Goldstein. Petitioner fails to show how Goldstein's "concern that users are missing important audible cues when wearing headsets or earpiece" is in any way related to the claimed *alert* that is transmitted "*if at least one of the monitored one or more parameters falls outside of the predetermined threshold.*" Compare EX1001, Claim 32, with Pet., 59-60; EX1005, ¶24. Goldstein simply describes that audio cues may be missed due to environmental noise external to the user, which, as described above, is not mapped to the *sensed energy* throughout the entirety of the claims. *See* EX1005, ¶¶4, 43; *supra* Sections IX.A.1-2. Petitioner simply does not address this discrepancy, tarnishing its motivation as to how a POSITA would have modified Goldstein from the outset.

Therefore, Petitioner does not provide a reasonable likelihood of prevailing with respect to the proposed Goldstein-Newham-Chaudhri combination.

Petitioner's analysis of claim 32 itself is also filled with numerous technical and legal errors, and Petitioner therefore fails to establish a reasonable likelihood of success of prevailing in this proceeding. Institution should be denied.

C. All Grounds: Petitioner relies on distinct embodiments of Goldstein without providing required obviousness rationale.

Petitioner's Grounds require combining distinct embodiments of Goldstein without providing required obviousness reasoning. While a petitioner may combine multiple embodiments from a single reference in an obviousness theory, such combination must be supplemented with a full motivation-to-combine rationale. *See In re Stepan*, 868 F.3d 1342, 1345-46 n.1 (Fed. Cir. 2017); *NetMoneyIn, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *see also Abiomed, Inc. v. Maquet Cardiovascular, LLC*, IPR2017-01204, -01205, Paper 8 at 8-12 (PTAB Oct. 23, 2017).

Throughout its disclosure, Goldstein describes several different and distinct embodiments for using its earpiece. For instance, Goldstein describes distinct embodiments for (1) conducting listening tests in a user's ear canal; (2) adjusting audio using a measured SPL Dose; (3) managing audio delivery; and (4) mixing

audio content derived from multiple sources. *See* EX1005, ¶¶31-41; 42-52; 53-55 and 58-67; 56-57 (respectively). Goldstein discloses a single earpiece, but Goldstein does not state that the single earpiece may be formed from a combination multiple distinct embodiments. *See* EX1005, ¶¶22. Yet the Petition consistently combines the distinct embodiments of Goldstein without providing a motivation to combine these distinct embodiments. For example, for several claim elements, Petitioner combines Goldstein's embodiment for adjusting audio using a measured SPL Dose with Goldstein's separate embodiment for managing audio delivery. *Pet.*, 31-38, 54-60 (Petitioner's analysis of claim elements 39[e] and 32[e]). While Goldstein indicates that both embodiments may be separately used with the disclosed earpiece, Goldstein does not disclose adjusting audio using a measured SPL Dose and managing audio delivery in a single embodiment nor does Goldstein describe these embodiments as combinable. *See, e.g.*, EX1005, ¶¶42-67. Goldstein indicates that Step 706 of its audio delivery embodiment may filter audio in accordance with step 606 of its audio adjustment embodiment but does not describe how audio delivered to the earpiece could be adjusted based on sound pressure level measurements, as Petitioner asserts. *Compare* *Pet.*, 54-60, with EX1005, ¶¶42-52, FIG. 6 and EX1005, ¶¶53-55, 58-67, FIG. 7.⁵ Petitioner also

⁵ Petitioner's analysis is distinguishable from that approved by the Federal

combines distinct embodiments from Goldstein elsewhere in the Petition. *See, e.g.*, Pet., 29, 39-40, 45-51, 66-67, 69-74.

In each case, Petitioner does not even acknowledge they are cobbling together distinct embodiments of Goldstein, let alone provide any motivation to combine the different embodiments. Accordingly, Petitioner fails to meet its burden in establishing how and why the different embodiments of Goldstein are combinable, or an expectation they can successfully be used together. Petitioner therefore fails to provide a reasonable likelihood of prevailing on any Ground.

X. *CHEVRON* AND *DEEPER* FAVOR DENYING INSTITUTION.

The merits consideration phase of an IPR includes determining whether the petition presents a sufficient number of grounds/challenges that meet the reasonable likelihood standard. When “a petition meets the standards for institution

Circuit in *Guardant Health, Inc. v. University of Washington*, No. 24-1129, 2026 WL 184334 (Fed. Cir. Jan. 23, 2026). In *Guardant Health*, no motivation-to-combine analysis was required because the disputed claim elements were disclosed in a single embodiment of the asserted prior art reference. *Id.* at 2. In the instant proceeding, Petitioner’s obviousness theory of the challenged claim elements relies on distinctly different embodiments of Goldstein, such as its audio adjustment and audio delivery embodiments.

in relation to fewer than all the challenges presented, or where deficiencies in the petition ... affect only a portion of the challenges presented, the [Board] will evaluate all the challenges and determine whether, in the interests of efficient administration of the Office and integrity of the patent system, the entire petition should be denied.” Trial Practice Guide, § II.D.3 (citing 35 U.S.C. §§ 316(b), 326(b); *accord Chevron Oronite Co., LLC v. Infineum USA L.P.*, IPR2018-00923, Paper 9 (PTAB Nov. 7, 2018) (informative); *Deeper, UAB v. Vexilar, Inc.*, IPR2018-01310, Paper 7 (PTAB Jan. 24, 2019) (informative)).

As discussed throughout this Preliminary Response, the Petition suffers from numerous fatal deficiencies. Given these defects, institution of trial should be denied even if some of the claims or Grounds meet the standard for institution (which they do not). It would not be an efficient use of the Board’s valuable time and resources to institute review when resolution of this proceeding would be costly and time-consuming to address challenges that are flawed from the outset. *See* EX2020, 3; 35 U.S.C. § 316(b).

XI. CONCLUSION

The Petition fails to show a reasonable likelihood of showing that any of the challenged claims is unpatentable. Accordingly, the Director should deny institution.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Patent Owner Preliminary Response complies with the type-volume limitation of 14,000 words, comprising 11,523 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).

2. This Patent Owner Preliminary Response complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman font.

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PATENT OWNER PRELIMINARY RESPONSE UNDER 37 C.F.R. § 42.107(a)** and associated Exhibits 2004-2020 were served in their entirety on February 19, 2026, upon the following parties via electronic mail:

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