

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.,
Petitioner,

v.

EIGHT KHZ, LLC,
Patent Owner.

Case IPR2023-01024
Patent 11,290,836 B2

PATENT OWNER'S PRELIMINARY RESPONSE

35 U.S.C. §313, and 37 C.F.R. §42.107(a)

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Ex.	Description
2001	Defendants' Preliminary Invalidity Contentions
2002	U.S. District Court Order in <i>Eight kHz, LLC v. Meta Platforms, Inc.</i> , No. 6:22-cv-00575-ADA-DTG (W.D. TEX. Jun. 3, 2022), Granting Motion to Extend Scheduling Order Deadlines
2003	Memorandum from Katherine K. Vidal on Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022)
2004	Lex Machina, Patent Cases (All Judges) Time to Trial, U.S. District Court for the Western District of Texas, September 9, 2023
2005	Lex Machina, Patent Cases (Judge Alan D. Albright) Time to Trial, U.S. District Court for the Western District of Texas, September 9, 2023
2006	Declaration of Durand R. Begault, Ph.D. in Support of the POPR
2007	C.V. of Durand R. Begault, Ph.D.
2008	Declaration of John C. Hart, Ph.D. in Support of the POPR
2009	C.V. of John C. Hart, Ph.D.
2010	Y.H. Huang, R. Venkatakrisnan, R. Venkatakrisnan, S. V. Babu, and W.C. Lin., <i>Using audio reverberation to compensate distance compression in virtual reality</i> , ACM Symposium on Applied Perception 2021, pp. 1–10 (2021).
2011	J. M. Arend, A. Neidhardt, and C. Hristoph Porschmann, <i>Measurement and perceptual evaluation of a spherical near-field HRTF set</i> , Proceedings of the 29th Tonmeistertagung-Vdt International Convention, Cologne, Germany, 17–20 November 2016 (2016).
2012	RESERVED
2013	Douglas S. Brungart, <i>Near-Field Auditory Localization</i> , Ph.D. thesis, Massachusetts Institute of Technology (1998).
2014	<i>SoundScape Renderer Manual</i> , Release 0.6.1-6-g9710c96, SSR Team, 2023-09-02
2015	Asserted U.S. Patent No. 11,290,836 “Providing Binaural Sound Behind an Image Being Displayed with an Electronic Device, Plaintiff’s Amended Infringement Contentions Exhibit 27, Eight KHZ, LLC v. Meta Platforms, Inc., No. 6:22-cv-00575 (Quest 1).
2016	Asserted U.S. Patent No. 11,290,836 “Providing Binaural Sound Behind an Image Being Displayed with an Electronic Device, Plaintiff’s Amended Infringement Contentions Exhibit 27, Eight KHZ, LLC v. Meta Platforms, Inc., No. 6:22-cv-00575 (Quest 2).

2017	Asserted U.S. Patent No. 11,290,836 “Providing Binaural Sound Behind an Image Being Displayed with an Electronic Device, Plaintiff’s Amended Infringement Contentions Exhibit 27, Eight KHZ, LLC v. Meta Platforms, Inc., No. 6:22-cv-00575 (Quest Pro).
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Patent Owner Eight KHZ, LLC (“8KHZ”) submits this Preliminary Response to the Petition for *inter partes* review of claims 8-17 of U.S. Patent No. 11,290,836 (“836 Patent”). Paper 2 (“Pet”).

I. INTRODUCTION

The ‘836 Patent discloses and claims an unconventional electronic system that displays an image perceived by a user to be located within “a near-field distance from a head of the user.” Ex.1001, Abstract. The electronic system is capable of processing the sound for the image into binaural sound with “a sound localization point (SLP) with a coordinate location that occurs behind the image.” *Id.* The system includes, among other things, a novel feature of using “far-field head-related transfer functions (HRTFs)” to place the SLP “at a far-field distance located behind the image and along a line-of-sight from the user to the image” while the image is at the near-field. *Id.*, claim 8.

Institution of an IPR is authorized when “the information presented in the petition ... and any response ... shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. §314(a).

Petitioner does not satisfy the threshold for institution of this IPR because it has not shown there is a reasonable likelihood that it would prevail in establishing

the unpatentability of at least one Challenged Claim. Institution of this IPR should be denied. Petitioner fails to address the differences between the claimed subject matter and the prior art, provide a reasoned analysis of how and why a POSITA would combine the prior art teachings, and show a POSITA would have had a reasonable expectation of success.

A. The ‘836 Patent

The ‘836 Patent is titled “Providing binaural sound behind an image being displayed with an electronic device,” and was issued by the United States Patent and Trademark Office (“PTO”) on March 29, 2022. Ex.1001, codes 54, 45.

- 1. The ‘836 Patent discloses and claims a novel system that utilizes far-field HRTFs to process the sound for an image into a binaural sound, and incongruently localize the same at a location that occurs behind the image and at a far-field distance from a user, all while the image displayed is being perceived to be located within a near-field distance from the user.**

The ‘836 Patent is directed to a system that processes “the sound for the image into binaural sound ... [that has] a sound localization point (SLP) with a coordinate location that occurs behind the image while the image is located a near-field distance from a head of the user.” *Id.*, Abstract. Specifically, the ‘836 Patent discloses use of far-field HRTFs to process or convolve the sound “so the sound originates to a listener “behind the image.” *Id.*, claim 8; 6:63-65 (“A processor processes or convolves the sound with far-field HRTFs so the sound originates to a listener

beyond yet behind the electronic device, the image, or the object.”); *see also id.* 8:11-14 (“[A] processor convolves or processes the sound to originate at a coordinate location that occurs behind a coordinate location of the visible source of the sound.”).

2. The challenged claims

Of the Challenged Claims, claim 8 is one of the two challenged independent claims, and is reproduced below:

8. An electronic device, comprising:

a display that *displays an image that occurs within a near-field distance from a head of a user*; and

one or more processors that *process sound for the image to generate binaural sound that has a sound localization point (SLP) with a coordinate location that occurs at a far-field distance located behind the image* and along a line-of-sight from the user to the image while *the display displays the image to the user at the near-field distance*, wherein the one or more processors include a digital signal processor (DSP) that *processes the sound for the image with far-field head-related transfer functions (HRTFs)* while the electronic device is located at the near-field distance from the head of the user.

Ex.1001, claim 8 (emphasis added).¹

II. THE ASSERTED GROUNDS

Petitioner asserts the Challenged Claims are unpatentable based on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
8-10, 15-17	103	Finnegan, ² alone or in view of Begault ³
8-10, 13-17	103	Norris, ⁴ alone or in view of Begault and Algazi ⁵

¹ Unless otherwise noted, all emphases are added by 8KHZ.

² Daniel J. Finnegan et al., *Compensating for Distance Compression in Audiovisual Virtual Environments Using Incongruence*, Chi' 16: Proc. of the 2016 CHI Conf. on Hum. Factors in Computing Sys. (2016) (Ex.1005).

³ Durand R. Begault, *3-D Sound for Virtual Reality and Multimedia*, NASA/TM 2000-209606 (2000) (Ex.1006).

⁴ U.S. Patent No. 9,226,090 (Ex.1007).

⁵ V.R. Algazi et al., *The CIPIC HRTF Database*, IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (2001) (Ex.1008).

11-12		Norris, alone or in view of Begault and Algazi, and further in view of Sauk ⁶
8-10, 15-17	103	Shivappa, ⁷ alone or in view of Zhou ⁸

Pet. 2. Petitioner supports the grounds with the Declaration of Agnieszka Roginska (Ex.1003).

A. Claim Construction

For purposes of the POPR, 8KHZ raises no claim construction issues.

B. Person of Ordinary Skill in the Art

A POSITA would have several years of academic and/or professional experience in a technical field relevant to digital audio signal processing, such as

⁶ U.S. Patent No 7,876,903 (Ex.1009).

⁷ U.S. Patent No. 10,979,843 (Ex.1010).

⁸ Zhiying Zhou et al., *An Experimental Study on the Role of Software Synthesized 3D Sound in Augmented Reality Environments*, 16 Interacting with Computs. 989 (2004) (Ex.1011).

electrical engineering, computer engineering, or computer science; and a familiarity with relevant literature and concepts concerning virtual 3D audio processing, which were widely available at the time of disclosure.⁹

III. PETITIONER HAS FAILED TO ESTABLISH A REASONABLE LIKELIHOOD THAT ANY CLAIM IS UNPATENTABLE

A. Institution Standards

Review cannot be instituted unless the Petition demonstrates a reasonable likelihood that at least one of the Challenged Claims is unpatentable. 35 U.S.C. §314(a); 37 C.F.R. §42.108(c). The Board “will not take on the role of advocate for a party, trying to make out a case the party has not adequately stated.” Standing Order ¶121.5.2 (B.P.A.I. Mar. 8, 2011). Rather, it is Petitioner’s duty to provide sufficient grounds for the institution of a review “focus[ing] on concise, well organized, easy-to-follow arguments supported by readily identifiable evidence of record.” *Cisco Sys., Inc. v. C-Cation Tech, LLC*, IPR2014-00454, Paper No. 12 at 11 (PTAB Aug. 29, 2014).

The ultimate determination of obviousness under 35 U.S.C. §103 is a question of law based on underlying factual findings. *In re Baxter Int’l, Inc.*, 678 F.3d 1357,

⁹ For consistency, 8KHZ advances the same POSITA standard it proposed in the parallel district court litigation. That said, both experts retained by 8KHZ in this proceeding meet the standard proposed by Petitioner. *See* Exs.2006-2009.

1362 (Fed. Cir. 2012) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1996)). “To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380-81 (Fed. Cir. 2016). The “factual inquiry” into the reasons for “combin[ing] references must be thorough and searching, and the need for specificity pervades.” *In re NuVasive, Inc.*, 842 F.3d 1376, 1381-82 (Fed. Cir. 2016) (internal quotations and citations omitted). The specific reasoning must include some rational underpinning to combine the prior art elements as claimed to support the conclusion of obviousness. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). It is Petitioner’s burden to demonstrate a motivation to combine, and a reasonable expectation of success. *See In re Magnum Oil Tools*, 829 F.3d at 1381. Mere conclusory statements are insufficient. *Id.*, at 1380.

Petitioner asserts three obviousness grounds of unpatentability. Pet. 2. For the purpose of this POPR, the Board need only consider the validity of independent claims 8, 15 of Grounds 1, 2, and 3. As shown below, the Petition fails to establish a reasonable likelihood that Petitioner will prevail. A trial therefore should not be instituted.

B. The Petition Should Not be Instituted on Ground 1 Because the Prior Art Fails to Disclose or Teach the Invention as Claimed.

Petitioner asserts claims 8-10, 15-17 are obvious based on Finnegan, alone or in view of Begault. *Id.* The asserted prior art fails to disclose one or more limitations, either expressly or inherently, and a POSITA would not have been motivated to start with or combine the asserted references to arrive at the claimed subject matter, nor would they have had a reasonable expectation of success in arriving at the claimed subject matter. The Petition fails to establish a reasonable likelihood that Finnegan, alone or in view of Begault, would render the challenged claims obvious. The Board should therefore deny institution based on Ground 1.

1. Finnegan

Finnegan is titled “Compensating for Distance Compression in Audiovisual Virtual Environments Using Incongruence,” and was published in May 2016. Ex.1005. Finnegan proposes a hypothesis and designs an experiment to test the same: “Rendering the audio at an incongruent position further from the observer than the visual stimulus (IV), will result in more accurate distance perception (DV) compared to conditions where both stimuli are at the same position (congruent conditions).” *Id.*, 6. In Finnegan’s experiment, subjects are virtually presented with a series of visual stimuli within a near subrange (0.5 to 5.5 meters relative to the subjects) and within a far subrange (4.5 to 9.5 meters relative to the subjects). *Id.*, 7.

Finnegan concludes that its hypothesis is only valid “in the far range but not in the near range [, because] [i]ncongruence resulted in more accurate distance estimates when audiovisual targets were presented in the far range.” *Id.*, 9.

2. Begault

Begault is titled “3-D Sound for Virtual Reality and Multimedia,” and was published in April 2000. Ex.1006. Begault teaches that “3-D sound can contribute to the sense of immersivity in a 3-D environment,” notably when such sound emits from a “proper location[.]” *Id.*, 13. Begault provides numerous examples showing that adding auditory cues to “locations of visual targets” in a 3-D environment improves users’ sense of immersivity. *E.g., id.*, 190-92. To provide such auditory cues, Begault proposes a *method* using sound “localization with HRTF cues,” noting that the “inclusion of the binaural HRTF is fundamental for a 3-D sound system.” *Id.*, 49, 99. To improve the localization performance and properly account for a user’s movement in the 3-D environment. Begault proposes using a different HRTF: “Changing HRTF spectra as a function of head movement is generally considered to improve overall localization performance. It does not necessarily follow that virtual source movement will improve performance.” *Id.*, 99.

3. Finnegan, alone or in view of Begault, fails to disclose, teach, or suggest several limitations of independent claim 8 discussed above, nor does it render obvious claim 8

a. Finnegan fails to disclose or teach displaying an image that occurs within a near-field distance from a head of a user of limitation 8[a]

Petitioner argues two inconsistent theories for the above claim limitation.

Both must be rejected.

i. Per the ‘836 Patent’s specification, the image and the display are not co-located, and even if they were, Finnegan is inapposite

Petitioner first alleges that Finnegan renders this limitation obvious because it discloses “a Rift DK2 VR HMD that displayed images to users,” the lenses of which “were well within 1 m from a user’s head.” Pet. 9. In doing as such, Petitioner assumes that the electronic device of the ‘836 Patent and the image are “co-located,” i.e., are located within the same distance from the user. *Id.*, 10. This assumption is an egregious error and directly contradicts the disclosure of the ‘836 Patent. Ex.2006, ¶¶13-16; Ex.2008, ¶¶17-22.¹⁰ Petitioner’s read of the ‘836 Patent leads to

¹⁰ Throughout the Petition, Petitioner cites 8KHZ’s preliminary infringement contentions in the parallel district court proceeding to support its “co-location” theory. Pet. 10, 22, 52-53. 8KHZ disagrees that its preliminary infringement contentions implied “co-location” of the image and the display. That said, to address Petitioner’s apparent confusion, 8KHZ has amended and served Petitioner with its infringement contentions clarifying that the image and the display are not necessarily

the absurd result that even a conventional TV displaying an image with no depth cues at all—even a test pattern—teaches this limitation, merely because, for a user standing one meter away from the TV screen, the surface of the screen itself is located within a near-field distance from the user. Ex.2008, ¶22.

First, the location of the image and the location of the electronic device are two separate and different limitations of claim 8: “**image that occurs within a near-field distance**” and “**electronic device ... at the near-field distance.**” Ex.1001, claim 8. Petitioner argues that these two distance limitations must be construed in the same way, because location of the image is necessarily the same as location of the electronic device. But that is not what the claims say: the electronic device is **at** the near-field distance, while the image **occurs within** the near-field distance. By treating them the same, Petitioner effectively argues that one of these terms is redundant and must not be given effect. This is wrong. *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017) (“It is highly disfavored to **construe terms in a way that renders them** void, meaningless, or **superfluous.**”); *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) (“[C]laims are interpreted with an eye toward **giving effect to all terms in the claim.**”).

co-located. Exs.2015-2017. Thus, Petitioner’s reliance on 8KHZ’s preliminary infringement contentions is mooted.

Furthermore, as Petitioner notes and then adopts in its interpretation of the alleged prior art, the specification defines “near-field” to include any distance “less than one meter from the person.” Ex.1001, 2:15-18. Thus, while under this interpretation the claims require that the distances from the user of both the electronic device and the perceived image not exceed one meter, this *does not necessarily mean that the two are co-located*, as Petitioner assumes. Ex.2006, ¶¶13-16; Ex.2008, ¶¶17-22.

Further, and more important, the adjective subordinate clause “that occurs within a near-field distance” in the claims clearly modifies the immediately preceding word “an image”—as opposed to at the display or electronic device. The use of the word “occur” in this context clearly indicates the user’s perception of the location of the virtual image. Ex.2006, ¶14; Ex.2008, ¶18. To arrive at its “co-location” conclusion, Petitioner necessarily equates the claim limitation with “a display that displays an image within a near-field distance”—effectively omitting the key term “that occurs” from the claim limitation, and rendering that limitation redundant with the later limitation that explicitly states that “the display displays the image to the user at the near-field distance.” Ex.2008, ¶18. This violates the well-established principle that “every word in a claim should be given effect.” *Laird Techs., Inc. v. Parker Intangibles LLC*, IPR2018-00049, Paper 9, at 11-12 (PTAB April 16, 2018) (citing *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970)).

Second, the specification clearly discloses, through various embodiments, that location of an image ought to be construed as the location of the image in the virtual world, as it is perceived (i.e., observed) by the user:

A distance from the listener to the sound source is based on a relative size of the image being displayed or a location or virtual location to where the image is being rendered. For instance, the image is displayed at a real or virtual chair that is observed as two feet away from the wearer of the electronic device.

Id., 27:3-8; Ex.2006, ¶¶14-15; Ex.2008, ¶20. This “virtual chair” embodiment, by and of itself, forecloses Petitioner’s “co-location” theory. It shows that while the electronic device (i.e., display) is located inches away from the face of the user,¹¹ the image is being rendered such that the user perceives it as some two feet away.

Notably, in describing FIGS. 6A and 6B the ‘836 Patent discloses that “three different images 620A, 620B, and 620C [are displayed] on a display 630 of an electronic device 640.” *Id.*, 21:51-52. But the specification further provides that

“The listener, however, perceives the images at different distances with respect to the listener. Images 620A and 620B appear to be located at the surface of the display 630. Image 620C, however, appears to be located farther away than a wall or virtual wall 622 at which the display 630 is located.”

¹¹ The electronic device is located inches away from the face of the user, for it is “worn on the head of the listener.” Ex.1001, 18:20-21; 3:39-41.

Id., 22:11-15; Ex.2006, ¶15; Ex.2008, ¶20. Accordingly, Petitioner’s assertion that the image and the display are necessarily co-located collides head-on with the express language of the specification defining the location of the image as “visually perceived location of the sound source,” different from the location of the display. *Id.*, 3:39-41; Ex.2006, ¶¶16; Ex.2008, ¶21.

Even assuming, *arguendo*, that this limitation is referring to the location of the display, as Petitioner alleges, Finnegan is still inapposite. Finnegan does not address how to incongruently position a binaural sound when the display is the visual reference point relative to which the binaural sound is incongruently positioned. Ex.2006, ¶18; Ex.2008, ¶24. Finnegan proposes an experiment in which subjects are asked to judge the perceived relationship between a virtual visual stimulus and an auditory stimulus (an abstract “visual cube” to which noise is added, and an abstract “pink noise”). Ex.1005, 7; Ex.2006, ¶18; Ex.2008, ¶24. Specifically, Finnegan discloses a method for computing the desired distance of the auditory stimulus relative to the user as a function of the “the visual component’s position”—and not the position of the display. *Id.*, 5; Ex.2006, ¶18; Ex.2008, ¶24. Finnegan does not gather data on the relationship between the location of a display and that of an auditory stimulus; nor does it make any conclusion about that. Thus, for at least this reason Ground 1 fails—even under Petitioner’s erroneous “co-location” theory—because Petitioner does neither “specify sufficiently where each element of each

challenged claim is found” in Finnegan, nor include an explanation of the significance of the quotations and citations plucked from Finnegan. *Google Inc. and Twitter, Inc. v. EveryMD.com, LLC*, IPR2014-00347, Paper 9, at 23-25 (PTAB May 22, 2014); *see also* 37 C.F.R. §§42.104(b)(4), 42.22.

ii. Finnegan teaches away from displaying an image within a near-field distance from the user

Alternatively, Petitioner alleges that even if an “image ... within a near-field distance” is the distance to the location of a perceived image in the virtual world, Finnegan nevertheless renders this limitation obvious. Pet.,10. Petitioner reasons that in Finnegan’s experiments, visual stimuli are positioned at distances ranging between 0.5 to 9.5 meters in front of the user, “while associated sounds were presented at congruent and incongruent locations.” *Id.* Petitioner mischaracterizes Finnegan’s experiment and its conclusions.

Finnegan hypothesizes that “[r]endering the audio at an incongruent position further from the observer than the visual stimulus (IV), will result in more accurate distance perception (DV) compared to conditions where both stimuli are at the same position (congruent conditions).” Ex.1005, 6. Finnegan refers to this hypothesis as H1. *Id.* To test this hypothesis, Finnegan proposes an experiment where subjects are presented with a series of visual stimuli within a near subrange (0.5 to 5.5 meters relative to the subjects) and within a far subrange (4.5 to 9.5 meters relative to the

subjects). *Id.*, 7. But Finnegan was unable to prove its hypothesis for the near subrange: “Thus H1 is supported by the results of our analysis in the far range but not in the near range.” Ex.2006, ¶18; Ex.2008, ¶24. Incongruence resulted in more accurate distance estimates when audiovisual targets were presented in the far range.” *Id.*, 9; Ex.2006, ¶18; Ex.2008, ¶24. Therefore, upon reading Finnegan, a POSITA would not be motivated to design an electronic device that “displays an image that occurs within a near-field distance from a head of a user,” for which the sound is localized at a far-field. Ex.1001, claim 8; Ex.2006, ¶19; Ex.2008, ¶26.

That a POSITA would be taught away from the claimed limitation is evidenced by peer-reviewed articles citing Finnegan. For example, in September 2021, Huang et al. published an article titled “Using Audio Reverberation to Compensate Distance Compression in Virtual Reality,” where they described Finnegan’s teaching: “As Finnegan et al. [Finnegan et al. 2016] suggested, the incongruence of audio and visual object distances can compensate distance compression only when the object is at a longer range.” Ex.2010, 4; Ex.2006, ¶19; Ex.2008, ¶¶25-26. Discouraged by Finnegan’s conclusion about unworkability incongruent positioning for near-range distances, Huang et al. prescribes a distance of at least “5 meters” away from the user for displaying a virtual image. *Id.*; Ex.2006, ¶19; Ex.2008, ¶¶25-26. Accordingly, a POSITA familiar with Finnegan would not think the concept of the ‘836 Patent that requires displaying a visual stimulus within

a near-field distance (i.e., less than one meter away from the user)—while the auditory component is localized at a far-field—would be workable. *In re Gurley*, 27 F.3d 551, 553 (Fed.Cir.1994) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant ... [or] if it suggests that the line of development flowing from the reference’s disclosure is unlikely to be productive of the result sought by the applicant.”). Petitioner fails to resolve this difference between Finnegan and the claimed subject matter, and so fails to adequately state a claim for relief. *Liberty Mutual Insurance Co. v. Progressive Casualty Insurance Co.*, CBM2012-00003, Paper 7 at 2-3 (PTAB Oct. 25, 2012) (precedential).

Petitioner’s obviousness analysis is fatally defective, because it is based on a reference that teaches away from the claimed subject matter, and [a] reference that properly teaches away can preclude a determination that the reference renders a claim obvious.” *In re Mouttet*, 686 F.3d 1322, 1333 (Fed.Cir.2012).

Finnegan fails to disclose, teach, or suggest displaying an image that occurs within a near-field distance from a head of a user as claimed, and Petitioner has failed to provide an explicit analysis in the Petition of how and why a POSITA would have a reasonable expectation of success to adopt what is expressly taught away by the prior art to arrive at the invention as claimed.

- b. Finnegan fails to disclose or teach a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image of limitation 8[c]**

Petitioner argues two inconsistent theories for the above claim limitation.

Both must be rejected.

- i. Per the ‘836 Patent, the image and the display are not co-located, and even if they were, Finnegan is inapposite**

Petitioner first alleges that Finnegan renders this limitation obvious because “the sounds Finnegan positioned at far-field distances were behind images that were ‘concurrently’ displayed on a Rift HMD’s lenses.” Pet. 15. Again, Petitioner’s argument is founded on a misconception that the ‘836 Patent requires co-location of the display and the image. For the reasons discussed in §III.B.3.a.i, this assumption is an error, and thus Petitioner’s argument must be rejected.

Further, even if the ‘836 Patent requires such co-location, Finnegan does not gather data on the relationship between the location of a display and that of an auditory stimulus; nor does it make any conclusion about that. §III.B.3.a.i; Ex.2006, ¶18; Ex.2008, ¶¶24-25. Accordingly, and for reasons discussed in §III.B.3.a.i, because Petitioner has failed to “specify sufficiently” where in Finnegan the relationship between the location of a display and that of an auditory stimulus—necessitated by Petitioner’s “co-location” theory—is found, Ground 1 of the Petition

is fatally defective. *See In re EveryMD.com, LLC*, Paper 9, at 23-25; *see also* 37 C.F.R. §§42.104(b)(4), 42.22; §III.B.3.a.i.

ii. Finnegan teaches away from localizing a sound in a far-field and behind an image occurring within a near-field distance from the user

Alternatively, Petitioner alleges that Finnegan renders this limitation obvious, because it “tested near-field images while concurrently presenting incongruent audio at far-field distances.” Pet. 17. For the reasons discussed in §III.B.3.a.ii, Finnegan teaches away from rendering sound at a far-field for a near-field image, and thus Petitioner’s obviousness analysis is fatally defective, because it is based on a reference that teaches away from the claimed subject matter. §III.B.3.a.ii; Ex.2006, ¶19; Ex.2008, ¶¶25-26.

Finnegan fails to disclose, teach, or suggest a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image as claimed, and Petitioner has failed to provide an explicit analysis in the Petition of how and why a POSITA would have a reasonable expectation of success to adopt what is expressly taught away by the prior art to arrive at the invention as claimed.

c. Finnegan fails to disclose or teach that a DSP processes the sound for the image with far-field HRTFs while the electronic device is located at the near-field distance of limitation 8[e]

Petitioner alleges that Finnegan renders the above claim limitation obvious because Finnegan utilizes software (i.e., SoundScape Renderer (SSR)) to generate binaural sounds that “used Head Related Transfer Functions (HRTFs) to reproduce a soundfield at the listeners ears.” Pet. 17-18. But Petitioner fails to point to any place in the prior art indicating that SSR generates binaural sounds for virtual sound sources in the near-field via using far-field HRTFs. Because Petitioner has failed to “specify sufficiently” where in Finnegan the use of far-field HRTFs for generating binaural sounds is discussed, Ground 1 of the Petition is fatally defective. *See In re EveryMD.com, LLC*, Paper 9, at 23-25; *see also* 37 C.F.R. §§42.104(b)(4), 42.22.

Petitioner’s only effort in support of its obviousness argument is citing its expert to make a conclusory statement that a POSITA “would have known and understood that the HRTFs from the SoundScape Renderer used in Finnegan’s testing were (or at a minimum were obviously) far-field HRTFs.” Pet. 17-18. As a threshold matter, there is no detailed discussion in the Petition supporting the conclusion, requiring 8KHZ and the Board to go in search of the supporting analysis in Dr. Roginska’s declaration (which is also conclusory). Petitioner incorporates arguments by reference and therefore violates 37 C.F.R. § 42.6(a)(3). *Cisco Systems, Inc. v. C-Cation Techs.*, IPR2014-00454, Paper 12 at 9 (PTAB. Aug. 29, 2014) (designated informative) (providing that “practice of citing the Declaration to support conclusory statements that are not otherwise supported in the Petition also

amounts to incorporation by reference.”). This reason alone suffices to deny institution. *See Parus Holdings, Inc. v. Google LLC*, 70 F.4th 1365, 1370-71 (Fed. Cir. Jun. 12, 2023).

Even if this is overlooked, statements offered by Petitioner’s expert “are conclusory and unsupported, add[] little to the conclusory assertion for which [they are] offered to support, and are entitled to little weight.” *Xerox Corp. et al. v. Bytemark, Inc.* IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential). Similar to *Xerox*, Petitioner’s only evidence in support of its assertion that Finnegan used far-field HRTFs to process the sound is the opinion of its expert: “Persons of ordinary skill in the art also would have known and understood that the HRTFs from the SoundScape Renderer used in Finnegan’s testing were (or at a minimum were obviously) far-field HRTFs.” Ex.1003, ¶241. This echoes the conclusory, unsupported statement made by Dr. Jones in *Xerox*. *Xerox*, Paper 9 at 15. There, in support of its assertion that “blocking the purchaser would require recording the blocking in a record in the user's account,” the petitioner offered only Dr. Jones’s declaration, where he simply stated that “a POSITA would understand that such a blocking would require recording the blocking in a data record associated with that user’s account.” *Id.*, 15. The Board disregarded Dr. Jones’s statement as conclusory because he did not “cite to any additional supporting evidence or provide any technical reasoning to support his statement.” *Id.* For the same reason as in *Xerox*,

the unsupported conclusory statements of Petitioner's expert here should be disregarded and entitled to no weight.

More important, and contrary to Petitioner's assertion, a POSITA using SSR does not and cannot generate binaural sounds for virtual sound sources in the near-field via using far-field HRTFs. Ex.2006, ¶¶21-23. A POSITA using SSR generates a binaural sound with far-field HRTFs when the virtual sound source is greater than one meter away from the listener (i.e., in the far-field) and uses near-field HRTFs when the source of the sound is less than one meter away from the listener (i.e., in the near-field). Ex.2006, ¶¶21-23; Ex.2008, ¶27. In fact, this is readily apparent from the very same article published by SSR developers and relied upon by Petitioner. Ex.1029; Pet. 15, 18. There, SSR developers provides that for binaural rendering feature users must select HRTFs that are "chosen depending on the position of the virtual sound source." Ex.1029, 3-4; Ex.2006, ¶23; Ex.2008, ¶27.

In fact, a literature review of prior art published before the priority date of the '836 Patent reveals that generating binaural sounds for virtual sound sources positioned in the near-field via using far-field HRTFs was not obvious to a POSITA. For example, in November 2016, Arend et al. published an article titled "Measurement and Perceptual Evaluation of a Spherical Near-Field HRTF Set," which, much like Finnegan, used SSR for binaural rendering. Ex.2011, 6; Ex.2006, ¶¶9, 20. Arend discloses that far-field HRTFs are only to be used in cases where "the

sound source used for measurements or simulations was placed at a distance of at least 1 m [i.e., far-field distance].” *Id.*, 2. Arend further teaches away from using far-field HRTFs for virtual sound sources in the near-field, because “[p]roper auralization of nearby sound sources requires near-field HRTFs.” *Id.*, 8; Ex.2006, ¶20. Therefore, a POSITA familiar with Arend (2016) and the Soundscape Renderer would understand that neither SSR nor Finnegan discloses rendering a near-field virtual source at a far-field distance by far-field HRTFs as required by this limitation. Ex.2006, ¶23. Lastly, the Petition fails to resolve the differences between the prior art that uses far-field HRTFs only for sources in the far-field and the claimed invention that uses far-field HRTFs for sources in the near-field, and so fails to adequately state a claim for relief. *Liberty Mutual*, Paper 7 at 2-3.

Alternatively, Petitioner argues that Finnegan and Begault would render obvious this limitation. Pet. 18. Petitioner relies on a statement from Begault that “the use of HRTF spectral shaping is typically featured as the key component of a 3-D sound system.” *Id.* But Petitioner fails to point to any passage from Begault that discloses, teaches, or suggest use of far-field HRTFs to move a virtual sound source located in a near-field to a far-field location behind the virtual image source, as claimed. This is because “nowhere in Begault (2000) is there a disclosure regarding near-field HRTFs, nor is there any discussion on how to move a virtual sound source located in a near-field to a far-field location behind the virtual image

source in the near-field.” Ex.2006, ¶24. To cure this deficiency, Petitioner plucks statements from Begault indicating that a database of HRTFs known as KEMAR has been by researchers. Pet. 18. But Petitioner fails to offer any evidence showing that any such uses of KEMAR’s HRTFs were similar to how the claim limitation uses far-field HRTFs. This, Petitioner cannot. Ex.2006, ¶24. Because Petitioner has failed to “specify sufficiently where [this] element of [the] challenged claim is found” in Begault, and because Petitioner has failed to explain the significance of the quotations and citations plucked from Begault—notably in comparison with the claimed subject matter—the Ground 1 of the Petition is fatally defective. *In re EVERYMD.COM*, Paper 9, at 23-25; see also 37 C.F.R. § 42.104(b)(4), 42.22.

In fact, Begault expressly teaches away from doing so: “Changing HRTF spectra as a function of head movement is generally considered to improve overall localization performance. *It does not necessarily follow that virtual source movement will improve performance.*” Ex.1006, 99; Ex.2006, ¶25. Accordingly, a POSITA familiar with Begault would not think the concept of the ‘836 Patent that requires use of far-field HRTFs to move a near-filed virtual sound source to a far-field location behind the virtual image source (i.e., incongruent placement) would be workable. Ex.2006, ¶¶24-25. Thus, Petitioner’s obviousness analysis is fatally defective, because it is based on a reference that teaches away from the claimed subject matter, and [a] reference that properly teaches away can preclude a

determination that the reference renders a claim obvious.” *In re Mouttet*, 686 F.3d 1322, 1333 (Fed.Cir.2012).

Finnegan, alone or in view of Begault, fails to disclose, teach, or suggest that a DSP processes the sound for the image with far-field HRTFs while the electronic device is located at the near-field distance as claimed, and Petitioner has failed to provide an explicit analysis in the Petition of how and why a POSITA would have a reasonable expectation of success to adopt what is expressly taught away by the prior art to arrive at the invention as claimed.

- 4. Finnegan, alone or in view of Begault, fails to disclose, teach, or suggest several limitations of independent claim 15 discussed above, nor does it render obvious claim 15**
 - a. Finnegan fails to disclose or teach displaying an image that is located within a near-field distance from a head of a user viewing the image 15[a]**

This limitation would not have been obvious over the prior art for the same reason as limitation 8[a].

- b. Finnegan fails to disclose or teach a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image of limitation 15[d]**

This limitation would not have been obvious over the prior art for the same reason as limitation 8[c].

Because Finnegan, alone or in view of Begault, fails to disclose, teach, or suggest the several limitations of independent claims 8 and 15 discussed above, and

does not render obvious claims 8 and 15, institution based on Ground 1 should be denied.

5. All Remaining Claims That Rely on Finnegan, alone or in view of Begault, Fail for the Same Reasons

Because challenged claims 9-10, and 16-17 of Ground 1 depend from independent claims 8 and 15, respectively, and rely on Finnegan, alone or in view of Begault, for at least the teachings of the several limitations of claims 8 and 15 above, these claims are not rendered obvious by Finnegan, alone or in view of Begault.

C. The Petition Should Not be Instituted on Ground 2 Because the Prior Art Fails to Disclose or Teach the Invention as Claimed.

Petitioner asserts claims 8-10, 13-17 are obvious based on Norris, alone or in view of Begault and Algazi, and asserts claims 11 and 12 are obvious based on Norris, alone or in view of Begault and Algazi, and further in view of Sauk. Pet. 2. The asserted prior art fails to disclose one or more limitations, either expressly or inherently, and a POSITA would not have been motivated to start with or combine the asserted references to arrive at the claimed subject matter, nor would they have had a reasonable expectation of success in arriving at the claimed subject matter. The Petition fails to establish a reasonable likelihood that Norris, alone or in view of Begault and Algazi, would have rendered the challenged independent claims obvious. The Board should therefore deny institution based on Ground 2.

1. Norris

Norris is titled “Sound localization for an electronic call,” and was published in December 2015. Ex.1007. Norris proposes a method that includes capturing binaural sound of a talking person during an electronic call with a listening person and providing “the binaural sound to the listening person during the telephone call...” *Id.*, cl. 1. Specifically, Norris teaches that the sound of the speaker can be rendered at “a sound localization point at a location in empty space that is away from and proximate to a location of the listener such that the sound localization point simulates an origin of the sound that the listener hears.” *Id.*, 3:33-36. Norris accomplishes this through the use of HRTFs: that “[a] location of sound and/or a direction to the sound can be altered or created using one or more of head-related transfer functions (HRTFs).” *Id.*, 3:59-62.

2. Algazi

Algazi is titled “The CIPIC HRTF Database,” and was published 2001. Ex.1007. Algazi describes a database containing measurements of “HRTFs at high spatial resolution for more than 90 subjects.” *Id.*, 99. The measurements were carried out by the U.C. Davis CIPIC Interface Laboratory.” *Id.* “All measured HRTFs were measured with the subject seated at the center of a 1-m radius hoop whose axis was aligned with the subject’s interaural axis.” *Id.*

3. **Norris, alone or in view of Begault and Algazi, fails to disclose, teach, or suggest several limitations of independent claim 8 discussed above, nor does it render obvious claim 8**
 - a. **Norris fails to disclose or teach displaying an image that occurs within a near-field distance from a head of a user of limitation 8[a]**

Petitioner alleges that Norris renders obvious this limitation because of the disclosure of “wearable electronic devices (“WEDs”) that display images to users on a display.” Pet. 28. Petitioner reasons that because a POSITA would understand that Norris’s WED displays images on its lenses, Norris teaches this limitation. Not so. Again, Petitioner’s argument is founded on a misconception that the ‘836 Patent requires co-location of the display and the image. For the reasons discussed in §III.B.3.a.i, this assumption is an error, and thus Petitioner’s argument must be rejected.

The display disclosed by the ‘836 Patent necessarily renders “stereoscopic videos and images,” (Ex.1001, 22:16-20), “3D image[s],” (*Id.*, 5:53-54), and “images in 3D environment[s],” (*Id.*, 23:51-52), thereby providing the user with important cues to visual depth perception. Ex.2008, ¶¶22. Unlike the ‘836 Patent, Norris never discloses a distance to the location of a perceived image in the virtual world. In fact, Norris’s WEDs only provide cues to audio depth perception, but the images rendered by Norris’s WEDs are all 2-dimensional. *See, e.g.*, Ex.1007, 7:16-20 (“an image or video of a friend appears on a display” during a video call); 30:38-

39 (“images and/or video that correspond to the band playing at the venue”)); Ex.2006, ¶27; Ex.2008, ¶29.

Even Petitioner cannot deny that Norris’s WED does not teach or suggest location of a perceived image in the virtual world. Unlike its argument for Ground 1 regarding Finnegan, Petitioner does not advance a theory of obviousness based on “the location of a *perceived* image” for Norris. *Compare* Petition, 28-29, *with id.*, 10. Petitioner fails to show that Norris’s WED allows a listener to perceive “an image that occurs within a near-field distance from a head of a user,” as claimed. Ex.1001, claim 8; 22:11-12 (providing that the claimed display allows a listener to “perceive[] the images at different distances with respect to the listener”). Because Petitioner has failed to “specify sufficiently where [this] element of [the] challenged claim is found” in Norris, the Ground 2 of the Petition is fatally defective. *In re EVERYMD.COM*, Paper 9, at 23-25; *see also* 37 C.F.R. § 42.104(b)(4), 42.22.

Further, even under Petitioner’s erroneous “co-location” theory, the Petition fails to resolve differences discussed above between Norris’s WED and the claimed, and so fails to adequately state a claim for relief. *Liberty Mutual*, Paper 7 at 2-3.

Norris fails to disclose, teach, or suggest displaying an image that occurs within a near-field distance from a head of a user as claimed.

- b. Norris fails to disclose or teach a SLP with a coordinate location that occurs at a far-field distance located**

behind the image and along a line-of-sight from the user to the image of limitation 8[c]

Petitioner alleges that Norris discloses far-field SLPs behind near-field images; yet Petitioner's only effort in support of its allegation is citing its expert to make a conclusory statement that "Norris's far-field SLPs would all be behind their associated images when those images are displayed on the lenses (display) of a Norris HMD (i.e., at near-field distances)." Pet. 32. As a threshold matter, there is no detailed discussion in the Petition supporting Petitioner's conclusion, requiring 8KHZ and the Board to go in search of the supporting analysis in Dr. Roginska's declaration (which is also conclusory). Petitioner incorporates arguments by reference and therefore violates 37 C.F.R. § 42.6(a)(3). *Cisco Sys.*, Paper 12 at 9. This reason alone suffices to deny institution. *See Parus Holdings*, 70 F.4th at 1370-71.

There is a simple reason for Petitioner's and its expert's handwaving: nowhere does Norris teach or even suggest using far-field SLPs when their associated images are displayed at near-field distances. Ex.2006, ¶27; Ex.2008, ¶29. Because Petitioner has failed to "specify sufficiently" where in Norris the use of far-field SLPs for near-field images is discussed, Ground 2 of the Petition is fatally defective. *In re EVERYMD.COM*, Paper 9, at 23-25; *see also* 37 C.F.R. § 42.104(b)(4), 42.22.

Even if Petitioner’s unwarranted incorporation by reference is overlooked, statements offered by Petitioner’s expert “are conclusory and unsupported, add[] little to the conclusory assertion for which [they are] offered to support, and are entitled to little weight *Xerox*, Paper 9 at 15. Similar to *Xerox*, Petitioner’s only evidence in support of its assertion that “persons of ordinary skill in the art would have known from Norris, and found it obvious, that such far-field SLPs would be behind their associated images,” is that its expert says so. Ex.1003, ¶307; Pet. 32. This echoes the statement made by Dr. Jones in *Xerox*, which the Board disregarded for failure to “cite to any additional supporting evidence or provide any technical reasoning to support his statement.” *Xerox*, Paper 9 at 15. For the same reason as in *Xerox*, the statements here made by Petitioner’s expert should be disregarded and entitled to no weight.

Further, Petitioner’s argument is again based on a misconception that the location of the image as perceived by the user is set by the location of the display. For reasons discussed in §III.B.3.a.i, Petitioner’s argument is fatally defective.

Further, the ‘836 Patent is novel and non-obvious over Norris, because claims of the ‘836 Patent solve a technical problem in the prior art, including in Norris. As discussed in §III.B.3.c, a literature review of prior art published before the ‘836 Patent priority date reveals that generating binaural sounds for virtual sound sources positioned in the near-field via using far-field HRTFs was not obvious to a POSITA.

The conventional method to generate binaural sound was to process the sound with far-field HRTFs for sources located greater than one meter away from the listener and process the sound with near-field HRTFs for sources located less than one meter away from the listener. Ex.2006, ¶¶9, 11; Ex.2008, ¶¶15, 27. As the ‘836 Patent explains, the conventional method is problematic with near-field HRTFs because listeners have a difficult time determining a location or direction of binaural sound that originates “less than one meter from the person (considered to be ‘near-field’)....” Ex.1001, 2:11-19. When an electronic device convolves binaural sound to a near-field distance, “[t]he listener may perceive the sound as originating from the wrong location or be unable to localize an origin of the sound.” *Id.*, 2:34-38. This problem becomes exacerbated because “convolving sound with near-field HRTFs can be computationally complex and processor-intensive.” *Id.*, 2:39-40. Furthermore, “even when the sound is convolved with near-field HRTFs in order for the sound to originate from the near-field visible source of the sound, the convolved sound may fail to accurately localize to a listener due to the lower reliability of externalization from near-field HRTFs....” *Id.*, 3:18-26.

The claims of the ‘836 Patent “solve these problems and improve the user experience of a listener externally localizing binaural sound.” *Id.*, 3:50-53, 4:57-62; Ex.2006, ¶11; Ex.2008, ¶15. The ‘836 Patent discloses that when the source of sound is within a near-field distance, one should not process the sound with near-field

HRTFs as traditionally done: “The position to where the sound is convolved **is not the location of the sound source.**” *Id.*, 5:64-65. Instead, the ‘836 Patent processes the sound “to a location that is located **behind a location of the sound source** so the person perceives an origin of the sound as originating from the location at the sound source.” *Id.*, 5:58-63, 65-67; claim 8 (“generate binaural sound that has an SLP “with a coordinate location that occurs **at a far-field distance located behind the image** and along a line-of-sight from the user to the image while the display displays the image to the user at the near-field distance...”); *see also* numerous examples in the specification from 6:1-8:39. This solution avoids problems associated with processing sound with near-field HRTFs. Unlike the ‘836 Patent, Norris provides no teaching or suggestion whatsoever of processing sound contrary to the conventional methods of using far-field HRTFs for images/objects located at far-field distances and using near-field HRTFs for images/objects located at near-field distances.

Finally, Petitioner also cites FIG. 20 in Norris and argues “[f]ourth” that “Norris’s far-field SLPs would be along a user’s line of sight to the images.” Pet. 32. This argument is untrue and contrary to the express teachings in Norris. All examples provided in Norris teach processing the sound to the location of an object, **not “behind the image** and along a line-of-sight from the user to the image while the display displays the image to the user at the near-field distance” as required by this limitation. Ex.2006, ¶27; Ex.2008, ¶29. Petitioner reproduces FIG. 20 in Norris, but

this figure shows processing the sound to the actual location of the object. Ex.2006, ¶27. Importantly, FIG. 20 shows the SLP 2060 occurring at the location of the chair 2070, not behind the chair. *Id.* Norris clearly states the SLP occurs at the actual physical object, not behind it: “The sound localization point 2060 localizes to an empty chair 2070 located in room 2065.” *Id.*, 32:14-16; *see also id.*, 32:31-34 (“voice of the listener 2020 originates from the chair 2070”). Equally important, FIG. 20 also shows the SLP occurs at the location of the virtual image, not behind this virtual image. “This image represents the sound localization point 2050 so the listener 2020 can see the sound localization point 2050 as it moves in the room 2055.” *Id.*, 32:45-48. The Petition fails to resolve these differences between Norris and the claimed subject matter, and so fails to adequately state a claim for relief. *Liberty Mutual*, Paper 7 at 2-3.

Norris fails to disclose, teach, or suggest a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image as claimed.

- c. **Norris fails to disclose or teach that DSP processes the sound for the image with far-field HRTFs while the electronic device is located at the near-field distance of limitation 8[e]**

Petitioner alleges that Norris renders obvious above claim limitation because it discloses “processing sound with far-field HRTFs through its numerous

descriptions of localizing sound to distances greater than or equal to one meter.” Pet. 35. But this argument does not help Petitioner. Instead, Petitioner must show that Norris discloses processing sound with far-field HRTFs for an image perceived to occur in the near-field, as required by this claim limitation. In fact, none of Norris’s “numerous descriptions of localizing sound,” (*Id.*), that Petitioner mentions involves an audiovisual object for which an image is in a near-field while the audio component is in the far-field. *See* Ex.1007, 5:17-6:10; Ex.2006, ¶27; Ex.2008, ¶29. Consider Norris’s “bird chirping” example where a recording of bird chirping sound is localized some two feet away (i.e., in the near-field) from the listener, because “microphones were two feet away from the real bird at the time of the recording.” *Id.*, 5:17-31. As this example shows, Norris does not disclose the image of the bird being displayed to the listener in the near-field; Norris is merely about audio and sound localization. Ex.2006, ¶27; Ex.2008, ¶29. This is because Norris’s WED, as discussed in §III.C.3.a, does not provide important cues for visual depth perception as the same is required for having a near-field image. Because Petitioner has failed to “specify sufficiently where [this] element of [the] challenged claim is found” in Norris, the Ground 2 of the Petition is fatally defective. *In re EVERYMD.COM*, Paper 9, at 23-25; *see also* 37 C.F.R. § 42.104(b)(4), 42.22.

Next, Petitioner argues that a POSITA “would have known and been motivated to use far-field HRTFs, including to process sounds for near-field images,

because that would require fewer stored HRTFs, could use commonly available far-field HRTFs databases, and could leverage other adjustments for producing near-field effects...” Pet. 35. However, instead of providing evidence from Norris, Begault, or Algazi in support of its assertion, Petitioner relies on a conclusory statement made by its expert. *Id.*, 35; Ex.1004, ¶251. As a threshold matter, there is no detailed discussion in the Petition supporting Petitioner’s conclusion, requiring 8KHZ and the Board to go in search of the supporting analysis in Dr. Roginska’s declaration (which is also conclusory). Petitioner incorporates arguments by reference and therefore violates 37 C.F.R. § 42.6(a)(3). *Cisco Sys.*, Paper 12 at 9. This reason alone suffices to deny institution. *See Parus Holdings*, 70 F.4th at 1370-71. Even if this is overlooked, statements offered by Petitioner’s expert “are conclusory and unsupported, add[] little to the conclusory assertion for which [they are] offered to support, and are entitled to little weight.” *Xerox*, Paper 9 at 15. For the same reason as in *Xerox*, the statements here made by Petitioner’s expert should be disregarded and entitled to no weight.

In fact, Petitioner’s conclusory statement is patently false. As discussed in §III.C.3.a, the ‘836 Patent addresses the problems in the art regarding using near-field HRTFs when the image or object is at a near-field distance and provides solutions to the same. Petitioner cannot use the teachings in the ‘836 Patent as a roadmap in hindsight to show obviousness. The motivations that Petitioner cites are

not supported in the references themselves but built from knowledge of problems and solutions discussed in the '836 Patent as this is the only reference discussing processing sound with far-field HRTFs when the object or image is at a near-field distance. But “[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor.” *Para-Ordnance Mfg., Inc. v. SGS Importers Int’l, Inc.*, 73 F.3d 1085, 1087 (Fed.Cir.1995).

Next, Petitioner argues that Norris discloses images in the near-field because it discloses a display worn on the head of the user. Pet. 35. Petitioner’s argument is again based on a misconception that the location of the image as perceived by the user is set by the location of the display. For reasons discussed in §III.B.3.a.i, Petitioner’s argument is fatally defective.

Alternatively, Petitioner argues that Norris in view of Algazi renders this claim limitation obvious because “Norris taught that HRTFs from public databases can be used with its systems and methods, and Algazi described and disclosed one of the most well-known databases.” *Id.*, 35-36. This argument does not help Petitioner. As discussed in §III.C.3.b, Norris embodies the conventional method which was to use far-field HRTFs when the distance was far-field (i.e., one meter or greater) and use near-field HRTFs when the distance was near-field (i.e., less than one meter). Ex.2006, ¶¶9, 11; Ex.2008, ¶¶15, 27. This conventional method would apply for HRTFs selected from a public database. Ex.2006, ¶28. It was known to

store HRTFs in a public database, but this fact has little, or nothing do with explaining how or why a POSITA would modify the combination of Norris, Begault, and Algazi to arrive at processing sound with far-field HRTFs while the virtual image is located at a near-field distance from the head of the user. As explained in §III.C.3.b, the '836 Patent is the only reference teaching how to process sound in this manner.

Petitioner's obviousness analysis is incomplete because it merely identified teachings of the claim by the asserted references, without articulating reason with some rational underpinning to combine the known elements in the way the claimed invention does to support a conclusion of obviousness. *KSR*, 550 U.S. at 418-19. Petitioner has failed to carry its burden to demonstrate that a skilled artisan would be motivated to combine the teachings to arrive at the claimed invention, and that a POSITA would have a reasonable expectation of success. *See In re Magnum Oil Tools*, 829 F.3d at 1381. Petitioner cites its expert's declaration but fails to provide an explicit analysis of how and why a POSITA would be motivated to modify Norris in view of Algazi and Begault, and that a POSITA would have a reasonable expectation of success. Pet. 36.

Norris, alone or in view of Begault and Algazi, fails to disclose, teach, or suggest DSP processes the sound for the image with far-field HRTFs while the electronic device is located at the near-field distance as claimed.

4. **Norris, alone or in view of Begault and Algazi, fails to disclose, teach, or suggest several limitations of independent claim 15 discussed above, nor does it render obvious claim 15**
 - a. **Norris fails to disclose or teach displaying an image that is located within a near-field distance from a head of a user viewing the image 15[a]**

This limitation would not have been obvious over the prior art for the same reason as limitation 8[a].

- b. **Norris fails to disclose or teach a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image of limitation 15[d]**

This limitation would not have been obvious over the prior art for the same reason as limitation 8[c].

Because Norris, alone or in view of Begault and Algazi, fails to disclose, teach, or suggest the several limitations of independent claims 8 and 15 discussed above, and does not render obvious claims 8 and 15, institution based on Ground 2 should be denied.

5. All Remaining Claims That Rely on Finnegan, alone or in view of Begault, Fail for the Same Reasons

Because challenged claims 9-14, and 16-17 of Ground 2 depend from independent claims 8 and 15, respectively, and rely on Norris, alone or in view of Begault and Alagzi, for at least the teachings of the several limitations of claims 8

and 15 above, these claims are not rendered obvious by Norris, alone or in view of Begault and Algazi.

D. The Petition Should Not be Instituted on Ground 3 Because the Prior Art Fails to Disclose or Teach the Invention as Claimed.

Petitioner asserts claims 8-10, 15-17 are obvious based on Shivappa, alone or in view of Zhou. Pet. 2. The asserted prior art fails to disclose one or more limitations, either expressly or inherently, and a POSITA would not have been motivated to start with or combine the asserted references to arrive at the claimed subject matter, nor would they have had a reasonable expectation of success in arriving at the claimed subject matter. The Petition fails to establish a reasonable likelihood that Shivappa, alone or in view of Zhou, would have rendered the challenged independent claims obvious. The Board should therefore deny institution based on Ground 3.

1. Shivappa

Shivappa is titled “Spatialized audio output based on predicted position data,” and was published on April 13, 2021. Ex.1010. Shivappa teaches an audio processing device equipped with a position predictor configured to determine “a predicted position of the audio device (or the user) at a particular (e.g., future) time based on the position data.” *Id.*, Abstract; 3:1-4. Shivappa’s position data includes “historical position data” and “velocity,” “estimated trajectory, or another indication

of a predicted movement path.” *Id.*, 3:5-11. Shivappa’s audio processing device generates “an output spatialized audio signal based on the predicted position data instead of based on the position data,” (*Id.*, Abstract), “[t]o prevent or reduce a likelihood of an audio output from lagging behind the user’s movement.” *Id.*, 3:35-36.

2. Zhou

Zhou is titled “An Experimental Study on the Role of Software Synthesized 3D Sound in Augmented Reality Environments,” and was published in August 2004. Ex.1011. Zhou is directed to “augmented reality (AR) environments.” *Id.*, Abstract. Zhou uses “a single camera system,” (*Id.*, 7), to test a hypothesis that “3D sound could also be helpful in AR environment for people to perceive depth.” *Id.*, 12. Zhou’s subjects “are required to tell which [virtual] telephone was nearer to [them] in the cases with and without 3D sound aided respectively.” *Id.*, 13. Zhou provides the 3D sound in such a way to appear that the sound “emanate[s] from the marker,” on to which the virtual telephone is augmented. *Id.*, 7.

3. **Shivappa, alone or in view of Zhou, fails to disclose, teach, or suggest several limitations of independent claim 8 discussed above, nor does it render obvious claim 8**
 - a. **Shivappa fails to disclose or teach displaying an image that occurs within a near-field distance from a head of a user of limitation 8[a]**

Petitioner alleges that Shivappa renders obvious this limitation because of the disclosure of “HMDs with display screens for displaying visual information.” Pet. 52. Petitioner contends that because images in Shivappa are displayed on the display screen located within a distance less than one meter from a user’s head, Shivappa teaches this limitation. Again, Petitioner’s argument is founded on a misconception that the ‘836 Patent requires co-location of the display and the image. For the reasons discussed in §III.B.3.a.i, this assumption is an error, and thus Petitioner’s argument must be rejected.

As discussed in §III.C.3.a, the claimed display necessarily provides the user with important cues to visual depth perception. Unlike the ‘836 Patent, Shivappa never discloses a distance to the location of a perceived image in the virtual world. Ex.2006, ¶30; Ex.2008, ¶31. Even Petitioner cannot deny this. Unlike its argument for Ground 1 regarding Finnegan, Petitioner does not advance a theory of obviousness based on “the location of a *perceived* image” for Shivappa. *Compare* Petition, 52-53, *with id.*, 10. Petitioner fails to show that Shivappa’s display allows a listener to perceive “an image that occurs within a near-field distance from a head

of a user,” as claimed. Ex.1001, claim 8; 22:11-12 (providing that the claimed display allows a listener to “perceive[] the images at different distances with respect to the listener. Because Petitioner has failed to “specify sufficiently” where in Shivappa an image that occurs within a near-field distance from a head of a user is found—notably in view of the ‘836 patent specification—Ground 3 of the Petition is fatally defective. *In re EVERYMD.COM*, Paper 9, at 23-25; *see also* 37 C.F.R. § 42.104(b)(4), 42.22.

Shivappa fails to disclose, teach, or suggest displaying an image that occurs within a near-field distance from a head of a user as claimed.

b. Shivappa, alone or in view of Zhou, fails to disclose or teach a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image of limitation 8[c]

Petitioner alleges that Shivappa renders obvious this limitation because it discloses “virtual images and associated binaural sounds.” Pet. 55. Petitioner only relies on its expert conclusory statement that “POSAs would have known these sounds could and would be located at SLPs with coordinate locations occurring at far-field distances.” *Id.*; Ex.1003, ¶389. As a threshold matter, there is no detailed discussion in the Petition supporting Petitioner’s conclusion, requiring 8KHZ and the Board to go in search of the supporting analysis in Dr. Roginska’s declaration (which is also conclusory). Petitioner incorporates arguments by reference and

therefore violates 37 C.F.R. § 42.6(a)(3). *Cisco Sys.*, Paper 12 at 9. This reason alone suffices to deny institution. *See Parus Holdings*, 70 F.4th at 1370-71. Even if this is overlooked, statements offered by Petitioner’s expert “are conclusory and unsupported, add[] little to the conclusory assertion for which [they are] offered to support, and are entitled to little weight.” *Xerox*, Paper 9 at 15. For the same reason as in *Xerox*, the statements here made by Petitioner’s expert should be disregarded and entitled to no weight.

Further, Petitioner mischaracterizes Shivappa’s teachings. Contrary to Petitioner’s argument, Shivappa does not associate binaural sounds to virtual images. Shivappa merely provides for a method “to modify the spatialized audio signal during playback of the spatialized audio signal such that the spatialized audio signal is perceived to be in synch with user movement.” Ex.1010, 8:30-34. And contrary to Petitioner’s argument, no example of Shivappa involves a virtual image. Ex.2006, ¶30. Take the “door opening” example in Shivappa—which Petitioner mischaracterizes as if it involves “a virtual door,” (Pet. 55-56)—“ a user may perceive a sound of a door opening to their right (but not to their left) for an auditory sound of an opening door.” Ex.1010, 5:34-36. Shivappa never teaches that the sound associates with an image in the virtual world.

Further, Petitioner’s citations to Shivappa’s specification, (Pet. 55-56), are wholly inapposite, for they do not teach these sounds are located at SLPs with

coordinate locations occurring at far-field distances, as required by this limitation. In those citations, Shivappa merely discloses that spatialization of the sound “may enable the user to perceive direction, distance, or both of one or more sound sources.” *Id.*; Ex.1010, 5:31-34. Shivappa never discloses that these sounds should be localized in the far-field (i.e., at distances that are at least one meter away from the listener). Therefore, because Petitioner fails to show that Shivappa discloses “a sound localization point (SLP) with a coordinate location that occurs at a far-field distance,” as required by the ‘836 Patent, (Ex.1001, claim 8), the Petition is fatally defective. For this reason alone, the Petition cannot be instituted under Ground 3, because Petitioner does neither “specify sufficiently where each element of each challenged claim is found” in Shivappa. *In re EVERYMD.COM*, Paper 9, at 23-25; *see also* 37 C.F.R. § 42.104(b)(4), 42.22.

Next, Petitioner argues, in a conclusory manner, that Shivappa teaches this limitation because “Shivappa’s binaural sounds would (or obviously would) occur behind associated images presented at near-field distances on Shivappa’s HMDs’ lenses.” Pet. 56. Aside from the fact this conclusory statement does not win the day for Petitioner under the rules of *Parus Holdings* and *Xerox*, Petitioner’s argument is again founded on a misconception that the ‘836 Patent requires co-location of the display and the image. For the reasons discussed in §III.B.3.a.i, this assumption is an error and directly contradicts the ‘836 Patent specification, and thus must be

rejected. As discussed in §§III.B.3.c, III.C.3.c., the ‘836 Patent requires the audio component of a virtual sound source be rendered at an incongruent position in the far-field and behind the visual component—while keeping the visual component in the near-field—to “improve[] the accuracy of the localization and experience of the listener.” Ex.1001, 9:55-59; Ex.2006, ¶¶7-11; Ex.2008, ¶¶13-15. Shivappa neither teaches nor suggests the concept of incongruent rendering of audio and visual components of a virtual sound source, let alone disclosing that the former is placed behind the latter.

Alternatively, Petitioner argues that Shivappa in view of Zhou renders this limitation obvious, because Zhou places binaural sounds “around 1.5 m away from a listener ... while images associated with the sound sources were presented to the listener on the lenses of Zhou’s HMD, i.e., at a near-field distance.” Pet. 57. But Petitioner’s argument is fundamentally flawed for several reasons. First, Petitioner again erroneously assumes that this limitation of the ‘836 Patent requires co-location of the image and display, and thus must be rejected for the same reasons discussed in §III.B.3.a.i.

Second, as illustrated by Zhou’s FIG. 1, Zhou uses a “single camera system where camera is mounted to the front of HMD.” Ex.1011, 7. A single camera system allows only for monocular vision, thereby eliminating important cues to visual depth perception. *Id.* (admitting that “binocular cues do not work well due to the single-

camera setting”); Ex.2006, ¶32; Ex.2008, ¶¶33-34. However, as discussed in §III.B.3.a.i, the ‘836 Patent claims disclose a distance to the location of a perceived image in the virtual world. Thus, the display claimed necessarily provides user with important cues to visual depth perception—which cannot be achieved by Zhou’s HMD. Ex.2006, ¶32; Ex.2008, ¶¶33-34.

A POSITA would have known that providing such important cues to visual depth perception necessarily requires a display that can display stereoscopic images. In fact, the ‘836 Patent specification makes clear that the claimed display must be “a HMD, a display showing stereoscopic video or images.” Ex.1001, 22:16-20. Several embodiments disclosed the ‘836 Patent confirm that the claimed display necessarily renders “stereoscopic videos and images,” (*Id.*, 22:16-20), “3D image[s],” (*Id.*, 5:53-54), and “images in 3D environment[s],” (*Id.*, 23:51-52), thereby providing the user with important cues to visual depth perception. Ex.2008, ¶22.

A POSITA would have had no expectation of success adopting Zhou’s HMD to arrive at claimed limitation, because it is well-known in the art that experiments in monocular vision are not applicable to stereo vision head-mounted displays. Ex.2006, ¶32; Ex.2008, ¶¶33-34. For example, Turner et al., relied on by Petitioner’s

expert, discusses Zhou’s experiments and findings. Ex.1041, 4.¹² Turner unequivocally states that “the use of headphones and the monoscopic display mean the conclusions of this study [i.e., Zhou] cannot be transferred directly to a stereoscopic 3D viewing situation.” *Id.*; Ex.2006, ¶32; Ex.2008, ¶34. The Petition fails to resolve the differences between the prior art that allows only for monocular vision with the display claimed that allows for stereoscopic 3D vision, and so fails to adequately state a claim for relief. *Liberty Mutual*, Paper 7 at 2-3. Accordingly, a POSITA, as they understand Zhou’s conclusions, would not be motivated to combine Zhou with a display capable of providing cues to visual depth perception as claimed.

Third, Petitioner mischaracterizes Zhou, for Zhou does not render a sound behind the virtual image presented to the user. Zhou explains that its HMD has a built-in camera that captures images of the experiment environment comprising two markers, onto which two virtual telephones are augmented. *Id.*, 12. Zhou’s FIG. 2, reproduced below, shows “the augmented view seen by the user” vis-à-vis “a scene

¹² Turner is recognized as a high-impact research article in the field of depth perception—even Finnegan, the prior art reference asserted by Petitioner, discusses Turner as one of the most influential studies in the field. Ex.1005, 4.

captured by a moving camera.” *Id.*, 8. Simply put, in Zhou’s experiment virtual objects (i.e., telephones) are superimposed on the real-world markers.



Zhou proposes a hypothesis that “3D sound could also be helpful in AR environment for people to perceive depth.” *Id.*, 12. Zhou tests this hypothesis by an experiment whereby “the subject[s] are required to tell which telephone was nearer to [them] in the cases with and without 3D sound aided respectively.” *Id.*, 13. But Zhou is abundantly clear that in its experiment “the 3D sound appears to emanate from the marker,” on to which the virtual telephone is augmented. *Id.*, 7; Ex.2006, ¶31; Ex.2008, ¶32. Therefore, Zhou does not disclose rendering a binaural sound at a far-field distance from the listener for and behind an image presented to the listener in the near-field, because the audio and visual components of the virtual object are co-located in Zhou. For this reason alone, the Ground 3 of the Petition is fatally defective, because it does neither “specify sufficiently where each element of each challenged claim is found.” *In re EVERYMD.COM*, Paper 9, at 23-25; *see also* 37 C.F.R. § 42.104(b)(4), 42.22.

Shivappa, alone or in view of Zhou, fails to disclose, teach, or suggest a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image as claimed.

- c. Shivappa, alone or in view of Zhou, fails to disclose or teach that DSP processes the sound for the image with far-field HRTFs while the electronic device is located at the near-field distance of limitation 8[e]**

Petitioner makes a conclusory statement that a POSITA would have known that Shivappa's DSP, alone or in view of Zhou, uses "far-field HRTFs" to "process sound for images at far-field locations." Pet. 58. Aside from the fact this conclusory statement does not win the day for Petitioner under the rules of *Parus Holdings* and *Xerox*, per express language of the claim limitation, Petitioner must show that Shivappa, alone or in view of Zhou, uses far-field HRTFs for images at near-field locations. Because Petitioner has failed to "specify sufficiently" where in Zhou this claim limitation is found, Ground 3 of the Petition is fatally defective. *In re EVERYMD.COM*, Paper 9, at 23-25; *see also* 37 C.F.R. § 42.104(b)(4), 42.22.

Further, for reasons discussed in §§III.D.3.a, III.D.3.b, Petitioner cannot show that Shivappa, alone or in view of Zhou, discloses incongruently generating binaural sounds for virtual images positioned in the near-field via using far-field HRTFs. Yet again, Petitioner's argument is founded on a misconception that the '836 Patent requires co-location of the display and the image. Pet. 58. For the reasons discussed

in §III.B.3.a.i, this assumption is an error and directly contradicts the ‘836 Patent specification, and thus must be rejected.

Shivappa, alone or in view of Zhou, fails to disclose, teach, or suggest DSP processes the sound for the image with HRTFs while the electronic device is located at the near-field distance as claimed, and Petitioner has failed to provide an explicit analysis in the Petition of how and why a POSITA would have a reasonable expectation of success to combine the prior art to arrive at the invention as claimed.

4. Shivappa, alone or in view of Zhou, fails to disclose, teach, or suggest several limitations of independent claim 15 discussed above, nor does it render obvious claim 15

a. Shivappa, alone or in view of Zhou, fails to disclose or teach displaying an image that is located within a near-field distance from a head of a user viewing the image 15[a]

This limitation would not have been obvious over the prior art for the same reason as limitation 8[a].

b. Shivappa, alone or in view of Zhou, fails to disclose or teach a SLP with a coordinate location that occurs at a far-field distance located behind the image and along a line-of-sight from the user to the image of limitation 15[d]

This limitation would not have been obvious over the prior art for the same reason as limitation 8[c].

Because Shivappa, alone or in view of Zhou, fails to disclose, teach, or suggest the several limitations of independent claims 8 and 15 discussed above, and does not render obvious claims 8 and 15, institution based on Ground 3 should be denied.

5. All Remaining Claims That Rely on Finnegan, alone or in view of Begault, Fail for the Same Reasons

Because challenged claims 9-10, and 16-17 of Ground 3 depend from independent claims 8 and 15, respectively, and rely on Shivappa, alone or in view of Zhou, for at least the teachings of the several limitations of claims 8 and 15 above, these claims are not rendered obvious by Shivappa, alone or in view of Zhou.

E. The Board Should Exercise Discretion Under 35 U.S.C. §314 to Deny Institution

Institution of *inter partes* review is always discretionary. 35 U.S.C. §314(a). The Board should exercise its discretion under §314(a) to deny institution here.

1. The Board should exercise its discretion to deny institution of this Petition.

The Board should deny institution under §314(a) in view of its precedential decisions in *NHK Spring*¹³ and *Fintiv*¹⁴ because the district court and parties have

¹³ *NHK Spring Co., Ltd., v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 (PTAB Sep. 12, 2018) (precedential).

¹⁴ *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (“*Fintiv*”) (precedential).

already expended substantial time and resources, a stay is unlikely, and a final written decision (“FWD”) in this proceeding is expected no earlier than December 2024, at least four months after the jury trial begins. The ’836 Patent is involved in the related matter, (Pet. 65), that involves the same issues, arguments, and evidence that Petitioner has presented in the Petition. Petitioner gives little attention to the discretionary issues in the Petition and provides no *Sotera* stipulation resulting in an overlap of invalidity issues. Pet. 64-65. Duplicating the district court’s efforts would not be an efficient use of the Board’s resources and would not serve to fulfill the primary purpose of AIA proceedings: to provide a practical and efficient alternative to district court litigation.

In *NHK Spring* the Board denied institution primarily because the related district court case was nearing its final stages and would resolve all the issues before the Board. *NHK Spring*, Paper 8 at 20; *see also id.*, 11-18 (applying discretion under 35 U.S.C. § 325(d)). Other cases—relying on *NHK Spring*—have also denied institution. For example, in *E-One, Inc. v. Oshkosh Corp.*, the Board applied *NHK Spring*’s analysis under 35 U.S.C. §314(a) to deny institution. IPR2019-00161, Paper 16 (PTAB May 15, 2019). In *E-One*, the Board reasoned:

[i]n the § 314(a) portion of its analysis, [*NHK Spring*] noted that a district court proceeding involving the same patent was scheduled to go to trial before a final decision would have been due in the Board

proceeding, and the Board proceeding would involve the same claim construction standard, the same prior art references, and the same arguments as in the district court.

Id., 6. In both *NHK Spring* and *E-One*, factors warranting a denial of institution included: the district court investing considerable time and resources to handle the same issues presented in the IPR, and trials that were scheduled to be completed prior to a Board’s FWD. The facts here warrant denial just as decided in *NHK Spring* and *E-One*. Further, the Petition will not serve as an “effective and efficient alternative” to litigation, frustrating a primary objective of the AIA. *Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 16–17 (PTAB Sept. 6, 2017) (precedential).

In *Fintiv*, the Board emphasized six factors to consider under *NHK Spring* which are discussed below. *See Fintiv*, Paper 11 at 5-16. The Board stated that “[t]hese factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.*, 6. Here, each of these factors favors denial of institution of this Petition. Because the overall balance of factors favors denial of institution, the Board should apply its discretion under 35 U.S.C. § 314(a) to deny institution of the requested proceeding.

a. Factor 1 weighs against institution, because no court has granted a stay and no evidence exists that a stay may be granted.

The parallel district court proceeding has not been stayed. That proceeding includes a total of nine patents-in-suit, and Petitioner has filed Petitions against all patents-in-suit. While there is a pending motion for inter-district transfer, Petitioner has not sought a stay pending resolution of the motion, and overall a stay is unlikely. Pet. 64.

The district court has not indicated whether it would grant a stay if *inter partes* review is instituted, and the Board should decline to speculate whether the district court would grant a stay in this proceeding. *See, eClinicalWorks, LLC v. Decapolis LLC*, IPR2022-00229, Paper 10 at 8 (April 13, 2022) (“We will not attempt to predict, based on the facts in allegedly similar prior situations, how the Texas District Court would rule should a stay be requested in the WDTX Cases.”).

There is no evidence a stay may be granted if trial is instituted. This factor is at least neutral or weighs in favor of discretionary denial of institution.

b. Factor 2 weighs against institution, because trial in the district court is scheduled to begin months before the final written decision deadline.

Trial is set to begin in the parallel district court proceeding in August 2024. Ex.2002 at 5. This trial date is currently at least four (4) months before an expected December 2024 FWD would issue in this IPR. Proceedings with similar substantial

gaps between trial and FWD have found Factor 2 weighs in favor of denying institution. *See GlobalFoundries Inc. v. UNM Rainforest Innovations*, IPR2020-00984, Paper 11 at 11-16 (PTAB Dec. 9, 2020) (finding that a scheduled trial date four months before the statutory deadline for a final written decision was a factor weighing in favor of discretionary denial); *NanoCollect Biomedical, Inc. v. Cytonome/ST, LLC*, IPR2020-00551, Paper 19 at 16 (PTAB Aug. 27, 2020) (same); *U.S. Venture, Inc. v. Sunoco Partners Marketing & Terminals, L.P.*, IPR2020-00728 Paper 10 at 9 (PTAB October 1, 2020) (three or four months before issuance of final written decision). Here, just as in *NHK Spring*, “[i]nstitution of an inter partes review under these circumstances would not be consistent with ‘an objective of the AIA ... to provide an effective and efficient alternative to district court litigation.’” *NHK Spring*, Paper 8 at 20. As the Board recognized in *Fintiv*, “[i]f the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution under *NHK*.” *Fintiv*, IPR2020-00019, Paper 11 at 9.

Importantly, there is no evidence that the parties’ trial will be extended, let alone delay of trial would extend past the statutory deadline for the FWD. *See Cisco Systems, Inc. v. Oyster Optics, LLC*, IPR2021-00319, Paper 9 at 10-12 (PTAB Jun. 8, 2021) (weighing *Fintiv* factor 2 in favor of exercising discretion to deny Petition).

In sum, there is no reason to believe the August 2024 trial will be postponed. *See Fintiv*, Paper 11 at 13 (“We generally take courts’ trial schedules at face value absent some strong evidence to the contrary.”); *see also, Cisco Systems, Inc. v. Monarch Networking Solutions, LLC*, IPR2020-01227, Paper 11 at 9-11 (PTAB Mar. 4, 2021) (declining to speculate whether the district court will grant the pending motion to transfer and weighing *Fintiv* factor 2 in favor of denial of institution).¹⁵ Without a stay pending IPR, litigation continues, and there will be a continued expenditure of court resources. This factor weighs in favor of discretionary denial of institution.

¹⁵ This timing continues to hold under the guidance in the Director’s June 21, 2022, memo titled “Interim Procedures for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation” (“*Fintiv Memo*,” Ex.2003). The *Fintiv Memo* directs the Board to “consider the median time from filing to disposition” in the district court (Ex.2003 at 3), which for patent cases in the Western District of Texas is 25.4 months (Ex.2004), and for patent cases before Judge Albright is 24.7 months (Ex.2005). Counting from the June 3, 2022, filing of the parallel district court case results in an average time to trial before the end of July 2024, well in line with the scheduled August 2024 trial and roughly five months before any expected FWD here.

c. Factor 3 weighs against institution, because the court and parties have and will continue to invest significant time and resources in the parallel proceeding.

The district court action was filed June 3, 2022, and served June 13, 2022; this Petition was filed on June 8, 2023. Pet. 65, 68. Since then, the district court and parties have invested significant time and resources. In *Fintiv*, the Board stated, “if, at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial. Likewise, district court claim construction orders may indicate that the court and parties have invested sufficient time in the parallel proceeding to favor denial” of institution. *Fintiv*, Paper 11 at 9-10. Further, “[t]his investment factor is related to the trial date factor, in that more work completed by the parties and court in the parallel proceeding tends to support the arguments that the parallel proceeding is more advanced, a stay may be less likely, and instituting would lead to duplicative costs.” *Id.*, 10.

The investment by the parties and the court will be significant by the time either an institution decision or a FWD is issued. Petitioner waited over 11 months to file this Petition. By the time an institution decision is rendered in December 2023, the parties will have (1) completed Claim Construction briefing after depositions, (2) have had the Court rule on Petitioner’s motion to transfer after related discover and depostions, (3) conducted a Markman hearing, (4) received claim constructions (the Court’s procedure is to provide preliminary construction shortly in advance of

the Markman hearing and then provide final constructions at the hearing), (5) exchanged Final Infringement and Invalidity Contentions, and (7) closed fact discovery, which opens June 28, 2023 and closes December 21, 2023. Ex.2002 at 4. Further, the fact that the parallel district court proceeding opens fact discovery just weeks after claim construction does not change this analysis. *Universal Elecs., Inc. v. Universal Remote Control, Inc.*, 943 F. Supp. 2d 1028, 1031-32 (C.D. Cal. 2013) (“That the schedule in this case set discovery to occur after claim construction does not mean that the case remains in its procedural infancy until discovery is well underway.”). The district court action has and will proceed with significant costs to 8KHZ by the time an institution decision is rendered. This factor weighs in favor of discretionary denial of institution.

d. Factors 4-6 weigh against institution, because there is significant overlap between this IPR and district court proceedings, the parties involved are the same, and the asserted grounds fail.

The dispute in this proceeding and the district court case involves the same parties and overlapping issues. (Factors 4 and 5). Petitioner and 8KHZ are parties in the parallel district court litigation. Petitioner has presented substantially the same art and grounds of unpatentability in this Petition that it is asserting in the district court case – that the claims of the '836 Patent are allegedly obvious over at least the prior art Finnegan, Norris, Begault, and Algazi. Ex.2001 at 31-32. Thus, the claims

and prior art addressed by PTAB will not materially differ from what is being addressed in the parallel district court litigation. Further, as discussed above, there are blatant contradictions between the present Petition and Defendants' Invalidity Contentions in district court. Conducting proceedings in both the PTAB and district court with differing claim constructions and substantially similar prior art creates the potential of two different outcomes, leading to inconsistent results.

Petitioner has also not stipulated or withdrawn any invalidity positions raised at the district court that are also brought before the Board. Importantly, Petitioner has failed to make a stipulation in the Petition in full accordance with *Sotera* and has not filed such a stipulation in the district court.

Because the district court will address substantially the same issues, arguments, and evidence months before the Board's FWD would be due, instituting review here would not efficiently use the Board's resources, nor would it be an effective and efficient alternative to district court litigation.

The Board noted in *Fintiv* with respect to Factor 6 that:

[I]f the merits of a ground raised in the petition seem particularly strong on the preliminary record, this fact has favored institution.... [I]f the merits of the grounds raised in the petition are a closer call, then *that fact has favored denying institution* when other factors favoring denial are present.

Fintiv, IPR2020-00019, Paper 11 at 14-15. As shown above, the Petition fails on the merits for numerous reasons. These weaknesses, and the Factors addressed above, weigh in favor of discretionary denial of institution.

IV. CONCLUSION

For the foregoing reasons, institution of this IPR should be denied.

Date: September 14, 2023

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), the undersigned hereby certifies that the foregoing Patent Owner's Preliminary Response contains 13,996 words using the word count feature of Microsoft Word.

Dated: September 14, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), the undersigned hereby certifies that the above-captioned Eight KHZ LLC's Patent Owner Preliminary Response, and its cited exhibits, were served via electronic mail, as authorized by Petitioner's Mandatory Notices, on June 8, 2023 at the following email correspondence addresses of record:

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