

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

PATENT OWNER'S OBJECTIONS TO PETITIONER'S EVIDENCE

37 C.F.R. §§42.62, and 42.64

Pursuant to 37 C.F.R. §§42.62, and 42.64, and the Federal Rules of Evidence, Patent Owner Eight kHz, LLC (“8KHZ”) provides the following objections to evidence submitted by Petitioner Meta Platforms, Inc. These objections are timely served within ten (10) business days of the institution of the trial. The fact that 8KHZ has not objected below to certain pieces of evidence or certain portions of certain evidence provides no indication that 8KHZ agrees to the positions asserted therein. In addition, 8KHZ reserves the right to present further objections to this or additional evidence submitted by Meta Platforms, Inc., as allowed by the applicable rules or other authority.

I. 8KHZ’S OBJECTIONS TO EVIDENCE

Exhibit 1003 – “DECLARATION OF DR. AGNIESKA ROGINSKA IN SUPPORT OF PETITION”

8KHZ objects to the declaration of Dr. Agnieszka Roginska (the “Declarant”) Exhibit 1003 under Fed. R. Evid. 106, 401–403, 702– 703, 705, and 37 C.F.R. §§42.65(a), and §42.104(b)(5). This evidentiary failure cannot be cured because Petitioner is time-barred from filing another Petition under 35 U.S.C. §315(b). 8KHZ specifically objects to:

- (1) Paragraphs 41, 46, 53, 63, 98, 185-186, 197, 200, 202, 225, 241, 267, 280, 285, 288-289, 302, 307, 312, 326, 354, 367-368, 392, and 417 of Exhibit 1003 on the grounds that they are irrelevant, misleading, unduly

- prejudicial, and confusing under Fed. R. Evid. 401–403; and speculation under Fed. R. Evid. 702, 703, and 705;
- (2) Paragraphs 57, 74, 76, 91, 92, 93, 131, 157, 200, 218, 251, 253, 269, 287, 327, and 396 of Exhibit 1003 on the grounds that the probative value of the testimony contained therein is outweighed by a danger of prejudice and confusion under Fed. R. Evid. 403 and to the extent that at least some of these paragraphs fail to include all related parts “that in fairness ought to be considered at the same time” under Fed. R. Evid. 106;
- (3) Paragraphs 68, 98-101, 104, 107-121, 186, 188-193, 214-236, 251, 255, 266-267, 289, 314-322, 339, 364, 377, and 397-400 of Exhibit 1003 on the grounds that they contain purported expert testimony by a Declarant who is not qualified as an expert on these issues in violation of Fed. R. Evid. 702–703;
- (4) Paragraphs 41, 45-47, 53, 58, 62-68, 72, 74, 77, 79, 80, 82, 84, 89, 91-92, 94-98, 99-103, 108, 116, 119, 124-125, 144, 161, 185-188, 193, 194, 196, 200-204, 207-211, 213, 216-217, 221-223, 225-227, 231-235, 237, 240-243, 245, 250, 255-257, 259, 261, 263, 267-270, 272-280, 283, 285, 288-291, 293, 297, 302-303, 307, 310-312, 314-315, 320, 321, 325-328, 330-332, 348, 350, 354, 361, 367-375, 377, 392, 394, 396, 400-405, and 423-424 of Exhibit 1003 on the grounds that they contain “[e]xpert testimony

that does not disclose the underlying facts or data on which the opinion is based” in violation of 37 C.F.R. §42.65(a) and Fed. R. Evid. 702–703, and 705;

(5) All Paragraph of Exhibit 1003 to the extent that they are offered to prove the truth of the matter asserted on the grounds that they contain inadmissible hearsay; and

(6) Paragraphs 1-25, 52-120, 122, 182-184, 278, 290, 362, 375-378, 431-432 of Exhibit 1003 on the grounds that they are not cited to or relied upon by the Petition (Paper 2) in violation of 37 C.F.R. §42.104(b)(5).

The fact that 8KHZ has not objected to certain paragraphs of Exhibit 1003 provides no indication that 8KHZ agrees to the positions asserted therein.

1. Objections to Irrelevant, Misleading, Unduly Prejudicial and Confusing Testimony

8KHZ objects to Exhibit 1003 as unsupported and conclusory testimony that is irrelevant, misleading, unduly prejudicial, and confusing under Fed. R. Evid. 401–403 and purported expert opinion that is pure speculation under Fed. R. Evid 702, 703, and 705.

Specifically, and without limitation, 8KHZ objects to any such paragraph in which the Declarant speculates as to a POSITA’s understanding and state of mind, including, without limitation, paragraphs 41, 46, 53, 63, 98, 185-186, 197, 200, 202,

225, 241, 267, 280, 285, 288-289, 302, 307, 312, 326, 354, 367-368, 392, and 417 for relying on conclusory statements that are unsupported by factual evidence and which is pure speculation and/or unsupported by facts or data of a type reasonably relied upon by experts in the field in order to form the opinion or inferences made therein.

In paragraph 41, Declarant misleadingly characterizes and purely speculates without providing any supporting evidence that “[c]laims 15-17 are nearly identical to claims 8-10.”

In paragraph 46, Declarant purely speculates without providing any supporting evidence that “[w]ith respect to the ’836 patent, a person of ordinary skill in the art at the time of the earliest claimed priority date, May 24, 2017, would have been familiar with the development and implementation of virtual and/or augmented reality systems, and underlying technology used therein.”

In paragraph 53, Declarant purely speculates that “[t]he opinions that I provide in this declaration would remain true under any reasonable construction of the claim terms in the ’836 patent.” -

In paragraph 63, Declarant purely speculates that “[p]ersons of ordinary skill in the art also knew and understood for years before May 2017 that HMDs display images on lenses located inches away from a user’s eyes, to immerse the user in the images displayed.”

In paragraph 98, Declarant purely speculates “[a]ny person of ordinary skill using such databases would process signals and render binaural signals resulting in sounds in the far field.”

In paragraph 185, Declarant purely speculates that “[a] person of ordinary skill in the art would have considered it obvious to, and would have good reason to, use DSPs in a system like Finnegan’s, including as Begault described.”

In paragraph 186, Declarant purely speculates that “persons of ordinary skill in the art understood that DSPs could be advantageously used to process 3D sounds for virtual images” and that “[t]his was routine, commonplace, and straightforward for skilled artisans.”

In paragraph 197, Declarant purely speculates that “persons of ordinary skill in the art would have known and understood that an HMD displays images on its lenses, inches from a user’s eyes, which is ‘within a near-field distance from a head of a user,’ i.e., less than a meter away.”

In paragraph 200, Declarant purely speculates that “the electronic device must be at the same near-field distance at which the display displays the image to the user.”

In paragraph 202, Declarant speculates that 8KHZ’s interpretation of this claim limitation is different from the specification.

In paragraph 225, Declarant purely speculates that “persons of ordinary skill in the art would have known and understood that the “incongruent” sounds that Finnegan tested were, in addition to being behind tested images, along a line-of-sight from the user to such images.”

In paragraph 241, Declarant purely speculates that “[p]ersons 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.”

In paragraph 267, Declarant purely speculates that “persons of ordinary skill in the art designing such environments would have known and understood the need to control for head movement, including when ‘the head of [a] user moves away from viewing [an] image and the image remains within the near-field distance from the head of the user,’ as claimed.”

In paragraph 280, Declarant purely speculates that “[a] person of ordinary skill in the art would have considered it obvious to, and would have good reason to, use HRTFs from Algazi’s database with the methods, devices, and system for providing sound localization described in Norris, or a Norris- Begault system.”

In paragraph 285, Declarant purely speculates that “[p]ersons of ordinary skill in the art also would have reasonably expected to succeed in using CIPIC

HRTFs with a Norris or Norris-Begault system, as such a combination would have been straightforward and routine.”

In paragraph 288, Declarant purely speculates that “[a] person of ordinary skill in the art would have recognized, long before May 2017, that Sauk’s methods of switching from binaural to stereo (or monophonic, in some instances) sound to indicate relevance of audio signals could enhance or maintain user experience and perceptual accuracy while decreasing computational processing requirements.”

In paragraph 289, Declarant purely speculates that “Sauk provides a method of degrading less relevant sound that is readily transferable to the devices and methods that Norris discloses, or that would be used in a Norris-Begault system.”

In paragraph 302, Declarant purely speculates that “persons of skill in the art would have known and understood that Norris used its processors to process sound for an image.”

In paragraph 307, Declarant purely speculates 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, including images presented at near-field distances ... and along a user’s line of sight.”

In paragraph 312, Declarant purely speculates that “such person of skill in the art would have been motivated to do this, and would have expected to succeed in doing this, because, for example, doing so would have involved the same type of

processing for localizing sound to other locations and would have involved no more than using similar processing in a similar configuration with only minor, straightforward differences.”

In paragraph 326, Declarant purely speculates that “a person of ordinary skill would understand that by using far- field HRTF databases, other audio cues can be changes to produce near-field effects for closer distances, e.g., by turning up the volume.”

In paragraph 354, Declarant purely speculates that “persons of ordinary skill in the art would have known that Norris’s systems and methods could and should maintain sound occurring at the far-field distance for an image displayed on a near-field lens Norris’s AR or VR HMDs, e.g., the ‘virtual water fountain,’ even while a user’s head moves away from viewing that image so that the user can continue to determine the sound source’s location.”

In paragraph 367, Declarant purely speculates that “a person of ordinary skill in the art would have known and been motivated to degrade binaural audio, such as by automatically switching that sound to stereo sound, as a WED is rotated.”

In paragraph 368, Declarant purely speculates that “a person of ordinary skill in the art would have understood that degrading sound that is out of the field-of-view from binaural to stereo could conserve processing power, and by extension the battery life of a HMD, both powerful motivations for 3D audio and system

engineers. All the while, such degradation would not impact the user's ability to recognize where the sound source was located."

In paragraph 392, Declarant purely speculates that "[t]o the extent Patent Owner argues that Shivappa does not disclose or render obvious limitation 8[c] on its own, it is my opinion that this limitation would have been obvious to a person of ordinary skill in the art in view of Zhou."

In paragraph 417, Declarant purely speculates that "a person of ordinary skill in the art would understand that a user would be viewing the image displayed by display within a near-field distance from a head, i.e. a HMD worn a few inches from the user's head."

Accordingly, such unsupported and conclusory testimony is objected to as irrelevant, misleading, unduly prejudicial, and confusing under Fed. R. Evid. 401–403 and pure speculation under Fed. R. Evid. 702, 703 and 705.

2. Objections to Testimony Whose Probative Value is Substantially Outweighed by a Danger of Prejudice and Confusion

8KHZ objects to paragraphs 57, 74, 76, 91, 92, 93, 131, 157, 200, 218, 251, 253, 269, 287, 327, and 396 of Exhibit 1003 to the extent that the probative value of the testimony contained therein is substantially outweighed by a danger of prejudice and confusion under Fed. R. Evid. 403.

Specifically, 8KHZ objects to the misleading characterization in paragraph 57 that the “HMD of the VIEW used ... headphones to ‘present a wide variety of binaural sounds to the operator,” whereas the VIEW reference specifically provides that only the “Binaural auditory display” subsystem—but not the HMD subsystem—“is capable of presenting a wide variety of binaural sounds to the operator via headphones.” Ex. 1031 at 93. Furthermore, 8KHZ objects to the misleading characterization of Ex. 1075 that “[t]he VIEW system utilized HRTF-based audio and ‘maximize[d] flexibility and portability by synthetically generating three-dimensional sound in realtime for delivery through headphones,’ whereas Exhibit 1075 does not provide support for use of HRTF-based audio to maximize flexibility and portability: “The signal-processing device being developed at NASA-Ames maximizes flexibility and portability by synthetically generating three-dimensional sound in realtime for delivery through headphones.” Ex. 1075 at 86. Declarant provides an out-of-context, incomplete picture of the document, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to misleading characterization in paragraph 74 that Exhibit 75 described using “recorded HRTFs could be used as digital filters to simulate sound localized to different positions around the subject,” whereas cited portions of Exhibit 75 do not provide any support for sound localization to different

positions via using HRTF. Declarant provides an out-of-context, incomplete picture of the document, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to misleading characterization in paragraph 76 that “HRTFs are transfer functions that represent how sound reaches the ears of a listener,” whereas Exhibit 1045 cited in the same paragraph to support this misleading characterization merely provides that HRTF is “[a] transfer function that takes into account factors involved in sound reaching the ears of a listener, for sound localization and the determination of the arriving spectrum of sound.” Ex. 1045 at 335. Declarant provides an out-of-context, incomplete picture of the document, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to misleading and confusing characterization in paragraph 91 that “it was well-known before May 2017 that a far-field HRTF could readily and advantageously be used for sounds of various distances” based on statements plucked from Romblon, Algazi 2011, and Brungart. Cited statements from Romblon, Algazi 2011, and Brungart do not provide any support for Declarant’s conclusory statements related to “far-field HRTFs,” and thus they are irrelevant. Declarant provides an out-of-context, incomplete picture of the

documents, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to misleading and confusing characterization in paragraph 92 that “processing sound with HRTFs ... including with ‘far-field HRTF’ for ‘near-field’ sources” was obvious based on statements plucked from THE VR BOOK, Begault, Wenzel 1988a, Wenzel 1991, and Burgess. Cited statements from these references do not provide any support for Declarant’s conclusory statements related to use of “‘far-field HRTF’ for ‘near-field’ sources” and thus they are irrelevant. Declarant provides an out-of-context, incomplete picture of the documents, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to misleading and confusing characterization in paragraph 93 related to teachings of Zotkin, Srinivasan, Najaf-Zadeh, Miller, and Agevik. Declarant provides an out-of-context, incomplete picture of the documents, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to misleading and incorrect characterization in paragraph 131 that Finnegan “found that ‘intentionally rendering the auditory and visual components of objects incongruently to one another could improve distance perception in a virtual environment,’” whereas Finnegan specifically provides that

such incongruent rendering does not work for all distances: “Our results show that our method was successful when the target was at longer range; participants were more accurate in a distance discrimination task when the auditory and visual components of the targets were incongruent. At closer range, where distance expansion may have affected the observers’ perception, the positioning function actually seems to have made the distance estimates worse.” Ex. 1005 at 11. Declarant provides an out-of-context, incomplete picture of the document, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to misleading and confusing characterization in paragraph 157 that in Sauk “sound relevance can be signified by how sound is processed, for example, as binaural, stereo, or mono sound,” whereas Sauk merely provides that “[t]he selective filtering techniques described above can be utilized by BSS 400 in another configuration which combines a plurality of audio dimensions such as 3-D (binaural), 2-D (stereophonic), and 1-D (monophonic).” Ex. 1009 at 11:26-30. Declarant provides an out-of-context, incomplete picture of the document, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ specifically objects to misleading and confusing characterization in paragraph 200 that claim 8 of the ‘836 Patent requires that

“electronic device must be at the same near-field distance at which the display displays the image to the user.”

Further, 8KHZ specifically objects to misleading and confusing characterization in paragraph 218 that Finnegan “discloses rendering audio ... to a ‘sound localization point (SLP) with a coordinate location ... behind the image.’” The phrase “sound localization point (SLP) with a coordinate location ... behind the image” is not found in Finnegan, and thus Declarant’s statement in paragraph 218 is confusing and misleading.

Further, 8KHZ specifically objects to misleading and confusing characterization in paragraph 251 that “Finnegan discusses how ‘[i]ncongruent multisensory environments’ like the one it aimed to design are applicable to ‘augmented reality (AR) environments,’” whereas Finnegan merely provides that “Zhou et al. incorporated 3D sound into their investigations of distance perception in incongruent augmented reality (AR) environments.” Ex. 1005 at 4. Declarant provides an out-of-context, incomplete picture of the document, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ specifically objects to misleading and confusing characterization in paragraph 253 that “‘mixed reality’ environments include VR and AR environments,” whereas THE VR BOOK merely provides that “‘mixed

reality’ ... can be further broken down into ‘augmented reality’ and ‘augmented virtuality.’” Ex. 1033 at 29. Declarant provides an out-of-context, incomplete picture of the document, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to the speculative and misleading characterization in paragraph 269 which falsely implies that Begault discloses “keep[ing] sound sources ‘fixed in virtual space independent of head movement’ ... [when] using incongruent audio at a far-field distance and an image remaining at a near-field distance,” without any suggestion in Exhibit 1006 to support this opinion.

Further, 8KHZ objects to the misleading characterization in paragraph 287 that “Sauk, like Norris, aims to provide advantageous mechanisms for improving the provision of 3D audio, including in AR, VR, and mixed-reality settings,” whereas the assertion is not supported by citations provided. For example, the citation to Sauk merely provides that the aim of the invention is to “provide the user with understandable information regarding their surroundings,” Sauk at 2:45-47. For another example, Norris’s discussion of “virtual realities or online games” or “play spaces,” relied upon by Declarant, does not support the assertion made. Norris at 9:12-17. Declarant provides an out-of-context, incomplete picture of the Sauk and Norris, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Further, 8KHZ objects to the speculative and misleading characterization in paragraph 327 which falsely implies that Norris Fig. 20 and THE VR BOOK Figs. 2.1 and 3.3 disclose “us[ing] far-field HRTFs for processing sound for images” in the near-field, whereas the cited figures fail to disclose the same.

Further, 8KHZ objects to the speculative and misleading characterization in paragraph 396 which falsely implies that the co-players in Zhou are “separated by distances of one meter or more, i.e., far-field distances, in a nine square meter play area,” whereas Zhou does not provide any support for this assertion. Declarant provides an out-of-context, incomplete picture of Zhou, and pursuant to Fed. R. Evid. 106 fails to include all related parts “that in fairness ought to be considered at the same time.”

Accordingly, for at least the foregoing reasons, the testimony of paragraphs 57, 74, 76, 91, 92, 93, 131, 157, 200, 218, 251, 253, 269, 287, 327, and 396 of Exhibit 1003 is inadmissible as misleading and confusing under Fed. R. Evid. 401–403 and fails to include all related parts “that in fairness ought to be considered at the same time” under Fed. R. Evid. 106.

3. Objections to Purported Expert Testimony by a Declarant Who Is Not Qualified as an Expert

8KHZ objects to each and every paragraph of Exhibit 1003 where Declarant made a statement regarding signal processing and digital signal processing, distance

compression phenomenon including discussion of Finnegan and Zhou, depth perception, head-tracking system and technology, and public availability of a document under Federal Rules of Evidence 702–703 as the exhibit contains purported expert testimony by a Declarant who is not qualified as an expert by knowledge, skill, experience, training, or education to provide an expert opinion on these issues.

Specifically, and without limitation, 8KHZ objects to testimony of paragraphs 68, 98, 154, and 284 containing improper opinion testimony by Declarant on the public availability of processing techniques and HRTFs databases, subject matter on which Declarant is not an expert.

Further, 8KHZ objects to the testimony of paragraphs 99, 100, and 101, 104, 107, 214-227, 251, 255, 266-267 containing improper opinion testimony by Declarant on psychoacoustics phenomenon of depth perception, subject matter on which Declarant is not an expert.

Further, 8KHZ objects to the testimony of paragraphs 108, 109, 110, 111, 112, 113, 114, 115, 289, 339, 364, and 377 containing improper opinion testimony by Declarant on head-tracking technology and tracking in general, subject matter on which Declarant is not an expert.

Further, 8KHZ objects to the testimony of paragraphs 116, 117, 118, 119, 120, 121, 186, 188-193, 226-236, 314-322, and 397-400 containing improper opinion

testimony by Declarant on the functionality of processors and engines, including without limitation DSPs, subject matter on which Declarant is not an expert.

Further, 8KHZ objects to the testimony of paragraphs 124-132, 212, 219, 221, and 266-267 to the extent they improper opinion testimony by Declarant on psychoacoustics phenomenon of distance compression, subject matter on which Declarant is not an expert.

Accordingly, for at least the foregoing reasons, the testimony of paragraphs 68, 98-101, 104, 107-121, 186, 188-193, 214-236, 251, 255, 266-267, 289, 314-322, 339, 364, 377, and 397-400 of Exhibit 1003 is further inadmissible as misleading and confusing under Fed. R. Evid. 401–403 and also for failing to demonstrate that the testimony is reliably based on the facts and evidence as required by Fed. R. Evid. 702–703.

4. Objections to Purported Expert Testimony That Does Not Disclose the Underlying Facts or Data on Which the Opinion is Based

8KHZ further objects to Exhibit 1003 as including “[e]xpert testimony that does not disclose the underlying facts or data on which the opinion is based” in violation of 37 C.F.R. §42.65(a) and Fed. R. Evid. 702–703, and 705.

Specifically, each of paragraphs 41, 45-47, 53, 58, 63-68, 79, 80, 82, 84, 89, 94-98, 101-102, 108, 116, 124-125, 185-188, 193, 194, 196, 200-204, 207-211, 213, 216, 217, 221-223, 225-227, 231-235, 237, 240-243, 245, 250, 255, 257, 259, 261,

263, 267-270, 272-280, 283, 285, 288-291, 293, 297, 302-303, 307, 310-312, 314-315, 320, 321, 325-328, 330-332, 348, 350, 354, 361, 367-375, 377, 392, 394, 396, 400-405, and 423-424 contain sentences that do not cite to any evidence or facts to support the assertions made therein, and these uncited sentences are unsupported testimony that are accordingly objected to for failing to provide the underlying facts or data on which such opinion is based.

Further, sentences in paragraphs 62, 72, 74, 77, 79, 91-92, 99-101, 103, 119, 144, 161, 216, and 256 cite to references that fail to provide support for the statements and/or opinions being proffered, and this testimony is accordingly objected to for failing to provide the underlying facts or data on which such opinion is based.

5. Objections to Testimony Inadmissible for Hearsay

8KHZ objects to Exhibit 1003 to the extent Petitioner relies on it to prove the truth of the matter asserted as inadmissible hearsay under FRE 801 and 802 that does not fall under any exceptions, including those of FRE 803, 804, 805, or 807.

Further, 8KHZ objects to paragraph 76 under Fed. R. Evid. 801–802 as containing inadmissible hearsay because it contains out-of-proceeding statements that are being offered to prove the meaning of “head-related transfer function.”

Further, 8KHZ objects to paragraph 191 under Fed. R. Evid. 801–802 as containing inadmissible hearsay because it contains out-of-proceeding statements

that are being offered to prove that of “DSPs are appropriately sized for use in a system like Finnegan’s.”

Further, 8KHZ objects to paragraph 199 under Fed. R. Evid. 801–802 as containing inadmissible hearsay because it contains out-of-proceeding statements that are being offered to prove the truth of the assertion that “[t]he Oculus Rift was a predecessor to the Oculus Quest.”

Further, 8KHZ objects to paragraph 317 under Fed. R. Evid. 801–802 as containing inadmissible hearsay because it contains out-of-proceeding statements that are being offered to prove the truth of the assertion that “DSPs are fast.”

Further, 8KHZ objects to paragraph 343 under Fed. R. Evid. 801–802 as containing inadmissible hearsay because it contains out-of-proceeding statements that are being offered to prove the truth of the assertion “an intelligent personal assistant is one type of virtual character in an AR setting.”

6. Objections to Testimony Not Cited to or Relied Upon by the Petition

8KHZ further objects to Exhibit 1003 as to the extent the testimony provided by Declarant in paragraphs 1-25, 52-120, 122, 182-184, 278, 290, 362, 375-378, 431-432 is not cited to or relied upon by the Petition in violation of 37 C.F.R. §42.104(b)(5). Accordingly, this testimony is also irrelevant, misleading, and confusing under Fed. R. Evid. 401-403.

Exhibit 1012 – “DECLARATION OF INGRID HSIEH-YEE, PH.D.”

8KHZ objects to Exhibit 1012 under Fed. R. Evid. 401-403, 702–703, 705, 901 and 37 C.F.R. §42.65(a).

Specifically, 8KHZ objects to testimony in paragraphs 30-33, 66-68, 77-79, and 102-105 under Fed. R. Evid. 901 as there has not been a sufficient foundation laid for the admission of Begault, Finnegan, Algazi, and Zhou, for Declarant has no personal knowledge under Fed. R. Evid. 602 of these documents’ creation, storage, authorship, or any other required foundational aspect of the attached documents.

Further, 8KHZ objects to testimony in paragraphs 30-33, 66-68, 77-79, and 102-105, for they include “[e]xpert testimony that does not disclose the underlying facts or data on which the opinion is based” in violation of 37 C.F.R. §42.65(a) and Fed. R. Evid. 702–703, and 705. For example, in paragraphs 30-33, Declarant speculates that because Begault is found on NASA database, it is authentic. However, Declarant fails to explain why that would be the case. Further, in paragraphs 66-68, Declarant speculates that because Finnegan is “found in the custody of a digital library owned and managed by the publisher,” it is authentic. However, Declarant fails to explain why that would be the case. Further, in paragraphs 77-79, Declarant speculates that because Algazi is “found in the custody of a digital library owned and managed by the publisher,” it is authentic. However, Declarant fails to explain why that would be the case. Further, in paragraphs 102-

105, Declarant speculates that because Zhou is “found in the custody of a digital library owned and managed by the publisher,” it is authentic. However, Declarant fails to explain why that would be the case.

8KHZ further objects to testimony in paragraphs 30-33, 66-68, 77-79, and 102-105, because such unsupported and conclusory testimony is objected to as irrelevant, misleading, unduly prejudicial, and confusing under Fed. R. Evid. 401–403 and pure speculation under Fed. R. Evid. 702, 703 and 705.

Further, 8KHZ objects to Exhibit 1012 to the extent that it is offered to prove the truth of the matter asserted as inadmissible hearsay under FRE 801 and 802 that does not fall under any exceptions, including those of FRE 803, 804, 805, or 807.

Further, 8KHZ objects to Exhibit 1012 to the extent that it includes a number of attached appendices in violation of 37 C.F.R. §42.63. Accordingly, 8KHZ objects to any such appendices under 37 C.F.R. §42.63(a) and (c).

Exhibit 1002 – “U.S. Patent No. 11,290,836 File History”

8KHZ objects to this Exhibit under 37 C.F.R. §42.104(b)(5) because it is not cited to or relied upon by any paper in this proceeding, and, accordingly, it lacks relevance and fails to support a patentability challenge. Petitioner does not explain how this Exhibit is relevant to the proceeding (i.e., The Petitioner fails to provide the relevance of the evidence to the challenge raised), and the Board may exclude evidence where a party has failed to state its relevance. This evidentiary failure

cannot be cured because Petitioner is time-barred from filing another Petition under 35 U.S.C. §315(b).

Exhibits 1048-1049 – 8KHZ’s Infringement Contentions

8KHZ objects to these Exhibits under 401-403 and 37 C.F.R. §42.104(b)(5).

8KHZ objects to Exhibits 1048-1049 under Federal Rule of Evidence 401 as these Exhibits have no bearing on any issue in this proceeding. Furthermore, 8KHZ objects to these Exhibits under 37 C.F.R. §42.104(b)(5) because they are not cited to or relied upon by any paper in this proceeding, and, accordingly, they lack relevance and fail to support a patentability challenge. Petitioner does not explain how these Exhibits are relevant to the proceeding (i.e., The Petitioner fails to provide the relevance of the evidence to the challenge raised), and the Board may exclude evidence where a party has failed to state its relevance. Further, 8KHZ objects to these Exhibits because they have no bearing on the patentability of any of the claims of the Patent.

For these reasons, 8KHZ further objects to these Exhibits as irrelevant, misleading, unduly prejudicial, and confusing under Fed. R. Evid. 401-403.

Exhibit 1053– “Defendants Opening Claim Construction Brief”

8KHZ objects to this Exhibits under 401-403 and 37 C.F.R. §42.104(b)(5).

8KHZ objects to Exhibit 1053 under Federal Rule of Evidence 401 as this Exhibit has no bearing on any issue in this proceeding. Furthermore, 8KHZ objects

to this Exhibit under 37 C.F.R. §42.104(b)(5) because it is not cited to or relied upon by any paper in this proceeding, and, accordingly, it lacks relevance and fails to support a patentability challenge. Petitioner does not explain how this Exhibit is relevant to the proceeding (i.e., The Petitioner fails to provide the relevance of the evidence to the challenge raised), and the Board may exclude evidence where a party has failed to state its relevance. Further, 8KHZ objects to this Exhibit because it has no bearing on the patentability of any of the claims of the Patent.

For these reasons, 8KHZ further objects to this Exhibit as irrelevant, misleading, unduly prejudicial, and confusing under Fed. R. Evid. 401-403.

Exhibits Listed in Table A Below

8KHZ objects to each of the Exhibits listed in Table A under Fed. R. Evid. 901. This evidentiary failure cannot be cured because Petitioner is time-barred from filing another Petition under 35 U.S.C. §315(b).

Table A

Ex.	Description
1005	Daniel J. Finnegan et al., <i>Compensating for Distance Compression in Audiovisual Virtual Environments Using Incongruence</i>
1006	Durand R. Begault, <i>3-D Sound for Virtual Reality and Multimedia</i>
1008	V.R. Algazi et al., <i>The CIPIC HRTF Database</i>
1011	Zhiying Zhou et al., <i>An Experimental Study on the Role of Software Synthesized 3D Sound in Augmented Reality Environments</i>

8KHZ objects to each of the Exhibits listed in Table A under Fed. R. Evid. 901 as there has not been a sufficient foundation laid for the admission of each exhibit. The Petitioner has not submitted required witness testimony or evidence to demonstrate that this document is authentic. Although Petitioner attempts to authenticate the exhibit through its Ingrid Hsieh-Yee's testimony, she has no personal knowledge under Fed. R. Evid. 602 of the document's creation, the document's authorship, or any other required foundational aspect of each exhibit.

Further, 8KHZ objects to each of the Exhibits listed in Table A to the extent that it is offered to prove the truth of the matter asserted as inadmissible hearsay under FRE 801 and 802 that does not fall under any exceptions, including those of FRE 803, 804, 805, or 807.

Exhibits Listed in Table B Below

8KHZ objects to each of the Exhibits listed in Table B under Fed. R. Evid. 401–403, 901, and 37 C.F.R. §42.104(b)(5). This evidentiary failure cannot be cured because Petitioner is time-barred from filing another Petition under 35 U.S.C. §315(b).

Table B

Ex.	Description
1030	V. Ralph Algazi & Richard O. Duda, <i>Headphone-Based Spatial Sound</i>
1031	S.S. Fisher et al., <i>Virtual Interface Environment Workstations</i>

Ex.	Description
1032	Wolfgang Fohl et al., <i>A System-On-Chip Platform for HRTF-Based Realtime Spatial Audio Rendering With an Improved Realtime Filter Interpolation</i>
1034	Masayuki Morimoto & Yoichi Ando, <i>On the Simulation of Sound Localization</i>
1035	C. Phillip Brown & Richard O. Duda, <i>A Structural Model for Binaural Sound Synthesis</i>
1036	Douglas S. Brungart & William M. Rabinowitz, <i>Auditory Localization of Nearby Sources. Head-related transfer Functions</i>
1037	Kai-Uwe Doerr et al., <i>Evaluation of a Low-Cost 3D Sound System for Immersive Virtual Reality Training Systems</i>
1038	<i>Virtual Reality</i> , Cryptologic Quarterly 21 (Dec. 1, 2011)
1039	Stephan Paul, <i>Binaural Recording Technology: A Historical Review and Possible Future Developments</i>
1040	David Romblom & Bryan Cook, <i>Near-Field Compensation for HRTF Processing</i> (Convention Paper 7611)
1041	Amy Turner et al., <i>Can the Perception of Depth in Stereoscopic Images Be Influenced by 3D Sound?</i>
1042	Elizabeth M. Wenzel et al., <i>Development of a Three-Dimensional Auditory Display System</i>
1043	Elizabeth M. Wenzel et al., <i>Localization with Non-Individualized Virtual Acoustic Display Cues</i>
1044	Frederic L. Wightman & Doris J. Kistler, <i>Headphone Simulation of Free-Field Listening. II: Psychophysical Validation</i>
1045	Steven M. Kaplan, <i>Wiley Electrical and Electronics Engineering Dictionary</i>
1046	Dmitry N. Zotkin et al., <i>Customizable Auditory Displays</i>
1059	Areti Andreopoulou & Agnieszka Roginska, <i>Towards the Creation of a Standardized HRTF Repository</i>
1060	Chan Jun Chun et al., <i>Deep Neural Network Based HRTF Personalization Using Anthropometric Measurements</i>
1061	Karen Collins, <i>Game Sound: An Introduction to the History, Theory, and Practice of Video Game Music and Sound Design</i>
1062	Sungmok Hwang & Youngjin Park, <i>HRIR Customization in the Median Plane Via Principal Components Analysis</i>
1063	Donald H. Merson & John N. Bowers, <i>Absolute and Relative Cues for the Auditory Perception of Egocentric Distance</i>

Ex.	Description
1066	Pavel Zahorik, <i>Assessing Auditory Distance Perception Using Virtual Acoustics</i>
1075	Elizabeth M. Wenzel et al., <i>A Virtual Display System for Conveying Three-Dimensional Acoustic Information</i>
1076	Jean-Marc Jot et al., <i>Digital Signal Processing Issues in the Context of Binaural and Transaural Stereophony</i>
1077	Henrik Moller et al., <i>Head-Related Transfer Functions of Human Subjects</i>
1078	David A. Burgess, <i>Techniques for Low Cost Spatial Audio</i>
1079	Navarun Gupta et al., <i>HRTF database at FIU DSP Lab</i>
1080	John C. Middlebrooks, <i>Individual Differences in External-Ear Transfer Functions Reduced by Scaling in Frequency</i>
1081	Elizabeth M. Wenzel, <i>Localization in Virtual Acoustic Displays</i>
1083	Durant R. Begault et al., <i>Design and Verification of HeadZap, A SemiAutomated HRIR Measurement System</i>
1084	Bill Gardner & Keith Martin, <i>HRTF Measurements of a KEMAR Dummy-Head Microphone</i>
1085	David M. Howard & Jamie A.S. Angus, <i>Acoustics and Psychoacoustics</i>

8KHZ objects to each of the Exhibits listed in Table B under Fed. R. Evid. 401 and 37 C.F.R. §42.104(b)(5) because Petitioner does not demonstrate how each exhibit is relevant to the proceeding. (i.e., the Petitioner fails to identify the relevance of the evidence to the challenge raised.) Further, Petitioner did not cite to or otherwise utilize any of the Exhibits listed in Table B in the Petition. Accordingly, its probative value is substantially outweighed by a danger of prejudice and confusion pursuant to Fed. R. Evid. 403.

8KHZ objects to each of the Exhibits listed in Table B under Fed. R. Evid. 901 as there has not been a sufficient foundation laid for the admission of the exhibit.

The Petitioner has not submitted required witness testimony or evidence to demonstrate that these documents are authentic or establish the documents are what they claim to be. Although Petitioner does not even attempt to authenticate the exhibits through its counsel's and/or Ingrid Hsieh-Yee's testimony, neither counsel nor Ingrid Hsieh-Yee have personal knowledge under Fed. R. Evid. 602 of the documents' creation, the documents' authorship, or any other required foundational aspect of the exhibits.

Further, 8KHZ objects to each of the Exhibits listed in Table B to the extent that it is offered to prove the truth of the matter asserted as inadmissible hearsay under FRE 801 and 802 that does not fall under any exceptions, including those of FRE 803, 804, 805, or 807.

8KHZ further objects to each of the Exhibits listed in Table B under Fed. R. Evid. 401 and 402 as the documents are irrelevant and immaterial as there is no information whether these documents are authoritative sources regarding the subject matter of the '836 Patent.

Exhibits Listed in Table C Below

8KHZ objects to each of the Exhibits listed in Table C under Fed. R. Evid. 401–403 and 37 C.F.R. §42.104(b)(5). This evidentiary failure cannot be cured because Petitioner is time-barred from filing another Petition under 35 U.S.C. §315(b).

Table C

Ex.	Description
1014	U.S. Patent No. 4,774,515
1015	U.S. Patent No. 2,955,156
1016	U.S. Patent No. 9,041,622
1017	U.S. Patent No. 10,509,466
1018	U.S. Patent No. 9,767,618
1019	U.S. Patent No. 9,232,336
1020	U.S. Patent No. 9,578,440
1021	U.S. Patent No. 1,624,486
1022	U.S. Patent No. 1,855,149
1023	U.S. Patent No. 8,873,761
1024	U.S. Patent No. 9,787,846
1025	U.S. Patent Application Publication No. US 2012/0183161 A1
1026	U.S. Patent No. 9,530,426
1027	U.S. Patent Application Publication No. US 2017/0115488 A1
1028	U.S. Patent No. 7,710,654
1067	Korean Patent Application Publication No. KR 10-2011-0022252, including English Translation and Certification
1082	U.S. Patent No. 9,037,468

8KHZ objects to each of the Exhibits listed in Table C under Fed. R. Evid. 401 and 37 C.F.R. §42.104(b)(5) because Petitioner does not demonstrate how each exhibit is relevant to the proceeding. (i.e., the Petitioner fails to identify the relevance of the evidence to the challenge raised.) Further, Petitioner did not cite to or otherwise utilize any of the Exhibits listed in Table B in the Petition. Accordingly, its probative value is substantially outweighed by a danger of prejudice and confusion pursuant to Fed. R. Evid. 403.

Further, 8KHZ objects to each of the Exhibits listed in Table C to the extent that it is offered to prove the truth of the matter asserted as inadmissible hearsay under FRE 801 and 802 that does not fall under any exceptions, including those of FRE 803, 804, 805, or 807.

8KHZ further objects to each of the Exhibits listed in Table C under Fed. R. Evid. 401 and 402 as the documents are irrelevant and immaterial as there is no information whether these documents are authoritative sources regarding the subject matter of the '836 Patent.

Exhibits Listed in Table D Below

8KHZ objects to each of the Exhibits listed in Table D under Fed. R. Evid. 901. This evidentiary failure cannot be cured because Petitioner is time-barred from filing another Petition under 35 U.S.C. §315(b).

Ex.	Description
1029	Matthias Geier et al., <i>The SoundScape Renderer: A Unified Spatial Audio Reproduction Framework for Arbitrary Rendering Methods</i> (Convention Paper 7330)
1033	Jason Jerald, <i>The VR Book – Perception and Interaction Design for Virtual Reality</i>

8KHZ objects to each of the Exhibits listed in Table D under Fed. R. Evid. 901 as there has not been a sufficient foundation laid for the admission of the exhibit. The Petitioner has not submitted required witness testimony or evidence to

demonstrate that these documents are authentic or establish the documents are what they claim to be. Although Petitioner does not even attempt to authenticate the exhibits through its counsel's and/or Ingrid Hsieh-Yee's testimony, neither counsel nor Ingrid Hsieh-Yee have personal knowledge under Fed. R. Evid. 602 of the documents' creation, the documents' authorship, or any other required foundational aspect of the exhibits.

Further, 8KHZ objects to each of the Exhibits listed in Table D to the extent that it is offered to prove the truth of the matter asserted as inadmissible hearsay under FRE 801 and 802 that does not fall under any exceptions, including those of FRE 803, 804, 805, or 807.

Date: December 20, 2023

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), the undersigned hereby certifies that the above-captioned Patent Owner's Objections to Petitioner's Evidence, 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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