

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RØDE MICROPHONES, LLC AND
FREEDMAN ELECTRONICS PTY LTD,

Petitioners

v.

ZAXCOM, INC.,
Patent Owner.

Case IPR2025-00557
U.S. Patent 12,051,444

DECLARATION OF MR. JAMES M. DEFILIPPIS
Exhibit 2017

I. INTRODUCTION

1. I, James M. DeFilippis, have been retained as an independent expert in this inter partes review (“IPR”) by the Chipperson Law Group, P.C on behalf of Zaxcom, Inc. (“Zaxcom”) to provide opinions and conclusions regarding the unpatentability grounds asserted by RØDE Microphones, LLC and Freedman Electronics Pty Ltd (collectively “Petitioners”).

2. As discussed in further detail in this declaration (“Declaration”), it is my opinion that the Petition filed by the Petitioners in case IPR2025-00557 (the “Freedman/Rode IPR Petition”) has failed to prove that any of the challenged claims of U.S. Patent No. 12,051,444 (the “’444 Patent”) (the “Challenged Patent”) are unpatentable. It is further my opinion that the challenged claims are in fact valid over the cited art.

3. This Declaration, including the accompanying exhibits, sets forth my opinions, conclusions, and other matters regarding the Freedman/Rode IPR Petition and Patent Owner’s Preliminary Response (“Preliminary Response”) with respect to the ’444 Patent.

II. QUALIFICATIONS

4. I am currently President and CGO of TMS Consulting, Inc., where I have worked since 2012. For TMS Consulting, Inc., I provide insight to the media and broadcast industry related to new technologies. I am currently

active in the development of ATSC 3.0 standards, UHD TV, HDR, file-based workflow, high frame rate capture and production, and next generation audio codecs. I have authored articles in TV Technology discussing impact of new technologies to the TV broadcast industry. I am co-inventor of over 50 patents in the area of multi-primary color displays.

5. Prior to TMS Consulting Inc., I worked for the FOX technology Group from 1997 to 2012 as an Executive Vice President & Principle Engineer for Digital Television Technologies and Standards. I was a senior member of the FOX Technology group responsible for investigating, developing and deploying new technology for the FOX Television Group. I interfaced with senior thought leaders in each business unit to develop an implementation plan for new technologies as well as helped assess the impact to their core businesses. I put together a first-class media laboratory and hired key technologists to provide insights on new media technologies and their impact.

6. I have also worked in the broadcast/media space at various other companies since 1980, as indicated on my curriculum vitae. *See* Ex-2018.

7. I have an extensive background in new technologies for use in the broadcast/media space. My areas of experience include: digital distribution (SVOD, OTT), mobile video, media file-based workflow, MPEG splicing, digital cable and IPTV standards (SCTE), UHDTV, 4k, HDR, HFR and Wide

Color Gamut, Digital Broadcast Standards, live broadcast technology, audio/video production technology, video compression, advanced audio compression, satellite and fiber optic transmission, and media technical standards development. Additional areas of experience and expertise are listed in my curriculum vitae. *See* Ex-2018.

8. I hold two degrees from Columbia University in New York City: (1) a Bachelor of Science degree in Electrical Engineering; and (2) a Master of Science degree in Electrical Engineering. I hold a Professional Engineering License (PE) in New York. *See* Ex-2018.

9. I have achieved Cisco Certifications CCNA Course Part I and Part II and have completed UCLA Extension Courses in Java Programming and Android Programming. I also have an FCC First Class Radio Telephone license. *See* Ex-2018.

10. I am being compensated at the rate of \$350 per hour for my work on this declaration. My fee is not contingent on the outcome of any matter or on any of the technical positions I explain in this declaration.

11. I have no financial interest in Patent Owner or Petitioners.

III. UNDERSTANDING OF LEGAL PRINCIPLES

A. Prior Art

12. It is my understanding that for the claims of a patent to be valid

and enforceable, they must be novel and non-obvious in view of any reference or disclosure relevant to the claims of the patent made to the public before the effective filing date of the respective patent application for the invention. It is also my understanding that such references or disclosures made to the public are referred to as “prior art.”

B. Analogous Art

13. It is my understanding that a reference is analogous art to the claimed invention only if it: (i) is from the same field of endeavor; or (2) is reasonably pertinent to the problem faced by the inventor. A reference is not "reasonably pertinent" to the problem unless it logically commended itself to an inventor's attention in considering his or her problem.

C. Standard Of Proof

14. It is my understanding that the party asserting unpatentability bears the burden to prove by a preponderance of the evidence that each challenged claim is unpatentable. It is also my understanding that this burden is met when the asserting party sufficiently shows that the assertion is more probable than not.

D. Person Of Ordinary Skill In The Art

15. It is my understanding that a person of ordinary skill in the art

(“POSA”) with regards to the claimed inventions would have a bachelor’s degree in electrical engineering or a related subject and two to five years’ experience working with multi-track audio and wireless communications systems in the professional performance industry. As written in the abstract, the invention includes “[s]ystems and methods for wirelessly recording multi-track audio files.” Ex-1001, abstract. *See also* Ex-1001, 1:40-52 (“Embodiments of the present invention generally relate to systems and methods for recording and processing audio received from one or more wireless device...Many systems and method have been created to record performance audio. Some such systems include a **multi-track audio** recorder wired to one or more microphones. Typically, **one or more performers performing on a sound stage** are recorded by one or more microphones that are directly wired to the **multi-track recorder**. The multi-track recorder combines the single track of audio received from each microphone to create one multi-track audio file.”)(emphasis added). Accordingly, a POSA would be required to have the aforementioned experience, specifically with multi-track audio and wireless communication systems in the professional performance industry. An electrical engineer without at least two to five years’ experience working with multi-track audio would not possess the practical knowledge necessary to understand the complexities of the invention, such as how the recorder combines individual

audio tracks from multiple microphones into a single multi-track audio file.

Additionally, less education may be compensated for by a higher level of work experience.

16. It is my opinion that I would have qualified as a POSA at the time of the filing and prosecution of the Challenged Patent. *See* Ex-2020. I further believe that I have an acceptable level of experience, education, and knowledge to act as an expert in the art of the Challenged Patent.

17. My opinions are based on the perspective of a POSA at the time of the filing and prosecution of the Challenged Patent, or somewhat before such a time, consistent with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). I was asked to consider the type of problems encountered in the art, prior solutions available for such problems, how quickly innovations are made, the sophistication of the technology, and the educational level of active professionals in the field. Under that context, my opinions as disclosed in this Declaration are based on the materials I have reviewed and considered, as discussed below. *See infra* § IV.

E. Claim Construction

18. It is my understanding that, absent of extenuating circumstances, patent claims are to be interpreted according to their ordinary and customary

meaning, as would have been understood by a POSA and the prosecution history pertaining to the patent. It is also my understanding that sources, including, but not limited to, the words of the claims themselves, the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art, are to be used to determine what would be understood by a POSA.

F. Anticipation

19. Although not alleged in the Freedman/Rode IPR Petition, it is my understanding that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. It is also my understanding that the identical invention must be shown in as complete detail as is contained in the claim and that there must be no difference between the claimed invention and the reference disclosure, as viewed by a POSA. It is also my understanding that for a claim to be anticipated, a single reference must identify all claim elements in the same way it is in the claim.

G. Written Description Requirement

20. It is my understanding that when a disclosure describes a claimed invention in a manner that permits a POSA to reasonably conclude that the inventor possessed the claimed invention, the written description requirement is

satisfied. It is also my understanding that to satisfy the written description requirement, all that is required is reasonable clarity. It is my understanding that an adequate description may be made in any way, through express, implicit, or even inherent disclosures in the application, including words, structures, figures, diagrams, and/or formulae.

H. Obviousness

21. It is my understanding that the question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; and (3) the level of skill in the art. It is also my understanding that a petitioner seeking to invalidate a patent as obvious must demonstrate that a POSA would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the POSA would have had a reasonable expectation of success in doing so. It is my understanding that the evidence presented in the Petition must also address every element of every challenged claim. It is also my understanding that the Board has previously warned that failure to identify differences between the cited art and the claims is a basis for denying a petition.

IV. MATERIALS REVIEWED AND CONSIDERED

22. My opinions contained in this declaration are based on information including: (i) the documents and other evidence I have reviewed, including the Freedman/Rode IPR Petition and all associated exhibits; (ii) Patent Owner's Preliminary Responses and all associated exhibits; (iii) other materials noted in this Declaration; and (iv) my own education, training, experience and knowledge. I may rely on any of these materials, experiences, and knowledge, in addition to the evidence specifically cited as supportive examples in particular sections of this Declaration, as additional support for my opinions.

23. I understand that the '902 Patent, U.S. Patent No, 8,385 (the "'814 Patent'"), and U.S. Patent No. 9,336,307, (the "'307 Patent'"), were previously involved in the following IPRs filed by third party, Lectrosonics, Inc., respectively: *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129 (the "Prior '902 IPR"); *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01130 the "Prior '814 IPR"); and *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-00972 the "Prior '307 IPR") (collectively, the "Lectrosonics IPRs").

24. I may also provide testimony: (i) in rebuttal to Petitioners' positions, including opinions of any of Petitioners' experts and materials they discuss or rely upon; (ii) based on any Orders from the Board; (iii) based on documents or other discovery that Petitioners have not yet produced or that

were produced too late to be considered before my Declaration was due; or (iv) based on witness testimony which has not been given or was given too late to be considered before my Declaration was due. I reserve the right to supplement or amend my opinions as further documentation and information is received.

25. I reserve the right to supplement or amend this Declaration if additional facts and information that affect my opinions become available.

V. BACKGROUND

A. Prior Art Audio Systems

26. It is my understanding that prior art audio systems for the recordation of performance audio included the use of a multi-track audio recorder manually connected to audio input devices, such as microphones. *See* Ex-1001, 1:34-35. In these systems, each performer on a sound stage would be recorded by one or more microphones that are directly wired to the multi-track recorder, which would then combine the single track of audio received from each microphone to create one multi-track audio file. *See id.* at 1:36-40.

27. It is also my understanding that other prior art systems could include a multi-track audio recorder and an associated audio receiver that could receive audio wirelessly from one or more wireless transmitters. *See id.* at 1:49-51. The audio receiver would receive each performer's audio from the

performer's respective body pack via an analog or digital wireless transmission, which would be transmitted to the audio recorder. *See id.* at 1:53-56. All wireless transmissions received from all body packs would then be combined to create one multi-track audio file. *See id.* at 1: 56-58.

28. These prior art systems had problems with wireless transmission errors, such as dropouts, which would result in defective and interrupted audio recordings. *See id.* at 1:59-60. While these prior art systems used redundant receivers to reduce the likelihood of missed audio transmissions, it was ineffective in preventing the loss of data due to a distortion of the received audio signal due to receipt of multiple wireless signals, also known as an interference. *See id.* at 2:1-3. If an interference were to occur during a live performance, audio created during such a performance would be lost, as the receiver would be prevented from receiving a clean audio signal. *See id.* at 2:3-6.

VI. THE SPECIFIC GROUNDS FOR INVALIDITY REGARDING THE '444 PATENT

A. Claim Construction

1. "locally generated audio" (Claims 1-7, 9-10, 12-20, 22-24, 26-27)

29. I have reviewed the claim constructions proposed by Patent Owner in the Preliminary Responses and agree with them. I agree that a POSA

would understand that the claim element “locally generated audio” as recited in Claims 1-7, 9-10, 12-20, 22-24, 26-27) means “audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio.”

30. The '444 Specification is entitled “Systems and Methods For Repairing Remotely Recorded Audio Data”, and it is my understanding that the multitrack capabilities of the systems described therein are described throughout the '444 Specification. *See* Ex-1001, Abstract (“Disclosed are systems and methods for wirelessly recording multi-track audio files without the data corruption or loss of data that typically occurs with wireless data transmission.”).

31. It is my understanding that multitrack recording is a technique that captures multiple audio sources (i.e., the voices of individual performers) independently onto separate tracks instead of mixing them together in real time, thereby allowing audio engineers to independently edit each track during and after recording. This understanding is consistent with the following definition: “[a] multitrack recording consists of multiple, separate streams of sound without defined locations in a sound field. During a typical music-recording session, **individual instruments or voices will be recorded on separate tracks.**” Ex-2021, pg. 1 (Federal Agencies Digital Guidelines Initiative, Glossary) (emphasis

added).

32. It is my opinion that when read in the context of the '444 Specification, which specifically requires a multitrack recording system, and in the context of the claim language, it is clear that the claim element “locally generated audio,” as recited in Claims 1-7, 9-10, 12-20, 22-24, 26-27) means “audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio,” as this definition allows each performer to create his or her own audio track to be subsequently used and independently edited in the resultant multitrack recording. Any definition of these terms that collects a single track of audio that includes all ambient or environmental audio generated by all individuals and/or audio sources being recorded is improper because multitrack recording requires at least two discrete, independent audio tracks, typically one audio track per audio source (e.g., a performer) and anything less would be inconsistent with the '444 Specification as a whole, which states:

(i) “Systems and methods for wirelessly recording **multi-track** audio files. In some aspects, each performer is equipped with a local audio device capable of locally recording the **respective performer's audio** while also transmitting it to a master recorder.”

(Ex-1001, Abstract) (emphasis added);

(ii) [O]ne or more performers may each don a local audio device...

audio from multiple local audio devices may be transmitted to a

multi-track recorder for recording of the audio event while each

local audio device locally records **its performer's audio**" (Ex-

1001, 14:23-24, 15: 21-24) (emphasis added); and

(iii) "The audio received from each of the local audio devices (e.g.,

the **local audio device of each performer**) may be combined to

create one or more **multi-track** audio files," Ex-1001, 17:30-33

(emphasis added).

33. It is also my opinion that the language of Claims 1-7, 9-10, 12-20, 22-24, 26-27) also support this definition by requiring "at least one local audio device wearable by a creator of the locally generated audio." Ex-1001, 43:22-45:45. In other words, the person wearing the local audio device is the creator of the locally generated audio. Likewise, Claims 13-20, 22-24, and 26 require "locally recording locally generated audio." It is my opinion that the creation of a multi-track file can only happen when independent tracks of each of the individual voices of the audio event exist.

34. Additionally, it is my opinion that the locally generated audio is

primarily the audio of the performer wearing the local audio device through the use of the “at least one audio input port configured to receive the local audio data” that is typically close miked to the performer to capture only, or primarily, the audio of the performer wearing the local audio device so that this audio may be its own independent track of the multi-track audio file.

2. “local audio device wearable by a creator of said locally generated audio” (Claims 1-7, 9-10, 12-20, 22-24, 26-27)

35. I agree that a POSA would understand the claim element “local audio device wearable by a creator of said locally generated audio,” as recited in Claims 1-6 and 9-10, means “a local audio device suitable to be worn by the performer who creates the audio that is recorded by that performer’s local audio device.” It is my opinion that a POSA at the time of the invention reading this claim term would understand that this definition must be consistent with the purpose of the ’444 Patent, which is a “[s]ystems and methods for repairing remotely recorded audio data.” Ex-1001, Title. A POSA would understand that any claim construction inconsistent with multitracking is inconsistent with the ’444 Specification as a whole.

36. While the ’444 Specification does not explicitly state the term, “wearable,” the ’444 Specification nevertheless supports this definition. The ’444 Specification includes the term “worn,” and states that local audio devices:

“are worn by each performer” (Ex-1001, 1:65-67); “worn by news announcers, performers, and the like” (Ex-1001, 8:59-61); “are worn by the performers of the audio event” (Ex-1001, 11:7-11); and “are worn by the news announcers and performers.” Ex-1001, 43:59-61; 45:1-3, Claims 3 and 15. Further, the ’444 Specification states, “[s]ystems and methods for wirelessly recording multi-track audio files...each performer is equipped with a local audio device capable of locally recording the respective performer’s audio while also transmitting it to a master recorder.” Ex-1001, Abstract. It also states, “allowing a wireless recorder 108 ... to accurately combine multiple independent tracks of audio, wherein each independent track of audio is received from one of the performer's local audio device 102.” Ex-1001, 12:19-23. Claims 12 and 26 also require that the local audio device includes “at least one audio input configured to receive the local audio data,” whereby the audio input device is described as, e.g., a microphone, and that the audio input device port is any commercially available audio input device port that is compatible with the audio input device. Ex-1001, 4:38-45, 6:35-40, 9:8-14. That is, the performer is equipped with a microphone that connects to an input port of the local audio device such that the local audio device captures the audio of the specific performer wearing the local audio device. “[L]ocal control unit 310 receives recordable audio from local audio input device 312, which may be worn by the performer and connects to local

audio device 102 at local audio input device port 314.” Ex-1001, 10:41-47. In view of such disclosures, it is my opinion that the ’444 Specification supports this definition of the claim element.

37. The ’444 Patent is a continuation of a string of applications that all claim priority to parent application No. 11/181,062, which was filed on July 14, 2005, and issued as Patent No. 7,711,443 (the ’443 Patent). *See* Ex-1001, pg. 2, Related U.S. Application Data. My review of the prosecution history of the ’443 Patent makes it clear that “wearable” means “suitable to be worn by the performer” and excludes devices that are merely portable or able to be carried in a backpack. In the ’443 Patent’s Notice of Allowance, Examiner Elbin included a statement of reasons for allowance that distinguished between “portable” and “wearable”: “the closest prior art of record (Nagra-V) teaches a **portable** audio recorder ... The prior art fails to teach or suggest ... wherein the device is **‘wearable** by a creator of said locally generated audio.’” Ex-2022, pg. 2. The Nagra-V is portable, having dimensions of 11.4” x 8.6” x 4.5” with a weight of approximately 7.6 to 9 pounds, and sold with a soft carrying case NV-SCC. *See* Ex-2023 pg. 2. As such, it is my opinion that while the Nagra-V is fully capable of being carried in a backpack, the Examiner understood that the Nagra-V is not “wearable.”

**3. “master timecode generator” and “master timecodes”
(Claims 7 and 20)**

38. I agree that a POSA would understand the claim element “master timecode generator” and “master timecodes” to mean “a producer of a master time reference signal that controls at least one other timecode generator” and “a time reference signal used to synchronize at least one device,” respectively.

39. It is my opinion that this proposed construction is consistent with the meaning of the claim element itself. The claim term “master” means “[one] that has control over another or others.” Ex-2028, pg. 3 (The American Heritage Dictionary, Third Edition, Houghton Mifflin Company, 1993). Also, the plain meaning of these claim elements is confirmed by the ‘444 Specification, which states “FIG. 5 depicts a process for modifying the speed of a local timecode generator as necessary to maintain its synchronization with a master timecode generator.” Ex-1001, 2:11-14. The end of the description of Figure 5’s process in the ‘444 Specification also states “[i]n this manner, the speed of the local timecode generator and the sample rate of the ADC are increased to maintain synchronization with the master timecode generator.” Ex-1001, 15:49-51.

Figure 6 describes the master timecode generator’s use of a master timecode, or time reference signal used to synchronize at least one device: “[a]t 604, a master unit ... transmits master timecodes to each local audio device, and ... each local

audio device synchronizes (e.g., jam syncs) its respective on board local timecode generator with the master timecodes received from the master unit, thereby synchronizing all local audio device timecode generators with the master timecode generator.” Ex-1001, 17:9-18. That is, the master timecode generator actually controls the speed of the local timecode generator to ensure the two timecode generators are synchronized. The ’444 Specification further explains that the master timecodes synchronize the audio data recorded at various components of a recording system:

- (i) “Since the local audio device and recorder timestamps are synchronized, the replayed audio may be inserted in the proper time sequence with respect to the other recorded audio samples based upon the synchronized timestamp data. Synchronization is essential to ensure that each performer's audio is synchronized with all other performers' audio and to ensure that the newly recorded replayed audio is in the correct sequence with respect to the previously recorded live audio,” (Ex-1001, 4:60-5:1);
- (ii) “When recording system 100 is operating in a synchronous mode, transmission of the master time reference signal ensures that all of the components of recording system 100 store all locally

recorded audio with timestamps that are highly accurate as compared to the timestamps of all other local audio devices 102 and/or all other components of recording system 100. The timestamps are then used ... to ensure that the replayed audio from all local audio devices 102 is synchronized with previously recorded audio and with the audio replayed by all other local audio devices 102,” (Ex-1001, 6:15-21);

(vi) “[A] portion of the received data may be used to synchronize local timecode generator 304 to the master time code generator integral to one of the components of recording system 100 (e.g., RCU 104, recorder 108, etc.),” (Ex-1001, 11:26-30);

(v) “At 410, the local control unit reads the master timecode contained in the RX buffer and jam synchronizes the local timecode generator with the master timecode. The jam sync synchronizes the local audio device with the RCU while allowing the local audio device to supply its own timecode. Local supply of synchronized timecodes ensures proper timing during periods in which the master timecodes cannot be read,” (Ex-1001, 14:52-59);

and

(vi) “At 604, a master unit ... transmits master timecodes to each local audio device, and ... each local audio device synchronizes (e.g., jam syncs) its respective on board local timecode generator with the master timecodes received from the master unit, thereby synchronizing all local audio device timecode generators with the master timecode generator,” (Ex-1001, 17:9-17).

40. Accordingly, both the claim language itself and the ’444 Specification support Zaxcom’s proposed construction.

4. “body pack” (Claims 2, 3, 14, and 15)

41. I agree that a POSA would understand “body pack,” as recited in the claims, to mean “a small box housing a transmitter.” This proposed construction is consistent with the industry standard and the language of the ’444 Specification. Within the industry, a “body pack” is described as “a transmitter you can wear on a belt clip or in your pocket.” Ex-2024, pg. 5. Also, “[t]ransmitters and antennas are built into wireless microphones, either within the handheld unit or within the bodypack.” *Id.* at 14. In other words, it would be understood by a POSA that body packs in the industry of recording performances are devices that house a transmitter that are capable of being worn on a belt or in a pocket, such as those typically worn by news announcers,

performers, and the like.

42. The '444 Specification also explains that the local audio devices of the '444 Specification house a transmitter. For example, the '444 Specification explains that “wireless **transmitters** may take the form of body packs that are worn by each performer.” Ex-1001, 1:65-2:3 (emphasis added). Additionally, the local audio devices of the '444 Specification are described as “digital, wireless audio **transceivers**. Such audio devices may be manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like.” Ex-1001, 8:57-61 (emphasis added). The '444 Specification also discloses that “[l]ocal audio devices 102 may be bodypacks such as the local audio device 102 depicted in FIG. 3B.” Ex-1001, 12:42-43.

43. Furthermore, it is my opinion that the local audio device 102 “housing a transmitter” should be understood to be a “small box,” as depicted in Figures 1 and 3B of the '444 Specification. *See* Ex-1001, Figs. 1 and 3B (depicting local audio devices 102 as small boxes). As such, a POSA would understand that a “body pack” is a “small box housing a transmitter.”

5. “multi-track recorder” (Claims 6, 19)

44. I agree that a POSA would understand the claim element, “multi-track recorder,” as recited in Claims 6, 19 to mean “a recorder capable of combining local audio data from each local audio device with the local audio

data of other local audio devices to create a single multi-track data file,” i.e., multitrack creation.

45. It is my opinion that a POSA would have known at the time of filing of the '444 Patent that multitrack recording is a recording that “consists of multiple, separate streams of sound . . . individual instruments or voices will be recorded on separate tracks.” *See* Ex-2021, pg. 1.

46. '444 Specification clarifies that multitrack creation requires a combination of local audio data with local audio data or local audio with local audio. Ex-1001, 4:64-5:6 (“Synchronization is essential to ensure that each performer's audio is synchronized with all other performers' audio ... Such synchronization must maintain a high accuracy for each performer's timestamps with respect to all other performers' timestamps ...when the multiple audio recordings are combined to create one single recording.”). For example, “[t]he audio received **from each of the local audio devices** (e.g., the local audio device **of each performer**) may be combined **to create one or more multi-track audio files** that are stored with master timestamps generated by the receiver/recorder's internal master timecode generator. Ex-1001, 17:30-35 (emphasis added). The '444 Specification also explains that “audio from multiple local audio devices may be transmitted to a **multi-track** recorder for recording of the audio event while each local audio device locally records **its**

performer's audio.” Ex-1001, 15:21-24 (emphasis added). The multitrack requirements of the '444 Specification eliminate any construction of this claim term in which audio is combined from multiple recorders, who all record all audio from an event on a single track of mixed audio that does not include individual, isolated tracks of audio per performer/audio source. Such a recording eliminates the ability of an audio engineer to independently edit each audio source, which is the essence of a multitrack system.

47. It is my opinion that a POSA at the time of the invention reading this claim term in the context of the entire patent disclosure would understand that the definition must be consistent with the purpose of the '444 Patent, and any claim construction inconsistent with multitracking is inconsistent with the '902 Specification as a whole.

B. Petitioners Did Not Show That Any Of The Challenged Claims of the '444 Patent Would Have Been Obvious Over Any of the Cited References (Strub, Woo, Nagai, Glessiner, and Samadani)

48. It is my opinion that none of the challenged claims of the '444 Patent would have been obvious with respect to any of the proposed grounds of rejection set forth by Petitioners in the Petition for at least the reasons set for below.

A. Petitioners Do Not Demonstrate That Any of the Cited References Teaches Element 1[Pre], Element 13[Pre], Element 1[B], Element 13[B], Element 1[C], Element 13[C], Element 1[I] Because All of The Cited References Fail to Disclose Locally Generated Audio

49. It is my opinion that none of the cited references teach elements 1[Pre], 13[Pre], 1[B], 13[B], 1[C], 13[C], 1[I] because none of the cited references teach “locally generated audio.” That is, none of the cited references teaches Element 1[Pre] and Element 13[Pre], namely “[a] system for locally recording locally generated audio,” Element 1[B] and Element 13[B], namely “a local audio device capable of communicating with the remote receiver and configured to receive locally generated audio,” Element 1[C] and Element 13[C], namely, “the at least one local audio device wearable by a creator of the locally generated audio,” nor Element 1[I], namely “create time-referenced local audio data from the locally generated audio and the at least one master timecode.”

50. As previously discussed, “locally generated audio” is “audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio” as is required for incorporation of such “locally generated audio” in a multitrack system such as described in the ’444 Specification. The locally generated audio is primarily the audio of the performer wearing the local audio device through

the use of the “at least one audio input port for receiving locally generated audio from an audio input device” that is typically close miked to the performer to capture only, or primarily, the audio of the performer wearing the local audio device so that this audio may be its own independent track of the multi-track audio file. This individual track of audio is then combined with other performers’ independent, isolated tracks of audio to create a multi-track audio file that includes all performers’ audio tracks. Ex-1001, Abstract, 10:41-47. *See* Ex-1001, Abstract, 17:30-35.

51. Strub and Woo teach the exact opposite of “locally generated audio,” as the audio of Strub and Woo would be best described as locally “received” or “heard” by a recorder (i.e., the person in Strub who records the audio) – not audio generated, or created, by the recorder. Ex-1003, 22:16-33 (describing the recordation of sound to be for sound coming from in front of the recorder). That is, the audio recorded by Strub’s recording units 105-108, 200, and 300, and Woo’s recorders 14 and 16 is the sound received by the recording units 105-108, 200, and 300 and recorders 14 and 16 from varying perspectives, which is a single track of mixed audio without individual, isolated tracks of local audio per performer/audio source. This received, “heard” audio is not suitable for multi-track recording because it does not include individual, isolated tracks of audio per performer that can be independently edited.

52. Strub's specification repeatedly discloses the receipt of audio by a recorder, rather than generation of audio by a performer:

(i) "It is believed preferable to bias the audio recording in favor of recording sound from in front of the recorder for several reasons: i) a person or persons with whom a recorder is having a conversation will typically be in front of the recorder; ii) a recorder will typically face the parties participating in a conversation that does not include, but is of interest to, the recorder; iii) a recorder will often face the source of other sounds in which the recorder has an interest; and iv) conversations that occur behind a recorder are typically either conversations which the recorder does not want to hear or are conversations which the parties to the conversation may not intend the recorder to hear," (Ex-1003, 20:21-32);

(ii) "Mounting at or just above chest level also enables the audio data acquisition device to pick up spatial imaging of the audio that is similar to that which is experienced by the recorder's ears (e.g., sound wave reflections from the recorder's chest)," (Ex-1003, 22:59-63); and

(iii) "The use of a directional microphone as described above

has been found to enhance the ability to record the voices of other people, particularly when those people are relatively distant from the recorder,” (Ex-1003, 23:8-11).

53. Similarly, Woo does not disclose the aforementioned elements, namely “locally generated audio,” because it does not teach “audio **created** by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio.” Rather, recorders 14 and 16, which are recording devices that are not described as being worn by anyone, is recording the audio generated by a performer 12. This is consistent with the teachings of the specification of Woo, which states, “[t]he system 10 is used to record the live performance of a performer 12, e.g., a singer or actor. A recorder 14 captures the performance from its vantage point while another recorder 16 independently captures the same performance from its own vantage point.” Ex-1004, 5:1-5.

54. It is also my opinion that the combined event audio received by a Strub audio data acquisition device or Woo recorder cannot be used in a multitrack system as described in, and required by, the ’444 Specification because it does not allow each performer to be recorded on his or her own

individual, dedicated track. Neither Strub nor Woo discloses any form of independently recording an individual voice, nor does it disclose multi-track recording or a method of creating a multi-track audio file. As such, because neither Strub nor Woo disclose Elements 1[Pre], 13[Pre], 1[B], 13[B], 1[C], 13[C], 1[I], and Petitioners do not assert that these elements are shown by the cited references other than Strub and Woo (i.e., Nagai, Glessiner, Samadani), Petitioners have failed to show that there is a reasonable likelihood that at least one of the Challenged Claims of the '444 Patent is unpatentable.

B. Petitioners Fail to Demonstrate that Strub Teaches Elements 1[A], 13[A], 1[H], or 13[H] Because Neither Strub Nor Woo Teaches a Master Timecode Generator in the Form of a Remote Receiver That Receives Audio

55. It is my understanding that the claims require that the "remote receiver" is configured to both receive audio data and create at least one master timecode. The remote receiver serves as a "master timecode generator" that sends a master time reference signal suitable for synchronizing locally recorded audio data.

56. It is my understanding that Petitioners concede this in their own Petition, stating that "it would have been obvious to try using the remote receiver...as a master timecode generator," and that "using the remote receiver as the master timecode generator would have a high likelihood of success." It is

my opinion that neither Strub nor Woo teaches or suggests a remote receiver that both receives audio data and generates a master timecode.

1. Petitioner Makes No Argument That Woo Discloses Elements 1[A], 13[A], 1[H] or 13[H]

57. Petitioners make no argument that Woo discloses a remote receiver. Petitioners rely solely on Strub to teach these claim elements. While Petitioners cite the prior Lectrosonics IPR decision, in my opinion, that decision does not establish that Strub alone teaches these elements, nor does it address the additional requirement that the master timecode generator must also receive audio data. Petitioners cite Dr. Kyriakakis's declaration in support of their position on Element 1[A], but that declaration discusses only Strub, not Woo.

2. The “Master Timecode Generator” of Woo in the Lectrosonics IPRs Did Not Receive Audio Data as Required by the Challenged Claims

58. Assuming arguendo that Woo teaches a master timecode generator, it is my opinion that there is no evidence or argument that Woo's master timecode generator receives audio data as required by the Challenged Claims. Even with the Board's prior decisions in the Lectrosonics' IPRs in which the Board found that Woo's “master timecode generator” comprises a GPS receiver and a digital signal processor, Woo does not teach that either of these components receive audio data as required by the Challenged Claims. The

components of Woo that receive audio during the recording of a performer are recorders 14 and 16, not the navigation satellite receivers 18 and 22, which include the DSP 52 (Ex-1004, Fig. 3) or the GPS receiver 122 and DSP 1245 (Ex-1004, Fig. 5).

59. With respect to Strub, Petitioners argue that it teaches using a "master" recording unit that transmits synchronization pulses to other recording units. Petitioners equate these synchronization pulses with "master timecodes." It is my opinion that this interpretation is technically incorrect. The cited section of Strub refers to synchronization pulses used to align the timing of video frames across devices, a process known as genlocking. Genlocking is a video synchronization technique used to align the start of video frame acquisition across multiple visual data acquisition devices. It does not apply to or affect the synchronization of system clocks or audio timestamps. It is used exclusively in the video domain and has no bearing on audio synchronization.

60. It is my opinion that modifying Strub in this way would not have been obvious to a POSA at the time of the invention, particularly given that Strub's synchronization method is video-specific and relates to video frames and pixel clocks, not suitable to synchronize and identify audio data samples."

61. For these reasons, it is my opinion that Petitioners have failed to show that Strub or Woo teaches Elements 1[A], 13[A], 1[H], or 13[H].

3. Petitioners Fail to Demonstrate That a Combination of Strub and Woo Teaches Elements 1[C] and 13[C] (Claims 1-7, 9-10, 12-20, 22-24, 26-27)

62. It is my opinion that the combination of Strub and Woo do not teach Element 1[C] and Element 13[C], namely “the at least one local audio device wearable by a creator of the locally generated audio,” as required by Claims 1-7, 9-10, 12-20, 22-24, 26-27). In addition to not defining Elements 1[C] and 13[C], it is my understanding that Petitioners failed to state any proof in support of their assertion that a Strub recording unit having the features of Claims 1-7, 9-10, 12-20, 22-24, and 26-27, which include a receiver, is wearable.

63. Strub discloses many variations of recording units – some with only basic recording capabilities (“Basic Strub Recording Unit”) and some with transmitter/receiver capabilities (“Advanced Strub Recording Unit”). It is my opinion that the Strub recording units shown in Fig. 1 of the specification of Strub does not include all of the components necessary to meet all of the elements of Claims 1-7, 9-10, 12-20, 22-24, and 26-27. To the contrary, the support cited in the Petition for Strub’s wearability actually shows the opposite – that a Strub recording unit having all of the features required by Claims 1-7, 9-10, 12-20, 22-24, and 26-27 would not be “wearable” but rather, might be “easily carried by the recorder.” Ex-1003, 66:32.

64. Strub’s recording units 105-108 are only described as Basic Strub

Recording Units without any mention of an ability to transmit or receive data. Ex-1003, 8:13-29. Furthermore, Strub's recording unit 200, as shown in Fig. 2 of the Strub specification, depicts a standard Strub recording unit capable of recording an event with no transmitter or receiver capabilities, thereby disclosing a Basic Strub Recording Unit. As seen in Fig. 2, recording unit 200 includes only system controller 201, data acquisition device 202, data storage device 203, and control interface device 204 with no receiver or transmitter. Ex-1003, Fig. 2. In contrast, recording unit 300 includes the same components as recording unit 200 except that data acquisition device 202 morphs into two devices (video data acquisition device 302 and audio data acquisition device 303) and additional features are added including, but not limited to, transmitter 309, receiver 310, audio recording display device 307, and video recording display device 306. Ex-1003, 11:48-50, 12:13-16. As such, it is my understanding that recording unit 300 is an Advanced Strub Recording Unit. However, it is my opinion that nothing in the Strub specification indicates that recording unit 300 with these additional features is wearable.

65. In their invalidity analysis of Claim 1, Petitioners repeatedly equate the local audio device of Claim 1 to Strub's recording unit 300, presumably because this recording unit includes a receiver which is a required component of the local audio device of Claims 1-7, 9-10, 12-20, 22-24, and 26-27. *See inter*

alia Petition, pp. 33-34. Fig. 1 does not support the notion of the wearability of Strub's recording unit 300. The recording units 105-108 shown in Fig. 1 seem to have the limited capability of recording an event without any ability to receive or transmit data in any form. *See* Ex-1003, 8:10-29. As such, it is my opinion that Petitioners have failed to plead that Strub shows a recording unit that includes a receiver (as required by Claim 1) that is wearable.

66. Petitioners also cite the following other support for wearability: 4:21-31 ("a small, lightweight, wearable recording unit"), 14:59-15:11, 16:66-17:24, 38:65-39:11, 66:33-51, 67:54-68:10, 72:9-19. *See* Petition, pg. 41. However, it is my opinion that none of these citations support wearability of a Strub recording unit that meets all of the elements of the local audio device of Claims 1-7, 9-10, 12-20, 22-24, and 26-27(including the presence of a receiver).

67. For example, Strub at 4:21-31 refers to a recording unit that is capable of recording but makes no mention of an integral receiver and is therefore wholly inapplicable to wearability of a device that includes a receiver.

68. Similarly, it is my opinion that Strub at 14:59-15:11 and 16:66-17:24 of Strub discusses only that the visual acquisition device, and not the recording unit as a whole, can be worn by the user, and these sections of Strub actually prove that the visual acquisition device portion of a Strub recording unit is not inherently wearable because it must be attached to a "wearable

apparatus” such as a “helmet, headband, or head harness ... that is worn by the recorder” or “mating Velcro™ strips (or other suitable means of detachable attachment) can be used to attach the visual data acquisition device at various locations on headgear, and armband, a legband, or other wearable apparatus.” Ex-1003, 17:24. In other words, the “wearable apparatus” is wearable, but the visual data acquisition device is not, thereby necessitating its attachment to a “wearable apparatus.”

69. Strub at 38:65-39:11 only pertains to wearability of an “audio communication device” – not a recording unit, and such “audio communication devices” are never discussed elsewhere in the Petition. While 66:33-51 of the Strub specification does relate to wearability of a recording unit, it is my opinion that this portion of the specification only describes a bare bones recording unit 200 as it describes a “data acquisition device” which is only available in the basic Strub recording unit (e.g., recording unit 200). This is in contrast to the advanced Strub recording unit 300 (which has a receiver) that includes a video data acquisition device 302 and audio data acquisition device 303 rather than a data acquisition device such as data acquisition device 202. *See* Ex-1003, Figs. 2 and 3, 66:33-51. Furthermore, the first paragraph in this section 10 entitled “Packaging of Recording Unit Components” further indicates that even a Basic Strub Recording Unit without a receiver may not be wearable.

Ex-1003, 66:27-32 (“[i]t is desirable to "package" the recording unit components in any manner that achieves some or all of the desired characteristics of a recording unit according to the invention, e.g., small size, low weight, unobtrusiveness, and capability of being mounted on a recorder (**or, at least, capability of being easily carried by the recorder**).” (emphasis added)). In other words, even the Strub specification questions whether a Basic Strub Recording Unit without a receiver is actually wearable.

70. The Strub Specification at 67:54-68:10 and 72:9-19 again refer to the wearability of a Basic Strub Recording Unit, recording unit 700, having only a data acquisition unit 701, a control interface unit 702, and a data storage and system control unit 703. Ex-1003, 68:11-14. Again, this is inapplicable to the wearability of a recording unit having a receiver and other features required by Claim 1. Accordingly, Petitioners have failed to plead any facts to show that Strub discloses a wearable device having all of the features required by Claim 1.

71. It is my opinion that Strub teaches the opposite of wearability. Strub states that “Fig. 6 illustrates a recording unit according to the invention. Most of the components of the recording unit are enclosed within a backpack 601” and “a recording unit as shown in Fig. 6 ... weighs about 24 pounds.” Ex-1003, 67:30-33, 45-47. If Strub’s recording unit was “wearable,” it would not require a backpack to attach it to a recorder’s body. The Strub recording unit is

not worn – it is carried within a backpack. One might send their child to school with a sandwich in the child’s backpack – this does not make the sandwich wearable. As previously discussed, a proper claim construction of Elements 1[C] and 13[C] excludes portable devices.

72. Furthermore, it is my opinion that neither Strub nor Woo discloses a local audio device that is “**wearable** by a creator of the locally generated audio,” as required by the correct construction of Element 1[C] and Element 13[C]. The local audio device of the ’444 Patent are part of the recording system that “wirelessly records audio events such as performances, movie takes, etc.” Ex-1001, 3:64-65. The local audio devices of the ’444 Patent are described as “wireless transmitters [that] may take the form of body packs that are worn by each performer.” Ex-1001, 1:65-67. However, Strub does not disclose a local audio device “wearable by” the performers, as the Strub recording unit is much too large, visible, and imposing to be worn by performers.

73. The use of the Strub recording unit to “facilitate later reminiscence,” does not require the same portability and discreteness as a device used for audio events in a professional context, such as those including performances or movie takes. *See* Ex-1001, 1:65-67 (“Recording system 100 wirelessly records audio events, such as **performances, movie takes**, etc.”) (emphasis added). The professional context for which the local audio device of

the '444 Patent is used requires such audio devices to be of a size and shape that can be worn by performers having various strength levels without distracting the audience from the visual performance associated with such audio events. It is my opinion the Strub Recording Units prohibit such an application due to their unwieldy weight and shape. For example, the recording unit of Strub is described as a “recording unit [that] weighs about 24 pounds.” Ex-1003, 67:45-47. The description of this recording unit makes no reference to a receiver, as required by Claims 1 and 13. A Strub recording unit having all of the features of the challenged claims of the '444 Patent is likely to exceed 24 pounds.

74. While one might carry in excess of 24 pounds for recreational filming, performers (e.g., those performing in motion pictures, concerts, news reporting, opera, etc.) are unable to carry such a weight while delivering such a performance, particularly without disturbing their hair, makeup, and costumes. I believe that the backpack embodiment of the Strub recording unit would impair the visual aspects of the performance of the performer by way of their bulky nature. Additionally, a 24-pound backpack, as described by Strub, is likely to create various noises due to friction between the backpack and performer or the performer's clothing, which would be picked up by the performer's microphone and local audio device and degrade the quality of the locally recorded audio or local audio and render it unusable for performance audio. Furthermore, if the

performer requires a change of clothing or costume during a performance, the act of removing the backpack and putting it back on would be a hindrance.

75. Even in smaller configurations of the recording unit of Strub, depicted as a headband (Fig. 4) or a sling bag (Fig. 9A), it is my opinion that such “wearable” recording units are far too large and bulky to be discreetly used in professional performances without visually distracting the audience during such performances. In stark contrast, the size and shape of the audio devices of the ’444 Patent may be “manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like.” Ex-1001, 8:59-61. As both the visual and audio representation of the news announcers, performers, and the like are important to the recordation of the associated recorded events, it is my opinion that it would be counterintuitive to use the backpacks, headbands, or sling bags of Strub to record events.

76. It is my opinion that the discrete size and portability of the local audio device of the ’444 Patent is crucial to its functionality as a device which records audio of “a local audio device suitable to be worn by the performer who creates the audio that is recorded by that performer’s local audio device.”

Whereas the local audio device in the ’444 Specification records the audio created by the performer who is wearing the local audio device that records the audio, the recorders of Strub and Woo do not – rather, the Strub recorder

records audio the recorder hears, i.e., audio created by everyone or everything in front of the recorder, and the Woo recorder records the event including its performers.

77. As previously stated, it is my opinion that the claim element “local audio device wearable by a creator of said locally generated audio,” as recited in Claims 1-7, 9-10, 12-20, 22-24, and 26-27 means “a local audio device suitable to be worn by the performer who creates the audio that is recorded by that performer’s local audio device.” Such a definition of this claim term is essential to allow the systems and methods disclosed by the ’444 Specification to operate as multi-track systems as also required by the ’444 Specification which require individual, isolated tracks of audio for each source of audio (e.g., performers) for the reasons described above. Neither Strub nor Woo makes such disclosures, as neither reference discloses a local audio device worn by the specific performer who creates locally generated audio, nor does Strub or Woo makes reference to multi-track recording at all, or the creation of independent soundtracks for the audio created by each performer for use in a multi-track recording. *See* Ex-1003; *see also* Ex-1004.

78. It is my understanding that the local audio device in the ’444 Specification records the audio created by the performer who is wearing the local audio device that records the audio. However, the recorder of Strub does

not – rather, the Strub recorder records the audio the recorder hears, i.e., audio created by everyone or everything in front of the recorder. Ex-1003, 22:21-32. *See* Ex-1003, 8:8-16. (“Each of the recording units 105, 106, 107 and 108 ... enables the corresponding participant (recorder) to obtain a recording of the event.”).

79. That is, rather than the recorder generating the local audio that will be recorded by the Strub recording unit, the Strub recording unit records the audio of those interacting with the recorder. This is illustrated by the Strub specification, which teaches how and why a recorder is to position the recording unit to face the source(s) of audio instead of attempting to capture audio generated by the recorder. Strub discloses the following:

“[i]t is believed preferable to bias the audio recording in favor of recording sound from in front of the recorder for several reasons: i) a person or persons with whom a recorder is having a conversation will typically be in front of the recorder; ii) a recorder will typically face the parties participating in a conversation that does not include, but is of interest to, the recorder; iii) a recorder will often face the source of other sounds in which the recorder has an interest; and iv) conversations that occur behind a recorder are

typically either conversations which the recorder does not want to hear or are conversations which the parties to the conversation may not intend the recorder to hear.”

Ex-1003, 22:21-32.

80. As such, it is my understanding that the Strub recording unit records the audio of an event, which includes one recording of the mixed audio of multiple sources located in front of the Strub recording unit. This method of recording negates the ability to create a multitrack recording because there are no independent tracks of each source of audio that may be independently manipulated during the creation of a multi-track audio file. As such, Strub does not disclose a “local audio device wearable by a creator of said locally generated audio” as required by Claim 1, as Strub does not disclose a local audio device suitable to be worn by the performer who creates the audio that is recorded by that performer’s local audio device.

81. Accordingly, it is my opinion that the claim element of “local audio device wearable by a creator of the locally generated audio” are wholly absent from Strub and Woo. Furthermore, no assertions have been made that Woo is wearable, nor has any support been provided by Petitioners that would show that the invention of Woo is wearable. As such, because neither Strub nor Woo

disclose Elements 1[C] nor 13[C] of Claims 1-7, 9-10, 12-20, 22-24, and 26-27, and Petitioners do not assert that these elements are shown by its other cited references (Nagai, Glessiner, or Samadani), it is my opinion that Petitioners have failed to show that there is a reasonable likelihood that at least one of Claims 1-7, 9-10, 12-20, 22-24, and 26-27 of the '444 Patent is unpatentable.

4. Petitioners Fail to Demonstrate that any Combination of the cited references teaches Element 1[I] Because the Synchronization Pulses (Genlocking) of Strub Do Not Teach Synchronization of the Local Clocks in a Local Audio Device and Petitioners have Failed to Show that Strub or Woo Teaches At Least One Master Timecode a Created By The Remote Receiver

82. It is my understanding that the claims require that the remote receiver must transmit at least one master timecode to the local audio devices, and that this master timecode must be used to synchronize the local devices' clocks to create time-referenced audio data.

83. Petitioners argue that "Strub's local audio device receives at least one synchronization pulse - i.e., master timecode - from the remote receiver" and that "Strub's synchronization pulses would synchronize the local clock in the local audio device..." In my opinion, this assertion is technically inaccurate. Strub explicitly refers to these synchronization pulses as "genlocking", a term that was defined earlier in this declaration.

84. Petitioners also argue that Strub discloses creating time-referenced local audio data by adding GPS timestamps. However, in Strub, it is my understanding that the GPS signal is received directly from a satellite, not generated by the recording unit. Thus, the master timecode could not be “created by the remote receiver,” as required by the claims.

85. A GPS satellite cannot qualify as a remote receiver because it does not receive audio data. The remote receiver in the claims must both generate a master timecode and receive audio data. Strub does not disclose this configuration.

86. Petitioners also rely on Woo to argue that time-stamped audio satisfies the claims. However, from my understanding, Woo’s timestamps are based on GPS signals or a commercially available timecode generator. These sources would not qualify as remote receivers under the claim because they do not receive audio data.

87. Additionally, Petitioners point to Woo’s local audio device, which includes a “date and time tag unit 56” that provides time stamps. But, in my opinion, the claims require the master timecode to be created by the remote receiver, not by the purported local audio device.

88. In my opinion, Petitioners have not demonstrated that Woo teaches a remote receiver at all, much less one that creates a master timecode and

receives audio data. Therefore, neither Strub, Woo, nor any of the other cited references teaches Element 1[I].

5. Petitioners Fail to Demonstrate that any Combination of the cited references teaches Element 13[I]

89. With respect to Element 13[I], Petitioners argue that the Lectrosonics IPR Board found Woo discloses synchronizing a local clock with a master clock. However, the claims require synchronizing a local timecode with a master timecode. These are not the same. A clock provides continuous timekeeping, while a timecode is a discrete label used to timestamp media data. Synchronization of timecodes and clocks involve different mechanisms and are used for different technical purposes.

90. Petitioners also argue that Strub's synchronization pulses satisfy Element 13[I]. As explained above, and in my opinion, these pulses pertain only to genlocking and apply to video timing, not audio synchronization. Thus, they do not teach or suggest the claimed element.

91. Accordingly, in my opinion, Petitioners have failed to show that Strub, Woo, or any combination of the cited references teaches Element 13[I].

6. Petitioners Fail to Demonstrate That a Combination of Strub, Woo, Nagai, and Gleissner Teaches Claims 2-3 and 14-15

92. I agree that a POSA would understand “body pack,” as recited in Claims 2-3 and 14-15 to mean “a small box housing a transmitter capable of being worn on a belt or in a pocket.” This proposed construction is consistent with the industry standard and the language of the ’444 Specification. Within the industry, a “body pack” is described as “a transmitter you can wear on a belt clip or in your pocket.” Ex-2024, pg. 5. Also, “[t]ransmitters and antennas are built into wireless microphones, either within the handheld unit or within the bodypack.” Id. at 14. In other words, it would be understood by a POSA that body packs in the industry of recording performances are devices that house a transmitter that are capable of being worn on a belt or in a pocket, such as those typically worn by news announcers, performers, and the like.

93. The ’444 Specification also explains that the local audio devices of the ’444 Specification house a transmitter. For example, the ’444 Specification explains that “wireless transmitters may take the form of body packs that are worn by each performer.” Ex-1001, 1:65-67. Additionally, the local audio devices of the ’444 Specification are described as “digital, wireless audio transceivers. Such audio devices may be manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like.” Ex-1001, 8:59-61. The ’443 Specification also discloses that “[l]ocal audio devices 102 may be bodypacks such as the local audio device 102

depicted in FIG. 3B.” Ex-1001, 12:42-43. Furthermore, it is my opinion that the local audio device 102 “housing a transmitter” should be understood to be a “small box,” as depicted in Figures 1 and 3B of the ’444 Specification, wherein the body packs of Claims 2-3 and 14-15 are depicted as “a small box.” See Ex-1001, Figs. 1 and 3B (depicting local audio devices 102 as small boxes). As such, a POSA would understand that a “body pack” is a “small box housing a transmitter.

C. Petitioners Failed to Demonstrate That a POSA Would Have Been Motivated to Modify Strub With Woo, Nagai, Gleissner, or Samadani to Achieve the Inventions Recited in the Challenged Claims With a Reasonable Expectation of Success

94. It is my opinion that the Petitioners failed to provide any evidence whatsoever why a POSA would attempt to solve a dropout problem of a “Systems and Methods for Repairing Remotely Recorded Audio Data” (Ex-1001, Title), by combining the Cited References, as none of these references teach multi-track recording nor the capture of individual, isolated sources of audio as required for multi-track recording. To the contrary, both Strub and Woo capture single tracks of mixed audio that do not include individual tracks of audio per performer/audio source, and the other references fail to compensate for these deficiencies.

95. The Petitioners did not suggest why a POSA would attempt to solve a dropout problem of a “Systems and Methods for Repairing Remotely Recorded Audio Data” (Ex-1001, Title), by combining two references, Strub and Woo, that do not utilize multi-track recording and are not capable of doing so because they do not capture, nor are they intended to capture, individual sources of audio as required by the claims. To the contrary, it is my understanding that both Strub and Woo capture audio and video recordings of an event wherein each recorder captures all of the audio (and video) sources in the event in a single data track.

96. It is unclear how the teachings of Strub and Woo could be combined as suggested by the Petitioners to achieve the claimed invention with a reasonable expectation of success, because the references disclose methods that substantially differ from each other and the claimed invention.

97. The claimed systems of the ‘444 Patent include a master timecode generator in the form of a remote receiver that is “a producer of a master time reference signal that controls at least one other timecode generator,” and that creates “a time reference signal used to synchronize at least one device,” wherein this time reference signal is non-GPS-based, is used to coordinate the various tracks in a multi-track recording system.

98. In sharp contrast, Strub discloses a GPS time signal that is used as a clock to produce time stamps but is not in control of any other timecode generator and does not produce a time reference signal used to synchronize at least one device: “A GPS receiver can also be used to receive a signal representing the current time that can be used as a clock to generate time-stamps for the recording data.” Ex-1003, 63:40-49. Woo also differs substantially from both the claimed invention of the ’444 Patent and Strub. It discloses a device having a “master clock 120 compris[ing] a GPS navigation satellite receiver 122 and a digital signal processor 124 for accumulating and averaging code epochs.” Ex-1004 at 8:60-63. Woo relies on a video sync generator to provide the accurate pulse to the time code, but each individual sync generator in Woo is not synchronous to each other so the time codes are not synchronized to a common, master time code signal. *See* Ex-1004 9:14-16 (“A time of day signal 152 is combined with the precision time base clock 146 and seconds are divided into frame periods.” This is the essence of time code frame counting and relies on the video generator to convert seconds to frame counts. The video sync generator is distinct for each recorder and, while coordinated in frequency and time-of-day, are not coordinated in frame synchronization.

99. It is my opinion that a POSA would not have been motivated to combine Strub and Woo, since they use different approaches, and it is not clear that the outcome of this combination improves anything, never mind solving the problem of dropouts in multi-track recording systems as neither Strub nor Woo teach multi-track recording or capture individual sources of audio as required for multi-track recording.

100. Furthermore, it is my opinion that a POSA would not have been motivated to combine Strub and Woo because Strub already discloses a solution to post-production editing (i.e., participants share their locally recorded audio after a recorded event). Applying the Woo solution in post-production in Strub would have been unnecessary. A POSA would not have been motivated to apply a complex technical solution requiring multiple GPS receivers, video sync generators, delay circuitry, commands and requests, etc., to Strub's simple system, especially because doing so would dramatically increase the size, weight and battery requirements of the Strub recording units, making them even more unwieldy, cumbersome and impractical than they already were.

D. Strub and Woo are Non-Analogous Art

101. It is also my opinion that Strub and Woo are non-analogous art to the claimed invention as Strub and Woo are not in the same field as the claimed

invention and are not reasonably pertinent to the problem faced by the inventors of the '444 Patent. Neither Strub nor Woo relate to the field of multi-track recording, nor do the disclosures of Strub or Woo teach an invention capable of multi-track recording as the disclosures do not teach the recordation of individual sources of audio. Strub is not in the field of professional sound recording, but is in the field of low attention, social recording. *See infra* § VIII.A Woo teaches a “GPS receiver [that] comprises a data output port for communicating time code information formatted according to standards.” Ex-1004, Abstract. The '444 Patent does not mention any GPS satellite or receiver; it instead relates to using a master timecode generator to control other timecode generators in other recorders and “to accurately stamp its recorded audio ... [which] allows multiple individually recorded audio tracks to be combined into one or more multi-track audio files.” Ex-1001, 3:62-4:23. A POSA would not have looked to Strub or Woo to address the problem identified in the '444 Patent. Therefore, Strub and Woo are non-analogous art to the claimed invention.

E. Modifying Strub or Woo With Any of the Other Cited References Would Change the Principle Operation of Strub And Woo And Render it Unsuitable for Its Intended Purpose of Low Attention, Social Recording

102. It is my understanding that a petition fails to show that the disputed claims are obvious via a combination of prior art references if the

proposed modification of a reference: (1) changes the principle operation of a reference; and (2) renders the reference unsuitable for its intended purpose. Any such combination destroys obviousness under 35 USC § 103. It is also my understanding that regarding element (1), if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. Regarding element (2), if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

103. It is my opinion that the Petition fails to show that the disputed claims are obvious in view of Strub, Woo, Nagai, Gleissner, and Samadani in consideration of the aforementioned test. As far as which reference is being modified the Petition does not clearly articulate which reference is intended to be the primary reference, and it argues largely that both Strub and Woo disclose almost every aspect of the claims in question. Based upon the Petition's assertion that "Woo itself provides motivations to use its synchronization methods in a wireless, multi-recorder system such as Strub's" (Petition, pg. 79), it would be reasonable for Zaxcom to assume the reference being modified is Strub, although

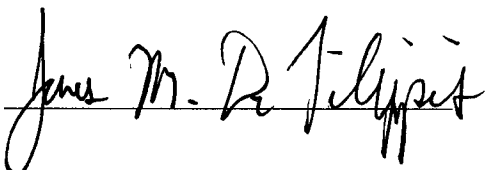
the arguments herein could equally be applied to Woo (if Woo is the primary reference) as will be discussed below.

104. It is my understanding that Strub's intended purpose is low attention, social recording that allows multiple recorders to record the same event so that multiple recordings can be created thereof from multiple viewpoints. *See* Ex-1003, Abstract ("The low attention recording enabled by the invention can be particularly advantageously employed in 'social recording,' i.e., recording in which multiple participants in an event are recording the event."); *see also* Ex-1004, 5:3-5 ("[a] recorder 14 captures the performance from its vantage point while another recorder 16 independently captures the same performance from its own vantage point.").

105. It is my opinion that modifying Strub or Woo with any of the cited references as suggested in the Petition, would both change the principle operation of Strub and Woo and render it unsuitable for its intended purpose because such a modification would cause each Strub recorder, or Woo recorder, to record only the performer's audio, and not the audio of all of the audio sources in a particular event. In this scenario, each recorder's audio recordings would then be combined together into a single multitrack recording, which would result in only one audio recording for any given event. Such an outcome both changes the principle operation of Strub and Woo, and renders each unsuitable for its intended purpose

because Strub and Woo no longer function to perform “‘social recording,’ i.e., recording in which multiple participants in an event are recording the event.” *See* Ex-1003, Abstract; *see also* Ex-1004, 5:3-5 (“[a] recorder 14 captures the performance from its vantage point while another recorder 16 independently captures the same performance from its own vantage point.”). It is my understanding that the modification of Strub or Woo with the teachings of the other references to achieve the invention of the Challenged Claims would change the principle operation of Strub and Woo, and render it unsuitable for its intended purpose. In view of the aforementioned, it is my opinion that there is no suggestion or motivation for a POSA to make the proposed combination. I hereby declare under penalty of perjury that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true. I understand that willfully false statements and the like are punishable by fine, imprisonment, or both under 18 U.S.C. § 1001.

Executed on July 6, 2025, in Los Angeles, California.

By: 

Mr. James DeFilippis