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Paper 33
Entered: January 24, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LECTROSONICS, INC.,
Petitioner,

v.

ZAXCOM, INC.,
Patent Owner.

IPR2018-01129
Patent 7,929,902 B2

Before SCOTT R. BOALICK, *Chief Administrative Patent Judge*, KALYAN K. DESHPANDE, and LYNNE E. PETTIGREW, *Administrative Patent Judges.*

DESHPANDE, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Granting Patent Owner's Motion to Amend
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background

Lectrosonics, Inc. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 7, 8, 11, 12, 14, and 15 of U.S. Patent No. 7,929,902 B2 (Ex. 1001, "the '902 patent"). Paper 2 ("Pet."). Zaxcom, Inc. ("Patent Owner") filed a Preliminary Response. Paper 11 ("Prelim. Resp.").

On January 24, 2019, we issued a Decision ordering that "an *inter partes* review of claims 7, 8, 11, 12, 14, and 15 of the '902 patent is hereby instituted with respect to all grounds set forth in the Petition." Paper 12 ("Dec."). After institution, Patent Owner filed a Patent Owner's Response (Paper 17, "PO Resp.") and a Patent Owner's Contingent Motion to Amend (Paper 16, "PO MTA"). In reply, Petitioner filed a Petitioner's Reply to Patent Owner's Response (Paper 21, "Pet. Reply") and a Petitioner's Opposition to Motion to Amend (Paper 22, "Pet. Opp. to MTA"). In response, Patent Owner filed a Patent Owner's Sur-Reply (Paper 24, "PO Sur-Reply") and a Patent Owner's Reply in Support of Motion to Amend (Paper 25, "PO Reply to Opp. to MTA"). In reply, Petitioner filed a Petitioner's Sur-Reply in Opposition to Patent Owner's Motion to Amend (Paper 27, "Pet. Sur-Reply to Opp. to MTA"). Patent Owner and Petitioner presented oral arguments on October 25, 2019, and a transcript has been entered into the record. Paper 32 ("Tr.").

The Board has jurisdiction under 35 U.S.C. § 6. In this Final Written Decision, after reviewing all relevant evidence and arguments, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that claims 7, 8, 11, 12, 14, and 15 of the '902 patent are unpatentable. We further determine that Petitioner has not met its burden of

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showing, by a preponderance of the evidence, that proposed substitute claims 21–26 are unpatentable.

B. Related Proceedings

The parties indicate that the ’902 patent is involved in *Zaxcom, Inc. v. Lectrosonics, Inc.*, Civil Action No. 1:17-cv-03408 (E.D.N.Y.), and *Zaxcom, Inc. v. Lectrosonics, Inc.*, Civil Action No. 2:17-cv-02840 (D.N.J.). Pet. 52; Paper 10, 1–2. The following proceedings, before the Board, also involve the same parties: IPR2018-00972 and IPR2018-01130. Paper 3, 2. We previously issued a decision in IPR2018-00972 (“the ’972 proceeding”). *See Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-00972, Paper 41 (PTAB Nov. 7, 2019) (Final Written Decision).

C. The ’902 Patent (Ex. 1001)

The ’902 patent discloses a system and method “for recording and processing audio having one or more tracks received from one or more wireless devices operating in either an asynchronous or synchronous mode.” Ex. 1001, 1:29–32. Figure 1 is reproduced below.

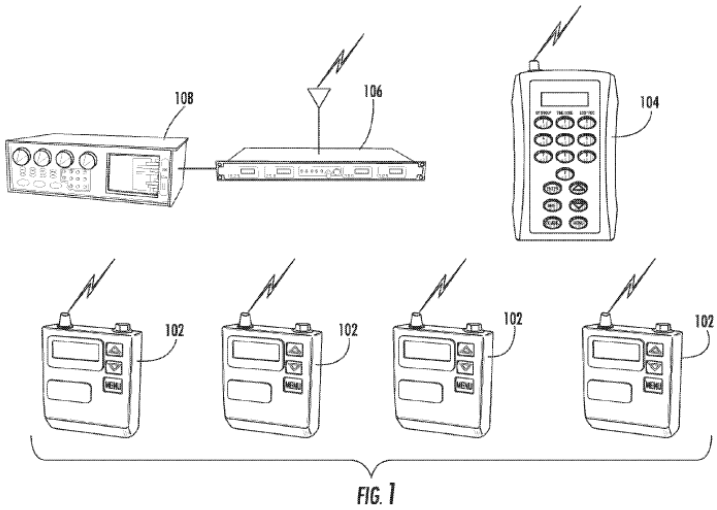

FIG. 1

Figure 1 depicts recording system 100, which “wirelessly records audio events, such as performances, movie takes, etc. having one or more

performers." Ex. 1001, 4:10–14. Recording system 100 includes local audio devices 102, remote control unit ("RCU") 104, receiver 106, and recorder 108. *Id.* at 4:37–40. Local audio devices 102 record live audio and store the audio in memory using timestamps that are synchronized with the timestamps of recorder 108. *Id.* at 5:2–7. Local audio devices 102 may transmit both live and replayed audio to receiver 106 to be recorded by audio recorder 108. *Id.* at 4:50–52. "RCU 104 includes an RF transmitter capable of transmitting one or more of a time reference signal, digital commands, and audio to one or more other components of recording system 100." *Id.* at 4:40–43. The RCU may remotely control local audio devices 102, receiver 106, and recorder 108 for "initiating audio playback of all local audio devices 102 starting at the same time reference, as well as recording thereof by receiver 106 and recorder 108." *Id.* at 4:43–49.

D. Illustrative Claims

Petitioner challenges claims 7, 8, 11, 12, 14, and 15 of the '902 patent. Pet. 19–52. Claims 7 and 12 are the independent claims at issue. Claims 7 and 12 are illustrative of the challenged claims and are reproduced below:

> 7. A system for recording locally generated audio comprising:
>
> at least one master timecode generator for generating a plurality of master timecodes; and
>
> at least one local audio device wearable by a creator of said locally generated audio including:
>
> at least one local audio device receiver for receiving at least one of the group consisting of digital commands and said master timecodes;
>
> at least one audio input port for receiving locally generated audio from an audio input device;
>
> at least one memory;

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> at least one local timecode generator for generating a plurality of local timecodes; and
>
> at least one control unit electrically coupled to said local audio device receiver, said audio input device, said memory, and said local timecode generator for creating stamped local audio data and storing said stamped local audio data in said memory;
>
> wherein said stamped local audio data includes at least one local timestamp to reference at least a portion of said stamped local audio data to at least one of said local timecodes; and
>
> wherein said stamped local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof.

Ex. 1001, 24:51–25:10.

> 12. A method of wirelessly recording local audio, said method comprising:
>
> locally receiving said local audio generated by at least one performer during an audio event;
>
> wirelessly transmitting said local audio to at least one of the group consisting of a recorder, a receiver, and combinations thereof;
>
> locally recording said local audio as local audio data in at least one memory of at least one local audio device; and
>
> remotely recording said transmitted local audio via at least one of the group consisting of a recorder, a receiver, and combinations thereof as remote audio data;
>
> wherein at least a portion of said local audio data is retrieved during or subsequent to said audio event and is combined with said remote audio data;
>
> wherein said local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof.

Id. at 25:66–26:17.

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II. ANALYSIS

A. Prior Art and Asserted Grounds

Petitioner asserts that claims 7, 8, 11, 12, 14, and 15 of the ’902 patent are unpatentable based on the following grounds (*see* Pet. 19–51):[1]

Claims Challenged	35 U.S.C. §	Reference(s) / Basis
7, 8, 11, 12, 14, 15	103	Strub[2]
7, 8, 11	103	Strub, Nagai[3]
7, 8, 11	103	Strub, Gleissner[4]
7, 8, 11	103	Strub, Woo[5]
7, 8, 11	103	Strub, Nagai, Woo
7, 8, 11	103	Strub, Gleissner, Woo
12, 14, 15	102	Strub
12, 14, 15	103	Strub, Wood[6]

B. Claim Construction

The Petition was filed on June 12, 2018, prior to the effective date of the rule change that replaces the broadest reasonable interpretation (“BRI”) standard. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (final rule) (“This rule is effective on

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[1] Petitioner supports its challenge with the Declaration of John Tinsman. Ex. 1011.

[2] U.S. Patent No. 6,825,875 B1, issued Nov. 30, 2004 (Ex. 1003, “Strub”).

[3] U.S. Patent Application Publication No. 2002/0159179 A1, published Oct. 31, 2002 (Ex. 1004, “Nagai”).

[4] U.S. Patent Application Publication No. 2004/0028241 A1, published Feb. 12, 2004 (Ex. 1005, “Gleissner”).

[5] U.S. Patent No. 5,479,351, published Dec. 26, 1995 (Ex. 1020, “Woo”).

[6] World Intellectual Property Organization Publication No. WO 2004/091219 A1, published Oct. 21, 2004 (Ex. 1008, “Wood”).

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November 13, 2018 and applies to all IPR, PGR and CBM petitions filed on or after the effective date."). We, therefore, interpret claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b) (2017); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Under the broadest reasonable construction standard, claim terms are generally given their ordinary and customary meaning, as would have been understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. "local audio data . . . is combined with said remote audio data"

Petitioner asserts that "[f]or the purposes of this Petition, no explicit construction is needed." Pet. 11. Patent Owner proposed a construction of the limitation "local audio data . . . is combined with said remote audio data" (the "combining" limitation), as recited by independent claim 12, to require

> (i) local audio generated by a performer is stored in a wearable local audio device as local audio data, (ii) the same local audio is transmitted to a remote recorder or receiver, (iii) the same local audio is remotely recorded at the recorder or receiver as remotely recorded audio data, and (iv) that the local audio data is combined with the remotely recorded audio data (*i.e.*, that a time segment of the local audio data replaces a corresponding time segment of the remotely recorded audio data).

Prelim. Resp. 10–11. Patent Owner argued that this interpretation is consistent with both the claims and the '902 patent specification. *Id.* at 10–12. In our Decision on Institution, we disagreed with Patent Owner that this limitation requires *replacing* the remotely recorded audio data with local audio data. Dec. 7–9.

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Patent Owner now asserts a different construction of this limitation, requiring

> that (i) local audio generated by a performer is stored in a wearable local audio device as local audio data, (ii) *the same* local audio is transmitted to a remote recorder or receiver, (iii) *the same local audio* is remotely recorded at the recorder or receiver as remotely recorded audio data, and (iv) that the local audio data is combined with the remotely recorded audio data.

PO Resp. 9 (citing Ex. 2111 ¶ 15) (emphases added). Patent Owner asserts that this construction is consistent with both the claim language and the ’902 patent specification. *Id.* at 8–11.

Turning first to the claims, Patent Owner asserts that claim 12 requires the local audio data and the remotely recorded audio data to originate from the same audio. *Id.* at 9 (citing Ex. 1001, 26:1–2). Patent Owner asserts that “said local audio data” is combined with “said remotely recorded audio data” and both originate from the same source—the “local audio generated by at least one performer.” *Id.*; PO Sur-Reply 2–3. Patent Owner further argues that the ’902 patent specification supports its construction. PO Resp. 10. Specifically, Patent Owner argues that Figure 6 depicts audio replaying and re-recording processing. *Id.* (citing Ex. 1001, Fig. 6).

Petitioner argues that Patent Owner’s proposed construction contradicts the claims and fails to distinguish between “local audio” and “local audio data.” Pet. Reply 4. Petitioner asserts that there is a distinction between audio from a performer and audio data from memory. *Id.* at 16–17. Petitioner asserts that local audio is generated by a performer in claim 12, and “[t]here's nothing in the claims, in the specification, at least that the Patent Owner has pointed to, that would distinguish between local audio from a performer and local audio received at the unit.” Tr. 16:9–11. In sum,

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Petitioner asserts that claim 12 is directed to "the multi-track embodiments that the patent talks to." Tr. 48:3–6.

We agree with Petitioner that the "combined" limitation encompasses the multitrack embodiment of the '902 patent. Independent claim 12 recites that the "local audio data" is "*combined* with said remote audio data." In view of Mr. DeFilippis's testimony that the "combined" limitation allows "multiple individually recorded audio tracks to be combined into one or more multi-track audio files" (*see* the '972 proceeding, Ex. 2086 ¶ 18), we determine that claim 12 does not require the claimed "local audio data" and "remotely recorded audio data" to be derived from the same source. Furthermore, every occurrence of the term "combined" in the '902 patent specification outside of the claims refers to the combination of audio into a multi-track file. *See, e.g.*, Ex. 1001, 4:23–25 ("This accuracy allows multiple individually recorded audio tracks to be combined into one or more multi-track audio files electronically post-recording."), 5:18–19 ("the multiple audio recordings are combined to create one single recording"), 16:51–55 ("[T]he local audio device of each performer . . . may be combined to create one or more multitrack audio files that are stored with master timestamps generated by the receiver/recorder's internal master timecode generator."), 19:13–15 ("[A]ll of the individual audio files may be combined to provide one or more comprehensive audio files."). Although we agree with Patent Owner that the '902 patent specification describes an embodiment of repairing a dropout (*i.e.*, a loss of audio data during a wireless transmission is remedied through the replacement of data), we are not persuaded that the recited "combined" limitation is limited to that embodiment, but rather also encompasses the multi-track embodiment of the

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’902 patent. *Id.* at 4:23–25. Thus, we determine that the limitation “said local audio data is retrieved during or subsequent to said audio event and is combined with said remote audio data” does not require that the local and remote audio data originate from the same source because the ’902 patent specification contemplates a broader definition—one that includes the combination of local audio data and remotely recorded audio data to create a multi-track audio file. *See id.* at 4:23–35, 5:18–19, 16:51–55, 19:13–15.

Based on the foregoing, we construe the “combining” limitation as broad enough to encompass combining local audio data and remotely recorded audio data, without a requirement that the local audio data and remotely recorded audio data are the same. In other words, we construe the “combining” limitation to encompass the disclosed multitrack embodiment in the ’902 patent specification, where separate audio tracks are combined to form a multitrack audio file. *See* Ex. 1001, 4:23–35, 5:18–19, 16:51–55, 19:13–15.

2. “wearable”

Patent Owner and Petitioner propose different meanings for the term “wearable.” *See* PO Resp. 11–12; Pet. Reply 3; PO Sur-Reply 4–6. Claim 7 recites “at least one local audio device wearable by a creator of said locally generated audio.”

Patent Owner, relying on the Microsoft Encarta Dictionary, asserts that an “electronic device (e.g., a local audio device) would have been considered to be ‘wearable’ if it were ‘suitable and in a condition to be worn.’” PO Resp. 11 (citing Ex. 2110, 1628). Patent Owner then proposes that “wearable” means “small, lightweight, unobtrusive, easily hidden, not visible, and designed to be worn on the body of a creator of audio (*i.e.*,

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performer)." *Id.* at 12 (citing Ex. 2111 ¶ 15). Patent Owner argues that Petitioner's expert, Mr. Tinsman, agrees with this narrower construction. *Id.* at 11–12 (citing Ex. 2109, 41:7–42:5, 47:15–48:2).

Patent Owner further asserts that the '902 patent specification "repeatedly describes the local audio device as being suitably worn on the body of a creator of audio (*i.e.*, a performer)." *Id.* at 12 (citing Ex. 1001, 1:51–53 ("Such wireless transmitters may take the form of body packs that are worn by each performer."), 8:65–67 ("Such audio devices may be manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like."), 10:7–11 ("In one aspect of the present invention, local 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.")). Finally, Patent Owner asserts that the Examiner considered "wearable" to exclude devices carried in backpacks. PO Sur-Reply 5 (citing Ex. 2095, 29; Ex. 2117).

Petitioner argues that the '902 patent specification does not support the narrow construction proposed by Patent Owner. Pet. Reply 3. Rather, Petitioner argues that the '902 patent specification only indicates that a device may be worn. *Id.* (citing Ex. 1001, 1:51–53, 8:65–67, 10:7–11). Petitioner asserts that Mr. Tinsman explains that "wearable" means "something that was straightforward to carry on your person," or "designed to be worn on the body." *Id.* (citing Ex. 2109, 41:2–10).

We agree with Petitioner that the term "wearable" means "suitable and in a condition to be worn." *See id.* (quoting Ex. 2110, 1628). This definition is consistent with the plain meaning of "wearable," and we find no

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credible evidence on the record that requires a narrower definition. Furthermore, we are not persuaded that Petitioner's expert, Mr. Tinsman, provides a definition consistent with Patent Owner's narrow definition. Rather than defining "wearable," Mr. Tinsman explains that the term "bodypack" is "[s]omething relatively small and lightweight." *Id.* (citing Ex. 2109, 41:18–22). Further, when describing "wearable" as "unobtrusive, easily hidden," Mr. Tinsman clarifies this description as "[y]ou know, reasonable to carry around." Ex. 2109, 47:20–22.

3. "master timecode generator"

Patent Owner and Petitioner propose different meanings for the term "master timecode generator," as recited in claim 7. PO Resp. 13–17; Pet. Reply 1–3; PO Sur-Reply 6–7.

Patent Owner proposes that the term "master timecode generator" should be construed to mean "a producer of a plurality of master timecodes controlling other time code generators." PO Resp. 13. Patent Owner further asserts that the term "master timecodes" should be construed as "codes synchronizing audio samples." *Id*. Relying on the American Heritage Dictionary, Patent Owner further asserts that the term "master" means "[one] that has control over another or others." *Id.* (quoting Ex. 2084, 835). Patent Owner argues that the '902 specification supports the proposed construction as it describes that a master timecode "(i) is used to control the local timecode generator and (ii) produces master time codes controlling other time code generators." *Id.* at 13–17 (citing Ex. 1001, 15:10–29, 5:7–14, 6:27–37, 10:20–32, 10:56–61, 14:9–17, 16:30–37).

Petitioner argues that Patent Owner "improperly adds the unrecited functions of 'controlling' and 'synchronizing.'" Pet. Reply 1 (citing PO

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Resp. 13). Petitioner asserts that claim 7 only requires "generating a plurality of master timecodes" and "at least one local audio device receiver receiving at one of the group consisting of digital commands and said master timecodes." *Id.* at 2. More specifically, Petitioner argues that the '902 patent specification "does not require using master timecodes to control local timecode generators and instead states that master timecodes may be used 'for a variety of purposes.'" *Id.* (quoting Ex. 1001, 6:12–16; citing Ex. 1001, Fig. 6, 5:66–6:42 ("master time reference signal"), 16:30–37). Petitioner argues that cited descriptions in the '902 patent specification cannot be overcome by the extrinsic evidence cited by Patent Owner. *Id.* (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005)).

We agree with Patent Owner and construe "master timecode generator" to mean "a producer of a plurality of master timecodes controlling other time code generators." *See* PO Resp. 13. This definition is consistent with the plain meaning of "master timecode generator," and to construe the claim term as Petitioner proposes would require that we read the term "master" out of the claim. Furthermore, although we agree with Petitioner that the '902 patent specification broadly describes master timecodes as being used "for a variety of purposes," we agree with Patent Owner that the specification also clearly provides support for the plain and ordinary meaning of master timecode generator—controlling other time code generators. *See id.* at 13–17 (citing Ex. 1001, 15:10–29, 5:7–14, 6:27–37, 10:20–32, 10:56–61, 14:9–17, 16:30–37). Thus, we determine that the term "master timecode generator" requires the master timecodes to control the local timecode generators because the plain meaning of *master* timecode generator requires control and the '902 patent specification contemplates

producing a plurality of master timecodes to control other time code generators. *See* Ex. 1001, 15:10–29, 5:7–14, 6:27–37, 10:20–32, 10:56–61, 14:9–17, 16:30–37.

We determine that no other express claim construction analysis of any claim term is necessary. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only terms in controversy must be construed and only to the extent necessary to resolve the controversy) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Obviousness and the Level of Ordinary Skill in the Art

"Section 103(a) forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) if in the record, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Petitioner asserts that a person of ordinary skill in the art, at the time of the '902 patent, would have had "a bachelor's degree in electrical engineering or a related subject and two to five years working with audio and wireless communications systems." Pet. 11 (citing Ex. 1011 ¶ 27). Patent Owner's expert, Mr. DeFilippis, similarly opines that a person of

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ordinary skill in the art would have had a "Bachelor's degree in electrical engineering and two years of experience working with audio and wireless communications systems either in industry or in graduate school." Ex. 2111 ¶ 15.

We adopt Petitioner's and Patent Owner's proffered level of ordinary skill in the art as its essence is agreed upon and consistent with the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) ("[T]he level of skill in the art is a prism or lens through which a judge, jury, or the Board views the prior art and the claimed invention."); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991) ("The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry."). Specifically, we determine that a person of ordinary skill in the art, at the time of the '902 patent, would have had a Bachelor's degree in electrical engineering and two or more years of experience working with audio and wireless communications systems. Pet. 11 (citing Ex. 1011 ¶ 27); Ex. 2111 ¶ 15. To that end, we note that the prior art itself often reflects an appropriate skill level. *See Okajima*, 261 F.3d at 1355.

D. Obviousness of claims 7, 8, and 11 of the '902 patent over Strub in combination with Nagai or Gleissner, and Woo

Petitioner contends that claims 7, 8, and 11 of the '902 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Strub in combination with Nagai or Gleissner, and Woo. Pet. 19–41. For the reasons discussed below, we determine Petitioner has demonstrated by a preponderance of the evidence that claims 7, 8, and 11 of the '902 patent are unpatentable under 35 U.S.C. § 103 as obvious over Strub in combination with Nagai or Gleissner, and Woo.

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1. Strub (Ex. 1003)

Strub, titled "Hybrid Recording Unit Including Portable Video Recorder and Auxiliary Device," is directed to "recording of the event by multiple participants (i.e., from multiple points of view), often simultaneously." Ex. 1003, 1:25–31. Strub discloses a "hybrid recording unit" that is "constructed by adding to a portable video recorder (e.g., camcorder, portable dockable videotape recorder (VTR)) one or more devices (an 'auxiliary device') that provide additional functionality to the portable video recorder." *Id.* at 5:23–29. "The auxiliary device can advantageously provide, for example, one or more of the following capabilities: marking, position sensing, physiological monitoring and/or biometric identification." *Id.* at 5:29–32. The hybrid recording unit is adapted to obtain a visual recording of the event as well as an audio recording of the event. *Id.* at 8:44–52. Multiple hybrid recording units may record a single event and one recording unit may transmit its recording to another recording unit. *Id.* at 37:18–40; 38:8–10.

2. Nagai (Ex. 1004)

Nagai is directed to a data recording and reproducing apparatus for recording and reproducing voice data. Ex. 1004 ¶¶ 3–5. Nagai's apparatus includes an audio input, a headphone jack for audio output, a memory card to store audio data, and a USB port for transferring audio data to another device. Ex. 1004 ¶¶ 106, 125, 126, 139, 140, 145, Figs. 1, 2A, 2B.

3. Gleissner (Ex. 1005)

Gleissner is directed to an audio data recorder that includes a microphone unit and a recording appliance (audio data recorder), connected to one another via a plug connection. Ex. 1005 ¶ 10. The plug connection

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between the microphone unit and recording appliance provides both an electrical connection and a rigid mechanical connection. *Id.* The recording appliance may further be connected to headphones to allow a user to simultaneously hear the input into the microphone. *Id.* ¶ 33.

4. Woo (Ex. 1020)

Woo is directed to a "time-keeping system for synchronizing sound and picture recordings from a plurality of independent recording devices at a shared performance." Ex. 1020, 4:62–65. The time-keeping system includes a master clock comprised of a GPS navigation satellite receiver 122 and a digital signal processor 124. *Id.* at 8:60–63, Fig. 5. The master clock output 128 is an SMPTE[7]-formatted timecode that is preferably compatible with commercially available equipment that has master clock input ports. *Id.* at 9:1–4, Fig. 5.

5. Analysis

a. Petitioner's Contentions

Petitioner contends that claims 7, 8, and 11 of the '902 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Strub in combination with Nagai or Gleissner, and Woo. Pet. 19–41.

Claim 7 recites a "system for recording locally generated audio." Petitioner asserts that Strub discloses a recording unit for use in a system. Pet. 20 (citing Ex. 1003, 11:32–36). Petitioner also asserts that Strub discloses the recording unit acquires local audio from a microphone and stores it in a data storage device. *Id.* (citing Ex. 1003, 12:13–21, 12:31–39, 25:35–49, 35:54–65, 37:18–40, 38:1–4). Petitioner further asserts that audio

[7] SMPTE is the acronym for the Society of Motion Picture and Television Engineers.

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data acquisition device 303 acquires local audio, the recording unit stores the audio data in data storage device 305, and transmitter 309 wirelessly transmits the locally generated audio to a remote recording unit. *Id.* at 21 (citing Ex. 1003, 6:1–8, 7:25–35, 12:31–39, 35:54–65, 37:18–40, 47:41–48, 53:16–33, 64:57–65:22, 70:38–51, 75:58–76:34, Fig. 1).

Claim 7 also recites "at least one master timecode generator for generating a plurality of master timecodes." Petitioner argues that it would have been obvious to modify Strub's recording unit to include "a conventional master timecode input port to receive SMPTE timecodes . . . from the master clock . . . in Woo." Pet. 23–24 (citing Ex. 1011 ¶ 56). Petitioner asserts that Woo discloses "a master clock to synchronize audio recorders (like Strub's recording units) at a performance event by timestamping the audio data with conventional timecodes, including SMPTE timecodes (like in Strub and the '902 patent)." *Id.* at 23 (citing Ex. 1020, Abstract, 1:21–28, 1:60–2:9, 2:39–48, 3:3–24, 4:3–32 ("audio recorders"), Figs. 1–5). Petitioner contends that Woo's master clock receives a GPS time signal and converts it to a conventional time code output, preferably in SMPTE timecode format. *Id.* at 24–25 (citing Ex. 1020, Abstract, 2:2–9, 4:45–55, 8:60–9:4).

Petitioner argues that it would have been obvious to combine the teachings of Woo with Strub to "provide an SMPTE-formatted master timecode to Strub's recording units, as Strub itself teaches." Pet. 25–26 (citing Ex. 1003, 5:32-6:26, 62:26-63:15, 75:25–57; Ex. 1011 ¶ 58). First, Petitioner asserts that audio recorders with timecode input ports "were a conventional way to synchronize two devices recording the same event." *Id.*

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at 25 (citing Ex. 1020, 2:2–48, 3:37–57, 4:3–5; Ex. 1011 ¶ 58). Further, Petitioner asserts that Woo provides express motivation to combine as

> (1) the master clock provides accurate synchronization across recorders recording a performance; (2) it can generate coordinated timecodes at independent sites proximate to recorders; (3) it is simple to connect to the recorders; and (4) it provides timecode output in a format that is compatible with a standard (SMPTE) used by commercially available equipment.

Id. (citing Ex. 1020, 4:3–44; Ex. 1011 ¶ 58). Finally, Petitioner concludes that a person with ordinary skill in the art would have combined the master clock and input port described by Woo with Strub for the express reasons above and because such a combination "would have been simply combining prior-art elements according to known methods to improve the system and yield predictable results." *Id.* at 25–26 (citing Ex. 1011 ¶ 58).

Claim 7 also recites "at least one local audio device wearable by a creator of said locally generated audio." Petitioner asserts that Strub discloses a "small, lightweight, *wearable* recording unit." Pet. 26 (citing Ex. 1003, 4:29–31). Petitioner further asserts that the recording device may be worn by "a creator of said locally generated audio." *Id.* (citing Ex. 1003, 4:21–31, 25:38–46, 93:26–27, 94:21–27; Ex. 1011 ¶ 59).

Claim 7 also recites "at least one local audio device receiver for receiving at least one of the group consisting of digital commands and said master timecodes." Petitioner contends that Strub discloses a recording unit that includes multiple receivers including a receiver, position sensing device (GPS receiver), and an SMPTE timecode input port. Pet. 26–27 (citing Ex. 1003, 12:39–52, 63:12–15, 70:26–37, 75:25–51, Fig. 3; Ex. 1011 ¶ 61). Petitioner asserts that "[a]lthough the claim requires only 'at least one of the

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group,' Strub discloses receiving 'digital commands' and 'master timecodes.'" *Id.* at 27 (emphasis omitted).

First, Petitioner argues that Strub's receiver 301 may wirelessly receive digital data from the control interface device including digital commands for the recording unit. *Id.* (citing Ex. 1003, 89:21–39). Petitioner asserts that the digital commands include "control settings of the data acquisition device." *Id.* at 27–28 (citing Ex. 1003, 89:21–39; Ex. 1011 ¶ 63). Petitioner further asserts that Strub discloses receiving master timecodes because the recording unit can "receive a signal representing the current time that can be used as a clock to generate time-stamps for the recording data." *Id.* at 28–29 (quoting Ex. 1003, 63:41–60; citing Ex. 1011 ¶ 65). Further, Petitioner asserts that Strub discloses an alternate method of receiving a master timecode because the recording unit includes an SMPTE timecode input port that can receive SMPTE-formatted master timecodes from an external device. *Id.* at 26, 29 (citing Ex. 1011 ¶ 66).

Alternatively, Petitioner asserts that Woo discloses a conventional master timecode input port for receiving SMPTE-formatted timecodes from the master clock. *Id.* at 29. Petitioner asserts that it would have been obvious to a person of ordinary skill in the art to modify Strub's recording unit to include Woo's conventional master timecode input port. *Id.*

Claim 7 further recites "at least one audio input port for receiving locally generated audio from an audio input device." Petitioner asserts that Strub discloses the recording unit can receive audio from a microphone such as a lavalier worn by the creator. *Id.* at 29–30 (citing Ex. 1003, Fig. 3, 21:65–25:49, 68:63–69:67). The microphone or lavalier passes audio data to the recording unit "using wired or wireless techniques." *Id.* at 30 (citing

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Ex. 1003, 64:50–65:3). Petitioner asserts that a person with ordinary skill in the art would have understood Strub's wireless or wired connections would include an "audio input port," such as a standard microphone jack in the case of a wired connection. *Id.* at 30–31. Petitioner's expert, Mr. Tinsman, explains that Strub's wired or wireless techniques connecting the microphone and recording unit would include an audio input port. *Id.* (citing Ex. 1011 ¶ 69).

Alternatively, Petitioner asserts that Strub's recording unit could be modified to include an input port disclosed by either Nagai or Gleissner. *Id.* at 31–33 (citing Ex. 1011 ¶ 73). Petitioner asserts that Nagai discloses a "mike jack" that "receives a voice signal from an external device such as an external mike." *Id.* at 32 (quoting Ex. 1004 ¶¶ 109, 139; citing Ex. 1011 ¶ 74). Mr. Tinsman explains that Nagai's "mike jack" would have been understood by a person of ordinary skill in the art to include, for example, a conventional tip-ring-sleeve ("TRS") microphone connector. *Id.* (citing Ex. 1011 ¶ 74). Petitioner further asserts that Gleissner also discloses an audio input, arguing that Gleissner discloses an "XLR plug connector." *Id.* at 32–33 (citing Ex. 1005 ¶¶ 13, 23, 24, 32; Ex. 1011 ¶ 75).

Petitioner argues that it would have been obvious to combine the teachings of Nagai or Gleissner with Strub. *Id*. Petitioner argues that a person with ordinary skill in the art would have understood that Strub suggests the use of an audio input port, which "provide[s] the benefit of interchangeability by allowing the user to select the appropriate microphone for the recording scenario." Pet. 30–31 (citing Ex. 1003, 25:8–49). Petitioner further asserts that the '902 patent recognizes that such a benefit of using a port for a microphone was known, and describes input port 314 as

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"any commercially available audio input device port" using "any type of commercially available audio input device such as a microphone." *Id.* at 31 (citing Ex. 1001, 9:9–19). Accordingly, Petitioner concludes that a person with ordinary skill in the art would have combined either of the input ports described by Nagai and Gleissner with Strub to provide the benefit of customization and detachability. *Id.* (citing Ex. 1011 ¶ 73).

Claim 7 further recites "at least one memory." Petitioner asserts that Strub discloses its recording unit includes a data storage device 305, which may include a hard disk, removable data storage medium, or non-volatile data storage device. Pet. 33 (citing Ex. 1003, 27:36–51, 33:20–35:50, 76:6–34, 94:15–20, Fig. 3; Ex. 1011 ¶ 76).

Claim 7 further recites "at least one local timecode generator for generating a plurality of local time codes." Petitioner asserts that Strub discloses its recording unit includes an internal clock that provides a timecode. *Id.* at 33–34 (citing Ex. 1003, 13:48–67, 63:50–60 ("recording unit according to the invention typically also includes an internal clock . . . that . . . can be used to accurately time-stamp data"), 79:54–80:9). Petitioner further asserts that each recording unit uses its clock to time-stamp recording data as it is acquired. *Id.* at 34 (citing Ex. 1003, 79:54–80:9). Petitioner further asserts that Strub discloses synchronizing recordings from multiple recording units using those time stamps in post-processing. *Id.* at 33–34 (citing Ex. 1003, 79:54-80:9 ("temporally synchronize multiple recordings of the same event that were simultaneously obtained by different recording units")).

Claim 7 further recites "at least one control unit electrically coupled to said local audio device receiver, said audio input device, said memory, and

said local timecode generator for creating stamped local audio data and storing said stamped local audio data in said memory." Petitioner asserts that Strub discloses system controller 301 and data processing device 304, which are electrically coupled to receiver 310, position sensing device 311, and/or SMPTE timecode input port, audio data acquisition device 303, data storage device 305, and the internal clock. Pet. 35 (citing Ex. 1003, 12:4–13, 13:36–14:13, Fig. 3; Ex. 1011 ¶ 79). Petitioner asserts that system controller 301 controls the operation of the components of recording unit 300, "*for creating stamped local audio data and storing said stamped local audio data in said memory*." *Id.* (citing Ex. 1003, 11:32–56, 12:4–13, 13:36–14:13, 66:7–25, 70:1–5, Fig. 3). Petitioner asserts that "[s]ystem controller 301 acquires local audio via audio data acquisition device 303 and stores the acquired audio data in data storage device 305." *Id.* at 35–36 (citing Ex. 1003, 12:10–21). Petitioner further asserts that "system controller 301 may also store information associated with the audio recording, e.g., a timestamp or information identifying the recording unit and/or recorder, which become part of the '*stamped local audio data*.'" *Id.* at 36 (citing Ex. 1003, 13:48–67; Ex. 1011 ¶ 80).

Claim 7 further recites "wherein said stamped local audio data includes at least one local timestamp to reference at least a portion of said stamped local audio data to at least one of said local timecodes." Petitioner asserts that Strub discloses the recording unit stores stamped local audio data in memory where "that data includes a timestamp ('*at least one local timestamp*'), which references at least a portion of the stamped local audio data to the local timecode (e.g., time) of the recording provided by the

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internal clock ('*at least one of said local timecodes*')." *Id.* (citing Ex. 1011 ¶ 82).

Claim 7 further recites "wherein said stamped local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof." Petitioner asserts that Strub discloses the stamped local audio data includes data that may identify the recording unit or the recorder (performer). Pet. 37 (citing Ex. 1003, 8:67–9:3). Petitioner asserts that Strub discloses biometric data may be obtained that identifies the recorder, identifiers for recording units, and marks identifying either people present in recorded content or the speaker. *Id.* (citing Ex. 1003, 36:52–57, 53:34–44, 55:59–64; Ex. 1011 ¶ 84).

b. Patent Owner's Arguments

Patent Owner argues that Petitioner fails to demonstrate by a preponderance of the evidence that claims 7, 8, and 11 would have been obvious over Strub in combination with Nagai or Gleissner, and Woo. PO Resp. 21–22, 36–66. Specifically, Patent Owner argues that (i) Petitioner fails to demonstrate that one of ordinary skill in the art would have been motivated to combine the teachings of the cited prior art references with a reasonable expectation of success; (ii) Petitioner fails to demonstrate that the combination of references teaches each and every element of the challenged claims; and (iii) the objective indicia of nonobviousness indicates that the claimed invention of the '902 patent would not have been obvious to a person of ordinary skill in the art. *Id.* at 21–22.

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1. Differences between the prior art and claims

First, Patent Owner argues that Strub does not disclose a local audio device "wearable by a creator of said locally generated audio." PO Resp. 36–38. Patent Owner argues that Strub's device is not "small, lightweight, unobtrusive, easily hidden, not visible, and designed to be worn on the body of a creator of audio (i.e., performer)" based on its claim construction. *Id.* at 36; *see* Section II.B.2. Mr. DeFilippis, Patent Owner's expert, opines that Strub's system "would require a computer that could compare content from multiple mpeg sources in real time and multiplex the results to a recording," and the "hardware and software to do this could not be incorporated into a device that is wearable." PO Resp. 37 (citing Ex. 2111 ¶ 52).

We are not persuaded by Patent Owner's argument that Strub fails to teach a "wearable" device because Patent Owner's argument is based on a claim construction we do not agree with and do not apply. *See* Section II.B.2. We construe "wearable" as "suitable and in a condition to be worn." *Id.*; *see also* PO Resp. 11 (citing Ex. 2110, 1628). We further agree with Petitioner that Strub's device is "wearable." Pet. Reply 3, 9–10. Strub describes its device as a "small, lightweight, wearable" unit. *Id.* at 9 (citing Ex. 1003, 4:29–31). Accordingly, we are not persuaded by Patent Owner's argument that Strub fails to disclose a "wearable" device.

Patent Owner further argues that Strub "does not disclose the particular electrical coupling of components within a wearable local device as required by independent claim 7." PO Resp. 39; PO Sur-Reply 22–23. More specifically, Patent Owner argues that Figure 3 of Strub does not disclose the electrical coupling of components because Figure 3 is a

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functional diagram that does not show "electrical couplings, electrical signals, or intervening circuitry" and, therefore, fails to disclose "at least one control unit electrically coupled to said local audio device receiver, said audio input device, said memory and said local timecode generator for creating stamped local audio data and storing said stamped local audio data in said memory." PO Resp. 38–40; PO Sur-Reply 23. Patent Owner argues that Strub is silent as to any electrical coupling between any components and the portions relied upon by Petitioner illustrate functional components rather than electrical coupling. *Id.* at 39 (citing Ex. 1003, Fig. 3, 7:44–46, 12:4–13, 13:36–14:13, 11:32–56, 12:4–13, 13:36–14:13, 31:51–59, 66:7–25, 70:1–5).

We are not persuaded by Patent Owner's argument. As argued by Petitioner, Strub discloses that system controller 301 and data processing device 304 are electrically coupled to receiver 310, position sensing device 311, and/or SMPTE timecode input port, audio data acquisition device 303, data storage device 305, and the internal clock. Pet. 35 (citing Ex. 1003, 12:4–13, 13:36–14:13, Fig. 3; Ex. 1011 ¶ 79). We disagree with Patent Owner's argument that Figure 3 of Strub is a functional diagram, and we determine that Strub's description of Figure 3 indicates that the components are electrically coupled as claimed. *See* Ex. 1003, 12:4–13, 13:36–14:13. Strub describes that "communication among the components of a recording unit according to the invention can be implemented using conventional apparatus and techniques (e.g., using conventional *bus* techniques and apparatus), and is controlled or mediated by the system controller." Ex. 1003, 64:50–65:3 (emphasis added). Patent Owner's expert, Mr. DeFilippis, with reference to Strub's system controller 301, agrees that "the system controller has some interfaces to the various other blocks in the

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diagram and is either supplying instructions or receiving data or passing data." Ex. 1033, 17:13–17; *see* Pet. Reply 12. As such, we agree with Petitioner that a person of ordinary skill in the art would have understood "that the components in Strub's recording unit are '*electrically coupled*' to system controller 301 and data processing device 304 (*at least one control unit*)." Pet. Reply 10 (citing Pet. 14–15, 20–21, 35–36).

Patent Owner also argues that Woo fails to teach "at least one master timecode generator for generating a plurality of master timecodes," as recited in claim 7.[8] PO Resp. 46–48. Patent Owner, relying on the Declaration of Mr. DeFilippis, argues that "there is no teaching that Woo's master clock produces codes synchronizing audio samples via the control of other (slave) timecode generators." *Id.* at 46 (quoting Ex. 2111 ¶ 59). Patent Owner argues that "there is no mention of any such timecode generators in Woo, let alone that they are controlled by Woo's master clock." *Id.* Mr. DeFillipis explains that "[t]he mere disclosure of a master clock and master clock input ports on commercially-available equipment does not nearly meet the requirements of the claimed 'master clock generator' producing codes synchronizing audio samples to control other timecode generators." *Id.* at 47 (quoting Ex. 2111 ¶ 60).

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[8] Patent Owner further argues that Strub does not disclose the claimed "master timecode generator for generating a plurality of master timecodes," and "one local timecode generator for generating a plurality of timecodes." PO Resp. 40–45; PO Sur-Reply 23–25. However, as discussed above, Petitioner relies on Woo as disclosing this limitation. Accordingly, we are not persuaded by Patent Owner's argument because Patent Owner's argument is tantamount to an attack on the reference individually rather than the proposed combination of references. *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

We are not persuaded by Patent Owner's argument that Woo fails to teach a "master timecode generator." Rather, we agree with Petitioner that "the purpose of Woo's device is to provide master timecodes in SMPTE format to synchronize recording data in independent sound, film, and video recorders." Pet. Reply 7 (citing Ex. 1020, title, abstract, 3:20–24, 8:26–59, Figs. 4, 5). Woo discloses a master clock comprising a GPS navigation satellite receiver and a digital signal processor. Pet. 24–25 (citing Ex. 1020, 8:60–9:4 ("The master clock 120 comprises a GPS navigation satellite receiver 122 and a digital signal processor 124 for accumulating and averaging code epochs which occur each millisecond in time and having a precision time-base output.")). Woo also discloses that the master clock outputs using the SMPTE timecode format. Ex. 1020, 2:2–9, 3:3–37, 4:3–37, 8:7–25, 9:1–4. In sum, Woo's master timecode generator provides a "precision clock output . . . for synchronizing film and video equipment." *Id.* at 8:65–9:1.

Woo additionally discloses using "jam synchronization" to synchronize local clocks with a master time clock just as disclosed by the '902 patent. Pet. Reply 8; Ex. 1001, 6:11–14 ("This master time reference signal provides a time reference for all local audio devices 102, which may use this information for a variety of purposes such as jam synchronizing their respective local timecode generators 304."). Woo describes the process of jam synchronization as allowing "a time code generator to follow the time code off another source." Pet. Reply 8 (citing Ex. 1020, 3:38–46). Thus, we find that Woo discloses a master timecode generator that provides an SMPTE timecode for use in synchronizing film and video equipment, using the same SMPTE format used in the '902 patent, and Woo discloses jam

synchronizing to control other timecode generators. Therefore, we are persuaded that Woo teaches the "master timecode generator" as properly construed. *See* Section II.B.3.

Patent Owner further argues that "Petitioner makes only a conclusory argument that a POSA would have been motivated to 'use Woo's master timecode generator in the system of Strub,'" Petitioner's "motivation to combine is rooted in forbidden hindsight analysis," and a person with ordinary skill in the art would not have had a reasonable expectation of success in combining Strub and Woo. PO Resp. 48–54 (citing Pet. 25; Ex. 2111 ¶ 62); PO Sur-Reply 25.

We are not persuaded by Patent Owner's argument. As discussed above, Petitioner asserts that Woo itself provides an express motivation to combine, stating

> (1) the master clock provides accurate synchronization across recorders recording a performance; (2) it can generate coordinated timecodes at independent sites proximate to recorders; (3) it is simple to connect to the recorders; and (4) it provides timecode output in a format that is compatible with a standard (SMPTE) used by commercially available equipment.

Pet. 25 (citing Ex. 1020, 4:3–44; Ex. 1011 ¶ 58); Pet. Reply 14. Petitioner further argues, with support from Mr. Tinsman, that "audio recorders with timecode input ports were known for more than a decade and were a conventional way to synchronize two devices recording the same event. *Id.* (citing Ex. 1020, 2:2–48, 3:37–57, 4:3–5, 5:16–19; Ex. 1011 ¶ 58). Petitioner argues that a person of ordinary skill in the art would have understood that modifying Strub to include "a conventional SMPTE timecode input port for receiving conventional SMPTE-formatted master timecodes from Woo's master clock would have been simply combining

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prior-art elements according to known methods to improve the system and yield predictable results." *Id.* at 25–26 (citing Ex. 1011 ¶ 58). Accordingly, we disagree with Patent Owner that Petitioner's rationale to combine Strub and Woo is merely a conclusory argument without objective evidence, that Petitioner's analysis is based on impermissible hindsight analysis, and a person of ordinary skill in the art would not have a reasonable expectation of success in combining Strub and Woo. Rather, we determine that Petitioner has set forth sufficient rationale to combine the teachings of the references in the manner asserted and specifically has articulated sufficient reasoning with rational underpinning to combine Strub with Woo. *See id.* at 25.

Patent Owner further argues that Woo is non-analogous art to the claimed invention because it is neither in the same field of endeavor as the claimed invention nor reasonably pertinent to the problems faced by the inventors of the '902 patent. PO Resp. 52–54. Patent Owner contends that "Woo relates to a 'GPS receiver [that] comprises a data output port for communicating time code information formatted according to standards,'" whereas the claimed invention "makes no mention of any GPS satellite or receiver; it instead relates to using a master timecode generator to control other timecode generators in other recorders." *Id.* at 53 (citing Ex. 1020, Abstract; Ex. 1001, 26:1–13). We disagree with Patent Owner. Both Woo and the '902 patent address problems associated with the synchronization of audio or visual data using a master timecode. Pet. Reply 13–14 (citing Ex. 1001, 1:26–32, 6:2–16); *see* Ex. 1020, Abstract. Furthermore, both the '902 patent and Woo disclose the use of SMPTE timecodes for use in synchronization as well as jam synchronization to control other timecode generators. Ex. 1001, 6:2–11; Ex. 1020, Abstract. Accordingly, we

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determine that Woo is both in the same field of endeavor, synchronizing different recordings of a live performance, and reasonably pertinent to the problem of synchronization, and, therefore, is analogous art. Ex. 1020, Title, Abstract.

Finally, Patent Owner argues that a person of ordinary skill in the art 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)." PO Resp. 53 (citing Ex. 1003, 80:1–64). We are not persuaded by Patent Owner's argument because Petitioner relies on Woo for its disclosure of a master timecode generator, not for a solution to post-production editing. Pet. 25. As discussed above, Petitioner's proposed combination "simply requires Strub's unit to receive conventional SMPTE timecodes from Woo's master clock." Pet. Reply 14 (citing Pet. 23–26). As Strub discloses its devices are capable of receiving SMPTE timecodes, we are not persuaded that the proposed combination with Woo would result in any dramatic increase to the size, weight, and battery requirements of Strub's devices. *See* Pet. 22 (citing Ex. 1011 ¶ 52; Ex. 1003, 79:54–80:7); Pet. Reply 15.

2. Objective Indicia of Nonobviousness

Patent Owner further asserts that the nonobviousness of the claims is supported by objective indicia of nonobviousness including long-felt need, failure of others, and industry praise of the patented invention. PO Resp. 54–66 (citing Exs. 2087, 2098–2104, 2106–2107, 2109, 2111, 2113–2114); PO Sur-Reply 25–31. Petitioner disagrees. Pet. Reply 22–29. For the reasons below, we determine that Patent Owner fails to show the requisite

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nexus between its alleged objective indicia of nonobviousness and the merits of the claimed invention.

For objective indicia of nonobviousness to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo, Inc., v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). "[T]here is no nexus unless the evidence presented is 'reasonably commensurate with the scope of the claims.'" *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). A patentee is entitled to a presumption of nexus "when the patentee shows that the asserted objective evidence is tied to a specific product and that product 'embodies the claimed features, and is coextensive with them.'" *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000))). "[T]he purpose of the coextensiveness requirement is to ensure that nexus is only presumed when the product tied to the evidence of secondary considerations '*is* the invention disclosed and claimed.'" *Id.* at 1374 (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)). "[T]he degree of correspondence between a product and the patent claim falls along a spectrum. At one end of the spectrum lies perfect or near perfect correspondence. At the other end lies no or very little correspondence." *Id.* "A patent claim is not coextensive with a product that includes a 'critical' unclaimed feature that is claimed by a different patent and that materially impacts the product's functionality." *Id.* at 1375.

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Patent Owner does not provide an analysis demonstrating that its products are coextensive (or nearly coextensive) with the challenged claims. We, therefore, find that a presumption of nexus is inappropriate. *See* Pet. Reply 28–29.

However, "[a] finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations." *Fox Factory*, 944 F.3d at 1375. "To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed invention.'" *Id.* at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)). "Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus to the merits of the claimed invention," meaning that "there must be a nexus to some aspect of the claim not already in the prior art." *In re Kao*, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011) (emphasis in original). On the other hand, there is no requirement that "objective evidence must be tied exclusively to claim elements that are not disclosed in a particular prior art reference in order for that evidence to carry substantial weight." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1331 (Fed. Cir. 2016). A patent owner may show, for example, "that it is the claimed combination as a whole that serves as a nexus for the objective evidence; proof of nexus is not limited to only when objective evidence is tied to the supposedly 'new' feature(s)." *Id.* Ultimately, the fact finder must weigh the secondary considerations evidence presented in the context of whether the claimed invention as a whole would have been obvious to a skilled artisan. *Id.* at 1331–32.

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As objective evidence of nonobviousness, Patent Owner submits the Declarations of Mr. Sarokin and Mr. Wexler, user manuals for Patent Owner's digital transmitter and digital recording transmitter products, and evidence of awards for its products and product manuals. *See* PO Resp. 54–66; Exs. 2113, 2114. Patent Owner asserts that "[t]he products for which the inventors of the '902 patent received the Emmy award, the Technical Achievement Award from the Academy of Motion Picture Arts and Sciences, and other industry praise include the TRX900AA manual (Ex. 2113) and TRX900LA & TRX900LAS . . . these products contain all of the limitations recited in the originally-issued challenged claims as well as the substitute claims." PO Resp. 59 (quoting Ex. 2111 ¶ 93); *see* Exs. 2113, 2114.

We determine that Patent Owner has not demonstrated a nexus exists between the evidence presented and the merits of the claimed invention because the evidence is directed to features that are not required by the claims. *See Kao*, 639 F.3d at 1068–69. We determine that the evidence submitted by Patent Owner primarily is directed towards the feature of fixing dropouts. However, the feature of repairing dropouts by replacing data is not required by claims 7, 8, and 11, which instead are directed to locally recording and timestamping audio data. *See* Ex. 1001, 24:51–25:35, 25:61–65.

We do not discount the importance of receiving an Emmy award or Technical Achievement Award; however, our analysis requires determining whether a nexus exists between the evidence and the claimed invention. *ClassCo*, 838 F.3d at 1220. The evidence shows that the Emmy and Technical Achievement Award were awarded for, among other things, the

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critical feature of eliminating dropouts. Ex. 2108, 3; Pet. Reply 26–27 (citing Ex. 2106, 11). Accordingly, we are not persuaded that there is a nexus between the received award and the claimed invention. Absent a nexus between the merits of the claimed invention and the submitted evidence relating to long-felt need, industry praise, and the failure of others, we determine that Patent Owner's evidence of secondary considerations does not weigh in favor of nonobviousness.

6. Conclusion

In summary, we are persuaded by Petitioner's arguments, as they are supported by the cited evidence, notwithstanding Patent Owner's arguments, addressed above. Having considered the *Graham* factors, including the scope and content of the prior art, the differences between the prior art and the challenged claims, and the objective evidence of nonobviousness, we determine that Petitioner has demonstrated by a preponderance of the evidence that independent claim 7 of the '902 patent is unpatentable under 35 U.S.C. § 103(a) as obvious over Strub in combination with Nagai or Gleissner, and Woo. Petitioner provides a similar analysis for claims 8 and 11, and we similarly determine that Petitioner has demonstrated by a preponderance of the evidence that claims 8 and 11 of the '902 patent are unpatentable under 35 U.S.C. § 103(a) as obvious Strub in combination with Nagai or Gleissner, and Woo. *See* Pet. 19–41.[9]

[9] In view of this determination, we do not reach Petitioner's challenge to claims 7, 8, and 11 as obvious over Strub alone, Strub in combination with Nagai, Strub in combination with Gleissner, and Strub in combination with Woo.

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E. Anticipation of claims 12, 14, and 15 of the '902 patent by Strub

Petitioner contends that claims 12, 14, and 15 of the '902 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Strub. Pet. 41–52. For the reasons discussed below, we determine Petitioner has demonstrated by a preponderance of the evidence that claims 12, 14, and 15 of the '902 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Strub.

1. Analysis

a. Petitioner's Contentions

Claim 12 recites "[a] method of wirelessly recording local audio." Petitioner asserts that Strub discloses a recording unit that acquires locally generated audio data from audio data acquisition device 303 (e.g., a microphone) and both records the locally generated audio in data storage device 305 and wirelessly transmits it to another recording unit. Pet. 41–42 (citing Ex. 1003, 6:1–8, 7:25–35, 12:13–21, 12:31–39, 25:35–49, 35:54–65, 37:18–40, 47:41–48, 53:16–33, 64:57–65:22, 70:38–51, 75:58–76:34, Fig. 1; Ex. 1011 ¶ 94).

Claim 12 also recites "locally receiving said local audio generated by at least one performer during an audio event." Petitioner asserts that Strub discloses "a small, lightweight, *wearable* recording unit." *Id.* at 26–29, 42 (quoting Ex. 1003, 4:29–31; citing Ex. 1003, 14:59–15:11, 16:66–17:24, 38:65–39:11, 66:33–51, 67:54–68:10, 72:9–19, Figs. 1, 8A–8C, 9A, 9B; Ex. 1011 ¶¶ 59, 95).

Claim 12 further recites "wirelessly transmitting said local audio to at least one of the group consisting of a recorder, a receiver, and combinations thereof." Petitioner asserts that Strub discloses a local audio device that includes an audio data acquisition device 303 (e.g., a microphone) that

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acquires local audio and stores the audio data in data storage device 305. Pet. 43 (citing Ex. 1003, 12:13–21, 25:35–49). Petitioner also asserts that Strub discloses the local audio device includes a transmitter 309 that wirelessly transmits its locally generated audio to a remote recording unit. *Id.* (citing Ex. 1003, 12:31–39, 35:54–65). Petitioner asserts that the transmission is wireless because (1) Strub discloses the example of a 2.4 gigahertz analog television transmission path and (2) the figures do not show wires between the local and remote units. *Id.* at 43–44.

Claim 12 additionally recites "locally recording said local audio as local audio data in at least one memory of at least one local audio device." Petitioner argues that Strub discloses a local audio device that acquires audio from an attached microphone ("local audio") and both stores it ("locally recording") as audio data ("local audio data") in a data storage device ("at least one memory") and wirelessly transmits it to another recording unit. Pet. 45 (citing Ex. 1003, 12:13–21, 12:31–39, 25:35–49, 35:54–65, 37:18–40, 38:1–4, Fig. 3).

Claim 12 additionally recites "remotely recording said transmitted local audio via at least one of the group consisting of a recorder, a receiver, and combinations thereof as remote audio data." Petitioner argues that Strub discloses a remote recording unit that receives the transmitted audio data via a receiver and records it. *Id.* (citing Ex. 1003, 12:13–21, 12:31–39, 25:35–49, 35:54–65, 37:18–40, 38:1–4, Fig. 3; Ex. 1011 ¶ 98.). Petitioner further asserts that Strub discloses that "each recording unit can include a receiver that enables receipt of signals broadcast from other recording units that represent the recording data." *Id.* at 45–46 (quoting Ex. 1003, 35:54-65).

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Claim 12 additionally recites "wherein at least a portion of said local audio data is retrieved during or subsequent to said audio event and is combined with said remote audio data." Petitioner argues that Strub discloses "the recording units timestamping the recorded audio and synchronizing recordings from multiple recording units using those timestamps in post-processing." *Id.* at 47 (citing Ex. 1003, 13:50–67). Petitioner contends that local audio data is retrieved and transmitted to other devices via transmitter 309 or wired connections. *Id.* at 47 (citing Ex. 1003, 12:4–39, 66:7–25, Fig. 3).

Claim 12 additionally recites "wherein said local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof." Petitioner argues that Strub discloses the local audio data includes at least one identifier that "that identifies track ('*track identifiers*'), the recording unit ('*local audio device identifiers*'), and/or the recorder ('*performer identifiers*')." Pet. 50 (citing Ex. 1003, 6:1–8, 7:25–35, 12:31–39, 35:54–65, 37:18–40, 47:41–48, 53:16–33, 64:57–65:22, 70:38–51, 75:58–76:34, Fig. 1; Ex. 1011 ¶ 107).

b. Patent Owner's Arguments

Patent Owner argues that Petitioner fails to demonstrate by a preponderance of the evidence that claims 12, 14, and 15 are anticipated by Strub. PO Resp. 17–22. Patent Owner argues that Strub fails to disclose "the same local audio is stored at both the local audio device as local audio data and the remote receiver/recorder as remote audio data and that the local audio data is combined with the remote audio data." PO Resp. 19 (quoting Ex. 2111 ¶ 21). More specifically, Patent Owner asserts that Strub does not

satisfy the claim requirements of "(1) the same audio data to be (i) stored at the local audio device (as 'local audio data') and (ii) transmitted to and recorded at the remote recorder (as 'remotely recorded audio data') and (2) 'the local audio data' and the 'remotely recorded audio data' to be combined." PO Resp. 18–19; PO Sur-Reply 7–12. Patent Owner argues that Petitioner fails to identify (1) two different devices taught by Strub that correspond to the claimed wearable local audio device and remote receiver/recorder or (2) the audio data in Strub that corresponds to the claimed local audio. PO Resp. 19.

Rather than storing the same data at the local device and the remote recorder, Patent Owner asserts that Strub discloses that different audio data from different recording units or data acquisition devices are combined. PO Resp. 19 (citing Ex. 1003, 13:50–67). Patent Owner contends that Petitioner's expert, Mr. Tinsman, conceded that Strub discloses "combining the different audio data from the different recording units." *Id.* (citing Ex. 2109, 55:3–7). Patent Owner further contends that its expert, Mr. DeFilippis, explains that in Strub, a "mere multi-track recording (combining multiple tracks of audio onto a single media) also does not satisfy these claim requirements." PO Resp. 19 (citing Ex. 2111 ¶ 21). Accordingly, Patent Owner asserts that Strub's "blending (e.g., mixing) of data from multiple, different data acquisition devices" is different from the claims, which require "the same audio data to be (i) received and stored locally, (ii) transmitted and stored remotely, and (iii) then combined." PO Resp. 20 (citing Ex. 2111 ¶ 23).

We are not persuaded by Patent Owner's argument. Petitioner identifies the first local audio device as including position sensing device

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311 and audio receiver 310 that records *audio data*, GPS position data or biometric data, and time data. Pet. 42 (citing Ex. 1011 ¶ 95), 26–27 (citing Ex. 1003, 12:39–52, 35:53–61, 37:55–62, 63:41–60; Ex. 1011 ¶ 61). Further, Petitioner identifies Strub's disclosure of other recording devices to which local audio data is transmitted via transmitter 309. Pet. 42–43 (citing Ex. 1003, 12:13–21, 12:31–39, 25:35–49, 35:54–65, 37:18–40, 38:1–4, Fig. 3; Ex. 1011 ¶ 96). In summary, Strub discloses a local audio device that records local audio and transmits the local audio to other remote devices. (Ex. 1001, Fig. 1, 105–108, 8:50–53, 12:4–39, 66:7–25). Therefore, Petitioner has identified two devices in Strub—a local audio device and a remote audio device that receives the transmitted audio. Ex. 1003, 12:4–39, 66:7–25, Fig. 3. Petitioner has also identified the claimed local audio as the audio that is stored by a local audio device and transmitted to a remote audio device. *Id.*

Furthermore, Patent Owner's argument that Strub fails to disclose "that the same local audio is stored at both the local audio device as local audio data and the remote receiver/recorder as remotely recorded audio data and that the local audio data is combined with the remotely recorded audio data" is not persuasive because it is inconsistent with our claim construction discussed above. *See* Section II.B.1; PO Resp. 19. We do not construe the limitation "said local audio data is retrieved during or subsequent to said audio event and is combined with said remote audio data" to require that the local audio data and remotely recorded audio data be the same data. *See* Section II.B.1. Accordingly, we agree with Petitioner that Strub discloses the disputed element because Strub discloses local audio devices transmitting recordings to other recording units and the recording units

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timestamping the recorded audio and synchronizing, i.e., combining, recordings from multiple recording units using those timestamps in post-processing. Ex. 1003, 13:50–67.

2. Conclusion

We are persuaded by Petitioner's arguments, as they are supported by the cited evidence, notwithstanding Patent Owner's arguments, addressed above. We determine that Petitioner has demonstrated by a preponderance of the evidence that claim 12 of the '902 patent is unpatentable under 35 U.S.C. § 102(e) as anticipated by Strub. Petitioner provides a similar analysis for claims 14 and 15, and we similarly determine that Petitioner has demonstrated by a preponderance of the evidence that claims 14 and 15 of the '902 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Strub. *See* Pet. 41–52.[10] *See* Pet. 41–52.

III. PATENT OWNER'S CONTINGENT MOTION TO AMEND

Pursuant to 35 U.S.C. § 316(d)(1) and 37 C.F.R. § 42.121(a), Patent Owner moves to replace claims 7, 8, 11, 12, 14, and 15 of the '902 patent with proposed substitute claims 21–26. PO MTA 1. The motion is contingent on our determination as to whether a preponderance of the evidence establishes that claims 7, 8, 11, 12, 14, and 15 of the '902 patent are unpatentable. *Id.* As discussed above, we determine that original claims 7, 8, 11, 12, 14, and 15 of the '902 patent have been shown to be unpatentable by a preponderance of the evidence. *See* Sections II.D.6,

[10] In view of this determination, we do not reach Petitioner's challenge to claims 12, 14, and 15 as obvious over Strub alone or in combination with Wood.

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II.E.2. Therefore, we proceed to address Patent Owner's contingent Motion to Amend.

In support of the Motion to Amend, Patent Owner relies on the Declaration of Mr. DeFilippis. *Id.*

A. Proposed substitute claims

Patent Owner submits the following proposed substitute claims 21–26:

> 21. A system for locally recording locally generated audio and remotely recording the locally generated audio comprising:
>
> at least one remote recorder;
>
> at least one master timecode generator for generating a plurality of master timecodes; and
>
> at least one local audio device wearable by a creator of said locally generated audio including:
>
> at least one local audio device receiver for receiving [at least one of the group consisting of] digital commands and said master timecodes;
>
> at least one audio input port for receiving locally generated audio from an audio input device;
>
> at least one memory;
>
> a wireless transmitter transmitting said locally generated audio to said at least one remote recorder;
>
> at least one local timecode generator for generating a plurality of local timecodes, said local timecode generator is synchronized by said master timecodes; and
>
> at least one control unit electrically coupled to said local audio device receiver, said audio input device, said memory, and said local timecode generator for creating stamped local audio data and storing said stamped local audio data in said memory;
>
> wherein said stamped local audio data includes at least one local timestamp to reference at least a portion of said stamped local audio data to at least one of said local timecodes; [and]

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wherein said stamped local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof[.]; and

said at least one remote recorder receiving said locally generated audio and remotely recording said locally generated audio as remote audio data; receiving said stamped local audio data, and replacing a portion of said remote audio data with said stamped local audio data.

22. A system according to claim [7] 21, said system further comprising:

at least one remote control unit having an RCU transmitter capable of wirelessly transmitting digital commands;

wherein said remote control unit controls at least one function of said local audio devices via transmission of at least one of said digital commands; and

wherein said function includes at least one of the group consisting of adding said track identifier to at least a portion of said stamped local audio data, deleting said track identifier from at least a portion of said stamped local audio data, altering said track identifier associated with at least a portion of said stamped local audio data, adding said local audio device identifier to at least a portion of said stamped local audio data, deleting said local audio device identifier from at least a portion of said stamped local audio data, altering said local audio device identifier associated with at least a portion of said stamped local audio data, adding said performer identifier to at least a portion of said stamped local audio data, deleting said performer identifier from at least a portion of said stamped local audio data, altering said performer identifier associated with at least a portion of said stamped local audio data, and combinations thereof.

23. A system according to claim [7] 21, wherein said master timecode includes at least one of the group consisting of time data, frame data, timecode type, recorder transport status, name of scene, name of take, track identifier, and combinations thereof.

24. A method of wirelessly recording local audio, said method comprising:

locally receiving said local audio generated by at least one performer during an audio event;

wirelessly transmitting said local audio to at least one of the group consisting of a recorder, a receiver, and combinations thereof;

locally recording said local audio as local audio data in at least one memory of at least one wearable local audio device; and

remotely recording said transmitted local audio via at least one of the group consisting of a recorder, a receiver, and combinations thereof as remote audio data;

[wherein] retrieving at least a portion of said local audio data [is retrieved] during or subsequent to said audio event and [is combined with said remote audio data] combining said remote audio data with said local audio data by replacing a portion of said remote audio data with said local audio data;

wherein said local audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof.

25. A method according to claim [12] 24, said method further comprising:

remotely controlling at least one function of at least one of said local audio device via at least one remote control unit;

wherein said function includes at least one of the group consisting of adding said track identifier to at least a portion of said local audio data, deleting said track identifier from at least a portion of said local audio data, altering said track identifier associated with at least a portion of said local audio data, adding said local audio device identifier to at least a portion of said local audio data, deleting said local audio device identifier from at least a portion of said local audio data, altering said local audio device identifier associated with at least a portion of said local audio data, adding said performer identifier to at least a portion of said local audio data, deleting said performer identifier from

> at least a portion of said local audio data, altering said performer identifier associated with at least a portion of said local audio data, and combinations thereof.
>
> 26. A method according to claim [12] 24, further comprising:
>
> manipulating said local audio data contained in at least a portion of said memory;
>
> wherein said manipulation includes at least one of the group consisting of adding said track identifier to at least a portion of said memory, deleting said track identifier from at least a portion of said memory, altering said track identifier associated with at least a portion of said memory, adding said local audio device identifier to at least a portion of said memory, deleting said local audio device identifier from at least a portion of said memory, altering said local audio device identifier associated with at least a portion of said memory, adding said performer identifier to at least a portion of said local audio data, deleting said performer identifier from at least a portion of said local audio data, altering said performer identifier associated with at least a portion of said local audio data, and combinations thereof.

PO MTA 30–33.

B. Procedural Requirements

"Before considering the patentability of any substitute claims, . . . the Board first must determine whether the motion to amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121." *Lectrosonics, Inc. v. Zaxcom, Inc.*, Case IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (precedential) ("*Lectrosonics*").

First, we consider whether the Motion to Amend proposes a reasonable number of substitute claims. 35 U.S.C. § 316(d)(1)(B). "There is a rebuttable presumption that a reasonable number of substitute claims per challenged claim is one (1) substitute claim." *Lectrosonics* at 4–5 (citing 37 C.F.R. § 42.121(a)(3)). The Petition challenges 6 claims. The Motion to

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Amend proposes 6 substitute claims. PO MTA 1. We determine that the number of proposed claims is reasonable.

Second, we consider whether the proposed substitute claims respond to a ground of unpatentability involved in this trial. *Lectrosonics* at 5–6. The Motion to Amend proposes adding the following limitation to independent claim 7, resulting in proposed substitute independent claim 21:

> said at least one remote recorder receiving said locally generated audio and remotely recording said locally generated audio as remote audio data; receiving said stamped local audio data, and replacing a portion of said remote audio data with said stamped local audio data.

Further, the Motion to Amend proposes amending the following limitation of independent claim 12, resulting in proposed substitute independent claim 24:

> [wherein] retrieving at least a portion of said local audio data [is retrieved] during or subsequent to said audio event and [is combined with said remote audio data] combining said remote audio data with said local audio data by replacing a portion of said remote audio data with said local audio data.

PO MTA 31–32. Patent Owner asserts that the proposed substitute claims are patentable over the references at issue in this proceeding. *Id.* at 21–29. We determine that the amended language in the proposed substitute claims is responsive to the grounds of unpatentability involved in this trial.

Third, we consider the breadth of the substitute claims. "A motion to amend may not present substitute claims that enlarge the scope of the claims of the challenged patent or introduce new subject matter." *Lectrosonics* at 6–8 (citing 35 U.S.C. § 316(d)(3); 37 C.F.R. § 41.121(a)(2)(ii)). Patent Owner proposes an amendment that limits claims 21 and 24 to "replacing" remotely recorded audio data with local audio data, thereby limiting the

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scope of the claims. *See* PO MTA 2–3. We determine that the proposed amendment narrows claims 21 and 24.

Patent Owner asserts that proposed substitute claims 21–26 are supported by the original disclosure in U.S. Patent Application No. 11/404,735 ("the '735 application") and U.S. Patent Application No. 11/181,062 ("the '062 application") of which it is a continuation in part. PO MTA 4–16 (providing claim charts with citations to Exs. 2018, 2112). Petitioner asserts that the Motion fails to show support in the original disclosure for the "replacing" limitation. Pet. Sur-Reply to Opp. to MTA 3.

We disagree with Petitioner. We recognize that the '062 application does not recite the term "replacing." *See generally* Ex. 2018. However, the "description need not recite the claimed invention *in haec verba* but must do more than merely disclose that which would render the claimed invention obvious." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009). The '062 application describes that locally recorded data may be retrieved and used to repair the corruption of the audio file generated by the receiver/recorders that occurred due to the receipt of corrupted audio data or dropouts. Ex. 2018, 12:12–17, 28:18–21. In other words, the '062 application describes repairing corrupted remotely stored audio using locally recorded audio data. We determine, based on the testimony of Mr. DeFilippis, that the term "repair," in the context of the specification, adequately supports the claimed "replacing." Ex. 2111 ¶¶ 68–70. Mr. Tinsman, Petitioner's expert, explains that the '902 patent specification discloses that timestamps are used to synchronize the "local audio with the wirelessly transmitted version of the local audio to *replace* any dropouts." Ex. 1011 ¶ 17 (emphasis added). Accordingly, we agree with Patent Owner

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that the proposed substitute claims do not enlarge the scope of the claims or introduce new subject matter.

Finally, the Motion to Amend includes a claim listing, as required by 37 C.F.R. § 42.121(b). PO MTA 30–33; *Lectrosonics* at 8.

In view of the above, we determine that Patent Owner's Motion to Amend meets the statutory and regulatory requirements of 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121 in a manner sufficient to proceed with the issue of whether Petitioner has met its burden of persuasion with respect to patentability.

C. Claim Construction

Patent Owner argues that the limitation of "said at least one remote recorder receiving said locally generated audio and remotely recording said locally generated audio as remote audio data; receiving said stamped local audio data, and replacing a portion of said remote audio data with said stamped local audio data" (the "replacing" limitation) requires:

> (i) locally generated audio by a creator is received at a wearable local audio device,
>
> (ii) the same locally generated audio is transmitted to a remote recorder or receiver,
>
> (iii) the same locally generated audio is remotely recorded at the recorder or receiver as remote audio data, and
>
> (iv) stamped local audio data is created from the locally generated audio and stored in the memory of the local audio device (in claim 21), and
>
> (v) the stamped local audio data (claim 21) or the local audio data (claim 24) is retrieved from the memory of the wearable local audio device and the remote audio data is combined with the stamped local audio data (claim 21) or the local audio data (claim 24) by replacing a portion of the remote audio data with the

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> stamped local audio data (claim 21) or the local audio data (claim 24).

PO MTA 17–19.

Patent Owner asserts that its proposed claim construction is consistent with both the ’902 patent specification and the proposed substitute claim language. PO MTA 18–19. Patent Owner further asserts that the ’902 patent specification supports its proposed claim construction. *Id.* at 17–19 (citing Ex. 1001, 3:57–59, Fig. 6; Ex. 2111 ¶¶ 15, 67). Specifically, Patent Owner asserts that the ’902 patent specification sets forth an embodiment where “the ‘902 patent replaces segments of the local audio that were previously transmitted by a local audio device to a remote receiver/recorder but not properly received (e.g., dropout).” *Id.* at 19 (citing Ex. 2111 ¶ 15).

Petitioner asserts that the plain meaning of the substitute claim language provides that

> [T]he “locally generated audio”/“local audio” in claims 21 and 24 is audio generated by a creator/performer, is stored/recorded in the local audio device as “local audio data,” and is remotely recorded as “remote audio data.” Thus, no construction is necessary.

Pet. Sur-Reply to Opp. to MTA 2.

We agree with Patent Owner that the amended claim language supports its proposed claim construction. Notably, proposed substitute claim 21 requires “locally recording locally generated audio,” transmitting the “locally generated audio to said at least one remote recorder,” and “recording said locally generated audio as remote audio data” for “replacing a portion of said remote audio data with said stamped local audio data.” *Id.* Proposed substitute claim 24 recites similar limitations. We determine that

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the addition of the step of "transmitting," as well as the explicit step of "replacing," supports Patent Owner's proposed construction.

As argued by Patent Owner, the '902 patent specification discloses "a process for recording audio *and for replaying and re-recording segments of missed audio*." Ex. 1001, 3:57–59 (emphasis added). Figure 6 describes the step of "[l]ocal audio devices record audio and transmit to receiving equipment in real time." *Id*. at Fig. 6, step 608. Later, "[l]ocal audio devices process [a] playback command and synchronize playback to the time code reference contained in the playback command and transmit synchronization data to receiving equipment." *Id*. at Fig. 6, step 614. Next, the "local audio devices transmit stored audio, which is simultaneously recorded by the receiving equipment, starting at the time specified in the playback command." *Id*. at Fig. 6, step 616. The dropout is then corrected as the "local audio devices continue to replay audio while the receiving equipment re-records the audio." *Id*. at Fig. 6, step 618. Although the '902 patent specification does not use the term "replacing," we determine that the aforementioned disclosure, and, more specifically, the playback command causing retransmission of local audio and the subsequent re-recording of the audio, provides adequate support for the amended claim recitation of "replacing."

Based on the foregoing, we agree with, and adopt, Patent Owner's proposed claim construction for the "replacing" limitation to require:

> (i) locally generated audio by a creator is received at a wearable local audio device,
>
> (ii) the same locally generated audio is transmitted to a remote recorder or receiver,

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> (iii) the same locally generated audio is remotely recorded at the recorder or receiver as remote audio data, and
>
> (iv) stamped local audio data is created from the locally generated audio and stored in the memory of the local audio device (in claim 21), and
>
> (v) the stamped local audio data (claim 21) or the local audio data (claim 24) is retrieved from the memory of the wearable local audio device and the remote audio data is combined with the stamped local audio data (claim 21) or the local audio data (claim 24) by replacing a portion of the remote audio data with the stamped local audio data (claim 21) or the local audio data (claim 24).

PO MTA 17–19.

Patent Owner argues that the limitation of "a wireless transmitter transmitting said locally generated audio to said at least one remote recorder" (the "transmitting" limitation) requires that the locally generated audio at a wearable local audio device is wirelessly transmitted to a remote recorder. PO MTA 19–20. Petitioner does not dispute Patent Owner's proposed construction. *See* Pet. Opp. to MTA 2.

We agree with Patent Owner that the amended claim language supports its proposed claim construction. Notably, proposed substitute claim 21 explicitly requires "a wireless transmitter transmitting said locally generated audio to said at least one remote recorder." We determine that the plain meaning of the added limitation supports Patent Owner's proposed construction. We further determine that the '902 patent specification discloses that "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. 2112, 47:5–7. Based on the foregoing, we

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agree with, and adopt, Patent Owner's proposed claim construction for the "transmitting" limitation.

Patent Owner argues that the limitation of "said local timecode generator is synchronized by said master timecodes," in conjunction with the claimed "master timecode generator" and "master timecodes," should be construed together such that

> The claim limitation "master timecode generator" should be construed as "a producer of a plurality of master timecodes controlling other timecode generators." The claim limitation "master timecodes" should be construed as "codes synchronizing audio samples."

PO MTA 20–21 (citing Ex. 2111 ¶ 67).

Petitioner disagrees and argues that "'[m]aster timecode generator' means a device that provides a timecode to other devices as a reference, and 'master timecodes' are time reference data." Pet. Opp. to MTA 3 (citing Pet. 8). Petitioner asserts that the specification describes a master timecode as a reference and states that the master timecodes may be used "for a variety of purposes." *Id.* (citing Ex. 1001, Fig. 6, 5:66–6:42, 16:30–37; quoting Ex. 1001, 6:12–16).

We agree with Patent Owner that the amended claim language supports its proposed claim construction. As described above, the limitation "master timecode generator" requires the master timecodes to control the local timecode generators because the plain meaning of master timecode generator requires control and the '902 patent specification contemplates producing a plurality of master timecodes to control other time code generators. *See* Section II.B.3. The proposed substitute claims add further support for Patent Owner's proposed construction as they explicitly require

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synchronization of a local timecode generator by a master timecode generator.

D. Whether the substitute claims comply with 35 U.S.C. § 112

Petitioner argues that the proposed substitute claims fail to particularly point out and distinctly claim the invention. Pet. Opp. to MTA 5 (citing *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005)). In particular, Petitioner argues that proposed substitute independent claim 21 improperly covers both "an apparatus and a method of using it." *Id.* at 5. Specifically, Petitioner argues that proposed substitute claim 21 recites apparatus or system elements, and also recites "a wireless transmitter transmitting," and "at least one remote recorder receiving and remotely recording . . . , receiving . . . , and replacing." *Id.* at 5 (citing PO MTA 30–31). Petitioner contends that "[t]his is confirmed by Zaxcom's own wireless transmitter construction: 'wireless transmitter on a local audio device wearable by a creator of locally generated audio transmits the locally generated audio to a recorder that is remote (i.e., away from the creator).'" *Id.* (citing PO MTA 19).

Patent Owner argues that the "claimed phrases quoted by Petitioner are not steps performed by a user with the claimed system," as in *IPXL*, but "instead qualify the types of components that are in the claimed system." PO Reply to Opp. to MTA 5–6. We agree with Patent Owner. The limitations quoted by Petitioner qualify the functions of the apparatus elements. *See* PO MTA 30–31. Specifically, the claimed wireless transmitter is for "transmitting said locally generated audio to said at least one remote recorder" and the claimed at least one remote recorder is for "receiving said locally generated audio and remotely recording said locally

generated audio as remote audio data; receiving said stamped local audio data, and replacing a portion of said remote audio data with said stamped local audio data." Claim 21 does not recite a step of transmitting or steps of receiving, recording, and replacing, but rather recites a defined functionality for the recited wireless transmitter and at least one remote recorder. We further are not persuaded that substitute claim 21 specifies the remote recorder as part of the local audio device.

Petitioner further argues that "[c]laim 24 is 'not sufficiently precise' because it recites a series of steps without any conjunction before the retrieving step." Pet. Opp. to MTA 5 (citing *IPXL Holdings*, 430 F.3d at 1384). Petitioner argues that "it is unknown whether just one of the 'remotely recording' and 'retrieving' steps is required or both." *Id.* In response, Patent Owner asserts that "[c]laim 24 recites the conjunction 'and' between the 'retrieving' step and the last step of the claim (the 'combining' step), thereby indicating that all steps of the claimed method are required." PO Reply to Opp. to MTA 6 (citing PO MTA 32). We agree with Patent Owner. The use of the conjunction "and" refers to a previous step, and, therefore, we are not persuaded that there is any lack of clarity as to whether any step is required. Accordingly, we determine that the proposed substitute claims comply with 35 U.S.C. § 112.

E. Level of Ordinary Skill in the Art

As discussed above, Petitioner and Patent Owner assert that a person of ordinary skill in the art, at the time of the '902 patent, would have had a Bachelor's degree in electrical engineering and two or more years of experience working with audio and wireless communications systems. Section II.C; Pet. 11 (citing Ex. 1011 ¶ 27); Ex. 2111 ¶ 15. We adopt the

same level of ordinary skill in the art in analyzing Patent Owner's proposed substitute claims.

F. Patentability of substitute claims over Strub in combination with Nagai or Gleissner, Woo, and Wood

Petitioner argues that substitute claims 21–26 are unpatentable under 35 U.S.C. § 103(a) as obvious over Strub in combination with Nagai or Gleissner, Woo, and Wood. PO Opp. to MTA 6–23.

1. Wood (Ex. 1008)

Wood is directed to a method for repairing a broadcast signal to improve the quality of the signal that is available to the end user. Ex. 1008, 2:28–30. Wood discloses a satellite or terrestrial digital television receiver 10 for receiving a digital video and audio stream. *Id.* at 3:16–18. Processor 16 monitors the broadcast signal to ascertain when the signal has been corrupted. *Id.* at 3:22–23. Transceiver 20 may request a replacement undamaged copy of the lost video and audio segments upon the detection of a lost portion of data in order to replace the lost data. *Id.* at 4:4–10. Multiplexor 24 is provided for combining the replacement portions supplied by transceiver 20 with the received broadcast signal. *Id.* at 4:11–12. Multiplexor 24 splices the "lost" video and/or audio obtained via the broadband connection into the "damaged" video and audio stream. *Id.* at 4:12–14.

2. Differences between the prior art and claims

Petitioner argues that substitute claims 21–23 are unpatentable under 35 U.S.C. § 103(a) as obvious over Strub in view of Nagai or Gleissner, Woo, and Wood. Pet. Opp. to MTA 6–23. Petitioner argues that Strub in view of Nagai or Gleissner, and Woo, teaches most of the limitations of proposed substitute claim 21 for the same reasons discussed in the Petition

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with respect to claim 7. *Id.* at 6–10 (citing Pet. 20–38, 41–44); *see* Section II.D.5. Accordingly, Petitioner asserts that, under Patent Owner's proposed construction (which we adopt), Strub in view of Nagai or Gleissner, and Woo teach all of the limitations of claim 21, except for the newly amended "replacing" limitation. Pet. Opp. to MTA 6–16; *see* Section III.C.

Similarly, Petitioner argues that substitute claims 24–26 are unpatentable under 35 U.S.C. § 103(a) as obvious over Strub in view of Wood. Pet. Opp. to MTA 16–19. Petitioner argues that Strub discloses most of the limitations of proposed substitute claim 24 for the same reasons discussed in the Petition with respect to claim 12. *Id.* at 16–19 (citing Pet. 41–49); *see* Section II.E.1. Accordingly, Petitioner asserts that, under Patent Owner's proposed construction (which we adopt), Strub discloses all of the limitations of claim 24, except for the newly amended "replacing" limitation. Pet. Opp. to MTA 16–19; *see* Section III.C.

Petitioner asserts that, although Strub discloses combining local and remotely recorded audio data, it does not expressly disclose "replacing said remotely recorded audio data with said local audio data." Pet. Opp. to MTA 13. For that limitation, Petitioner relies on the combined teachings of Strub and Wood. *Id.* at 13–16. Specifically, Petitioner asserts that Wood discloses a method to "fix defects or gaps in a recording of a received transmission ('*remotely recorded audio data*') by requesting an undamaged local copy and 'combining the replacement portions' ('*local audio data*') with the previously recorded transmission." *Id.* at 14 (citing Pet. 28–30); *see* Ex. 1008, 1:31–2:13, 3:22–29, 4:11–27, Figs. 1, 2; Ex. 1011 ¶ 58, ¶ 104 ("Wood discloses sending a request when a dropout is detected so that the content can be re-sent and combined with the previously received audio to

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repair the dropout."). Petitioner contends that, in the event of a transmission failure, it would have been obvious to a person of ordinary skill in the art to fix a defect in a remote recording of Strub's system by replacing the corrupt segment with a local copy. Pet. Opp. to MTA 15 (citing Pet. 48).

Patent Owner argues that Petitioner fails to demonstrate that Wood teaches "'local audio data' . . . because 'there is no local recording device in Wood.'" PO Reply to Opp. to MTA 7–8 (quoting Ex. 2086 ¶ 35). We are not persuaded by this argument because, as Petitioner responds, "Lectrosonics does not rely on Wood to disclose 'local audio' or a 'local recording device," and "Zaxcom [] errs by ignoring Lectrosonic's proposed combination and focusing only on whether each reference alone discloses each claim element." Pet. Sur-Reply to Opp. to MTA 4–5 (citing Pet. Opp. to MTA 7–9). This argument by Patent Owner is tantamount to an attack on Wood alone, but Petitioner's argument is based on the combination of the cited references. "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references." *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Regarding the combination of Strub and Wood, Petitioner asserts that the addition of Wood's method for replacing a dropout would have been obvious because Strub contemplated the problem of deficient recordings and Wood provided a known solution. Pet. Opp. to MTA 13–14. Specifically, Petitioner asserts that Strub recognized the problem of deficient recordings, and a person of ordinary skill in the art would have known that one such deficiency would have been dropouts. Pet. 48 (citing Ex. 1003, 48:18–30, 85:28–41 ("during an event, the recording obtained by a particular recording

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unit will be deficient in some way"); Ex. 1011 ¶ 103). In order to solve the problem of dropouts, Petitioner asserts a person of ordinary skill in the art would have combined Wood with Strub in order to improve signal quality and produce a program free of dropouts. *Id.* at 49 (citing Ex. 1003, 35:54–57, 36:10–29, 37:53–38:4, 66:7–15; Ex. 1008, 1:28–30, 3:4–6; Ex. 1011 ¶¶ 105–106). In Petitioner's view, the combination of Strub and Wood would have been expected because techniques for detecting dropouts and requesting replacements were well known, and Wood discloses such a technique. Pet. Opp. to MTA 15 (citing Pet. 48); Pet. Sur-Reply to Opp. to MTA 3–4. Patent Owner's own expert, Mr. DeFilippis, explains that if backup audio was available, a person of ordinary skill in the art would have known to replace corrupted audio with replacement audio. *See generally* Ex. 1034, 19:2–21:12.

Patent Owner argues that "it is unclear how the teachings of Strub and Wood could be combined in the manner suggested by Petitioner to achieve the claimed invention with a reasonable expectation of success." PO Resp. 26–27 (quoting Ex. 2111 ¶ 39). Specifically, Patent Owner asserts that Strub "allows the local audio data to be retrieved by transmitting the data to other devices via transmitter 309 or wired connections, such as USB," which differs substantially from Wood's combining of a broadcast signal transmitted on one channel with a replacement signal on another channel. *Id.* at 27 (citing Pet. 47; Ex. 1003, 12:4–39, 66:7–25, Fig. 3). Patent Owner argues that Wood discloses a system for "TV broadcasting and addresses problems with a broadcasting channel using a second channel," and a person with ordinary skill in the art "would not have looked to Wood

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to address the problem identified in the '902 patent." *Id.* at 29 (quoting Ex. 2111 ¶ 45).[11]

Patent Owner further argues that "Petitioner erred by focusing on whether the concept of repairing dropouts was known." PO Reply to Opp. to MTA 8–9. Patent Owner argues that Petitioner fails to establish that the "claimed combination as a whole" would have been obvious. *Id.* at 8. Patent Owner argues that "Wood would have taught repairing dropouts by a completely different approach using a server and recorder, neither of which is anywhere near the location of the locally generated audio." *Id.* at 8–9.

We are persuaded by Petitioner that Wood is analogous art, as it is reasonably pertinent to the problem faced by the inventors of the '902 patent. *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004); Pet. Reply 18–19 (citing Ex. 1001, 16:59–17:5; Ex. 1008, 1:31–2:13). Nevertheless, in view of the differences between the asserted prior art references and the subject matter of the proposed substitute claims, Petitioner presents a weak case of obviousness. For instance, although Strub recognizes that recordings may be deficient, Strub does not specifically contemplate deficiencies resulting from dropouts in transmission of local audio to a remote recorder or receiver. *See* Ex. 1003, 48:18–30, 85:28–41. Moreover, even if a person of ordinary skill in the art would have understood that dropouts could be one cause of deficient recordings in Strub, as Petitioner's expert opines, and Wood teaches a method for repairing

[11] Patent Owner presents several arguments towards the bodily incorporation of Wood in to Strub. PO Resp. 41–47. We are not persuaded by these arguments because the test for obviousness is what the combined teachings of the references would have suggested to a person with ordinary skill in the art. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

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dropouts, Wood focuses on repairing dropouts in a received TV broadcast signal rather than during post-processing of a recording, as in the ’902 patent. Furthermore, the evidence that a person with ordinary skill in the art would have looked to combine a small, wearable device for recording the audio of an event, as taught in Strub, with a method for repairing a TV broadcast signal, as taught in Wood, does not support a strong showing of obviousness. Considering all of the arguments and evidence of record, we conclude that Petitioner’s proposed combination of the teachings of Strub in combination with Nagai or Gleissner, Woo, and Wood, with respect to proposed substitute claims 21–23, and that Petitioner’s proposed combination of teachings of Strub in combination with Wood with respect to proposed substitute claims 24–26, at best only slightly weigh in favor of a conclusion of obviousness.

3. Objective Indicia of Nonobviousness

Patent Owner further argues that objective indicia of nonobviousness demonstrate that the substitute claims are patentable over the prior art. PO MTA 29. Patent Owner asserts that the submitted evidence demonstrates that: (1) there was a long-felt need for a wearable, wireless device that could reliably capture sound data from actors recording a movie or television show and the invention recited in the substitute claims satisfied this need; and (2) the invention received industry praise and recognition. *Id.* (citing Exs. 2111 ¶¶ 86–93, 2098, 2099, 2100, 2101, 2102; 2087 ¶¶ 8–10); PO Resp. 54–66 (citing Exs. 2087 ¶¶ 2–4, 2098–2104, 2107, 2109, 2113–2114, 2111 ¶¶ 92–93); PO Sur-Reply 25–31.

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a. Nexus

As described above, for objective indicia of nonobviousness to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo*, 838 F.3d at 1220; *see* Section II.D.5.b.ii. A patentee is entitled to a presumption of nexus "when the patentee shows that the asserted objective evidence is tied to a specific product and that product 'embodies the claimed features, and is coextensive with them.'" *Fox Factory*, 944 F.3d at 1373. However, "[a] finding that a presumption of nexus is inappropriate does not end the inquiry in to secondary considerations." *Id.* at 1375. "Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus to the merits of the claimed invention," meaning that "there must be a nexus to some aspect of the claim not already in the prior art." *Kao*, 639 F.3d at 1068–69.

In contrast to the original claims of the '902 patent, we construe substitute claims 21–26 as being directed to repairing dropouts by receiving local audio data and replacing remotely recorded audio data with the received local audio data. *See* Section III.C. In light of the different scope of proposed substitute claims 21–26, we consider the issue of nexus anew.

First, we determine that Patent Owner does not provide an analysis demonstrating that its products are coextensive (or nearly coextensive) with the challenged claims. We, therefore, find that a presumption of nexus is inappropriate. *See* Pet. Reply 28–29; Pet. Opp. to MTA 19–20.

However, we determine that Patent Owner has established a nexus between the evidence of secondary considerations and substitute claims 21–26. *Fox Factory*, 944 F.3d at 1373–74. In its Motion to Amend, Patent

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Owner argues that there was a "long felt need for a wearable wireless device that could reliably capture sound data from actors recording a movie or television show" and the "invention received industry praise and recognition including an Emmy award and a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences." PO MTA 29 (citing Exs. 2111 ¶¶ 86–93, 2098, 2099, 2100, 2101, 2102, 2087 ¶¶ 8–10). Although Patent Owner does not provide any more analysis in its Motion to Amend (Pet. Opp. to MTA 29), Patent Owner's arguments and evidence submitted in its Response are directed to the subject matter added by amendment to the proposed substitute claims, and we therefore consider the totality of the evidence regarding objective indicia of nonobviousness.

Patent Owner submits the testimony of Mr. Wexler, who explains: "I have been in many situations where for a variety of reasons there have been *RF dropouts and in some cases the wireless on the talent has moved way out of range . . . . [P]rior to Zaxcom's invention, the audio would be lost forever in these situations*." PO Resp. 54 (citing Ex. 2104 ¶ 6) (emphasis added). That is, Mr. Wexler refers generally to the prevention of dropouts and lost audio, i.e., the "replacing" limitation. *See* Section III.C. Mr. Wexler's testimony has probative value in establishing that the asserted objective evidence is tied to the proposed substitute claims.

Patent Owner also cites the following testimony from Mr. Sarokin and Mr. Wexler:

> Mr. Sanders announced his 3rd generation units. I purchased 12 TRX 900 transmitters and these included a mini SD card slot for recording and a built in remote control receiver . . . Not only could they transmit audio, they could also receive time code sync signals and remote control commands. Zaxcom combined this incredible capability with a built in digital recorder, making his

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> digital transmitters full synchronous recording systems. This capability solved the major limitation of radio mics … radio mics had a very limited range. Depending on what else is on the frequency, the range can be as little as 50 feet. In a big motion picture scene, especially on a film that Ridley Scott is directing, there can be simultaneous action hundreds of feet apart. Prior to Zaxcom's invention of recording radios, the field mixer would capture as much of the dialog as his equipment would allow and the rest would have to be dubbed in post production. I can't emphasize enough the revolution these recording radios brought on. If the actors in a scene went in and out of radio range the SD card on the transmitter would continue to record the audio . . . Zaxcom also integrated all their equipment so a sound mixer could hit a single button on a Zaxcom recorder and all the radios in use would play back from a certain take or time code start point so the scene could be remixed without any radio drop outs. Zaxcom has been doing this since 2005. 14 years! . . .
>
> Each Zaxcom transmitter can digitally record the output of the microphone along with transmitting the signal to the receiver. If there is a drop out of the RF signal, the identical recording in the transmitter can be used by post production. . .

PO Resp. 54–56 (citing Ex. 2103 ¶¶ 3, 4–7; Ex. 2104 ¶¶ 6–7). Mr. Sarokin and Mr. Wexler refer specifically to the "replacing" limitation of the '902 patent recited by the proposed substitute claims. For instance, Mr. Wexler states that each "transmitter can digitally record the output of the microphone along with transmitting the signal to the receiver. If there is a drop out of the RF signal, the identical recording in the transmitter can be used by post production." Ex. 2104 ¶ 6. In other words, a dropout causing an issue with remotely recorded audio can be fixed by "replacing" the remotely recorded audio with local audio data from a recording transmitter. We determine that this evidence is strongly probative in establishing that the asserted objective evidence is tied to the invention recited in the proposed substitute claims.

Similarly, Patent Owner's evidence of praise in the form of the Technical Achievement Award from the Academy of Motion Picture Arts and Sciences and the Emmy award from the Academy of Television Arts and Sciences awarded to Patent Owner also has probative value in establishing that the asserted objective evidence is tied to the invention disclosed and claimed in the substitute claims. For example, the Emmy award specifically praises the digital recording of microphone signals in the wireless transmitter to provide *backup* recording of the original microphone signal. PO Resp. 58 (citing Ex. 2106). That is, the Emmy award praises the "replacing" feature recited by the proposed substitute claims. We determine that this evidence is probative in establishing that the asserted objective evidence is tied to the invention disclosed in the substitute claims.

Petitioner contends that Patent Owner "presents no nexus argument, referring only to '[t]he invention.'" Pet. Opp. to MTA 20 (citing PO MTA 29). Petitioner specifically argues that Mr. Wexler and Mr. Sarokin praise unclaimed features. *Id.* at 28–29; PO Resp. 21–22. Petitioner further argues that the Technical Achievement Award and Emmy focus on "digital modulation technology," and "merely mention[] the ability to also record audio in the transmitter bodypack as one feature of the system." *Id.* at 22–23 (citing Ex. 2102, 1).

We are not persuaded by Petitioner's argument that the testimony of Mr. Wexler and Mr. Sarokin, and the Technical Achievement Award and Emmy, are directed to unclaimed features. As discussed above, both Mr. Wexler and Mr. Sarokin specifically identify the "replacing" limitation as a basis for the praise. *See* Ex. 2104 ¶ 6; Ex. 2103 ¶¶ 3, 4, 6. The Emmy similarly discusses providing a backup recording to the original recording,

and identifies the "replacing" limitation. *See* PO Resp. 58. As such, the evidence cited by Patent Owner further supports a finding of a nexus.

Accordingly, considering the totality of evidence before us, we determine that Patent Owner has established a nexus between the evidence of industry praise and long-felt need and the "replacing" limitation of the proposed substitute claims.

b. Long-Felt Need

"Evidence of a long-felt but unresolved need can weigh in favor of the non-obviousness of an invention because it is reasonable to infer that the need would not have persisted had the solution been obvious." *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1056 (Fed. Cir. 2016). Patent Owner asserts that there was a long-felt need for a "wireless, wearable, transmitting and recording device that could reliably capture sound data from actors recording a movie or television show." PO Resp. 54.

Patent Owner argues that the "claimed invention of the '902 patent satisfied this long felt need." *Id.* at 55. As support, Patent Owner submits the declarations of Mr. Sarokin and Mr. Wexler. PO Resp. 55–58 (citing Exs. 2103, 2104). For example, Mr. Sarokin explains that "[f]or the first time radio mic transmitters were now transceivers. Not only could they transmit audio, they could also receive time code sync signals and remote control commands. Zaxcom combined this incredible capability with a built in digital recorder, making his digital transmitters full synchronous recording systems. This capability solved the major limitation of radio mics." Ex. 2103 ¶ 6. Mr. Sarokin goes on to explain that "Zaxcom also integrated all of their equipment so a sound mixer could hit a single button on a Zaxcom recorder and all the radios in use would playback from a

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certain take or time code start point so the scene could be re-mixed without any radio drop outs." *Id*. Mr. Wexler also explains that "[i]n the past, prior to Zaxcom's invention, the audio would be lost forever in these situations [where there has been a dropout]. With Zaxcom recording transmitters, the audio will always be available directly from the transmitter." Ex. 2104 ¶ 6.

Petitioner asserts that Patent Owner has failed to provide evidence of long-felt need, specifically arguing that Patent Owner "presents no evidence of the field requesting such a device at any time, much less before the '902 patent, and no evidence of efforts to meet such a request." Pet. Opp. to MTA 21; *see* Pet. Reply 24–25. More specifically, Petitioner argues that Patent Owner "only generally discusses RF dropouts and talent moving out of range, without discussing the significance of the problem, if any, before 2005." Pet. Reply 24. Petitioner also argues that Patent Owner fails to show that the "need was unresolved and filled by the claimed features alone." Pet. Reply. 25.

Considering the totality of the evidence, we determine that Patent Owner has demonstrated that a long-felt need existed for a "wireless, wearable, transmitting and recording device that could reliably capture sound data from actors recording a movie or television show." As discussed above, we credit the testimony of Mr. Sarokin and Mr. Wexler, who both identify repairing dropouts as a long-felt need. PO Resp. 54–57 (citing Ex. 2103 ¶ 6; Ex. 2104 ¶ 6). As also discussed above, we credit the testimony of Mr. Sarokin, who explains that "[b]y 2005 my sound cart was fully digital . . . I purchased 12 TRX 900 transmitters . . . Zaxcom combined this incredible capability [of transmitting audio, receiving time code sync signals, and remote control commands] with a built in digital recorder,

making his digital transmitters full synchronous recording systems." Ex. 2103 ¶ 6. Mr. Sarokin explains that "[t]his capability solved the major limitation of radio mics." *Id.* We also credit the testimony of Mr. Wexler in explaining how the "replacing" limitation solved the long-felt need of repairing dropouts. PO Resp. 54–57 (citing Ex. 2104 ¶ 6). As such, we are not persuaded by Petitioner's arguments that Patent Owner does not provide evidence of a long-felt need, and that claimed features solved that long-felt need.

We, however, agree with Petitioner that Patent Owner has not presented strong evidence demonstrating that "the need was long felt based on the date when the problem to be solved was identified and efforts were made to solve the problem." Pet. Opp. to MTA 21–22 (citing *Texas Instruments Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 1178 (Fed. Cir. 1993). Although Mr. Sarokin generally asserts that there was a long-felt need as of 2005, Patent Owner's lack of further evidence regarding a specific date of the identified problem and efforts to solve the problem does not provide additional weight in favor of Patent Owner. Nonetheless, in view of the testimony from Mr. Sarokin and Mr. Wexler, we determine that Patent Owner provides sufficient evidence there was a long-felt need for a "wireless, wearable, transmitting and recording device that could reliably capture sound data from actors recording a movie or television show."

In sum, the evidence provided by Patent Owner establishes there was a persistent need, recognized by those of ordinary skill in the art, for a "wireless, wearable, transmitting and recording device that could reliably capture sound data from actors recording a movie or television show." We

determine that the evidence of long-felt need weighs in favor of nonobviousness.

c. Industry Praise

Evidence that the industry praised a claimed invention or a product that embodies the patent claims weighs against an assertion that the same claim would have been obvious. *WBIP*, 829 F.3d at 1334. As evidence of industry praise, Patent Owner relies upon the Declarations of Mr. Sarokin and Mr. Wexler. PO Resp. 54–59; PO Sur-Reply 26–27. Patent Owner further relies on the evidence of the awards for its products: the Technical Achievement Award from the Academy of Motion Picture Arts and Sciences and the Emmy award from the Academy of Television Arts and Sciences. *Id*.

For example, Mr. Wexler states that "[w]ith Zaxcom's brilliant invention . . . I could always deliver a track to post production even . . . where there were failures of the RF transmission" and "nothing else even came close." PO Resp. 57 (citing Ex. 2104 ¶ 7). Mr. Sarokin explains that he "can't emphasize enough the revolution these recording radios brought on." Ex. 2103 ¶ 6. Mr. Sarokin further explains that "[n]o other company has anything remotely close" and "[t]here is nothing even remotely comparable." Ex. 2103 ¶¶ 6, 8.

Also probative is Patent Owner's evidence of the received awards. Patent Owner asserts the Emmy award specifically praises features of the proposed substitute claims including the digital recording of microphone signals in the wireless transmitter "to provide *backup recording* of the original microphone signal." PO Resp. 58 (quoting Ex. 2106) (emphasis added). Patent Owner further relies on, and we credit, the testimony of

Mr. DeFilippis, a member of the committee who granted the award, who explains that "Mr. Sanders also received the Emmy award from the Academy of Television Arts and Sciences for the Zaxcom, Inc. digital recording wireless products that embody the claimed invention of the '902 patent." Ex. 2111 ¶ 92; *see* PO Sur-Reply 28–29. Patent Owner further asserts that "Glenn Sanders and the co-inventor of the '902 patent, Howard Stark, received the Technical Achievement Award from the Academy of Motion Picture Arts and Sciences for the digital recording wireless products that embody the claimed invention of the '902 patent." PO Resp. 58 (citing Ex. 2101; Ex. 2102; Ex. 2087 ¶¶ 2–4). Patent Owner further provides a press release for the Emmy that praises Patent Owner's "digital wireless transmission system for microphones *and a production tool that married wireless transmission with a recording device* located within the actor's body pack." Ex. 2107 (emphasis added).

Petitioner argues that the evidence of industry praise submitted by Patent Owner is directed to features that are "unclaimed, known in the art, or both." Pet. Opp. to MTA 22. Specifically, Petitioner argues that Mr. Wexler and Mr. Sarokin praise features directed to digital recording, wireless transmission, and time code signals, features that Petitioner alleges are not present in the claims. *Id*.

Although we agree with Petitioner that Patent Owner provides some evidence of industry praise directed to features not explicitly recited by proposed substitute claims 21–26, we are persuaded that Patent Owner provides evidence of industry praise related to the "replacing" limitation that specifically addresses dropouts. *See* PO Resp. 54–59. The evidence of features that are not recited by proposed substitute claims 21–26 weighs

neither for nor against nonobviousness. However, the testimonial evidence by Mr. Sarokin and Mr. Wexler praising Patent Owner's dropout correction features, as recited by the "replacing" limitation, weighs in favor of nonobviousness. Furthermore, the awards evidence that praises Patent Owner's digital recording devices that "married wireless transmission with a recording device located within the actor's body pack" also strongly weighs in favor of nonobviousness.

In sum, we determine that Patent Owner's evidence of industry praise weighs in favor of nonobviousness.

d. Failure of Others

Patent Owner asserts that others tried and failed to provide a device with similar features to the '902 patent, namely, "wireless, wearable, transmitting and recording device that transmits and stores the same local audio so that the corresponding local audio data can be used to repair dropouts."[12] PO Sur-Reply 30; *see* PO Resp. 56–57. More specifically, Patent Owner relies on the Declaration of Mr. Sarokin who states:

> Zaxcom would have no competition for almost 8 years. It was 2009 before SONY engineers were able to figure out the algorithms pioneered by Zaxcom. By the time Sony came out with their first digital radio Zaxcom was already on their 3rd generation . . .
>
> NO ONE else has recording capability, NO ONE else has systems integration. NO ONE else has reduced bandwidth digital radios, and NO ONE else has micro sized digital radios period.

[12] Although Patent Owner presents the failure of others arguments as directed to the original claims of the '902 patent, we understand these arguments also to apply to the proposed substitute claims for the same reasons discussed above.

PO Sur-Reply 30 (citing Ex. 2103 ¶¶ 5, 7); *see* PO Resp. 56–57.

Petitioner argues that Patent Owner provides no relevant evidence that others tried and failed to create the claimed technology, and that those failures were attributable to the claimed features. Pet. Reply 25–26 (citing *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1313 (Fed. Cir. 2006)). According to Petitioner, Patent Owner's evidence of the failure of others at most demonstrates an attempt at digital modulation. *Id.* (citing PO Resp. 56).

We agree with Petitioner. We find Patent Owner's evidence of the failure of others to be conclusory and without adequate support for the proposition that others failed. Mr. Sarokin describes a lack of competition and states, without evidentiary support, that "it was 2009 before SONY engineers *were able to figure out* the algorithms." Ex. 2103 ¶ 5 (emphasis added). The submitted evidence, by itself, is insufficient for us to find that Sony, or any other industry competitor, failed in developing a competing product as other business or economic factors may have come into play. The lack of a competing product is insufficient evidence of whether others tried and failed at development. Accordingly, we do not find Patent Owner's evidence of the failure of others to weigh in favor of nonobviousness.

4. Weighing the Objective Indicia of Nonobviousness

"The objective indicia of non-obviousness play an important role as a guard against the statutorily proscribed hindsight reasoning in the obviousness analysis." *WBIP*, 829 F.3d at 1328. Indeed, the Federal Circuit has held that such evidence "may often be the most probative and cogent evidence in the record." *Id.* (quoting *Stratoflex, Inc. v. Aeroquip Corp.*, 713

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F.2d 1530, 1538 (Fed. Cir. 1983)). We determine that Patent Owner has provided strong evidence of the nonobviousness of proposed substitute claims 21–26. Specifically, we find that the factors of long-felt need and especially industry praise weigh heavily in favor of nonobviousness. We do, however, agree with Petitioner that the evidence of the failure of others does not tend to show nonobviousness. In sum, we are persuaded by Patent Owner that the objective indicia of nonobviousness strongly support a conclusion of nonobviousness.

5. Conclusion

Factual inquiries for an obviousness determination include secondary considerations based on objective evidence of nonobviousness. *Graham*, 383 U.S. at 17–18. Weighing all four *Graham* factors, we conclude that Petitioner has not shown by a preponderance of the evidence that proposed substitute claims 21–23 would have been obvious over the combination of Strub in combination with Nagai or Gleissner, Woo, and Wood, or that proposed substitute claims 24–26 would have been obvious over the combination of Strub and Wood. Rather, we determine that Petitioner's proposed combination of the teachings of the references presents a weak case of obviousness, whereas the objective indicia of nonobviousness weigh heavily in favor of nonobviousness.

Based on the foregoing, we grant Patent Owner's Contingent Motion to Amend.

IV. Conclusion

Based on the information presented, we conclude that Petitioner has shown, by a preponderance of the evidence, that claims 7, 8, 11, 12, 14, and

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15 of the ’902 patent are unpatentable. We also grant Patent Owner’s Motion to Amend to replace claims 7, 8, 11, 12, 14, and 15 with proposed substitute claims 21–26.

In summary:

Reference(s)	**Basis**	**Claims**	**Claims Shown Unpatentable**	**Claims Not shown Unpatentable**
Strub, and Nagai or Gleissner, and Woo	§ 103	7, 8, 11	7, 8, 11	
Strub and Wood	§ 103	12, 14, 15	12, 14, 15	
Strub	§ 102	12, 14, 15	12, 14, 15	
Overall Outcome			7, 8, 11, 12, 14, 15	

Motion to Amend Outcome	**Claims**
Original Claims Cancelled by Amendment	7, 8, 11, 12, 14, 15
Substitute Claims Proposed in the Amendment	21–26
Substitute Claims: Motion to Amend Granted	21–26

V. ORDER

After due consideration of the record before us, and for the foregoing reasons, it is:

ORDERED that claims 7, 8, 11, 12, 14, and 15 of the ’902 patent are held unpatentable;

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FURTHER ORDERED Patent Owner's Contingent Motion to Amend is granted as to proposed substitute claims 21–26, and claims 7, 8, 11, 12, 14, and 15 are cancelled and replaced by proposed substitute claims 21–26; and

FURTHER ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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