

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

**RØDE Microphones, LLC and Freedman
Electronics Pty Ltd., Petitioners**
v.
Zaxcom, Inc., Patent Owner

Case Nos. IPR2025-00230 and IPR2025-00232
U.S. Patent Nos. 7,711,443 and 10,276,207

Petitioners' Trial Demonstratives
March 16, 2026

Petitioners' Trial Demonstratives

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I. The '443 and '207 Patents

The '443 Patent

'443 Patent



UNITED STATES Patent Trademark Office Saunders & Co.	62 Patent No. U.S. 7,714,443 (S. Pat.) May 7, 1910
26. SPECIAL HYPODERMIC LITHIUM BATHING SYSTEM	Special Bathing System — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
27. Improved Carbon Vacuum Furnace	Improved Carbon Vacuum Furnace — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
28. Improved Vacuum Furnace	Improved Vacuum Furnace — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
29. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
30. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
31. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
32. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
33. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
34. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
35. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
36. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
37. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
38. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
39. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
40. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
41. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
42. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
43. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
44. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
45. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
46. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
47. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
48. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
49. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
50. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
51. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
52. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>
53. Method of Heat Treatment of Metals	Method of Heat Treatment of Metals — <i>See</i> <i>Reference</i> <i>U.S. Pat. No. 7,714,443</i>

U.S. Patent No. 7,711,443

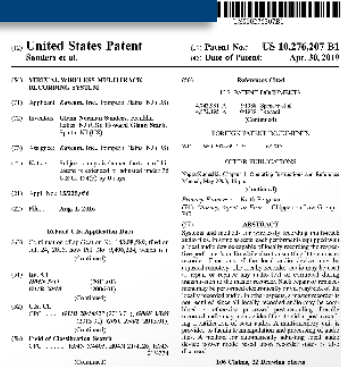
Priority Date:
July 14, 2005

VIRTUAL WIRELESS MULTITRACK RECORDING SYSTEM

Inventors:
Glenn Norman Sanders
Howard Glenn Stark

The '207 Patent

'207 Patent



U.S. Patent No. 10,276,207

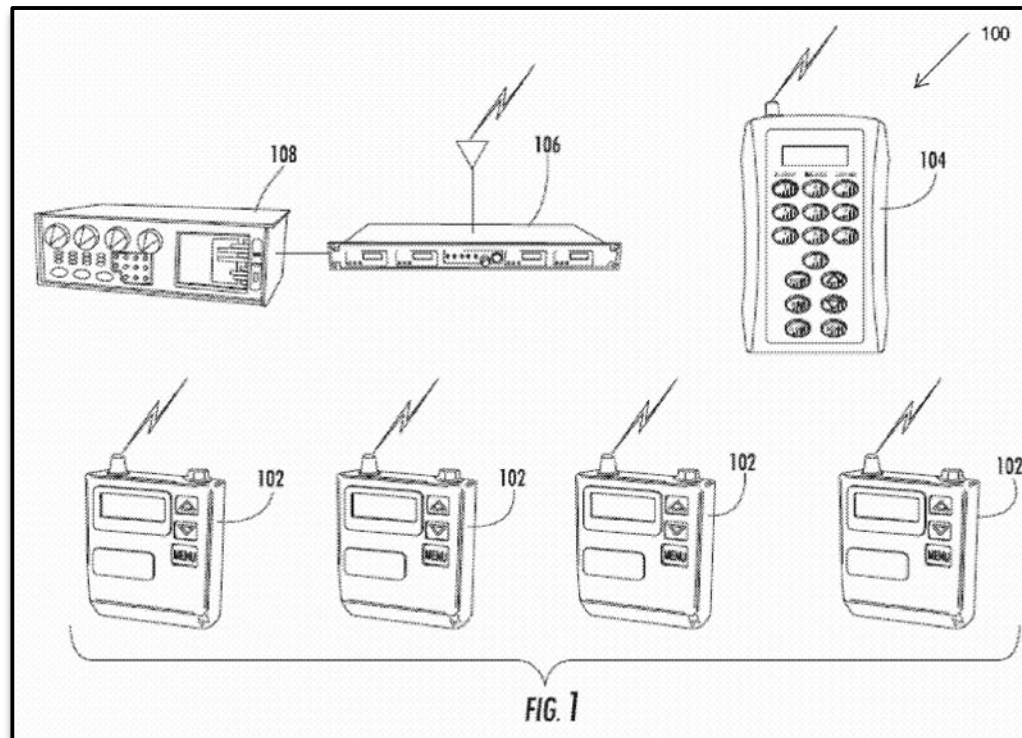
Earliest Possible Priority Date:
July 14, 2005

VIRTUAL WIRELESS MULTITRACK RECORDING SYSTEM

Inventors:
Glenn Norman Sanders
Howard Glenn Stark

The '443 and '207 Patents

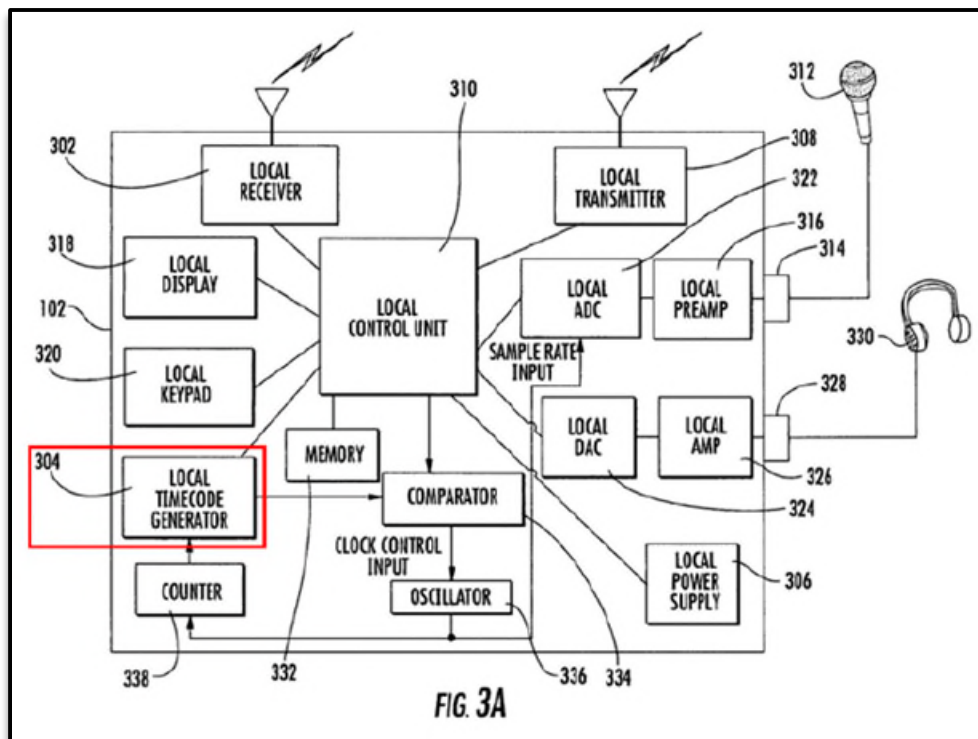
Wearable local audio device (102) which records local audio and wirelessly transmits the local audio, e.g., to a remote device including a receiver (106) and/or recorder (108)



'230 Ex. 1001 ('443 Patent), Fig. 1; '232 Ex. 1001 ('207 Patent), Fig. 1; Ex. 1002 (Kyriakakis Decl.) ¶¶ 46-47;
'230 Paper 1 (Petition) at 4-5; '232 Paper 1 (Petition) at 3-4.

The '443 and '207 Patents

Local audio data is timestamped using a master timecode or a local timecode



- Local audio device receives master timecodes from a master timecode generator
- '443 Patent: local audio data stamped with timestamp referencing at least a portion of the local audio data to the master timecode
- '207 Patent:
 - Local timecode generator (304) is jam synchronized to master timecode generator
 - Local timecode generator generates local timecode
 - Local audio data is stamped with local timecode

'230 Ex. 1001 ('443 Patent), 2:58-61, 3:32-54; 4:13-37, 5:25-31, 8:65-9:12, 9:38-45, 12:56-64, Figs. 3A, 4A-6; '232 Ex. 1001 ('207 Patent), 3:16-19, 4:3-26, 4:52-5:10, 6:2-8, 10:56-11:4, 11:29-35, 14:52-60, 17:9-22, Figs. 3A, 4A-6; Ex. 1002 (Kyriakakis Decl.) ¶ 50; '230 Paper 1 (Petition) at 5-6; '232 Paper 1 (Petition) at 4-6.

II. Level of Ordinary Skill in the Art

Definition of Person of Ordinary Skill in the Art (POSITA)

- Agreed-on portions of definition:
 - Bachelor's degree in EE or related or equivalent field.
 - 2+ years of experience working with audio systems.
 - Additional years of education may compensate for fewer years of experience, or visa-versa.
- Zaxcom's proposed extra requirements:
 - 2-5 years of experience specifically "working with **multi-track audio** and **wireless** communications systems in the **professional performance industry.**"

Zaxcom's extra requirements are unnecessary and overly specific:

- Multi-track audio is a basic concept known for decades.
- Off-the-shelf wireless components in 2005 did not require lengthy experience.
- None of the challenged claims are limited to a professional environment.

Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 4-5; '230 Paper 43 (Reply) at 1; '232 Paper 42 (Reply) at 1; '230 Paper 1 (Petition), at 3; '232 Paper 1 (Petition), at 3; '230 Paper 23 (POR), at 6-7; '232 Paper 23 (POR), at 8.

Dr. Chris Kyriakakis



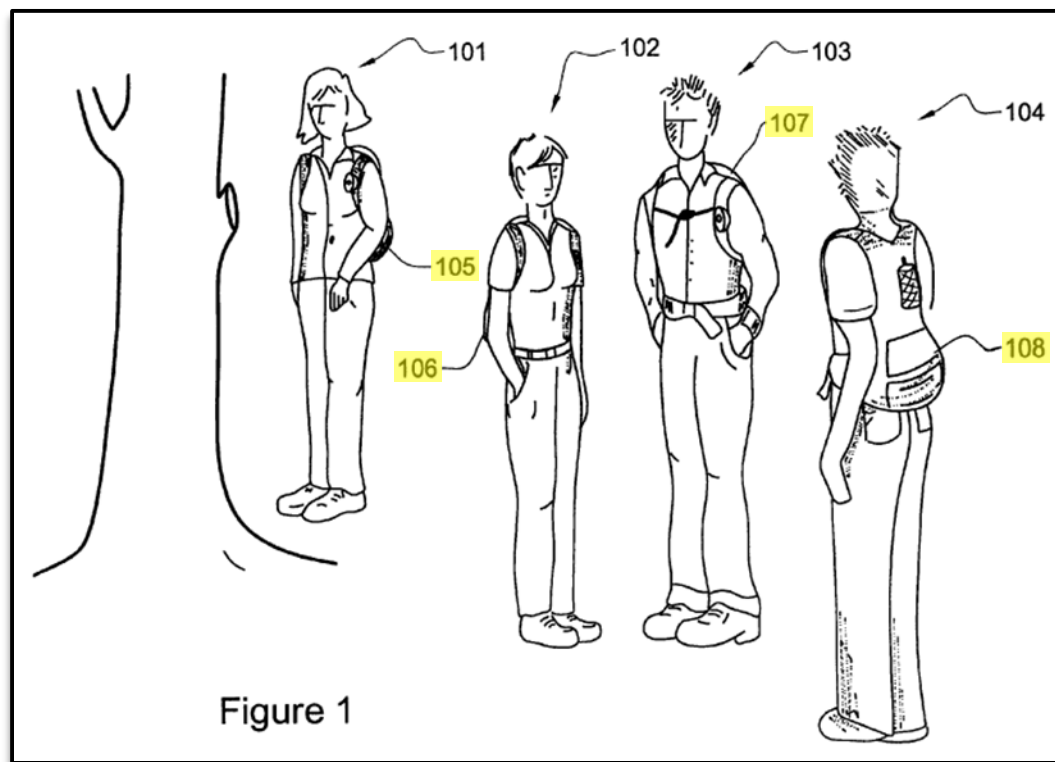
- Ph.D. in EE, University of Southern California
- M.S.E.E., University of Southern California
- B.S.E.E., Engineering and Applied Science, Caltech
- Tenured Associate Professor of Electrical Engineering, University of Southern California
- Founding Director of USC Immersive Audio Lab
- Research focus: wireless multi-track audio recording with SMPTE timecode synchronization
- 20+ years experience in audio technology, including positions in academia and industry
- Senior Member, IEEE
- 2006 World Technology Network Award
- Nearly 100 technical articles, including peer-reviewed papers
- Author of book on audio signal processing
- Multiple patents on audio-related inventions

See Ex. 1002 (Kyriakakis Decl.), ¶¶ 6-20.

III. The Prior Art

Strub – U.S. Patent No. 6,825,875

Teaches wearable local audio devices (105-108) that record local audio and wirelessly transmit the local audio to each other—i.e., each unit is a remote receiver/recorder with respect to the others



Ex. 1003 (Strub), 4:28-30, 8:7-19, 8:50-53, 12:13-21, 12:31-39, 14:59-15:11, 21:65-22:7, 35:54-65, 37:11-40, 67:30-53, Figs. 1, 4, 6, 8A-9B; Ex. 1002 (Kyriakakis Decl.) ¶¶ 76-77; '230 Paper 1 (Petition) at 15-16; '232 Paper 1 (Petition) at 14-15.

Strub – U.S. Patent No. 6,825,875

Teaches both **master timecode generator** and **local timecode generator** that can be used to time-stamp the recorded audio data

A GPS receiver can also be used to receive a signal representing the current time that can be used as a clock to generate time-stamps for the recording data. Depending upon the speed of the processing device(s) of the recording unit, the GPS time signal can be updated about once a second. The GPS time signals are extremely accurate; thus, since all of the recording units are receiving this time signal, the time-stamps of all recording units are adequately synchronized.

nication to an external device. Additionally, SMPTE time code input can be used with professional camcorders or portable dockable videotape recorders (VTRs), such as the Sony BVV-5 dockable Beta-SP VTR, to enable synchronization with an external device. Such portable video record-

some manner. For example, the system controller can include a clock that is used to time-stamp the recording data obtained by the recording unit. (The time-stamps can be

- Master timecode generators:
 - GPS satellite
 - SMPTE timecode source
- Local timecode generator:
 - internal clock

Ex. 1003 (Strub), 13:50-58, 62:26-63:60, 75:25-57, 79:54-80:9; Ex. 1002 (Kyriakakis Decl.) ¶ 78; '230 Paper 1 (Petition) at 16; '232 Paper 1 (Petition) at 15-16.

Woo – U.S. Patent No. 5,479,351

Teaches local audio devices (14, 16) that record local audio and wirelessly transmit the local audio to a remote receiver/recorder (34)

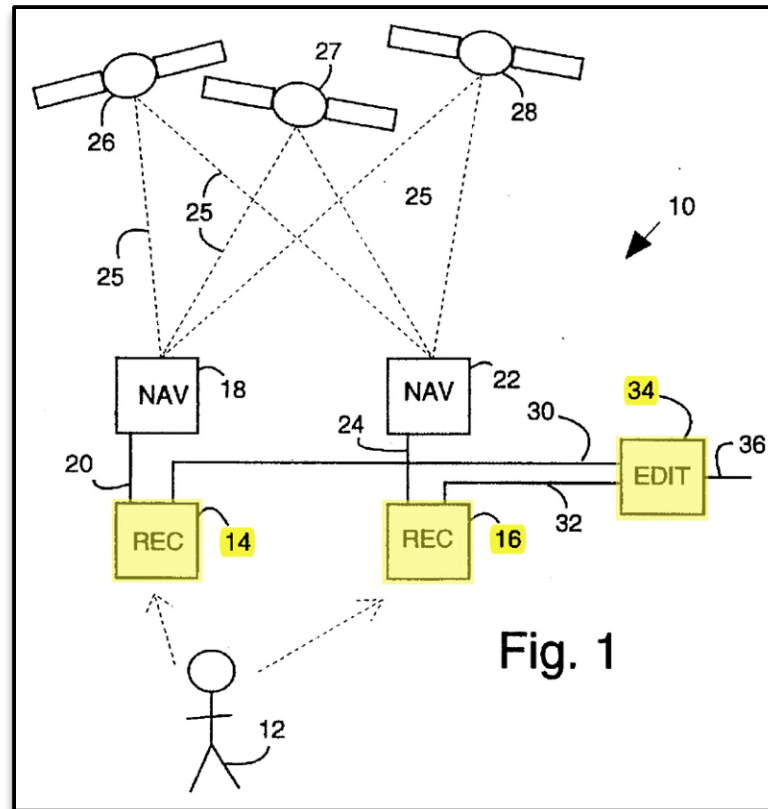
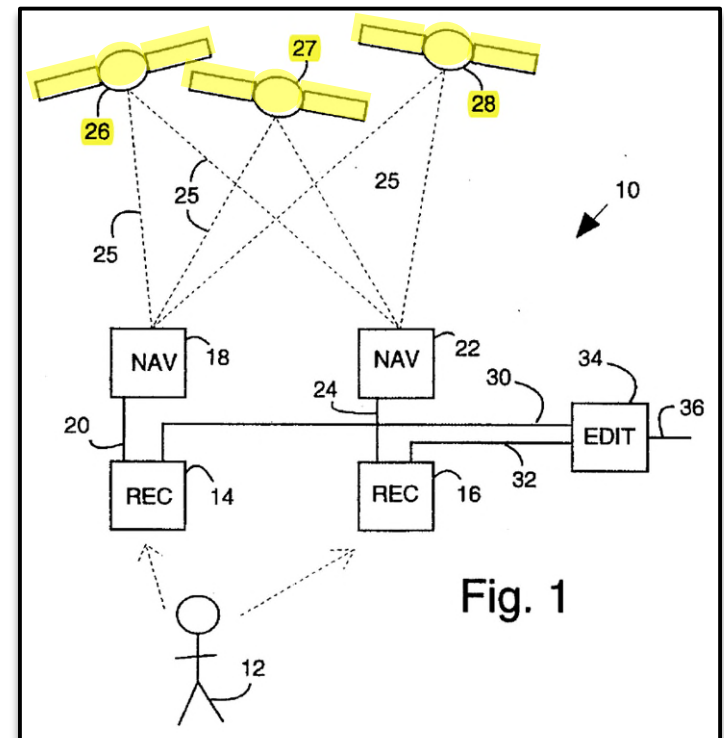
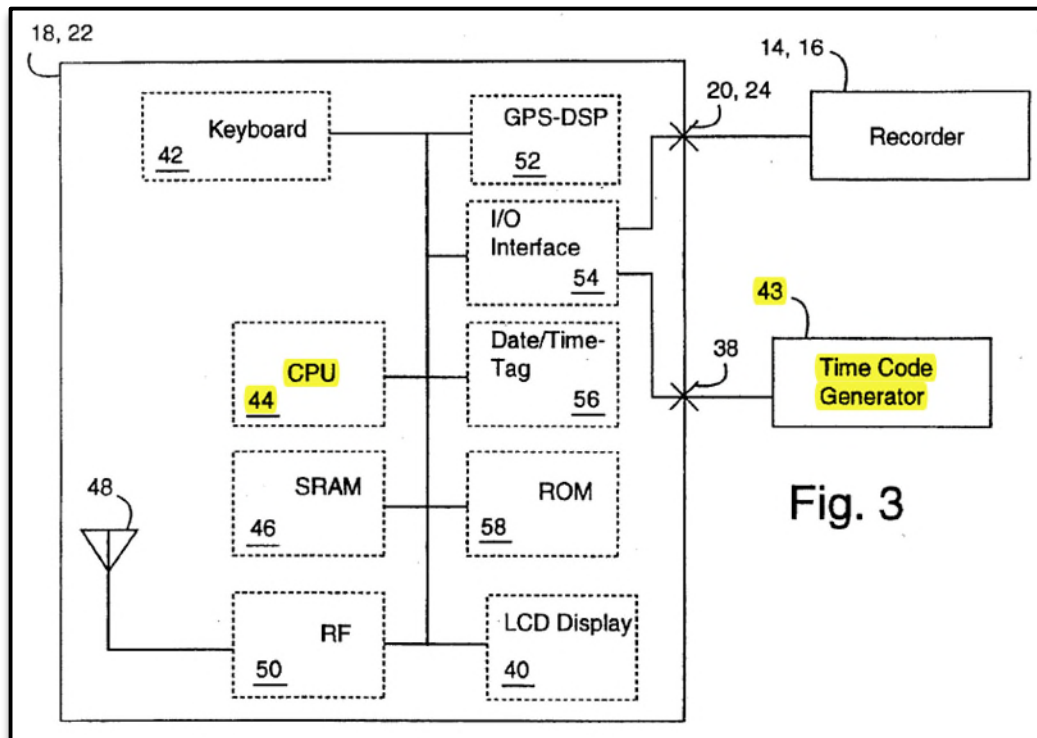


Fig. 1

Ex. 1004 (Woo), 5:3-5, 5:37-49, Fig. 1; Ex. 1002 (Kyriakakis Decl.) ¶¶ 81-82; '230 Paper 1 (Petition) at 17-18; '232 Paper 1 (Petition) at 16-18.

Woo – U.S. Patent No. 5,479,351

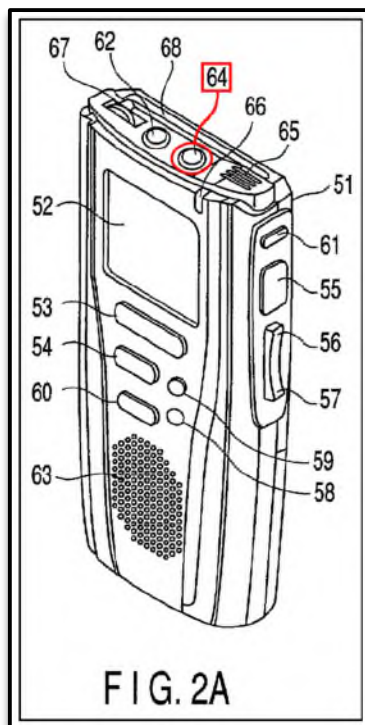
Teaches local timecode generator (43 and/or 44) which is jam-synchronized to GPS-based master timecode generator (satellites 26-28) and which generates local timecodes for time-stamping the local audio data



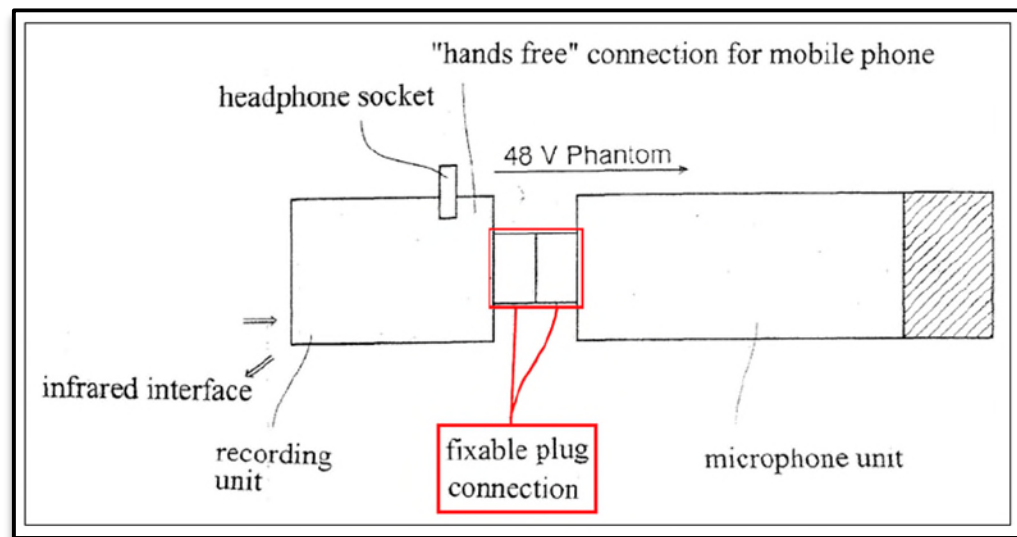
Ex. 1004 (Woo), Abstract, 1:60-2:9, 2:39-48, 3:3-24, 3:37-67, 4:3-32, 4:62-64, 5:37-45, 7:26-50, 8:60-9:4, Figs. 1, 3, 5, 6;
Ex. 1002 (Kyriakakis Decl.) ¶¶ 83-84; '230 Paper 1 (Petition) at 18-19; '232 Paper 1 (Petition) at 18-19.

Nagai (U.S. Pat. Pub. 2002/0159179) and Gleissner (U.S. Pat. Pub. 2004/0028241)

Both teach audio input port (microphone jack (64) or plug connection)—undisputed. Obviousness of combining Nagai or Gleissner with Strub or Woo also undisputed.



Nagai, Fig. 2A

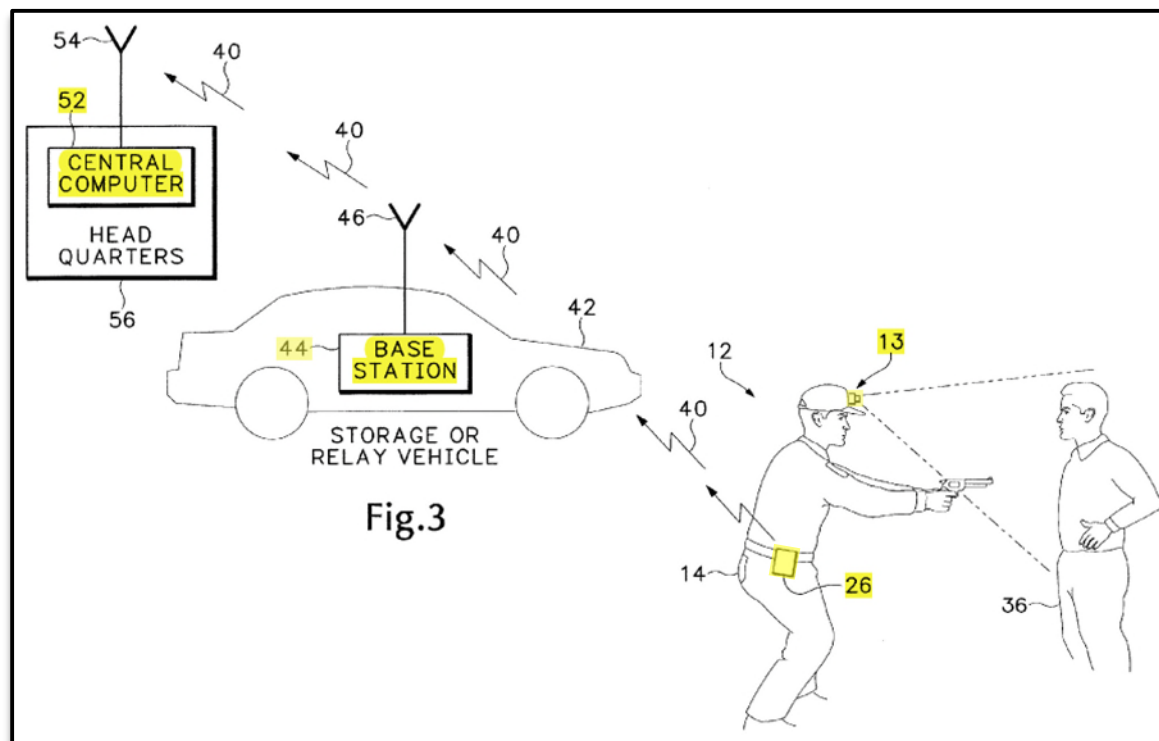


Gleissner, Fig. 1

Ex. 1005 (Nagai), [0100], [0109]-[0110], [0139], Fig. 2A; Ex. 1006 (Gleissner), [0013], [0024], [0032], Fig. 1;
Ex. 1002 (Kyriakakis Decl.) ¶¶ 87, 92; '230 Paper 1 (Petition) at 19-20, 22; '232 Paper 1 (Petition) at 20, 22-23.

Winningstad – U.S. Patent No. 7,483,485

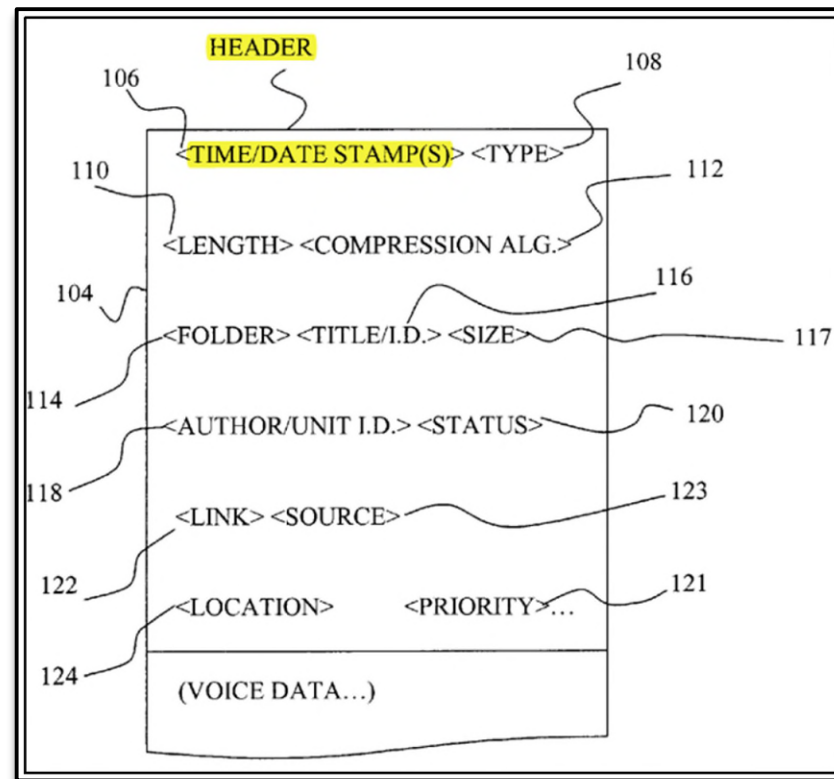
Wearable local audio device (13 and/or 26) records local audio and wirelessly transmits the local audio to a remote receiver/recorder (base station 44 or computer 52). Component 26 also comprises a remote control unit that interfaces with base station (44) or computer (52)



Ex. 1008 (Winningstad), Abstract, 2:44-48, 3:4-6, 4:25-28, 4:63-5:4, 5:17-25, 5:65-67, 6:30-34, 6:58-65, 8:38-41, Figs. 1-5; Ex. 1002 (Kyriakakis Decl.) ¶¶ 96-98; '230 Paper 1 (Petition) at 23-25.

Dwyer – U.S. Patent No. 6,571,211

Teaches portable digital audio recorder which stores audio file with a time and date stamp in the header – undisputed. Obviousness of combining Dwyer with Strub or Woo also undisputed.



Ex. 1009 (Dwyer), Title, Abstract, 1:11-13, 1:35-47, 4:51-55, Figs. 3, 5; Ex. 1002 (Kyriakakis Decl.) ¶¶ 101-102; '230 Paper 1 (Petition) at 26-27.

IV. Contested and Uncontested Claim Elements

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested (“C”) or Uncontested (“U”)*
1[Pre]	“A system for recording locally generated audio”	C
1[A]	“at least one master timecode generator for generating a plurality of master timecodes”	C
1[B]	“at least one local audio device wearable by a creator of said locally generated audio including:”	C
1[C]	“at least one local audio device receiver for wirelessly receiving said master timecodes”	U
1[D]	“at least one audio input port for receiving locally generated audio from an audio input device”	U
1[E]	“at least one memory”	U

*For certain elements whose presence in the secondary references is not contested, Patent Owner does contest the obviousness of combining those references with Strub.

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested (“C”) or Uncontested (“U”)
1[F]	“at least one control unit in communication with said local audio device receiver, said audio input device, and said memory for creating local audio data from said locally generated audio and storing said local audio data in said memory”	C
1[G]	“at least one local audio device wireless transmitter for wirelessly transmitting said local audio data in real time, said at least one local audio device wireless transmitter in communication with said at least one control unit”	U
1[H]	“wherein said local audio data includes stamped local audio data and unstamped local audio data”	U

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
1[I]	"wherein said stamped local audio data includes at least one timestamp to reference at least a portion of said local audio data to at least one of said master timecodes"	U
1[J]	"wherein said unstamped local audio data does not include a reference to said master timecodes"	U
Claim 2	" A system according to claim 1, said system further comprising: at least one remote control unit having an RCU transmitter capable of transmitting digital commands; wherein said remote control unit controls at least one function of said at least one local audio device via transmission of at least one of said digital commands."	U

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested (“C”) or Uncontested (“U”)
Claim 3	“A system according to claim 2, wherein said at least one function includes at least one of the group consisting of playing of said locally generated audio data from said memory, enabling and disabling recording by said at least one local audio device, adjusting a transmitter frequency of said at least one local audio device, adjusting a frequency of said at least one local audio device receiver, enabling and disabling said at least one local audio device wireless transmitter of said at least one local audio device, adjusting a gain of said at least one audio input port, adjusting a high pass filter of said at least one local audio device, selecting record mode of said at least one local audio device, entering at least one master timecode value, storing data in protected areas of said at least one memory, requesting status of said at least one local audio device, and combinations thereof.”	U

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
Claim 4	"A system according to claim 2, wherein said at least one remote control unit includes an external interface port for connection of said at least one remote control unit to an external interface selected from the group consisting of a personal computer, a dumb terminal, a recorder, a receiver, and combinations thereof."	U
7[A]:	"A system according to claim 1, said system further comprising: at least one of the group consisting of a recorder, a receiver, and combinations thereof, said at least one of the group consisting of said recorder, said receiver, and combinations thereof coupled wirelessly to said at least one local audio device"	U

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
7[B]	"wherein said at least one local audio device transmits said local audio data to said at least one of the group consisting of said recorder, said receiver, and combinations thereof wirelessly via said at least one local audio device wireless transmitter."	U
Claim 8	"A system according to claim 7, said system further comprising: at least one remote control unit having an RCU transmitter capable of transmitting digital commands; wherein said remote control unit controls at least one function of at least one of the group consisting of said at least one local audio device, said receiver, said recorder, and combinations thereof via transmission of at least one of said digital commands."	U

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
Claim 9	"A system according to claim 8 wherein said remote control unit includes an external interface port for connection of said remote control unit to an external interface selected from the group consisting of a personal computer, a dumb terminal, a recorder, a receiver, and combinations thereof."	U
Claim 15	"A system according to claim 1, wherein said local audio data is combined electronically to create a single multi-track data file."	C
Claim 17	"A system according to claim 1, wherein said at least one control unit is a digital signal processor."	C

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
Claim 19	"A system according to claim 1, wherein said at least one local audio device is a body pack."	C
Claim 20	"A system according to claim 1, wherein said at least one local audio device receives said master timecodes via at least one of the group consisting of said local audio device receiver, said audio input port, said audio input device, and combinations thereof."	U
22 [A]	"A system according to claim 1, wherein said local audio data is stored in said at least one memory as an audio file; and"	U
22 [B]	"wherein said first timestamp is implemented via storage of data of said master timecode in a header of said audio file."	U

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
Claim 23	"A system according to claim 1, wherein said at least one local audio device receiver stores said master timecode in a buffer of said at least one local audio device receiver."	U
Claim 24	"A system according to claim 1, wherein said at least one local audio device transmits said local audio data in digital form."	U
Claim 25	"A system according to claim 1, wherein said at least one local audio device receiver wirelessly receives at least one of the group consisting of digital commands, said master timecodes, remotely generated audio, and combinations thereof."	U

Contested and Uncontested Claim Elements

'443 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
Claim 26	"A system according to claim 25, said system further comprising: at least one remote control unit having an RCU transmitter capable of wirelessly transmitting said at least one of the group consisting of said master timecodes, said digital commands, said remotely generated audio, and combinations thereof."	U
Claim 27	"A system according to claim 26, wherein said master timecode generator is integral to said remote control unit."	U

Contested and Uncontested Claim Elements

'207 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
17 [Pre]	"At least one audio device wearable by a user for storing locally generated audio and transmitting the locally generated audio to a remote device, the remote device including at least one of a receiver, a recorder, a mixer, and combination thereof"	C
17[A]	"the at least one audio device comprising: a wireless transmitter"	U
17[B]	"an audio input port configured to couple to an audio input device to receive the locally generated audio"	U
17[C]	"a memory"	U

Contested and Uncontested Claim Elements

'207 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
17[D]	"a local timecode generator operable to generate a local timecode"	U
17[E]	"a control unit coupled to the wireless transmitter, the audio input port, the memory, and the local timecode generator"	U
17[F]	"the control unit operable to: (i) receive a master timecode from a master timecode generator and jam synchronize the local timecode generator to the master timecode generator using the master timecode"	C
17[G]	"(ii) transmit the locally generated audio to the remote device via the wireless transmitter; and"	C
17[H]	"(iii) store the locally generated audio in the memory as audio data; and"	C

Contested and Uncontested Claim Elements

'207 Patent

Element	Claim Language	Contested (“C”) or Uncontested (“U”)
17[I]	“(iv) stamp at least a portion of the audio data with the local timecode.”	U
Claim 18	“The at least one audio device of claim 17, wherein the control unit stores the locally generated audio in the memory and transmits the locally generated audio to a remote device substantially simultaneously.”	U
Claim 19	“The method of claim 18, wherein the at least one of the group consisting of a receiver, a recorder, and combinations thereof is not worn by a creator of locally generated audio and is located remotely from the at least one local audio device.”	U

Contested and Uncontested Claim Elements

'207 Patent

Element	Claim Language	Contested (“C”) or Uncontested (“U”)
Claim 21	“The at least one audio device of claim 17, wherein the audio data includes at least one identifier selected from the group consisting of track identifiers, local audio device identifiers, performer identifiers, and combinations thereof.”	U
Claim 22	“The at least one audio device of claim 17, wherein at least one of the group consisting of the local timecode, the master timecode, and combinations thereof includes at least one of the group consisting of time data, frame data, type, recorder transport status, name of scene, name of take, track identifier, and combinations thereof.”	U
Claim 23	“The at least one audio device of claim 17, wherein at least one of the master timecode, the local timecode, and combinations thereof is SMPTE compliant timecode.”	U

Contested and Uncontested Claim Elements

'207 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
Claim 33	"The at least one audio device of claim 17 further comprising: a gain adjustment circuit, the gain adjustment circuit separate from or at least partially implemented by the control unit."	U
Claim 34	"The at least one audio device of claim 17, wherein at least one of the local timecode is stored with said audio data."	U
59 [Pre]	"An audio device wearable by a user for storing locally generated audio and communicating the locally generated audio to a wireless transmitter for transmission of the locally generated audio to a remote device, the remote device including at least one of a receiver and a recorder"	C

Contested and Uncontested Claim Elements

'207 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
59[A]	"the audio device comprising: a memory"	U
59[B]	"a local timecode generator operable to generate a local timecode"	U
59[C]	"an audio input port configured to couple to an audio input device to receive the locally generated audio; and"	U
59[D]	"a control unit coupled to the memory, the local timecode generator and the audio input port"	U
59[E]	"the control unit being operable to: (i) receive a master timecode from a master timecode generator and jam synchronize the local timecode generator to the master timecode generator using the master timecode"	C

Contested and Uncontested Claim Elements

'207 Patent

Element	Claim Language	Contested ("C") or Uncontested ("U")
59[F]	"(ii) communicate the locally generated audio to the wireless transmitter for transmission of the locally generated audio to the remote device"	C
59[G]	"(iii) store the locally generated audio in the memory as audio data; and"	C
59 [H]	"(iv) stamp at least a portion of the audio data with the local timecode."	U
Claim 60	"The audio device of claim 59, wherein at least one of the master timecode and the local timecode is an SMPTE compliant timecode."	U
Claim 66	"The audio device of claim 59, wherein the control unit is operable to receive commands remotely from a wireless remote control unit."	U

V. Individual Claim Elements

Construction of “locally generated audio” and “[local] audio data”

Term	Petitioners’ Construction	Patent Owner’s Construction
“locally generated audio”	“audio <u>generated near</u> the local audio device”	“ separate, isolated audio created by the wearer of the local audio device receiving the locally generated audio, such audio suitable for use as an independent track of audio ”
“local audio data”	No construction needed, but if construed: “data from audio <u>generated near</u> the local audio device”	“mono or stereo audio files created from independent, isolated locally generated audio, such files suitable for creation of a multi-track audio file ”

- Terms appear in: ’443 Patent, 1[Pre], 1[F]; ’207 Patent, 17[Pre], 17[G], 17[H], 59[Pre], 59[F], 59[G]
- Patent Owner seeks to import extra limitations:
 - “separate,” “independent,” and “isolated”—can’t include anyone else’s audio. These are **absolute, negative** limitations.
 - suitable for “independent track of audio” or “multi-track audio”

’230 Paper 43 (Reply), at 2-3; ’232 Paper 42 (Reply), at 2-3; ’230 Paper 23 (POR), at 9-10; ’232 Paper 23 (POR), at 10-12.

Patent Owner's Specification Citations are Non-Limiting Examples

- The passages cited by Patent Owner use optional language: “In some aspects...,” “For example,...” “may be...”

'443, Abstract

data that typically occurs with wireless data transmission. In some aspects of the present invention, 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. The locally recorded audio may then be

'443, 12:26-28

the present invention. Process 400 begins at 402. For example, at 402, one or more performers may each don a local audio device, such as local audio device 102 as described with

'443, 13:18-21

audio recorders, and the like. For example, audio from multiple local audio devices may be transmitted to a multi-track recorder for recording of the audio event while each local audio device locally records its performer's audio. At 424,

'443, 15:18-21

tions such as receivers 106 and recorders 108 in real time. The audio received from each of the local audio devices (e.g., the local audio device of each performer) may be combined to create one or more multi-track audio files that are stored with

Patent Owner's Seeks to Import an Intended Use or Goal Into the Claims

- Patent Owner's extra language specifies the *intended use* of the “locally generated audio,” not *what it is*:
 - “suitable for use as an independent track of audio”
 - “suitable for creation of a multi-track audio file”
- Patent Owner cites Petitioner's expert's discussion of the “*goal* of multitrack recording”:

POR, at 9

12, 14-16. Petitioners' expert, Dr. Chris Kyriakakis, described the goal of multitrack recording as “to isolate as much as possible” and “to capture each individual instrument or performer separately.” Ex-2119, 52:10-12, 19-21,

'230 Paper 23 (POR), at 9; '232 Paper 23 (POR), at 11; Ex. 1073 (Kyriakakis reply Decl.) ¶¶ 11-13; '230 Paper 43 (Reply), at 2-3; '232 Paper 42 (Reply), at 3.

Patent Owner's "multi-track data file" Language Would Make '443 Claim 15 Redundant

'443, Claim 15

15. A system according to claim 1, wherein said local audio data is combined electronically to create a single multi-track data file.

'230 Ex. 1001 ('443 Patent), Claim 15; Ex. 1073 (Kyriakakis Reply Decl.) ¶ 13; '230 Paper 43 (Reply), at 2;
'232 Paper 42 (Reply), at 2.

Strub Teaches “locally generated audio” and “local audio data” Under Either Party’s Construction

- The wearer of Strub’s recording unit can be an event “**participant**”—i.e., someone who **creates the local audio**, not merely an observer

Strub, 8:7-18

numerals 105, 106, 107 and 108). Each of the recording units 105, 106, 107 and 108, in accordance with the invention, enables the corresponding participant (recorder) to obtain a recording of the event in a manner that does not interfere with participation in, or observation of, the event,

Strub, 11:11-17

The recording unit should be mounted, and components of the recording unit interconnected, so that the recording unit does not obstruct the recorder’s vision, hearing or motion, or distract the recorder from participation in the event. The

Strub, 52:19-24

and end of activity of interest during an event. As an illustration of the use of such marks, during a recording of a birthday party, a recorder could specify a “start” mark when a birthday cake is being brought out and an “end” mark when the singing of “Happy Birthday” has been completed. Additional marks can also indicate a character-

Strub, 1:24-35

and to devices used to record an event. The invention further, and more particularly, relates to recording an event in which multiple persons participate (a “group event”) and, even more particularly, to recording of the event by multiple participants (i.e., from multiple points of view), often simultaneously. Most particularly, the invention relates to a

Strub, 67:56-64

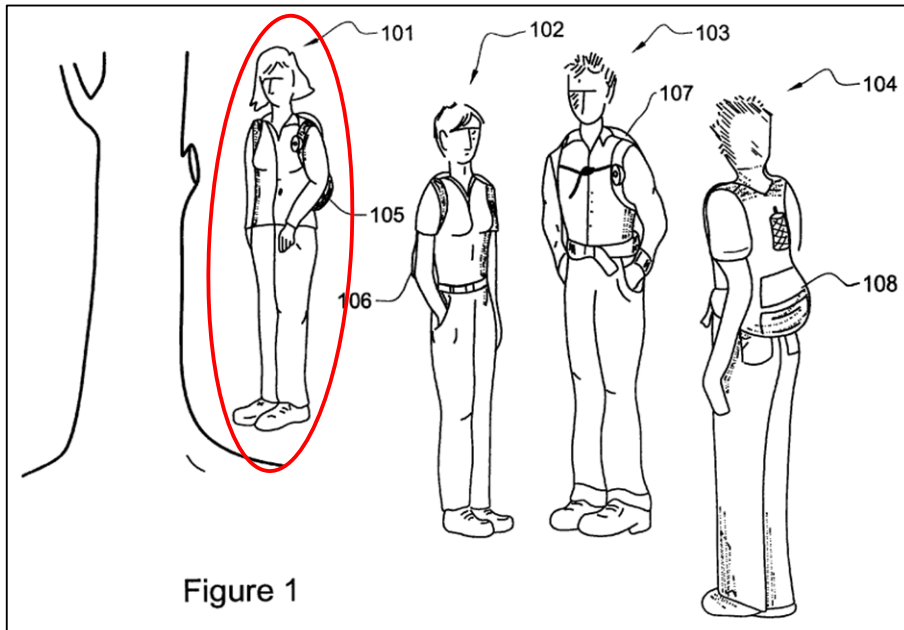
activity. For example, a recorder may desire to obtain a recording while engaging in an athletic activity, such as hiking, snow skiing or ping pong. Such events particularly demand that the recording unit allow the recorder freedom of movement and not distract or encumber the recorder’s participation in the activity. It can be desirable to tailor a

Strub, 22:16-33

reasons: i) a person or persons with whom a recorder is having a conversation will typically be in front of the recorder; ii) a recorder will typically face the parties par-

Ex. 1003 (Strub), 1:24-35, 2:55-65, 8:7-18, 11:11-17, 22:16-33, 47:35-48, 52:18-26, 65:15-22, 67:56-64; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 45-50; ’230 Paper 43 (Reply), at 3-4; ’232 Paper 42 (Reply), at 3-4.

Strub Teaches “locally generated audio” and “local audio data” Under Either Party’s Construction



Strub, 71:2-3

particularly useful if the recording unit 800 is used during activities such as water skiing or snow skiing.

Strub, 65:16-17

example, if the recorder is riding on a bicycle while recording, a visual data acquisition device that communi-

- Even if local audio must be “isolated” audio of the “wearer” (Patent Owner’s construction), Strub depicts one or more wearers separated enough to record only their own voices.
- Strub describes solitary activities (skiing, cycling) in which only the wearer’s audio would be recorded.

Ex. 1003 (Strub), 26:32-39, 47:35-48, 65:15-22, 67:59-61, 70:52-71:3, Fig. 1; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 49, 51-53; '230 Paper 43 (Reply), at 4; '232 Paper 42 (Reply), at 4.

Construction of “at least one local audio device wearable by a creator of said locally generated audio ” and “[local] audio device wearable by a user for storing locally generated audio”

Petitioners’ Construction

“a local audio device suitable to be worn by the performer who creates [] audio that is recorded by that performer’s local audio device.”

Should not preclude locally generated audio from including audio from performers other than the wearer.

Patent Owner’s Construction

“a local audio device suitable to be worn by the performer who creates **the** audio that is recorded by that performer’s local audio device”

- Term appears in: ’443 Patent, Element 1[B]; ’207 Patent, Elements 17[Pre], 59[Pre]
- The only dispute is use of the word “the,” by which Patent Owner implies that the recorded audio must be **only** that created by the wearer and must **exclude audio from any other source**.

’230 Paper 43 (Reply), at 2-3; ’232 Paper 42 (Reply), at 2-3; ’230 Paper 23 (POR), at 9-10; ’232 Paper 23 (POR), at 10-12.

There is No Basis for Excluding Audio From Creators Other Than the Wearer

Patent Owner fails to show that all audio other than that created by the wearer must be excluded from the device

'443, Claim 1

1. A system for recording locally generated audio comprising:

'207, Claim 17

combination thereof, the at least one audio device comprising:

'207, Claim 59

including at least one of a receiver and a recorder, the audio device comprising:

- Nowhere does the specification preclude locally generated audio from including audio from performers other than the wearer.
- '443 Claim 1 and '207 Claims 17 and 59 are “comprising” claims, so they permit additional local audio generated by other performers.
- “a creator” encompasses one or more creators, *e.g.*, if the microphone picks up audio from both the wearer and other nearby creators.

'230 Ex. 1001 ('443 Patent), Claim 1; '232 Ex. 1001 ('207 Patent), Claims 17, 59; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 15-17; '230 Paper 43 (Reply), at 4-5; '232 Paper 42 (Reply), at 4-5.

Strub Teaches “at least one local audio device wearable by a creator of said locally generated audio ” and “[local] audio device wearable by a user for storing locally generated audio”

Strub teaches a small, compact, light local audio device which (1) is wearable by a creator of locally generated audio, and (2) stores audio from the wearer

Strub, 11:1-17

I. Recording an Event

A. Overview of Recording Unit Apparatus and Operation

As indicated above, it is desirable that a recording unit according to the invention can be implemented so that the recording unit requires little attention from the recorder during recording, does not physically interfere with, or distract from, the recorder’s participation in the event, and

...

be relatively lightweight. Further, it is highly desirable that the recording unit be adapted to be mounted on (e.g., attached on, or worn by), rather than held by, the recorder.

- Even without the drawings, Strub’s text describes “a recording unit according to the invention” that may be “worn by...the recorder” and is “small size, low weight,” “unobtrusive[],” and “compact as possible.”

Strub, 66:26-51

In general, it is desirable to “package” the recording unit components in any manner that achieves some or all of the desired characteristics of a recording unit according to the invention, e.g., small size, low weight, unobtrusiveness, and capability of being mounted on a recorder (or, at least,

Ex. 1003 (Strub), 4:19-30, 9:15-33, 11:1-17, 66:26-51; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 54-55, 60; ’230 Paper 43 (Reply), at 5; ’232 Paper 42 (Reply), at 5.

Strub Fig. 3 depicts internal components of a *species* (300) of the wearable units 105-108 in Fig. 1

Strub, 7:39-40

FIG. 1 illustrates use of recording units according to the invention.

Strub, 8:13-15

numerals 105, 106, 107 and 108). Each of the recording units 105, 106, 107 and 108, in accordance with the invention, enables the corresponding participant (recorder)

Strub, 11:57-61

FIG. 3 is a block diagram illustrating the functional components of another recording unit 300 in accordance with the invention. The recording unit 300 has enhanced capabilities as compared to the recording unit 200 described above with respect to FIG. 2. It is to be understood that there

Strub, 10:40

recorders to communicate with each other during recording,

- Zaxcom draws an erroneous distinction between recording units 105-108 in Fig. 1 and the block diagram of their internal components in Fig. 3. Strub describes both drawings as illustrating “recording unit[s] according to the invention.”
- Strub states that units 105-108 “communicate with each other,” so they must have transmitters and receivers as illustrated in Fig. 3.
- A POSA would understand that Figs. 2 and 3 depict the internal components of two different species, 200 and 300, of the units 105-108 in Fig. 1.

The embodiment in Strub Fig. 6 is a *non-limiting example*

Strub, 7:53-54

FIG. 6 illustrates another way of packaging a recording unit according to the invention.

Strub, 67:45-51

Illustratively, a recording unit as shown in FIG. 6 can be implemented using off-the-shelf components and packaging materials so that the recording unit weighs about 24 pounds. It is anticipated that a recording unit implemented using components that are particularly designed for use in the recording unit can be implemented so that the recording unit is lighter (and smaller): such a recording unit may weigh

Strub, 70:56-67

be clearer from the description below, the recording unit 800 can be made compact and lightweight. Additionally, the

- The 24-lb. example in Fig. 6 is a non-limiting embodiment—"another way of packaging" a recording unit.
- Strub contemplates making the Fig. 6 embodiment "lighter...and smaller."
- The example in Fig. 6 has a camera, which can be removed since it is not required by the claims.
- Most adults could wear a 24-lb. backpack. The claims do not require wearability by specific people, let alone professional actors in "the motion picture industry," POR, at 18.

Ex. 1003 (Strub), 4:20-30, 7:53-54, 11:9-13, 66:33-51, 67:30-31, 67:45-51, 70:56-60; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 64-67; '230 Paper 43 (Reply), at 6-7; '232 Paper 42 (Reply), at 6-7.

Strub Meets the “Wearable by a Creator/User” Elements Even Under Patent Owner’s Construction

Strub teaches multiple examples that meet even Patent Owner’s erroneous restriction that the local audio device record **only** the wearer’s audio

Strub, 47:35-36

another object. For example, if the recording unit is to be used while the recorder is riding a bicycle, it can be

Strub, 70:67-71:3

supply to be used in the recording unit 800. The recording unit 800 can also be made water resistant, which can be particularly useful if the recording unit 800 is used during activities such as water skiing or snow skiing.

- Strub’s units are worn during solitary activities such as bicycling, water skiing, and snow skiing, where the participant/recorder would be the only creator generating audio.

Ex. 1003 (Strub), 26:32-39, 47:35-48, 65:15-22, 67:59-61, 70:67-71:3; Ex. 1073 (Kyriakakis Reply Decl.) ¶ 67; ’230 Paper 43 (Reply), at 7; ’232 Paper 42 (Reply), at 7.

Construction of “master timecode generator” and “master timecode”

Term	Petitioners’ Construction	Patent Owner’s Construction
“master timecode generator”	No construction, or ordinary meaning: “a generator of master timecodes”	“a producer of a master time reference signal that controls at least one other timecode generator ”
“master timecode”	No construction needed. Should not exclude asynchronous mode	“a time reference signal used to synchronize at least one device ”

- Terms appear in: ’443 Patent, Elements 1[A], 1[C], 1[I], 1[J] and dependent Claims 3, 20, 22, 23, 25, 26, 27; ’207 Patent, Elements 17[F], 59[E] and dependent Claims 22, 23, 60
- The dispute is whether the construction should **exclude the asynchronous embodiments** described in the Challenged Patents, in which the master timecodes **directly** stamp audio data and there is no local timecode generator.

’230 Paper 43 (Reply), at 8; ’232 Paper 42 (Reply), at 8; ’230 Paper 23 (POR), at 12-13; ’232 Paper 23 (POR), at 14-15.

There is No Basis for Excluding the Asynchronous Embodiment

Patent Owner's construction contradicts parts of the specification describing the asynchronous embodiments

'443, 5:52-57

audio devices 102. In contrast, when recording system 100 is operating in an asynchronous mode, transmission of the master time reference signal allows the files containing recorded audio to be timestamped with the master time reference information to allow the recorded audio to be accurately synchronized post-recording.

'443, 17:10-16

Operation of the present invention in asynchronous mode allows one or more components of local audio devices such as local audio devices 102 (e.g., local timecode generator, comparator, counter, etc.) to be eliminated in embodiments in which the local audio devices utilize master timecodes generated by the master timecode generator rather than locally generated timecodes.

- In the asynchronous embodiments, the audio data is ***directly stamped with the master timecodes***. There is no control or synchronization of a local timecode generator or other device.
- In asynchronous mode, the local timecode generator can be entirely eliminated.
- Patent Owner's construction ***cannot be correct***, because would preclude a master timecode generator or master timecodes from being used in the asynchronous embodiments.

'230 Ex. 1001 ('443 Patent), 5:52-57, 9:45-52, 17:10-16; '232 Ex. 1001 ('207 Patent), 6:29-34, 11:35-43, 19:37-43; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 27-31; '230 Paper 43 (Reply), at 8; '232 Paper 42 (Reply), at 8.

Strub and Woo Teach the “master timecode generator” and “master timecode” Terms

Strub and Woo teach “at least one master timecode generator for generating a plurality of master timecodes” (’443 Patent, Element 1[A]) and “receiv[ing] a master timecode from a master timecode generator” (’207 Patent, Elements 17[F], 59[E])

Strub, 63:41-49

A GPS receiver can also be used to receive a signal representing the current time that can be used as a clock to generate time-stamps for the recording data. Depending upon the speed of the processing device(s) of the recording unit, the GPS time signal can be updated about once a second. The GPS time signals are extremely accurate; thus, since all of the recording units are receiving this time signal, the time-stamps of all recording units are adequately synchronized.

- Strub’s and Woo’s GPS satellites are ***master timecode generators*** that generate ***master timecodes***—GPS timing signals.
- The GPS timing signals are received by Strub’s and Woo’s local audio devices.

Woo, 7:18-23

As shown in FIG. 2, each of the navigation satellite receivers 18 and 22 comprise the connections 20 and 24, an auxiliary connector 38, a liquid crystal display (LCD) 40 and a keyboard 42. Commercially available hand-held navigation satellite receivers may be used and appropriately modified to output data and time information, e.g., SCOUT

Ex. 1003 (Strub), 63:41-49, 79:54-80:9; Ex. 1004 (Woo), 3:37-45, 7:18-38, Fig. 3; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 68-80; ’230 Paper 43 (Reply), at 8-11; ’232 Paper 42 (Reply), at 8-11.

Strub's Asynchronous Embodiments Include a “master timecode generator” and “master timecodes”

Patent Owner's Expert Mr. DeFilippis acknowledges Strub's direct use of GPS timing information

DeFilippis Dec., ¶ 177

It is my opinion that Strub...discloses situations in which...GPS time signals...are used for time data....

- ***Patent Owner agrees that Strub's asynchronous embodiments use GPS signals or SMPTE timecodes to timestamp the audio data.***

DeFilippis Dec., ¶ 178

Strub...disclos[es] that the GPS time signals time stamp the recording units.

DeFilippis Dec., ¶ 180

[In Strub,] connection of an SMPTE time code input thereto would merely allow the recorder to use the SMPTE time code as its time code source....

Ex. 2140, ¶¶ 177, 178, 180.

Even Under Patent Owner's Construction, Strub and Woo Teach the "master timecode generator" and "master timecode" Terms

Strub includes embodiments in which a local timecode generator is controlled by a master timecode generator and synchronized to master timecodes

Strub, 63:50-56

Though the recording unit must not be constantly blocked from GPS satellites in order for the recording unit to receive such time signals, the recording unit need only be exposed to a GPS satellite for about a minute to enable the time signals to begin. Further, after that point, clock drift occurs slowly, even if the recording unit is blocked from the GPS satellites for a period of time. Additionally, a recording unit

- Strub teaches using GPS signals (master timecodes) from a GPS satellite (a master timecode generator) to synchronize a local clock (a local timecode generator).
- The point of Strub's description of clock drift is that ***there is no drift if the local audio device has a clear, unblocked GPS signal, because the local clock is synchronized to the GPS timing signals (master timecodes).***

Strub, 79:63-80:7

recordings. As described above, a recording unit according to the invention typically includes a clock that is used to time-stamp recording data as the recording data is acquired. However, the clocks of different recording units may not be adequately synchronized to enable use of the time-stamps

...

receiver, such mis-synchronization will only exist to an appreciable degree if one or more recording units are shielded from a GPS transmitter system for an extended period of time, e.g., several hours.) Or, the recording units

Ex. 1003 (Strub), 63:41-60, 79:63-80:9; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 70-72, 79-80; '230 Paper 43 (Reply), at 9; '232 Paper 42 (Reply), at 9-10.

Even Under Patent Owner's Construction, Strub and Woo Teach the “master timecode generator” and “master timecode” Terms

Woo describes a “jam-sync” process in which a local timecode generator is synchronized to master timecodes produced by a master timecode generator

Woo, 3:37-45

A common feature of time code generators is the slave or jam-sync process. This allows a time code generator to follow the time code off another source, e.g., a tape machine. This would allow for regeneration of time code. There are two basic modes of slaving or jam-syncing time code, hard slave or hard jam and soft slave or one-shot jam. Method one, the hard slave, forces the generator output to always follow the input. Method two, the soft slave, locks up to the input at first but runs free after that.

- In Woo’s “jam sync” process, a local “slave” timecode generator is locked to the “time code” produced by “another source”—i.e., a master timecode generator.

Ex. 1004 (Woo), 3:37-45, 7:18-38, Fig. 3; Ex. 1039, 8:46-54, 9:27-29, 10:7-11; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 73-80; '230 Paper 43 (Reply), at 10-11; '232 Paper 42 (Reply), at 10-11.

“jam synchronizing the local timecode generator to the master timecode generator using the master timecode”

Agreed Construction

“aligning the internal clock of the local timecode generator with the internal clock of the master timecode generator”

Woo, 3:37-45

A common feature of time code generators is the slave or jam-sync process. This allows a time code generator to follow the time code off another source, e.g., a tape machine. This would allow for regeneration of time code. There are two basic modes of slaving or jam-syncing time code, hard slave or hard jam and soft slave or one-shot jam. Method one, the hard slave, forces the generator output to always follow the input. Method two, the soft slave, locks up to the input at first but runs free after that.

Ex. 1039, 8:46-52

When a station finishes transmitting it does a jam sync to re-establish phase relationship with the receive clock. It is this procedure, a significant aspect of the invention, which deals with the second problem inherent in ring systems, accumulated phase delay.

When the transmit clock is jam synced with the receive clock to the next incoming data transition follow-

- Woo expressly describes a “jam sync” process in which a master timecode generator (“another source”) controls a local (“slave”) timecode generator.
- A POSA would understand the ordinary meaning of “jam-sync” to be that one time reference (e.g., clock) is synchronized to another.

Ex. 1004 (Woo), 3:37-45, 7:18-38, Fig. 3; Ex. 1039, 8:46-54, 9:27-29, 10:7-11; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 73-79, 127-129; '232 Paper 42 (Reply), at 11-15.

Strub's Synchronous Embodiments Jam Synchronize a Local Timecode Generator To a Master Timecode Generator Using a Master Timecode

Strub, 63:50-56

Though the recording unit must not be constantly blocked from GPS satellites in order for the recording unit to receive such time signals, the recording unit need only be exposed to a GPS satellite for about a minute to enable the time signals to begin. Further, after that point, clock drift occurs slowly, even if the recording unit is blocked from the GPS satellites for a period of time. Additionally, a recording unit

Strub, 79:63-80:7

recordings. As described above, a recording unit according to the invention typically includes a clock that is used to time-stamp recording data as the recording data is acquired. However, the clocks of different recording units may not be adequately synchronized to enable use of the time-stamps

...

receiver, such mis-synchronization will only exist to an appreciable degree if one or more recording units are shielded from a GPS transmitter system for an extended period of time, e.g., several hours.) Or, the recording units

- Strub teaches jam-synchronizing a local clock (a local timecode generator) to incoming GPS signals (master timecodes) from a GPS satellite (a master timecode generator).
- Strub's description of "clock drift" confirms that the local clock is synchronized to GPS timecodes, as "drift" refers to time deviation of the local clock relative to GPS time since their last synchronization. Such drift occurs while the GPS signals are blocked and unavailable for synchronization.

“multi-track data file”

Petitioners’ Construction

Ordinary meaning: “a data file comprising multiple tracks of audio.”

Should be agnostic to the source and content of the tracks.

Patent Owner’s Construction

“a data file consisting of multiple, **separate**, streams of sound with **individual instruments or voices recorded on separate tracks**”

- Term appears in: '443 Patent, Claim 15
- The dispute is over Patent Owner’s contention that the term must exclude situations in which any microphone picks up sound from more than one instrument or voice.

There is No Basis for Excluding Instances in Which a Microphone Picks Up Two or More Instruments/Voices

Patent Owner tries to import non-limiting specification examples into the claim

'443, 13:18-21

audio recorders, and the like. For example, audio from multiple local audio devices may be transmitted to a multi-track recorder for recording of the audio event while each local audio device locally records its performer's audio. At 424,

'443, 15:18-21

tions such as receivers 106 and recorders 108 in real time. The audio received from each of the local audio devices (e.g., the local audio device of each performer) may be combined to create one or more multi-track audio files that are stored with

'443, 21:56-57, 21:65-66, 23:33-35

at least one local audio device wearable by a creator of said locally generated audio including:

...

and said memory for creating local audio data from said locally generated audio and storing said local

...

15. A system according to claim 1, wherein said local audio data is combined electronically to create a single multi-track data file.

- The specification never mentions “separate” streams of sound or “individual” instruments or voices.
- Patent Owner's cited specification passages use **optional language** —“For example,” “may be”—to describe **non-limiting, non-definitional examples**, and merely refer to a **goal** or **use** of the alleged invention—creating multi-track files.
- Claim 15, including PO's cited portions, says nothing about each track being limited to a single instrument or voice.

'230 Paper 23 (POR), at 12 (citing '230 Ex. 1001 ('443 Patent, 15:18-21, 13:18-21, 21:56-57, 21:65-66, 23:33-35); Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 18-21; '230 Paper 43 (Reply), at 11.

There is No Basis for Excluding Instances in Which a Microphone Picks Up Two or More Instruments/Voices

The extrinsic evidence supports Petitioners', not Patent Owner's, construction

Ex. 2014

Term: Multitrack (audio)

Definition:

A multitrack recording consists of multiple, separate streams of sound without defined locations in a sound field. During a typical music-recording session, individual instruments or voices will be recorded on separate tracks. When these multiple tracks are mixed at the end of the session, combinations of sounds are assigned places in a sound field for future playback, thus producing a mixed and edited multichannel recording.

Ex. 1066, at 3

multitrack recording system—A recording system in which the medium has two or more recording paths, which may carry the same or different material but are played at the same time.

- The first sentence of the definition in Exhibit 2014 does **not** require each stream to include only one instrument or voice. The second sentence describes a non-limiting, “typical” example.
- A contemporaneous dictionary refutes Patent Owner’s construction by indicating that the tracks may be of the “same or different material.”

Strub Teaches Claim 15

Strub describes recording a “multi-track data file”

Strub, 92:38-42

Audio recording data can be blended in any appropriate way. For example, an audio mixer can be used to select audio recording data from multiple audio recordings in accordance with specified characteristics, and the selected audio recording data used to generate an audio display. Or,

Strub, 92:24-27

It may be possible and desirable to integrate audio recordings obtained by different audio data acquisition devices by blending the audio recording data acquired by those audio data acquisition devices. It may be particularly desirable—

Strub, 59:26

The control interface audio display is typically a speaker

- Strub teaches using an audio mixer to select and integrate separate tracks from the different recording devices.
- A POSA would understand that Strub teaches saving the mixed recording to a file, because that is the objective of making the “recordings.”
- Strub’s “audio recording display” means speakers, not a screen.

Strub Teaches Claim 15

Creating a multi-track data file is obvious, standard editing functionality

Strub, 92:38-42

Audio recording data can be blended in any appropriate way. For example, an audio mixer can be used to select audio recording data from multiple audio recordings in accordance with specified characteristics, and the selected audio recording data used to generate an audio display. Or,

- A POSA would have understood Strub's reference to an "audio mixer" to refer to a computer or other device running standard, widely available post-processing software.

Kyriakakis Dec. (Ex. 1002), ¶ 240

In view of Strub's teaching of the value of maintaining separate audio tracks of the event, a POSA would have understood Strub's reference to an "audio mixer" displaying multiple tracks as meaning either a special-purpose mixing device or a computer running conventional audio post-processing software, either of which would necessarily include the conventional, standard functionality of saving the displayed multi-track audio as a single file.

Kyriakakis Reply Dec. (Ex. 1073), ¶ 87

At a minimum, claim 15 would have been obvious as it covers standard audio editing functionality that was well known in the art and that could be performed with widely-available software such as Pro Tools, Avid Media Composer, Short/cut 2000, etc.

Strub Teaches Claim 15

Strub describes stereo recording, which is an example of multi-track

Strub, 25:47-49

An example of a stereo directional microphone that can be used in a recording unit according to the invention is the Sanken CSS-5.

Strub, 68:63-65

The audio data acquisition device can be embodied, for example, by two omni-directional stereo lavalier microphones (e.g., Lectret 5200 microphones, discussed above). It

Strub, 93:3-11

recordings including different audio content. Simultaneous display of audio recordings can give a more complete representation of the audio content over the space traversed by recorders during an event, both by better reproducing the content that existed and by better replicating the richness of the audio space (particularly if the audio display is implemented so as to reproduce the spatial relationships of the recording units during recording) that may have existed in that space.

- Strub teaches stereo recording, in which left and right channels are recorded as separate tracks.
- The separate tracks are used to preserve the “spatial” and “imaging” aspect of a performance, which requires a multi-track recording.

Ex. 1003 (Strub), 24:43-60, 25:35-48, 68:63-65, 93:3-11; Ex. 1040, 1:56-59, 5:12-23; Ex. 1041, 11:18-24; Ex. 1042, Fig. 1, 2:52-58; Ex. 1043, 5:1-2; '230 Paper 1 (Petition), at 29, 34, 39, 41-42, 45, 64-65; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 82, 83; '230 Paper 43 (Reply), at 12-13.

Strub Teaches Claim 15

A POSA would understand Strub's references to stereo mixing to mean that a multi-track file is being stored

Ex. 1046, 5:19-22

The output signals 11 from the mixing console 10 are available from each channel 12. The final mix will generally comprise a two channel stereophonic mix which can be recorded on storage media, such as multitrack tape deck 22,

- A POSA would have understood a stereo mix to be a multi-track data file with left and right channels stored as separate tracks.
- Patent Owner's expert Mr. Defilippis admits that stereo recording and mixing have been commonplace for 60 years.

Ex. 1076 (Defilippis Depo. Tr.), 81:3-5

Q. Do you know when stereo recording and mixing first became commonplace?

A. Sometime in the 1960s.

Ex. 1073, ¶ 87

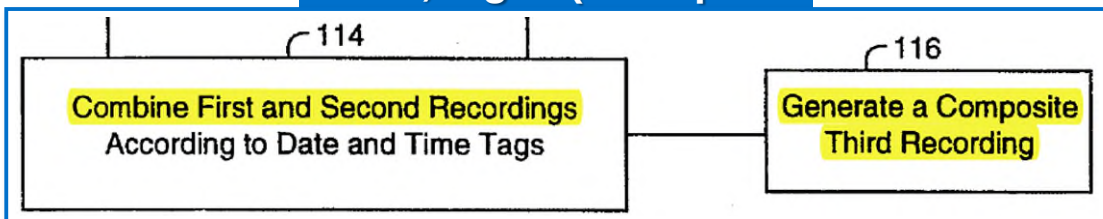
15. At a minimum, claim 15 would have been obvious as it covers standard audio editing functionality that was well known in the art and that could be performed with widely-available software such as Pro Tools, Avid Media Composer, Short/cut 2000,

Ex. 1040, 1:56-59, 5:12-23; Ex. 1041, 11:18-24; Ex. 1042, Fig. 1, 2:52-58; Ex. 1043, 5:1-2; Ex. 1046, 1:17-36, Fig. 1, 4:66-5:24; Ex. 1076, 81:3-5; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 81-83; '230 Paper 43 (Reply), at 12-14.

Woo Teaches Claim 15

Woo also describes recording a “multi-track data file”

Woo, Fig. 4 (excerpted)

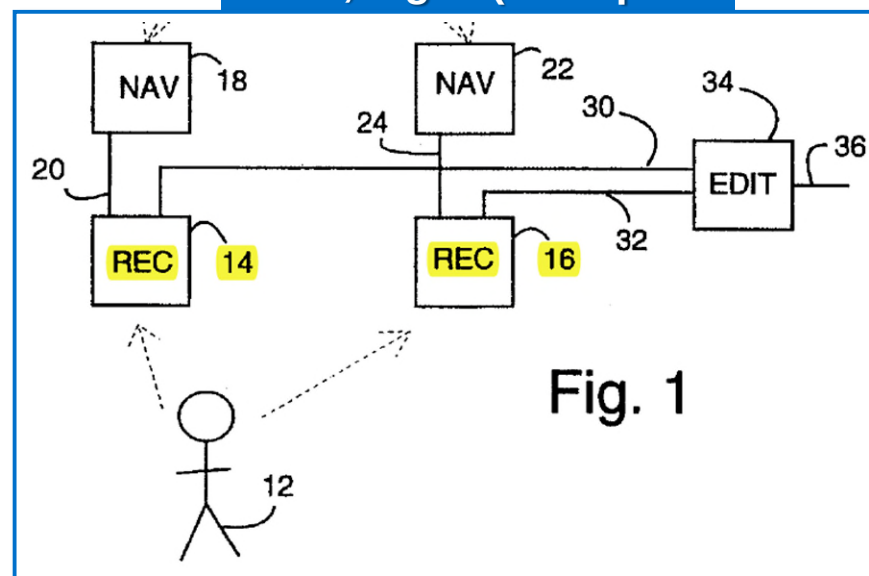


- Woo uses separate tracks from separate recording units 14 and 16 and combines them into a “composite [(i.e., multi-track)] third recording” with standard editing software.

Woo, 8:44-59

date and time code information. A step 114 combines the first and second recordings, according to a synchronization between the first and second date and time code information. A step 116 generates a third recording from the date and time synchronized portions of the first and second recordings, wherein the third recording presents an apparently time-seamless blend of the performance from a plurality of viewpoints. In step 114, the combining and generating may be done in real-time with the performance such that the third recording is delayed from the performance by an insubstantial amount of time. Alternatively, in step 114, the combining and generating are done post the performance such that the third recording is independent of the time of the performance. The combining, may, for example, be done in a telecine suite or audio layback suite.

Woo, Fig. 1 (excerpted)



Ex. 1004 (Woo), 1:24-28, 5:3-8, 5:17-20, 5:37-42, 8:45-59, Figs. 1, 4; Ex. 1002 (Kyriakakis Decl.) ¶¶ 240, 241; 230 Paper 1 (Petition), at 64-67; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 88-91; 230 Paper 43 (Reply), at 14.

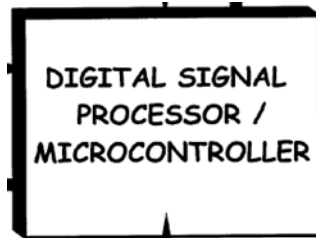
Strub Teaches '443 Claim 17: “said at least one control unit is a digital signal processor”

Strub’s “system controller” performs digital signal processing and thus is a DSP

Strub, 31:51-59

multiple microphones, a beam forming method can be used to discriminate the sounds of interest or importance from other sounds. A beam forming method can be performed by the system controller or data processing device(s) operating in accordance with a computer program stored in the data storage device. (It may, alternatively, be desirable to provide a separate processing device or devices, e.g., one or more digital signal processors, to perform beam forming.) Beam

Ex. 1049, Fig. 4 (excerpted)



Ex. 1044, 8:6-7

74'. In the latter, the CPU 82' is either a digital signal processor (DSP) or a reduced instruction set computing

Ex. 1052, 5:46-47

In one embodiment, audio decompression is performed by a general-purpose DSP microcontroller implemented within

- Strub’s system controller performs audio beam forming, conversion, and compression, which a POSA would consider DSP functions.
- Strub’s use of the word “alternatively” means that the DSP may or may not be separate from the controller—*i.e.*, Strub teaches both options. It does **not** mean the controller cannot be a DSP.
- A POSA would know that a DSP is a type of, and often integrated with, a microcontroller, as seen in contemporaneous sources.

Ex. 1003 (Strub) at 12:16–21, 14:1-13, 27:45–51, 31:51-62, 38:15–20; '230 Paper 23 (POR), at 24; 1049, Fig. 4a, 8:32, 9:20-23; Ex. 1044, FIG. 5, 8:1-8; Ex. 1052, 5:46-47; Ex. 1002 (Kyriakakis Decl.) ¶¶ 242-243; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 92-94; '230 Paper 43 (Reply), at 14-15.

Construction of “body pack”

Petitioners’ Construction

Ordinary meaning: “a compact bundle of equipment arranged for convenience for carrying on the body”

Patent Owner’s Construction

“a small box housing a transmitter capable of being worn on a belt or in a pocket”

- Term appears in: ’443 Patent, Claim 19
- Petitioner’s construction is based on the dictionary definition of “pack,” modified to specify that the pack is worn on the “body.”

Ex. 1058, at 6

1 **pack** \ˈpak\ *n.*, often attrib [ME, of LG or D origin; akin to MLG & MD *pak* pack] (13c) 1 **a : a bundle arranged for convenience in carrying esp. on the back** b : a group or pile of related objects c (1) : a number of individual components packaged as a unit <a ~ of gum> (2) : CONTAINER (3) : a compact unitized assembly to perform a specific function (4) : a stack of magnetic disks in a container for use as a

Construction of “body pack”

Patent Owner seeks to import non-limiting examples from the specification

'443, 1:40-42

from one or more wireless transmitters. Such wireless transmitters may take the form of body packs that are worn by each performer. Typically, the audio receiver receives each per-

'443, 7:46-55

Turning next to FIG. 3A, depicted is a block diagram of one embodiment of local audio device 102 in accordance with the present invention. In one aspect of the present invention, local audio devices 102 are digital, wireless audio transceivers. Such audio devices may be manufactured in the form of body-packs, such as those typically worn by news announcers, performers, and the like. In the depicted embodiment, local audio device 102 includes, inter alia, local receiver 302, local timecode generator 304, local power supply 306, local transmitter 308, local control unit 310, local audio input

'443, 10:52-53

Local audio devices 102 may be bodypacks such as the local audio device 102 depicted in FIG. 3B. In such an

- Patent Owner’s specification examples of transmitters within body packs use optional language—“In the depicted embodiment,” “may,” “In one aspect,” “one embodiment,” *etc.*—and none say anything about a “small box.”

² '230 Paper 23 (POR), at 13-14 (citing '230 Ex. 1001 ('443 Patent)), 1:40-42, 7:49-52, 10:52-53); Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 34-38; '230 Paper 43 (Reply), at 16; see also '230 Ex. 1001 ('443 Patent), 1:43-47, 7:53-60.

Construction of “body pack”

Petitioner cites a contemporaneous definition. Patent Owner cites *non-contemporaneous* sources that do not define “body pack”

Petitioners’ Ex. 1060

In the world of wireless performance a body pack is the device a performer wears somewhere on his or her body that houses the electronics that handle sending a signal to a remote receiver or, as in the case of personal monitoring systems, receives a signal from a remote location. Typically body packs hold a battery and some combination of electronics that do the transmitting or receiving, and amplifying. Some wireless systems do not require a body pack as all of these electronics can be housed right inside of a microphone or a small plug that can be connected directly to a guitar or other musical instrument.

PO’s Ex. 2020, at 14

The transmitter is built directly into the handheld microphone; headworn and lapel mics connect to a bodypack transmitter.

PO’s Ex. 2025, at 7

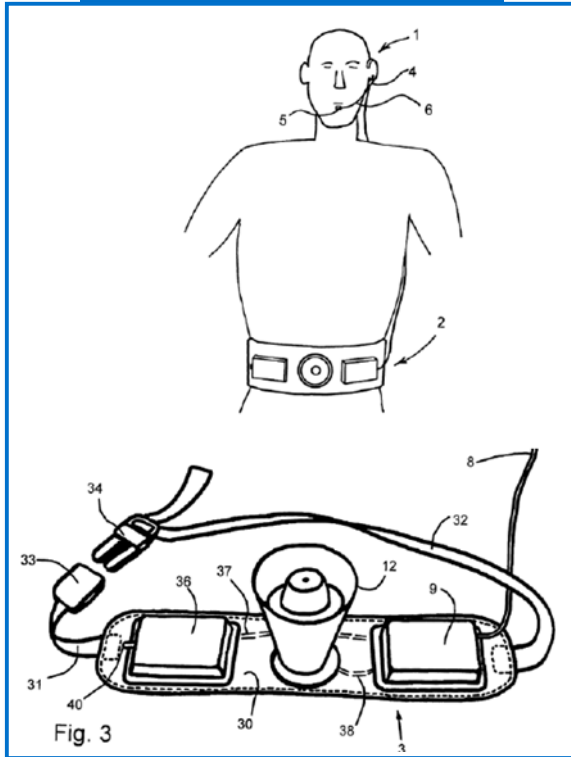
Overview of the SK 2000 bodypack transmitter

- Petitioner cites a contemporaneous definition from 2003 which indicates a ***transmitter is optional*** (“***typically***” has a transmitter ***or*** receiver).
- Patent Owner’s sources are from 2012 and 2016 and contain no definition.
- Patent Owner’s exhibits refer to a “bodypack transmitter,” which demonstrates that a body pack does not necessarily include a transmitter.

’230 Paper 23 (POR), at 14 (citing Ex. 2020, at 5, 14; Ex. 2025); Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 40-43; ’230 Paper 43 (Reply), at 16.

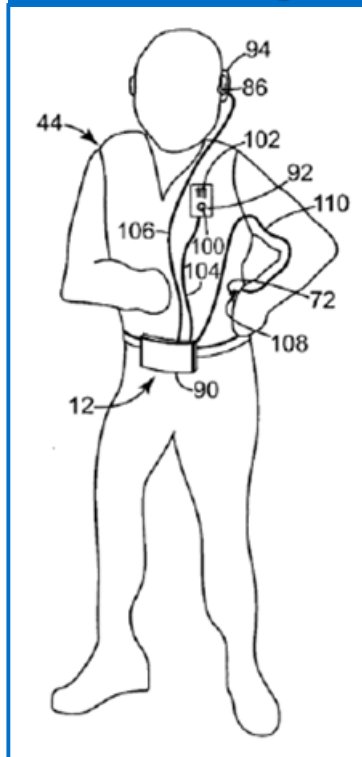
Other Contemporaneous Sources Support Petitioners' Definition of "body pack"

Ex. 1061, Figs. 1, 3



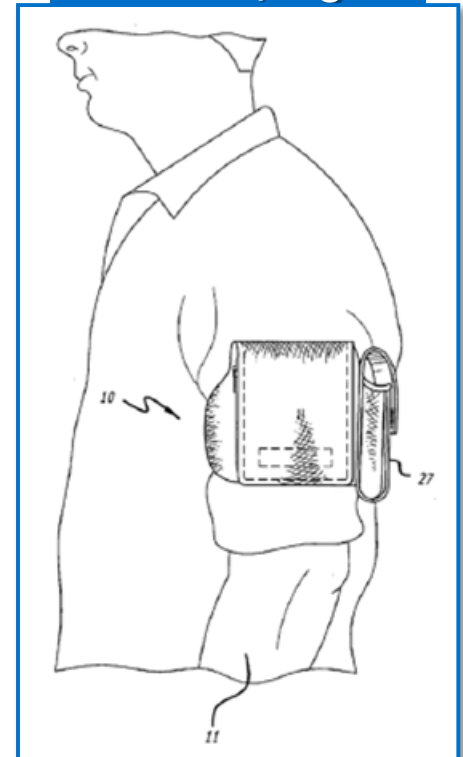
Ex. 1061, [0019]
body pack 2

Ex. 1067, Fig. 3



Ex. 1067, [0039]
body pack 90

Ex. 1068, Fig. 1



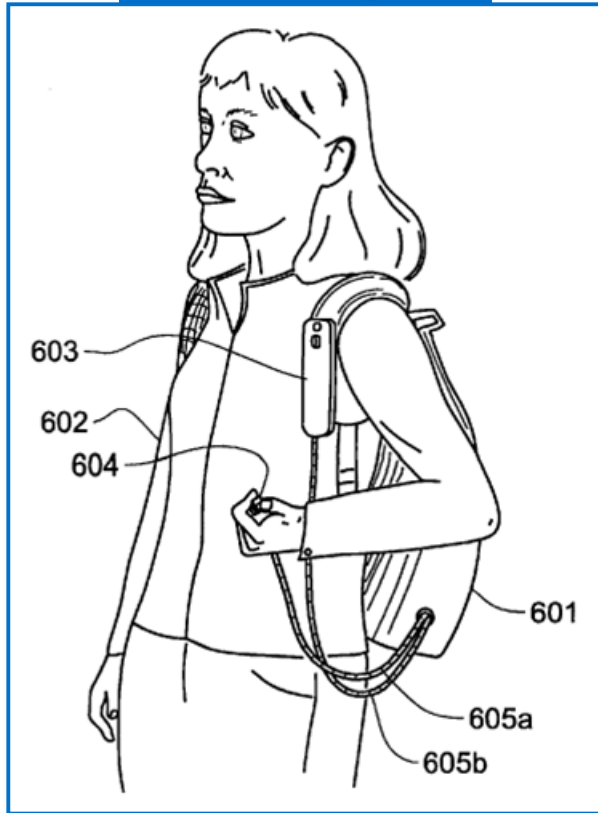
Ex. 1068, [0018]
body pack 10

Ex. 1061, Figs. 1, 3, [0019]-[0021]; Ex. 1067, Fig. 3, [0039]-[0041]; Ex. 1068, Fig. 1, [0018]; Ex. 1073 (Kyriakakis Reply Decl.) ¶ 44; '230 Paper 43 (Reply), at 16-18.

Strub Teaches a Body Pack

Strub's recording units are wearable on the body

Strub, Fig. 6



- A POSA would consider a backpack recording unit a bodypack since it is carried on the body and encloses the recording unit components. The backpack is the housing.
- Strub's use of the word "adapted" is standard patent terminology for "configured." It does not mean that Strub's unit must be modified to be worn.

Strub, 11:11-13

be relatively lightweight. Further, it is highly desirable that the recording unit be adapted to be mounted on (e.g., attached on, or worn by), rather than held by, the recorder.

Ex. 1003 (Strub), Abstract, 4:28-30, 11:11-13, 16:50-53, 66:45-49, 67:30-33, 67:66-67, 70:56-60, Figs. 1, 6, 8; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 95-104; '230 Paper 43 (Reply), at 19-20.

VI. Motivation to Combine

A POSA Would Have Been Motivated to Combine Strub and Woo

Dropout correction is irrelevant to motivation to combine, because it does not appear in the claims

POR, at 26

The Petitioners fail to show a POSA's motivation to combine the Cited References to solve a dropout problem of a "multitrack recording system" (Ex-

- Patent Owner focuses on a POSA's motivation "to solve a dropout problem." That is the wrong question, because ***no Challenged Claim recites dropout correction.***

A POSA Would Have Been Motivated to Combine Strub and Woo

Strub and Woo have numerous overlapping features and objectives—e.g., recording an event, transmitting the audio, using timecodes for synchronization, GPS timing signals, and post-recording editing.

Strub, 8:12-15

numerals 105, 106, 107 and 108). Each of the recording units 105, 106, 107 and 108, in accordance with the invention, enables the corresponding participant (recorder) to obtain a recording of the event in a manner that does not

Strub, 12:31-34

recording unit 300. The transmitter 309 transmits signals ("recording data signals") representing recording data acquired by the recording unit 300, so that such recording

Strub, 13:52-57

some manner. For example, the system controller can include a clock that is used to time-stamp the recording data obtained by the recording unit. (The time-stamps can be used, for example, to display the time at which a displayed recording was obtained, to locate particular stored recording data, or to enable post-event synchronization of the display

Woo, 5:1-5

e.g., independent cameras. The system 10 is used to record the live performance of a performer 12, e.g., a singer or actor. A recorder 14 captures the performance from its vantage point while another recorder 16 independently captures the same performance from its own vantage point. A

Woo, 5:37-42

The recorders 14 and 16 each transmit their respective recordings over a pair of connections 30 and 32 to an editing station 34. The connections 30 and 32 represent the communication of the respective recordings by wire, radio link and/or tape or film delivery to the editing station 34, e.g., a telecine suite or an audio layback suite. Each recording

Woo, 4:6-8

It is another object of the present invention to provide a highly-accurate time code source for recording performances.

Ex. 1003 (Strub), 4:20-30, 8:7-53, 12:31-46, 7:11-24, 13:48-58, 63:56-60, 79:63-65; Ex. 1004 (Woo), 4:3-5, 4:62-5:20, 5:37-42, 4:6-8, 4:20-26; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 106-109; '230 Paper 43 (Reply), at 20-21; '232 Paper 42 (Reply), at 15-16.

A POSA Would Have Been Motivated to Combine Strub and Woo

Strub and Woo—overlapping features and objectives (GPS timing signals, post-recording editing)

Strub, 63:41-43

A GPS receiver can also be used to receive a signal representing the current time that can be used as a clock to generate time-stamps for the recording data. Depending

Strub, 92:38-42

Audio recording data can be blended in any appropriate way. For example, an audio mixer can be used to select audio recording data from multiple audio recordings in accordance with specified characteristics, and the selected audio recording data used to generate an audio display. Or,

Woo, 4:13-19

Briefly, an embodiment of the present invention comprises a GPS navigation receiver with a data output port for communicating time codes in SMPTE format. The conventional date and time sentence output of the GPS navigation receiver is combined with a highly-accurate one pulse-per-second ($\pm$ one microsecond) to form a time-keeping base for the time code output.

Woo, 8:45-59

A step 116 generates a third recording from the date and time synchronized portions of the first and second recordings, wherein the third recording presents an apparently time-seamless blend of the performance from a plurality of viewpoints. In step 114, the combining and generating may be done in real-time with the performance such that the third recording is delayed from the performance by an insubstantial amount of time. Alternatively, in step 114, the combining and generating are done post the performance such that the third recording is independent of the time of the performance. The combining, may, for example, be done in a telecine suite or audio layback suite.

Ex. 1003 (Strub), 63:41-56, 80:2-7, 92:24-50; Ex. 1004 (Woo), Abstract, 4:13-19, 8:13-19, 5:42-45, 8:34-59; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 106-109; '230 Paper 43 (Reply), at 20-21; '232 Paper 42 (Reply), at 15-16.

Combining References Would Not Make Strub's Recording Unit Unwearable

Strub repeatedly teaches wearability, small size, and light weight

Strub, Abstract

described in more detail below, advantageous aspects of the invention can be provided by a small, lightweight, wearable recording unit. In particular, a “hybrid recording unit”

Strub, 11:9-13

event. Thus, for example, it is generally desirable that the recording unit be relatively small and that the recording unit be relatively lightweight. Further, it is highly desirable that the recording unit be adapted to be mounted on (e.g., attached on, or worn by), rather than held by, the recorder.

Strub, 66:27-32

In general, it is desirable to “package” the recording unit components in any manner that achieves some or all of the desired characteristics of a recording unit according to the invention, e.g., small size, low weight, unobtrusiveness, and capability of being mounted on a recorder (or, at least, capability of being easily carried by the recorder).

The heaviest and bulkiest components—camera and LCD screen—can be eliminated because they are not in the Challenged Claims

Kyriakakis Dec. (Ex. 1073), ¶ 111

“[T]he video camera and LCD screen are generally the largest consumers of power, so a POSA would further understand that their elimination would substantially reduce power consumption and permit use of a smaller battery, which would further save on size and weight.”

Ex. 1003 (Strub), Abstract, 9:4-33, 11:9-17, 66:26-51, 67:45-52; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 110-111; '230 Paper 43 (Reply), at 21; '232 Paper 42 (Reply), at 16.

Winningstad Does Not Teach Away From Post-Production Editing as Disclosed in Strub and Woo

Winningstad's optional password would not prevent a user from performing post-production editing.

Winningstad, 2:33-35

the date, time, and sequence of recorded events. Passwords and the authentication keys can also be used to improve the security and integrity of the recorded data.

- The password is optional (“can” or “may” be used).
- The user could just enter the password.

Winningstad, 8:12-16

recorded event. To ensure that the time and date encoder **88** in the DD device **26** is not tampered with, an internal password may be required to be entered via interface **98** in order to modify the clock settings provided by data and time encoder **88**.

VII. Patent Owner's Failure to Show Conception and Diligence Before Winningstad

Patent Owner Fails to Show Conception Before Winningstad (April 20, 2005)

Patent Owner's conception evidence is missing multiple claim elements

- Element 1[H] requires “unstamped local audio data”
- Element 1[J] requires “unstamped local audio data [that] does not include a reference to said master timecodes.”
- Patent Owner relies on Ex. 2134 to show conception, but the sole passage cited for Elements 1[H] and 1[J] says nothing about unstamped audio data:

POR, at 31

1[H]/[I]/[J]

“...recorded audio is referenced to the time code signal that originated from the IFB900transmitterEx-2134, p. 1.

- Unstamped local audio data appears nowhere else in Ex. 2134.
- ***Failure to prove these elements is fatal to Patent Owner's attempt to pre-date Winningstad.***

'230 Paper 23 (POR) at 30-31; Ex. 2134; '230 Paper 43 (Reply), at 22.

Patent Owner Fails to Show Conception Before Winningstad

Other elements missing from Patent Owner's conception evidence

- Element 1[F] requires a “control unit in communication with said local audio device receiver, said audio input device, and said memory.”
- Element 1[G] also recited the “control unit.”
- Patent Owner relies in Ex. 2134 to show conception, but the passages cited for Elements 1[F] and 1[G] say nothing about a control unit, much less a control unit in communication with the other recited components:

POR, at 30

1[F]	“The TRX900s internally records audio to a memory...” Ex-2134, p. 1.
1[G]	“containing an audio transmitter ...called TRX900Ex-2134, p. 3.

- The recited control unit appears nowhere else in Ex. 2134.

'230 Paper 23 (POR) at 30-31; Ex. 2134; '230 Paper 43 (Reply), at 22.

Patent Owner's Other Exhibits Also Are Missing Multiple Claim Elements

Patent Owner's other exhibits fail to show Elements 1[F], 1[G], 1[H], and 1[J]

- Ex. 2046 is purportedly dated May 16, 2005 (Ex. 2030, Chipperson Dec., ¶ 19) and is not relied on to prove conception before Winningstad (April 20, 2005).
- Either way, it also lacks the control unit of Elements 1[F] and 1[G] and the unstamped local audio data of Elements 1[H] and 1[J]:

POR, at 32

1[E]/1[F]	"Audio receiving device 312 is also worn by the speaker and connects to local audio device 102 at audio input port 314. The locally recorded audio is stored along with time code numbers that indicate when, during the live audio event, each segment of audio occurred in local memory 316." Ex-2046, p. 5
1[G]	"[P]rocess proceeds to 514. At 514, the local audio device outputs the mixed audio signal...as per the instructional data contained in the single audio signal." Ex-2046, p. 13.
1[H]/1[I]/1[J]	"The locally recorded audio is stored along with time code numbers that indicate when ... each segment of audio

- Ex. 2131 (cited for objective indicia) lacks Elements 1[F] and 1[H]-1[J].

'230 Paper 23 (POR) at 31-33, 59-60; Ex. 2046; '230 Paper 43 (Reply), at 22-23.

VIII. Enablement of Strub

Strub is Enabling

Patent Owner uses the wrong legal standard

“[T]he standard for what constitutes proper enablement of a prior art reference for purposes of anticipation under section 102 . . . differs from the enablement standard under section 112....[T]he relevant timeframe for determining whether a prior art reference is enabling is one year before the effective filing date of the patent-in-suit.”

Intas Pharms. Ltd. v. Atossa Therapeutics, Inc., PGR2023-00043, Paper 37 at 18 (PTAB Jan. 29, 2025)

- Patent Owner erroneously uses Strub’s filing date of April 2000 to assess enablement, which is fatal to its non-enablement argument:

POR, at 56

“Given this state of the prior art, a POSA attempting to follow Strub’s disclosure in 2000 would have faced unsolvable engineering challenges on multiple fronts.”

POR, at 40

“In April 2000, designing devices with reasonable operating time on portable power was a major hurdle for all audiovisual electronics manufacturers....The batteries in 2000 were largely NiMH and Li-ion with low energy densities...”

POR, at 54

“The first battery powered streaming camcorder ...was not introduced until 2002, two years after Strub was filed....In April 2000, even professional camcorders could not wirelessly transmit audiovisual data.”

²³⁰ Paper 23 (POR) at 4, 40, 54-56; Ex. 2140, ¶ 290; Ex. 1076, 18:22-19:16; ²³² Paper 23 (POR) at 29, 34, 36-37, 40-42, 46, 50; Ex. 2058, ¶ 290; ²³⁰ Paper 43 (Reply), at 24; ²³² Paper 42 (Reply), at 16-17.

Strub is Enabling

Patent Owner uses the wrong legal standard

- Patent Owner erroneously requires Strub to enable its own disclosure, including unclaimed elements such as video, artificial intelligence, and LCD displays.

POR, at 52

“[T]he cited Casio VM-150 purported to be an acceptable **video recording display device**...is incompatible for direct connection to the 68HC11G.... Strub recognizes that this ‘**LCD display**’ is relatively small ... though it requires a relatively large amount of power,’...yet provides no corresponding power supply design.”

POR, at 53

“The nature of Strub’s invention...is a...unit that has the ability to: record audio/**video** data...; simultaneously receive audio/**video** data from four other recording units...; simultaneously transmit audio/**video** data in real time to another recording unit...; **display audio and video data separately on two screens**....”

POR, at 43

“[T]his is another aspirational suggestion of an **artificial intelligence technology** that could not be implemented by a POSA **in 2000**....”

’230 Paper 23 (POR) at 34, 38, 40-43, 45-50, 52-53; ’232 Paper 23 (POR) at 29, 33, 38-45, 47-50; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 150-152; ’230 Paper 43 (Reply), at 24; ’232 Paper 42 (Reply), at 17.

Strub Was Enabled Even by April 2000

Even under Patent Owner's erroneous legal standard, Strub was enabled

Kyriakakis Dec. (Ex. 1073), ¶ 153-156

"In my opinion, the technology involved in the challenged claims was neither complex nor unpredictable. To the contrary, it involves straightforward electrical and mechanical design using elements and building blocks that were well known and well understood for many years before the April 2000 date that Mr. Defilippis uses in his analysis.... Receiving and recording audio has been well-known for over a century....By the 1970's, digital audio recording was demonstrated....[B]y April 2000 it was well-known in the art that solid state memory...could be used to store audio data.....Prior to April 2000, it was also known to transmit audio using RF technology.....[T]he Texas Instruments TM320C series of DSPs was widely available before April 2000...."

Kyriakakis Dec. (Ex. 1073), ¶ 157

"I do not perceive any enablement issues with a POSA being able to make the claimed inventions prior to April 2000....[T]he technologies for recording and storing audio, processing audio, and transmitting audio were all mature, well-developed and well understood [and] was neither complex nor unpredictable prior to April 2000."

Exs. 1048, 1050, 1051, 1054, 1055, 1064, 1065, 1069, 1070, 1071, 1072; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 104, 153-158, 160-164; '230 Paper 43 (Reply), at 25; '232 Paper 42 (Reply), at 17-18.

IX. Lack of Nexus With Patent Owner's Objective Indicia

Patent Owner's Objective Indicia Have No Nexus to the Challenged Claims

The industry praise focuses on features appearing in claims for which ***obviousness is not at issue, so objective indicia are irrelevant***

- None of the independent claims recite digital transmission or remote controllability, and product size, but those features are the focus of the industry praise.
- '443 Claims 2, 8, and 24, and 26, and '207 Claim 66 recite a remote control unit and digital data transmission, but ***it is uncontested that Strub teaches those features, so there is no separate obviousness issue involving those claims.***

Emmy Award (Ex. 2111)

OUTSTANDING ACHIEVEMENT IN ENGINEERING
DIGITAL RECORDING WIRELESS

Academy Award (Ex. 2113)

The Zaxcom system has advanced the state of wireless microphone technology by creating a fully digital modulation system with a rich feature set, which includes local recording capability within the belt pack and a wireless control scheme providing real-time transmitter control and time-code

Sarokin Tr. (Ex. 1075), 33:7-12

“Q. What was revolutionary was the conversion of the microphones to digital; is that correct?”

A. Yes.”

Exs. 2111, 2113; Ex. 2126, ¶¶ 5-6; Ex. 2127, ¶¶ 5-7; Ex. 1075, 32:10-33:21, 37:2-38:12, 72:20-73:8; Ex. 1074, 41:4-42:18; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 131-143; '230 Paper 43 (Reply), at 26-27; '232 Paper 42 (Reply), at 18-20.

Patent Owner's Objective Indicia Are Directed to the Wrong Features

Industry praise directed to the uncontested features for which there obviousness is not at issue

Wexler Dec. (Ex. 2126), ¶ 5

“Zaxcom produced the first wireless systems designed specifically for our usage in sound for picture that utilized **digital RF transmission**. This went a long way in solving some of the problems associated with frequency allocation.”

Sarokin Tr. (Ex. 1075), 77:13-16

“Q. Do you believe that **remote controllability of the transmitter** was revolutionary in 2005?

A. **Yes.**”

Emmy Program Booklet (Ex. 2128), at 11

Not for a single component but for the system as a whole, the Engineering Emmy goes to Zaxcom for its innovations in **digital wireless** technology. These include:

- Digital recording of microphone signal in the wireless transmitter to provide backup recording of the original microphone signal.
- Unique audio file format (MARF) that includes time code stamps to facilitate synchronization of the recorded audio with video as well as the conversion to Broadcast Wave Format (BWF).
- Record audio file protection in case of power failure or media removal using a **unique file directory structure** embedded within the recording file.
- Distribution to each digital wireless body pack of a common time code signal as well as digital, low latency IFB (interrupted fold back) audio return signal.
- Full-range microphone audio capture (126dB) using **dual precision A/D converters**.
- **Low latency digital compression and transmission** (3.5mS).
- **Efficient, high quality digital compression** to increase the number of wireless microphone channels available. (**4:1 increase over analog** wireless microphones).
- **Wireless digital remote control** of the wireless microphone transmitter including **pre-amp gains**.

Ex. 2126, ¶ 5; Ex. 1075, 77:9-79:12; Ex. 2128, at 11; Ex. 1073 (Kyriakakis Reply Decl.) ¶¶ 131-143; '230 Paper 43 (Reply), at 26-27; '232 Paper 42 (Reply), at 18-20.

In *Lectrosonics*, the PTAB Rejected the Same Nexus Arguments

In the Lectrosonics IPRs involving similar claims, the PTAB found no nexus to similar claims

- The Lectrosonics panel found that PO's objective indicia supported non-obviousness ***only for claims that expressly recited repair/replacement/dropout correction.***
- None of the currently Challenged Claims have that feature.

Lectrosonics FWD (Ex. 1014), at 24

“We determine that **no 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....We determine that the evidence submitted by Patent Owner **primarily is directed towards the feature of fixing dropouts.**”

Ex. 1014, 23-25; Ex. 1017, 31-35; Ex. 1018, 28-31; Ex. 1073 (Kyriakakis Reply Decl.) ¶ 148; '230 Paper 43 (Reply), at 27; '232 Paper 42 (Reply), at 20.

Conclusion

- All Challenged Claims are unpatentable
 - '230 IPR, Ground 1: The combination of Strub, Woo, Nagai, and Gleissner Renders Challenged Claims 1-3, 7, 8, 15, 17, 19, 20, and 23-27 of the '443 Patent obvious.
 - '230 IPR, Ground 2: The combination of Strub, Woo, Nagai, Gleissner, and Winningstad Renders Challenged Claims 4 and 9 of the '443 Patent obvious.
 - '230 IPR, Ground 3: The combination of Strub, Woo, Nagai, Gleissner, and Dwyer Renders Challenged Claim 22 of the '443 Patent obvious.
 - '232 IPR, Ground 1: The combination of Strub, Woo, Nagai, and Gleissner Renders Challenged Claims 17-19, 21-23, 33, 34, 59, 60, and 66 of the '207 Patent obvious.