

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AXON ENTERPRISE, INC.,
Petitioner,

v.

DIGITAL ALLY, INC.,
Patent Owner.

Case IPR2017-00515
Patent 9,253,452 B2

Before PHILLIP J. KAUFFMAN, MINN CHUNG, and
ROBERT L. KINDER, *Administrative Patent Judges*.

CHUNG, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
35 U.S.C. § 314(a) and 37 C.F.R. § 42.108

I. BACKGROUND

A. Introduction

Axon Enterprise, Inc. (“Petitioner”)¹ filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 10–17 and 20 of U.S. Patent No. 9,253,452 B2 (Ex. 1001, “the ’452 patent”). Digital Ally, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”). We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a).

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless the information presented in the Petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition and the Preliminary Response, we conclude that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing the unpatentability of any of the challenged claims on the grounds set forth in the Petition. Accordingly, we deny Petitioner’s request to institute an *inter partes* review of claims 10–17 and 20.

B. Related Proceedings

The parties indicate that the ’452 patent is the subject of the following patent infringement cases: *Digital Ally, Inc. v. TASER International, Inc.*, Case No. 2:16-cv-02032-CM-JPO, and *Digital Ally, Inc. v. Enforcement*

¹ Petitioner indicates that, since the filing of the Petition, it has changed its name from TASER International, Inc. to Axon Enterprise, Inc. Paper 9, 1.

Video, LLC, Case No. 2:16-cv-02349-JTM-JPO, each pending in the United States District Court for the District of Kansas. Pet. 2–3; Prelim. Resp. 1; Paper 5, 2. The '452 patent is also the subject of a co-pending petition for *inter partes* review filed by Petitioner in IPR2017-00775. Additionally, we instituted *inter partes* review of certain claims of U.S. Patent No. 8,781,292 B1, which is a continuation for the '452 patent, in IPR2017-00375.

II. THE '452 PATENT

A. Background

As a description of related art, the '452 patent describes that recording device management systems are used to coordinate recording devices to capture multiple recordings of an event. Ex. 1001, 1:18–20. For example, a user could press a button on a control board to start multiple video cameras. *Id.* at 1:20–24. According to the '425 patent, such systems did little if anything to react to inputs from electronic devices, to make decisions based on statuses of electronic devices, or to corroborate the recorded data from distinct devices. *Id.* at 1:22–28.

Also as background, the '452 patent describes that law enforcement often used recording devices to record evidence. *Id.* at 1:29–31. These devices often used different cues to start recording, or required manual operation. *Id.* at 1:35–38. Known drawbacks of such systems included lack of corroboration or other forensic verification, and time to correlate this evidence. *Id.* at 4:40–46.

B. Described Invention

The '452 patent describes an embodiment in the form of an intermediate recording device managing apparatus (“recording device

manager”) for use in a multiple recording device system. *Id.* at 1:54–56. The recording device manager receives a first communication signal from a first recording device that the first recording device has started recording, and transmits a second communication signal to a second recording device instructing the second recording device to begin recording. *Id.* at 1:56–62. Thus, the recording device manager insures multiple recording devices record an event. *Id.* at 1:63–64.

In another embodiment, an intermediate recording device managing apparatus comprises an internal clock and a controller. *Id.* at 1:65–2:1. The controller obtains time readings from the internal clock and creates time stamps. *Id.* at 2:1–3. The controller transmits the time stamps to synced recording devices for corroborating recordings. *Id.* at 2:3–4.

Figure 1 of the '452 patent is reproduced below.

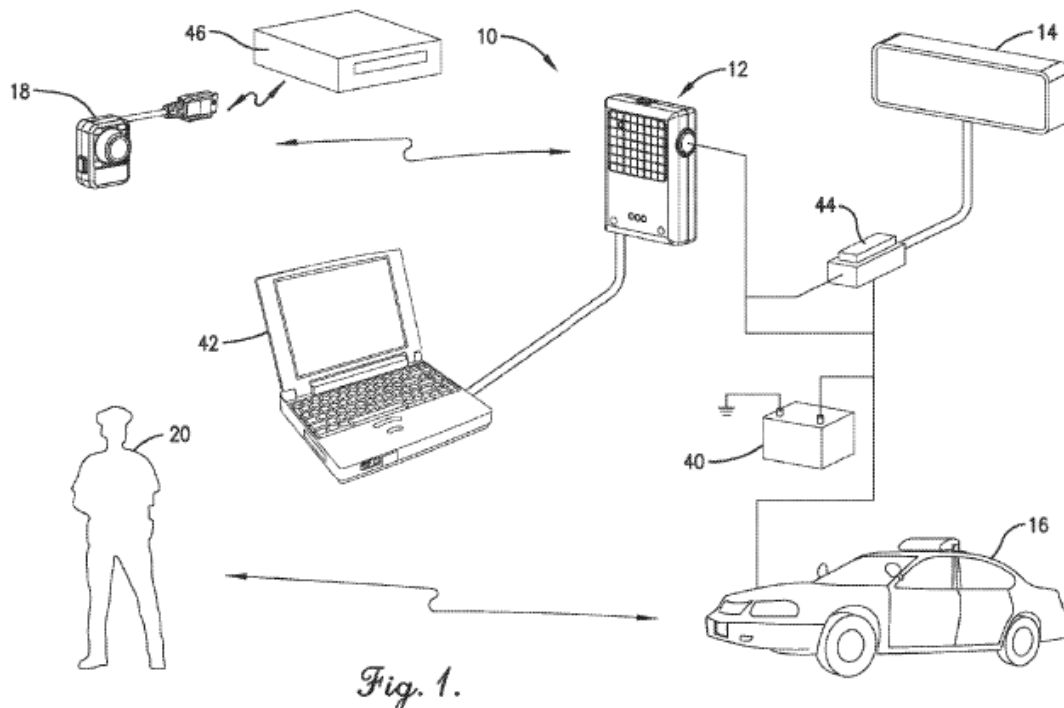


Figure 1 is a schematic plan view of a multiple recording device management system. *Id.* at 2:21–26. System 10 includes intermediate vehicle video recording device 14 mounted in police vehicle 16 and personal video recording device 18 carried by police officer 20, each wirelessly synced to recording device manager 12. *Id.* at 3:10–20. Multiple personal recording devices 18 can be synced with manager 12. *Id.* at 3:36–38, 4:20–24. Recording device manager 12 also may generate time stamps and unique serial numbers for a data recording, and create or collect metadata and transmit such time stamps, unique serial number, and metadata to recording devices 14, 18 for corroborating the recorded data. *Id.* at 3:25–30.

In an embodiment, when recording device manager 12 receives a signal from a first recording device (e.g., personal recording device 18) that it has begun recording, either due to an instruction to record or a triggering event, recording device manager 12 signals a second recording device (e.g., vehicle recording device 14) to begin recording.² *Id.* at 4:29–43.

In another embodiment, recording device manager 12, upon receiving a signal indicating a triggering event, broadcasts a signal to recording devices 14 and 18, instructing both of them to begin recording. *Id.* at 14:41–48. Examples of a trigger event include the officer turning on the police vehicle sirens, police lights, or spotlight. *Id.* at 14:46–48. In yet another aspect of the invention, the time stamp and serial number are sent to recording devices 14 and 18 when the recording devices begin recording for a particular data recording event. *Id.* at 6:57–60. By beginning to record

² Either recording device (14, 18) may be the first or second recording device.

almost simultaneously as personal recording device 18, vehicle recording device 14 can capture additional video and audio data recordings of the situation encountered by the officer, including capturing from a different vantage point than the officer. *Id.* at 7:11–15. The time stamp and serial number corresponding to the captured and recorded video and audio data recordings from personal recording device 18 can be matched with the concurrent time stamp corresponding to the captured and recorded video and audio data recordings from vehicle recording device 14 to link the recordings chronologically. *Id.* at 7:15–21. According to the '452 patent, it is desirable to forensically establish the timing of the events captured by the two recording devices and the relation of the recorded images and audio from the personal recording device to the recorded images and audio from the vehicle recording device. *Id.* at 7:21–25.

C. Illustrative Claim

Of the challenged claims, only claim 10 is independent. Claim 10 is illustrative of the challenged claims and is reproduced below.

10. A system for recording multiple viewpoints of an event, comprising:
 - a first recording device configured to be mounted on or configured to be carried by a law enforcement officer so as to record a first set of record data for the event;
 - a second recording device, distinct from the first recording device, located so as to record a second set of record data for the event, said first set of record data being distinct from the second set of record; and
 - a recording device manager operable to:
 - receive a trigger signal,

said trigger signal being at least one of activation of a law enforcement vehicle's siren, activation of said law enforcement vehicle's signal lights, activation of said law enforcement vehicle's spotlight, a vehicle crash event, and a vehicle speed, and

broadcast, in response to receiving the trigger signal, at least one communication signal including correlation data to the first recording device and the second recording device instructing the first recording device to begin recording said first set of record data and instructing the second recording device to begin recording said second set of record data,

wherein the first recording device stores the correlation data as metadata for the first set of record data and the second recording device stores the correlation data as metadata for the second set of record data, such that the first set of record data and the second set of record data can be correlated back to the event,

wherein the first set of record data and the second set of record data are recorded beginning substantially simultaneously in response to the broadcast communication signal.

Ex. 1001, 16:21–53.

III. PETITIONER'S CHALLENGES

A. Prior Art Cited in Petitioner's Challenges

Petitioner cites the following references in its challenges to patentability.

Reference and Relevant Dates	Designation	Exhibit No.
U.S. Patent Application Pub. No. 2005/0083404 A1 (published Apr. 21, 2005)	Pierce ³	Ex. 1014
U.S. Patent No. 8,594,485 B2 (filed Dec. 30, 2010; issued Nov. 26, 2013)	Brundula	Ex. 1015
U.S. Patent No. 8,805,431 B2 (filed July 31, 2012; issued Aug. 12, 2014)	Vasavada	Ex. 1010
U.S. Patent Application Pub. No. 2014/0355951 A1 (published Dec. 4, 2014)	Tabak	Ex. 1009

B. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 4, 25, 49):

Claims Challenged	Statutory Basis	References
10–17 and 20	§ 103(a)	Pierce and Brundula
10–17 and 20	§ 103(a)	Vasavada and Tabak

³ For clarity and ease of reference, we only list the first named inventor.

IV. CLAIM CONSTRUCTION

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard as the claim construction standard to be applied in an *inter partes* review proceeding). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in view of the specification. *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

For the purposes of this decision, and on the record presented, we determine that no claim terms need express interpretation. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (explaining that “claim terms need only be construed ‘to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

V. ANALYSIS OF PETITIONER’S PRIOR ART CHALLENGES

A. Obviousness over Pierce and Brundula

Petitioner contends claims 10–17 and 20 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Pierce and Brundula. Pet. 25–49. Petitioner submits a Declaration of Dr. Henry H. Houh (Ex. 1003) in support of its contentions. We have reviewed the parties’

contentions and supporting evidence. Given the evidence of record, we are not persuaded that Petitioner has established a reasonable likelihood of prevailing on this asserted ground as to any of these challenged claims for the reasons explained below.

1. Relevant Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter 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 the 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 skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Furthermore, determining obviousness requires considering whether two or more pieces of prior art could be combined, or a single piece of prior art could be modified, to produce the claimed invention, *Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1351–52 (Fed. Cir. 2010), including whether a person of ordinary skill would have been motivated to modify or combine the prior art to achieve the claimed invention, *see Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (citation omitted). To show obviousness, the analysis of the purported reasons to combine or modify the prior art “should be made explicit.” *See KSR*, 550 U.S. at 418. “To satisfy its burden of proving obviousness, a petitioner cannot employ mere

conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

2. Overview of Pierce (Ex. 1014)

Pierce discloses a vehicle mounted data acquisition and display system and a method of recording and storing data in a vehicle mounted apparatus. Ex. 1014 ¶ 2.

Figure 3 of Pierce is reproduced below.

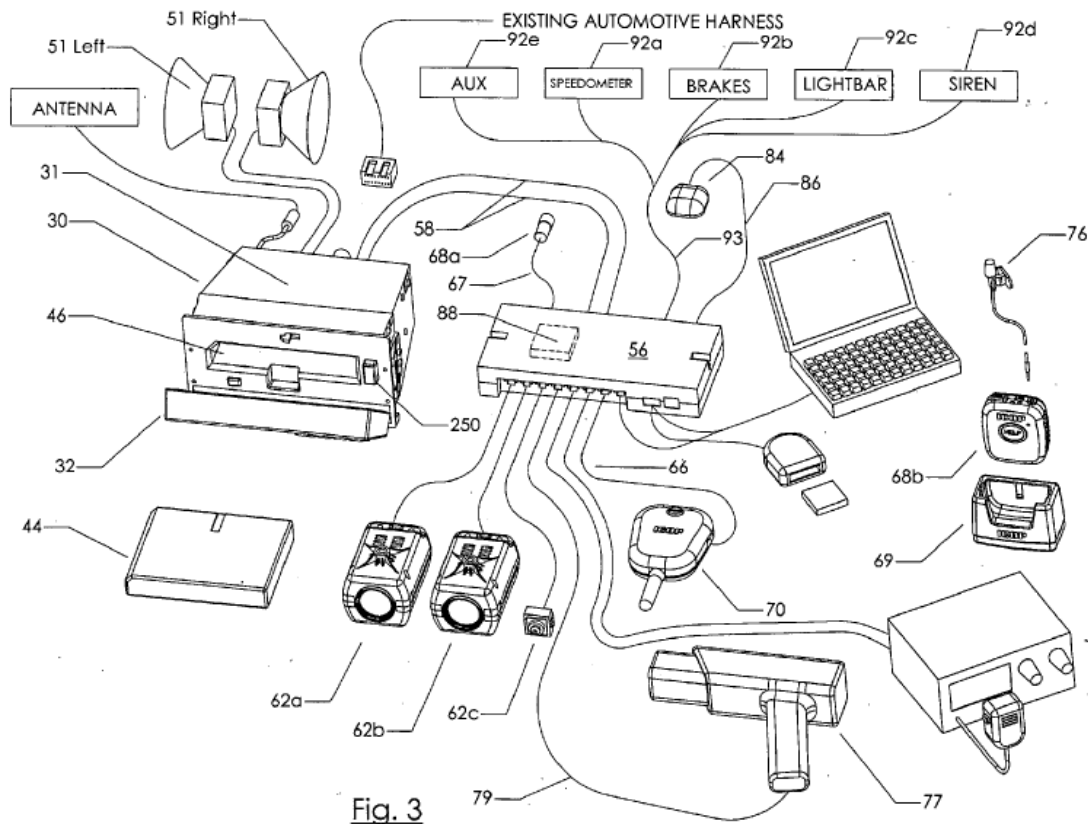


Figure 3 is a schematic illustrating the vehicle mounted data acquisition and display system of Pierce. *Id.* ¶ 17.

As shown in Figure 3, the data acquisition and display system includes central unit 30, which houses controller 31 and recording media 44. *Id.* ¶¶ 39, 46. Central unit 30 is connected to junction box 56 by line 58. *Id.* ¶ 51. Junction box 56 includes communication ports, such as infrared, wireless, and microwave receiving ports. *Id.* The data acquisition and display system also includes a number of wired or wireless cameras 62 located throughout the vehicle. *Id.* ¶ 52. Data recorded by cameras 62 is transmitted over lines 66 to junction box 56, and then from the junction box to controller 31 and recording media 44 via line 58. *Id.* ¶ 56. In an alternative embodiment, the data acquisition and display system can include a remote handheld video camera (not shown in Figure 3), which can be carried by an officer to record video when the officer leaves the vehicle to chase a suspect or to conduct an investigation. *Id.* ¶ 57. The data acquisition and display system of Pierce also includes microphones 68, such as internal microphone 68a and cordless or external microphone 68b. *Id.* ¶¶ 61, 62. Cordless microphone 68b transmits sound data to wireless transceiver 70 connected to junction box 56. *Id.* ¶ 62. The data acquisition and display system includes speed measuring apparatus 77, such as a radar-based gun or a laser-based speed gun. *Id.* ¶ 69. Similar to data recorded by cameras 62, data recorded by microphones 68 or speed gun 77 is transmitted to junction box 56 and subsequently to controller 31 and recording media 44. *Id.* ¶¶ 61, 62, 69, Fig. 3.

3. Overview of Brundula (Ex. 1015)

Brundula describes systems and methods for presenting incident information provided by video devices and electronic weapons. Ex. 1015,

Abstract. Information from video devices and/or electronic weapons may be temporally aligned (e.g., synchronized) for presenting events that occurred in a temporally related manner. *Id.* The present time and the identification number of a weapon is sent to a video device for use to align the weapon log with the video device recordings. *Id.* at 8:32–43.

4. Discussion

a. Independent Claim 10

Petitioner contends that the combination of Pierce and Brundula teaches or renders obvious all limitations of claim 10. Pet. 31–46. Patent Owner disagrees and argues that Petitioner’s analysis is deficient in several aspects. Prelim. Resp. 23–48. Our analysis focuses on the limitations identified by Petitioner as limitations 10[D], 10[G], and 10[K] (Pet. 36, 40, 45), which recite “a recording device manager operable to” (10[D]) “broadcast, in response to receiving the trigger signal, at least one communication signal including correlation data to the first recording device and the second recording device instructing the first recording device to begin recording said first set of record data and instructing the second recording device to begin recording said second set of record data” (10[G]), and “wherein the first set of record data and the second set of record data are recorded beginning substantially simultaneously in response to the broadcast communication signal” (10[K]).

(1) *Limitation 10[G]*

Claim 10 recites that “a recording device manager” receives a trigger signal and performs the step to “broadcast, in response to receiving the

trigger signal, at least one communication signal including correlation data to the first recording device and the second recording device instructing the first recording device to begin recording said first set of record data and instructing the second recording device to begin recording said second set of record data.” Ex. 1001, 16:30–31, 37–43. Claim 10 refers to the signal broadcast to the first and second recording devices as “the broadcast communication signal.” *Id.* at 16:52–53.

i) Petitioner’s Contentions

Petitioner contends that controller 31 of Pierce discloses “a recording device manager” recited in claim 10. Pet. 36–39. Petitioner also maps “a first recording device configured to be mounted on or configured to be carried by a law enforcement officer” to Pierce’s remote handheld video camera, and “a second recording device, distinct from the first recording device” to wired or wireless cameras 62, an internal microphone 68a, a wireless microphone 68b, and a radar or LIDAR speed gun 77 of Pierce. *Id.* at 32–34, 40.

Petitioner asserts that Pierce discloses a broadcast communication signal “to the second recording device instructing the second recording device to begin recording” because, when the operator activates the siren or light bar, controller 31 of Pierce automatically activates a number of recording devices, such as cameras 62 and microphones 68 (i.e., the claimed “second recording device”). *Id.* at 40–41 (citing Ex. 1014 ¶¶ 76, 84, 85).

With respect to the broadcast communication signal “to the first recording device . . . instructing the first recording device to begin recording,” however, Petitioner does *not* argue Pierce discloses a signal sent

by controller 31 to the remote handheld camera (i.e., the claimed “first recording device”) instructing the handheld camera to begin recording. *See* Pet. 40–41. Rather, Petitioner contends, citing the testimony of Dr. Houh, that it would have been an “obvious variant” of Pierce to modify “the wireless receiver [of junction box 56] to function as a wireless transceiver” so as to “transmit activation signals (record instructions) to both the remote handheld camera and the [wireless] camera 62a.” *Id.* at 38 (citing Ex. 1003 ¶¶ 164–166). Petitioner argues that a person of ordinary skill in the art would have understood that controller 31 would have been “capable of activating the remote handheld camera in a similar manner as the wireless microphone 68b when the wireless receiver of the junction box is simply *modified* to be a transceiver.” *Id.* at 41 (emphasis added) (citing Ex. 1003 ¶ 178). Petitioner does not indicate expressly whether any modification is necessary to the handheld camera of Pierce. In his Declaration, Dr. Houh testifies that “[a]ny *modifications* needed at the handheld camera would also be slight, and well within the skill of one skilled in the art . . . in view of the structure and operation of the wireless microphone.” Ex. 1003 ¶ 164 (emphases added). Dr. Houh, however, does not explain what specific modification would be necessary to the handheld camera of Pierce. *Id.*

Petitioner further contends that Brundula teaches “including correlation data” with the communication signal to the first recording device and the second recording device, as recited in claim 10, because Brundula discloses transmitting the identification number of a device and the local time of a device to other devices, including the video devices, in order to

establish temporal alignment for the data recorded by different devices.
Pet. 42 (citing Ex. 1015, Abstract, 7:21–38, 8:32–43, 18:33).

ii) Patent Owner's Arguments

Patent Owner argues that Pierce does *not* teach that controller 31 sends any signal to the remote handheld camera, as evidenced by the fact that Petitioner “never asserts” Pierce teaches this feature. Prelim. Resp. 24–25 (citing Pet. 36, 38). Addressing Petitioner’s “obvious variant” argument to supply this limitation missing from Pierce, Patent Owner asserts that Petitioner’s argument and Dr. Houh’s testimony are conclusory, and do not include the necessary reasoned analysis and evidentiary support to establish obviousness, especially when the missing limitation is a key feature of the invention. *Id.* at 35 (citing *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362 (Fed. Cir. 2016)), 40–44. Patent Owner argues, therefore, Petitioner has not met its burden to show that the proposed modification to Pierce would have been obvious to a person of ordinary skill in the art. *Id.* at 43–44.

iii) Analysis

We agree with Patent Owner that Petitioner does not show Pierce teaches a broadcast communication signal “to the first recording device . . . instructing the first recording device to begin recording,” as recited in claim 10. As discussed above, Petitioner does *not* argue Pierce discloses a signal sent by controller 31 to the remote handheld camera (i.e., the claimed “first recording device”) instructing the handheld camera to begin recording. See Pet. 40–41. Indeed, we do not discern anything in Pierce that teaches this feature.

Pierce describes the use of a remote handheld camera in paragraph 57. In that paragraph, Pierce describes that a remote handheld video camera can be carried by an officer to record video when the officer leaves the vehicle to chase a suspect or to conduct investigation. Ex. 1014 ¶ 57. Pierce also describes that, when the officer returns to the vehicle, the officer can upload recorded video data from the handheld camera to controller 31 and recording media 44. *Id.* Alternatively, the handheld camera could “wirelessly communicate *video data* to the controller 31 . . . , in real-time or upon the conclusion of the recording session.” *Id.* (emphasis added). Hence, the only communication between the controller and the handheld camera described in Pierce is transmission of *video data from* the handheld camera *to* controller 31. Therefore, Petitioner does not cite, nor do we discern, anything in Pierce that teaches transmission of a broadcast communication signal from controller 31 to the handheld camera that instructs the handheld camera to begin recording.

Addressing next the parties’ contentions regarding obviousness, we agree with Patent Owner that Petitioner’s arguments and evidence are insufficient to show that the missing limitation would have been obvious to a person of ordinary skill in the art. As discussed above, Petitioner proposes to make two separate modifications to the teachings of Pierce to supply the missing limitation—i.e., (1) modifying the wireless receiver of junction box 56 to function as a wireless transceiver (Pet. 38, 41), and (2) modifying the remote handheld camera in an unspecified way as “needed,” “in view of the structure and operation of the wireless microphone [68b]” (Ex. 1003 ¶ 164).

Pierce describes “cordless . . . microphone 68b” as “a walky-talky, a two-way radio, etc.” Ex. 1014 ¶ 62. Neither Petitioner nor Dr. Houh explains what specific modification to the remote handheld camera would have been necessary or how a person of ordinary skill would have been motivated to make the necessary modification based on “the structure and operation” of a walky-talky or a two-way radio. In addition, Dr. Houh does not explain what specific modification was “well within the skill of one skilled in the art” and why one would make such a modification. *See* Ex. 1003 ¶ 164. Further, Dr. Houh does not cite any evidence in support of his testimony. *See id.*; 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”). Hence, we agree with Patent Owner that, at least with respect to the proposed modification to the remote handheld camera of Pierce, Petitioner’s argument and Dr. Houh’s testimony are conclusory, are based on hindsight, and do not include a reasoned analysis and evidentiary support sufficient to establish obviousness. *See Magnum Oil Tools*, 829 F.3d at 1380.

Petitioner’s articulated rationale for modifying Pierce as proposed is also insufficient for the additional reason that Petitioner’s analysis is incomplete. Neither Petitioner nor Dr. Houh explains in sufficient detail the nature of Petitioner’s proposed modification to the remote handheld camera of Pierce. To the extent that Petitioner argues to modify the junction box only and not necessarily the handheld camera, Petitioner does not explain why the remote handheld camera, as described in Pierce and without any modification, would have been able to receive and process the signal from

the wireless transceiver of the modified junction box to allow the controller of Pierce to remotely initiate recording at the handheld camera. Hence, Petitioner's analysis is insufficient because Petitioner does not explain in sufficient detail *how* the proposed modification is supposed to work. See *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (“[A] clear, evidence-supported account of the *contemplated workings of the combination* is a *prerequisite* to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.”) (emphases added).

Petitioner's arguments and Dr. Houh's testimony seem to be directed to the contention that it was technologically feasible at the time of the invention of the '452 patent to modify the system of Pierce as proposed, and enable the controller to remotely initiate or activate recording at the handheld camera. See, e.g., Pet. 41 (“A [person of ordinary skill in the art] would understand that the controller 31 would be *capable of* activating the remote handheld camera in a similar manner as the wireless microphone 68b when the wireless receiver of the junction box is simply *modified* to be a transceiver.” (emphases added)) (citing Ex. 1003 ¶ 178 (“controller 31 is also capable of activating these wireless cameras”)). Although not discussed in the Petition, Dr. Houh in his Declaration states that the proposed modification would have been “obvious to try” for a person of ordinary skill in the art because “[t]here are only a few predictable solutions to activate both the handheld camera and the cameras 62.” Ex. 1003 ¶ 166. An obvious to try rationale generally requires some identification of “a design

need or market pressure to solve a problem” before looking at the “finite number of identified, predictable solutions.” *See KSR*, 550 U.S. at 421. Neither Dr. Houh nor Petitioner presents such an analysis. Instead, Dr. Houh opines that “[o]ne skilled in the art *could* also program the system to employ the transceiver 70 to bi-directionally communicate with both the microphone 68b and the cameras, or to include addition transceivers 70 for this purpose.” Ex. 1003 ¶ 166 (emphasis added). Hence, Dr. Houh’s purported “obvious to try” rationale appears to be nothing more than the statement that a person of ordinary skill in the art *could* have made the proposed modification.

Therefore, we agree with Patent Owner that Petitioner’s contentions and Dr. Houh’s opinions say no more than that a person of ordinary skill in the art *could* have made the proposed modification. Prelim. Resp. 43 (citing Ex. 1003 ¶¶ 166–168). However, “obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d at 1073 (citing *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014)). Therefore, we find the rationale articulated by Petitioner for modifying Pierce in the manner asserted by Petitioner to be insufficient.

Because Petitioner relies on Brundula only for the “including correlation data” limitation recited in claim 10 (*see* Pet. 42), Brundula does not cure the deficiencies in Petitioner’s obviousness analysis with respect to the limitation identified by Petitioner as limitation 10[G]. Based on the foregoing, Petitioner does not demonstrate that Pierce alone or Pierce

combined with Brundula teaches or renders obvious “a recording device manager” performing the step to “broadcast, in response to receiving the trigger signal, at least one communication signal including correlation data to the first recording device and the second recording device instructing the first recording device to begin recording said first set of record data and instructing the second recording device to begin recording said second set of record data,” as recited in claim 10.

(2) Limitation 10[K]

Petitioner identifies as limitation 10[K] the recitation “wherein the first set of record data and the second set of record data are recorded beginning substantially simultaneously in response to the broadcast communication signal.” Pet. 45. Petitioner contends that Pierce teaches or renders this limitation obvious. *Id.* at 45–46.

Petitioner asserts that controller 31 of Pierce automatically activates a number of recording devices, such as cameras 62 and microphones 68, when the operator activates the siren or light bar. *Id.* at 45 (citing Ex. 1014 ¶ 84). Petitioner argues that, therefore, “the record activation of the cameras 62 (i.e., second recording device) and the microphones 68 occurs at the same time.” *Id.* at 45–46.

Petitioner does *not* argue, however, Pierce teaches that the recording at the remote handheld camera (i.e., the claimed “first recording device”) and cameras 62 and microphones 68 (i.e., the claimed “second recording device”) begins substantially simultaneously. Rather, Petitioner contends that the simultaneous activation of cameras 62 and microphones 68 “*could* obviously also include simultaneous activation of the remote handheld video

camera (i.e., first recording device).” *Id.* (emphasis added) (citing Ex. 1003 ¶ 200).

The only evidence Petitioner cites in connection with this limitation is paragraph 84 of Pierce and paragraph 200 of the Houh Declaration. *Id.* (citing Ex. 1014 ¶ 84; Ex. 1003 ¶ 200). Paragraph 84 of Pierce is reproduced in its entirety below.

Alternatively, “EVENT” recording can be initiated automatically in act 120 when any one of a number of events occurs. For example, in some constructions, EVENT recording is initiated when the operator activates the siren 14 and/or the light bar 12, and/or AUX input. Alternatively, EVENT recording can be initiated when the speed measuring apparatus 77 records speed data above a predetermined value (e.g., above 80 mph) and/or when the CALL button is depressed. During EVENT recording, the controller 31 and the recording media 44 automatically record data from two predetermined cameras 62 (e.g., the first and second cameras 62a, 62b), the first and second microphones 68a, 68b, the GPS engine 88, the clock 47, the speed measuring apparatus 77, and the vehicle sensors 92a, 92b, 92c, 92d, and 92e. The recorded data is also indexed and relatedly coordinated as described above for later retrieval.

Ex. 1014 ¶ 84. Although paragraph 84 of Pierce describes that when the operator activates the siren or light bar, controller 31 of Pierce automatically records data from cameras 62 and microphones 68a, 68b (i.e., the claimed “second recording device”), it does not even mention a remote handheld camera (i.e., the claimed “first recording device”), let alone recording from the handheld camera at the same time as cameras 62. Therefore, Petitioner does not cite, nor do we discern, anything in Pierce that teaches or suggests “the first set of record data and the second set of record data are recorded

beginning substantially simultaneously in response to the broadcast communication signal,” as recited in claim 10.

In paragraph 200 of the Houh Declaration cited by Petitioner, Dr. Houh states that “[o]ne of ordinary skill in the art would understand from the disclosure of Pierce that the data recorders, including the cameras 62 and the handheld camera, would begin recording at the same time.” Ex. 1003 ¶ 200 (citing Ex. 1014 ¶ 84). But Dr. Houh does not explain why this would be the case other than citing to paragraph 84 of Pierce, which, as discussed above, makes no mention of a remote handheld camera. Therefore, Dr. Houh’s testimony is unpersuasive as conclusory and unsupported by evidence.

The lack of adequate reasoning and supporting evidence in Petitioner’s argument that the activation of cameras 62 in Pierce “*could* obviously also include simultaneous activation of the remote handheld video camera (i.e., first recording device)” (Pet. 45–46 (emphasis added)) indicates that Petitioner relies on impermissible hindsight. *See InTouch Techs.*, 751 F.3d at 1352 (characterizing as indicative of a hindsight analysis an expert’s “testimony [that] primarily consisted of conclusory references to her belief that one of ordinary skill in the art *could* combine these references, not that they *would* have been motivated to do so.”). Accordingly, Petitioner does not establish Pierce teaches or renders obvious “the first set of record data and the second set of record data are recorded beginning substantially simultaneously in response to the broadcast communication signal,” as recited in claim 10.

(3) Conclusion

Based on the record presented, the information presented in the Petition does not demonstrate a reasonable likelihood of Petitioner prevailing in its challenge to claim 10 under 35 U.S.C. § 103(a) as obvious over the combination of Pierce and Brundula.

b. Dependent Claims 11–17 and 20

Claims 11–17 and 20 each depend directly or indirectly from claim 10. Petitioner’s arguments and evidence presented with respect to these dependent claims do not remedy the deficiencies in Petitioner’s analysis of claim 10 discussed above. *See* Pet. 46–49. Therefore, Petitioner does not demonstrate a reasonable likelihood of prevailing in its challenge to dependent claims 11–17 and 20 under 35 U.S.C. § 103(a) as obvious over the combination of Pierce and Brundula.

B. Obviousness over Vasavada and Tabak

Petitioner contends claims 10–17 and 20 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Vasavada and Tabak. Pet. 49–73. We are not persuaded that Petitioner has established a reasonable likelihood of prevailing on this asserted ground as to any of the challenged claims for the reasons discussed below.

1. Overview of Vasavada (Ex. 1010)

As background, Vasavada describes that public safety providers (e.g., law enforcement, fire rescue) may only have limited information pertaining to an incident prior to arrival at the incident scene. Ex. 1010, 1:13–18. Consequently, upon arrival at the incident scene, an officer may not be as

well prepared to address and respond to the incident as he or she could be if better incident information were available. *Id.* at 1:22–24. In light of this, there was a need for improved means for acquiring and sharing incident scene information. *Id.* at 1:25–27.

To meet this need, Vasavada discloses an apparatus and method for initiating and sharing incident information in a communication system. *Id.* (54), 1:1–4. Vasavada’s communication system 100 provides automated incident alerts to a radio, automated video recording of the incident, dynamic formation of a work group, and automatic sharing of the incident information amongst members of the work group. *Id.*, Abstract.

Vasavada’s communication system 100 transitions through various operating states (110, 120, 130, 140). *Id.* at 1:37–39, 2:28–30, Fig. 1. The system comprises a plurality of radio units, which may be vehicular and/or portable handheld units, operating in a public safety radio network. *Id.* at 2:37–40. The units include a camera that captures video and possibly also audio data. *Id.* at 2:40–43.

As detailed below, when a triggering event occurs (an incident event alert) to a radio unit user, that unit automatically initiates video recording and sends a radio input. In response to that radio input, the system identifies a suitable response group (a talkgroup or work group), and transmits the video from the incident to that group.

The system automatically triggers an input to the radio and enables video recording in response to an incident event alerts. *Id.* at 2:57–3:15. Incident event alerts may be predetermined events such as a gun being drawn from a holster, a gunshot, a voice command, or detection of a toxic

condition (e.g., radiation). *Id.*, Fig. 1 (state 120). Following an event alert, the system performs dynamic search and identification based on relevant and available units (state 130). *Id.* at 3:16–19, Fig. 1. For example, an incident event alert for the user of radio 102 initiates video recording, and identifies units 104, 106, and 108 as a suitable work group (also known as a talkgroup). *Id.*

After identification, video recorded at the incident scene (unit 102) is transmitted to the work group (units 104, 106, 108) (state 140). *Id.* at 3:46–47, Fig. 1. Providing this real-time video to the work group improves preparedness as they approach the incident scene. *Id.* at 3:47–51.

Figure 2 of Vasavada is reproduced below.

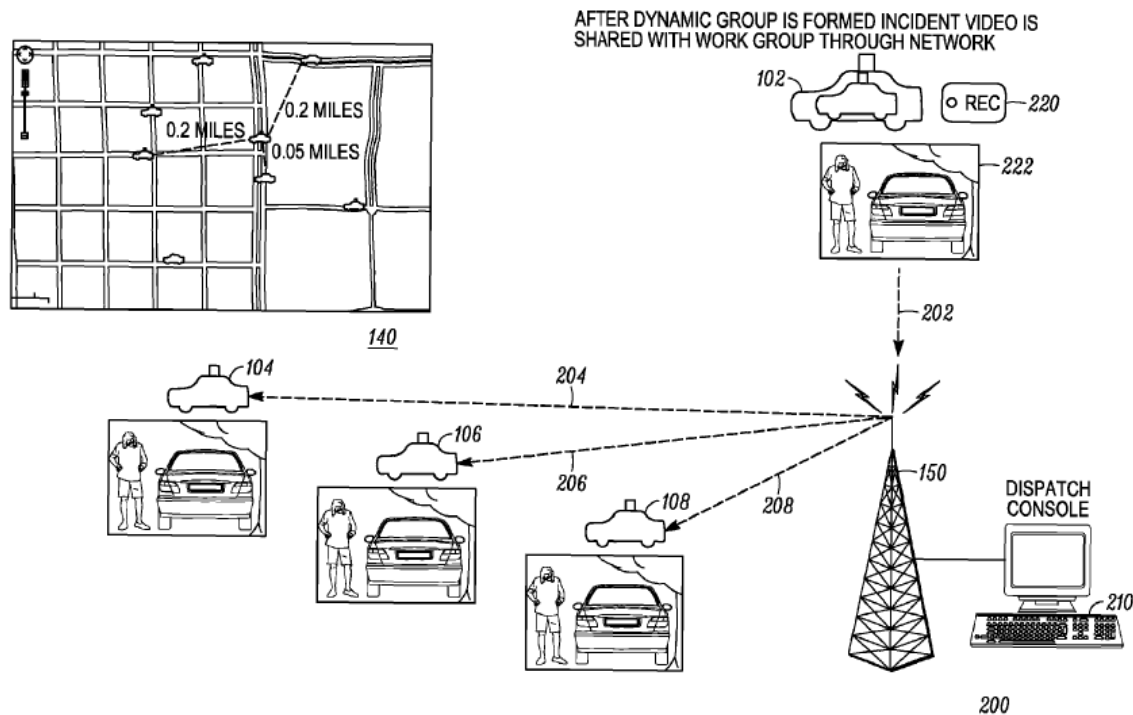


FIG. 2

Figure 2 depicts an example of a one-to-many embodiment of the communication system of Vasavada. *Id.* at 3:52–55. Vasavada refers to a

“one-to-many” embodiment where video is transmitted from one member of the work group to other members of that group, and a “many-to-one” embodiment where video is transmitted from other members of the work group to one member of the work group. *See id.* at 3:52–58, Figs. 2, 3, respectively.

In the one-to-many embodiment, an incident event alert occurring at vehicular radio unit 102, triggers a radio input (signal 202), and initiates recording of incident events (events 222). *Id.* at 3:59–4:4. Central control station 210 receives signal 202, establishes a work group (units 104, 106, 108), and transmits the recorded events (events 222) via signals 204, 206, and 208 to the units of the work group. *Id.* at 1:40–41, 4:1–6, Fig. 2.

Vasavada also describes the method in a flowchart. *Id.* at 5:11–13, Fig. 4. The system monitors for an alert at a radio unit (404), and if detected (406), that radio transmits an emergency alert to the central control station (408).⁴ *Id.* at 5:24–30, Fig. 4. The system creates a dynamic work group (420), and sends the video from the detected alert to that group (422). *Id.* at 5:46–52, Fig. 4. Central control station 210 configures video stream from any video accessories in the work group (420) to be shared among the group (426). *Id.*, Fig. 4. Members of the dynamic work group may activate their own cameras and transmit video data stream to the central control station (428). *Id.* at 5:58–60, Fig. 4.

⁴ We omit steps unrelated to our analysis.

2. Overview of Tabak (Ex. 1009)

Tabak describes systems and methods that facilitate synchronizing recordings between a plurality of content recording devices using embedded markers or metadata. Ex. 1009, Abstract. According to Tabak, a mechanism is disclosed for a content recording device to interact with one or more other content recording devices to establish synchronized recording.

Id. ¶ 32.

Figure 1 of Tabak is reproduced below.

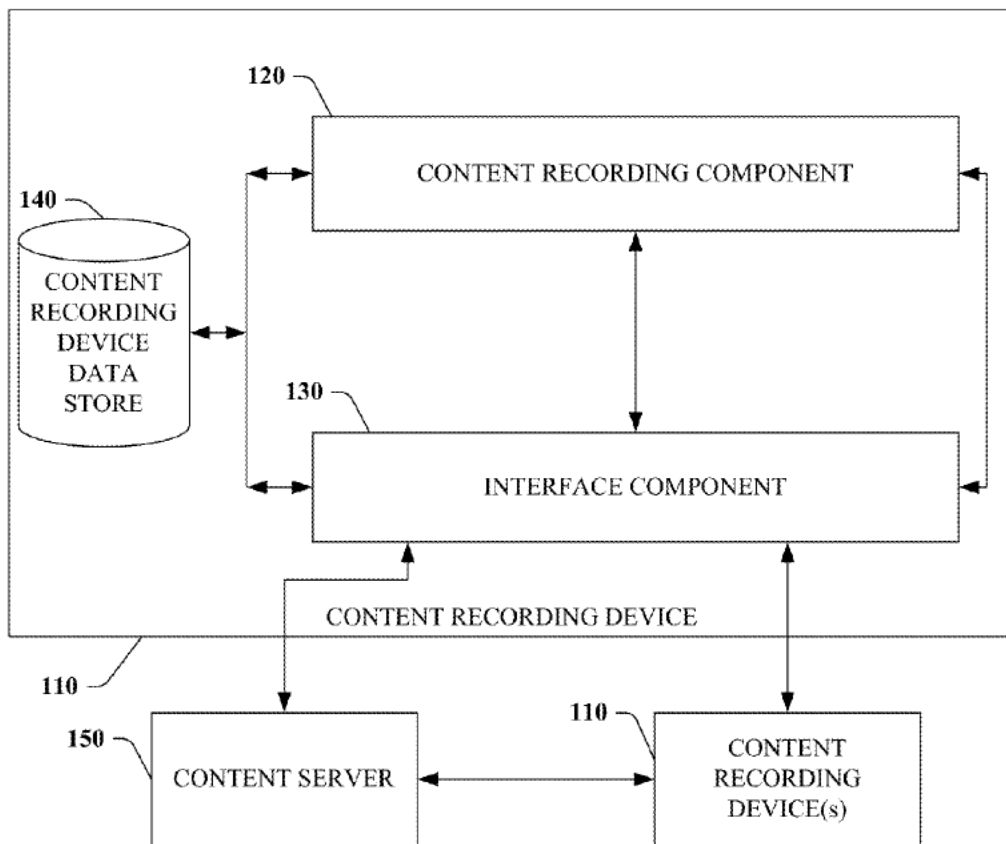


Figure 1 of Tabak illustrates a block diagram of an exemplary system for generating recordings in a synchronized manner amongst a plurality of content recording devices. *Id.* ¶ 9.

As shown in Figure 1, the system of Tabak includes a plurality of content recording devices 110 capable of recording content. *Id.* ¶ 35. The system also includes content server 150 that can receive recordings from the plurality of content recording devices. *Id.* Content recording device 110 includes content recording component 120 that records content for content recording device 110 and establishes synchronized recordings with other content recording devices 110. *Id.* In addition, content recording device 110 includes interface component 130 that interacts with other content recording devices 110 or content server 150 to send and/or receive information related to recording content. *Id.*

Content recording component 120, in turn, includes device synchronization component 220 that manages establishing of synchronized recording between content recording devices 110, and initiation or termination of synchronized recordings. *Id.* ¶ 39, Fig. 2. Additionally, content recording component 120 includes metadata component 240 that generates metadata for recordings on content recording device 110. *Id.* ¶ 39.

Device synchronization component 220 includes synchronized recording component 330 that manages synchronized recording with the other content recording devices 110 with which a synchronized recording relationship has been established. *Id.* ¶ 41, Fig. 3. Synchronized recording component 330 can initiate synchronized recording on content recording device 110 and other content recording devices 110 once a synchronized recording relationship has been established. *Id.* ¶ 44. When content recording device 110 and other content recording devices 110 are not currently recording content, synchronized recording component 330 can

instruct content recording device 110 and the other content recording devices 110 to initiate recording of content. *Id.*

Content recording device 110 can communicate metadata to the other content recording devices 110 for association with their respective content recordings. *Id.* ¶ 49. For example, information that allows for identification of content recordings that were part of an established synchronized recording relationship can be communicated as metadata. *Id.*

3. Discussion

a. Independent Claim 10

Petitioner contends that the combination of Vasavada and Tabak teaches or renders obvious all limitations of claim 10. Pet. 49–69. Patent Owner argues that Vasavada does not teach the limitation identified by Petitioner as limitation 10[G]. Prelim. Resp. 49–58. Our analysis focuses on the “broadcast communication signal” recited in claim 10.

(1) *Petitioner’s Contentions*

Petitioner contends that central control station 210 of Vasavada discloses “a recording device manager” recited in claim 10. Pet. 58–60. Petitioner also maps “a first recording device” to radio unit 104 of Vasavada, and “a second recording device” to radio unit 106. *Id.* at 55–58.

Petitioner asserts that signal 202 of Vasavada is the “trigger signal” recited in claim 10. *Id.* at 59. According to Petitioner, Vasavada describes that, in response to receiving signal 202 from radio unit 102, a talkgroup is established based on the type of event indicated by the trigger and analysis of the incident video, and the signal is then retransmitted to radio units 104,

106, 108. *Id.* (citing Ex. 1010, 4:1–9, Figs. 2, 4; Ex. 1003 ¶¶ 264, 276). Petitioner contends that, as shown in Figure 2, retransmitted signals 204, 206 to radio units 104, 106 (i.e., the claimed “first recording device” and “second recording device”) are the claimed “broadcast communication signal.” *Id.* at 64. Petitioner further asserts that, in response to receiving signals 204, 206, radio units 104, 106 begin recording. *Id.* at 59, 64 (citing Ex. 1010, 4:1–6, 5:58–64, Figs. 2, 4 (step 428); Ex. 1003 ¶¶ 262, 264, 285). Petitioner argues that central control station 210, therefore, sends a transmission (i.e., the claimed “broadcast communication signal”) simultaneously to multiple synced radio units instructing the devices to record. *Id.* (citing Ex. 1003 ¶ 285). According to Petitioner, Vasavada additionally describes that “recording 222 may also comprise a radio ID, date stamp, time stamp, sensor data and location as part of log information. The log information may be used to authenticate and substantiate the video recording for future evidentiary purposes.” *Id.* at 64–65 (citing Ex. 1010, 3:63–67).

In the alternative, Petitioner contends that, to the extent Vasavada does not expressly disclose that the broadcast communication signal includes correlation data, Tabak teaches “a manager that instructs other recording devices to record and also sends correlation data in the form of metadata . . . to the other recording devices.” *Id.* at 65 (citing Ex. 1009 ¶¶ 41, 44, 49; Ex. 1003 ¶¶ 289, 298).

(2) Patent Owner’s Arguments

Patent Owner argues that the proposed ground of unpatentability does not teach the “broadcast communication signal” recited in claim 10. Prelim. Resp. 49–58. According to Patent Owner, signals 204, 206 sent to radio

units 104, 106 are the recording 222 of the incident events occurring at the original scene and recorded by the first radio unit 102. *Id.* at 51. Patent Owner argues, therefore, signals 204, 206 do not instruct the first recording device and the second recording device (radio units 104 and 106) to begin recording their own video. *Id.*

(3) *Analysis*

i) *Whether Vasavada Alone Teaches a “Broadcast Communication Signal”*

Petitioner does not identify, nor do we discern, any express disclosure in Vasavada that signals 204 and 206 (the alleged “broadcast communication signal”) instruct the first and second recording devices (radio units 104 and 106) to begin recording. Rather, Vasavada’s signals 202, 204, and 206 include the recorded events 222 taken by unit 102 in response to the original triggering incident event alert. Ex. 1010, 1:40–41, 3:46–51, 4:1–6, Figs. 2, 4 (steps 420, 422). Indeed, Petitioner acknowledges that signals 202, 204, and 206 include the recorded events 222 taken by radio unit 102. Pet. 59; Ex. 1003 ¶¶ 262, 264.

Petitioner’s expert, Dr. Houh, opines that central control station 210 includes a transmitter and is configured to send a signal to a work group instructing them to record in-route video 324, 326, 338 as they approach the incident site. Ex. 1003 ¶¶ 262, 264, 285 (quoting Ex. 1010, 4:1–13, 5:11–64, Figs. 2, 3, 4 (identifying initiation of recording data as step 428)).

For the reasons that follow, Dr. Houh’s opinion is not supported by the reference.

None of the portions of Vasavada cited by Dr. Houh contain an explicit disclosure that signals 204 and 206 instruct the first and second recording devices (units 104 and 106) to begin recording a first set of record data and a second set of record data, respectively.

The first cited portion describes that, “FIG. 3 shows a representation for operating state 140 in which each of the radio units 104, 106, 108 of the talkgroup respectively records 314, 316, 318 in-route video 324, 326, 338 as the units approach the incident scene.” Ex. 1010, 4:10–13; *see also* Fig. 3. This disclosure indicates that Vasavada’s first and second recording devices (radio units 104 and 106) can record video (324) en route to the incident scene; however, this disclosure says nothing about how the recordings are initiated.

The second cited portion describes that “[t]he radios in the talkgroup may also activate their own cameras and transmit video-data streams to the central control station.” *Id.* at 5:58–60. This is not a disclosure that signal 204 instructs members of the work group to begin recording data. On the contrary, this disclosure suggests that each work group member (e.g., each user of radio units 104 and 106) activates their own camera.

Nor does the flowchart shown in Figure 4 support Dr. Houh’s opinion. Step 428 of the flowchart shown in Figure 4 states that “radios within the work group activate cameras and transmit video data stream to network.” *Id.*, Fig. 4. This is consistent with the disclosure mentioned above that users activate their own cameras.

Consequently, Petitioner has not demonstrated sufficiently that Vasavada's signals 204 and 206 correspond to a "broadcast communication signal" as claimed.

ii) Whether the Combination of Vasavada and Tabak Teaches or Renders Obvious All Limitations of Claim 10

In the alternative, Petitioner contends that Tabak teaches "a manager that instructs other recording devices to record and also sends correlation data in the form of metadata . . . to the other recording devices, which store the correlation data as metadata with the video locally." Pet. 65 (citing Ex. 1009 ¶¶ 41, 44, 49; Ex. 1003 ¶¶ 289, 298). It is not clear from the Petition whether Petitioner is relying on Tabak to supply the claimed "broadcast communication signal" or to teach "including correlation data" in the communication signal, as recited in claim 10. For purposes of this Decision, we resolve the apparent ambiguity in the light most favorable to Petitioner, and exercise our discretion to interpret Petitioner's argument as a contention that Tabak teaches the "broadcast communication signal" as well as the "correlation data" included in the communication signal.

Petitioner contends that Tabak's "manager" "transmits an instruction to a number of other recording devices to record and also sends metadata . . . to these other recording devices." Pet. 51–52 (citing Ex. 1009 ¶¶ 41, 44, 49). Hence, in the proposed combination, Petitioner appears to map the claimed "recording device manager" to the "manager" of Tabak, and the "broadcast communication signal" to the instruction signal transmitted by Tabak's "manager" to recording devices to begin recording. *Id.* at 51–52, 65.

It is unclear, however, what Petitioner means by a “manager” because the cited paragraphs of Tabak do not mention a “manager.” See Ex. 1009 ¶¶ 41, 44, 49. In this regard, paragraph 41 describes synchronized recording component 330 included within content recording device 110 that “manages” synchronized recording with the other content recording devices 110. *Id.* ¶ 41. Petitioner asserts that “in Tabak the *manager* is *within* a recording device.” Pet. 51 (emphasis added). This statement is consistent with Tabak’s disclosure that synchronized recording component 330, which is included *within* content recording device 110, “manages” synchronized recording. Ex. 1009 ¶ 41. Moreover, Tabak discloses that “synchronized recording component 330 can *instruct* content recording device 110 and the other content recording devices 110 to *initiate recording* of content.” *Id.* ¶ 44 (emphases added). Citing the same paragraph of Tabak, Dr. Houh opines that “Tabak discloses a first *content recording device 110* that *transmits a record instruction signal* to multiple synced content recording devices.” Ex. 1003 ¶ 289 (emphases added) (citing Ex. 1009 ¶ 44). In view of Petitioner’s statements and Tabak’s disclosure, we understand “the manager . . . within a recording device” of Tabak argued by Petitioner to be synchronized recording component 330 contained *within* content recording device 110. As discussed in Overview of Tabak section above, Tabak describes a nested structure where content recording device 110 includes content recording component 120, which in turn includes device synchronization component 220, which in turn includes synchronized recording component 330. Ex. 1009 ¶¶ 35, 39, 41. Hence, “the manager . . . *within* a recording device” of Tabak may be synchronized recording

component 330, device synchronization component 220, or content recording component 120, all contained *within* content recording device 110.

Therefore, in the proposed combination of Vasavada and Tabak, Petitioner appears to assert that content recording devices 110 are the claimed “first recording device” and “second recording device,” while the “manager” within each content recording device 110 is a “recording device manager.” According to Petitioner, the record instruction signal transmitted by the “manager” is the claimed “broadcast communication signal.” Pet. 51–52, 65.

To the extent Petitioner is proposing to rely on “the manager . . . within a recording device” of Tabak to supply the claimed “recording device manager,” i.e., substitute Vasavada’s central control station 210 with Tabak’s “manager” identified by Petitioner, we are not persuaded the proposed combination teaches or renders obvious all limitations of claim 10 because, by placing a “manager” *within* “a recording device,” as proposed by Petitioner, each of radio units 102, 104, 106, 108 would be transformed into a “a recording device manager.” This modification would fundamentally change the “one-to-many” or “many-to-one” communication structure of Vasavada’s centralized dispatch system into a peer-to-peer communication system between radio units. More importantly, Petitioner does not explain how “a recording device manager” would “receive a trigger signal,” as recited in claim 10, when every single radio unit in Vasavada’s system is a “recording device manager.” See Pet. 61. Therefore, Petitioner does not explain in sufficient detail how the proposed combination teaches or renders obvious all limitations of claim 10.

Furthermore, Petitioner’s analysis is insufficient because Petitioner does not explain in sufficient detail *how* the proposed combination is supposed to work. As discussed above, “a clear, evidence-supported account of the *contemplated workings* of the combination is a *prerequisite* to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so.” *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d at 994.

In the alternative, if Petitioner proposes to rely on central control station 210 of Vasavada to supply “a recording device manager,” and modify radio units of Vasavada in view of Tabak so as to synchronize recording among the radio units, the proposed combination would not teach the claimed “broadcast communication signal” from “a recording device manager” “to the first recording device and the second recording device” instructing the recording devices to begin recording because, in the proposed combination, the record instruction signals are transmitted between the recording devices, as acknowledged by Petitioner and Dr. Houh. *See* Pet. 51–52, 65; Ex. 1003 ¶ 289 (“Tabak discloses a first *content recording device 110* that *transmits a record instruction signal* to multiple synced *content recording devices*.”) (emphases added).

Accordingly, Petitioner does not establish that the combination of Vasavada and Tabak teaches or renders obvious all limitations of claim 10.

iii) Conclusion

Based on the record presented, the information presented in the Petition does not demonstrate a reasonable likelihood of Petitioner

prevailing in its challenge to claim 10 under 35 U.S.C. § 103(a) as obvious over the combination of Vasavada and Tabak.

b. Dependent Claims 11–17 and 20

Claims 11–17 and 20 each depend directly or indirectly from claim 10. Petitioner’s arguments and evidence presented with respect to these dependent claims do not remedy the deficiencies in Petitioner’s analysis of claim 10 discussed above. *See* Pet. 70–73. Therefore, Petitioner does not demonstrate a reasonable likelihood of prevailing in its challenge to dependent claims 11–17 and 20 under 35 U.S.C. § 103(a) as obvious over the combination of Vasavada and Tabak.

VI. CONCLUSION

Based on the arguments and evidence presented in the Petition, we conclude Petitioner has not demonstrated a reasonable likelihood that Petitioner would prevail in showing at least one of the challenged claims of the ’452 patent is unpatentable based on any asserted ground of unpatentability. Therefore, we do not institute an *inter partes* review with respect to any of the challenged claims of the ’452 patent.

VII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied* as to all challenged claims of the ’452 patent, and no trial is instituted.

IPR2017-00515
Patent 9,253,452 B2

PETITIONER:

Brandon Stallman
brandon.stallman@cojk.com

L. Rhys Lawson
rhys.lawson@cojk.com

PATENT OWNER:

Jennifer Bailey
jennifer.bailey@eriseip.com

Marshall Honeyman
marshall.honeyman@eriseip.com