

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.
Petitioner,

v.

STELLAR, LLC,
Patent Owner.

IPR2024-01313
Patent 10,523,901 B2

Before BRIAN J. McNAMARA, NABEEL U. KHAN, and
BRIAN P. MURPHY, *Administrative Patent Judges*.

McNAMARA, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Motorola Solutions, Inc. (“Petitioner”) filed a petition, Paper 2 (“Petition” or “Pet.”), to institute an *inter partes* review (“IPR”) of claims 1–25 (the “challenged claims”) of U.S. Patent No. 10,523,901 B2 (“the ’901 patent”). 35 U.S.C. § 311. Stellar, LLC (“Patent Owner”) filed a Preliminary Response, Paper 8 (“Prelim. Resp.”), contending that the Petition should be denied as to all challenged claims. We have jurisdiction under 35 U.S.C. § 6. Under 35 U.S.C. § 314 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.”

A decision to institute under § 314 may not institute on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 371 (2018). Per Board practice, if the Board institutes trial, it will institute “on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” *See* 37 C.F.R. § 42.108(a).

Having considered the arguments and the associated evidence presented in the Petition and the Preliminary Response, for the reasons described below, we institute *inter partes* review.

II. REAL PARTIES IN INTEREST

Petitioner identifies itself (Motorola Solutions, Inc.) and WatchGuard Video, Inc. as its real parties-in-interest. Pet. 87. Patent Owner identifies itself (Stellar, LLC) as its real party-in-interest. Paper 3, 1.

III. RELATED MATTERS

Petitioner and Patent Owner state that the ’901 patent is asserted in the following litigation: *Stellar, LLC v. Motorola Solutions, Inc. et al.*, Case No. 4:23-cv-750 (U.S. District Court, Eastern District of Texas) (“the District

Court Litigation” or “the parallel litigation”). Pet. 87; Paper 3, 1. Patent Owner identifies the following AIA proceedings as involving patents asserted in the District Court Litigation that are directly or indirectly related to the ’901 Patent: IPR2024-01205, IPR2024-01206, IPR2024-01207, IPR2024-01208, IPR2024-01284, IPR2024-01285, and IPR2024-01314. Paper 3, 1.

IV. EXERCISE OF DISCRETION

A. *Discretion Under 35 U.S.C. § 314(a)- Fintiv*

In the Preliminary Response, Patent Owner contends that we should exercise our discretion to deny the Petition in favor of the District Court Litigation. Prelim. Resp. 6–18. The Board has held that the advanced state of a parallel district court action is a factor that may weigh in favor of denying a petition under § 314(a). *See NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential); Trial Practice Guide, 58 & n.2. We consider the following factors to assess “whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding”:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). In evaluating these factors, we “take[] a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* at 6.

On June 21, 2022, the Director of the USPTO issued an *Interim Procedure For Discretionary Denials In AIA Post-Grant Proceedings With Parallel District Court Litigation*. (“Guidance Memo”) concerning the application of the *Fintiv* factors. The Guidance Memo directed the PTAB not to discretionally deny institution when Petitioner presented compelling evidence of unpatentability or presented a stipulation that Petitioner would not pursue in a parallel proceeding the same grounds or any grounds that could have been reasonably raised before the PTAB (known as a *Sotera*¹ stipulation). The Guidance Memo was rescinded on February 28, 2025.²

Given the rescission of the Guidance Memo, we consider parties’ contentions and weigh the *Fintiv* factors below.

1. *Fintiv* Factors 1, 2, and 6

As to *Fintiv* factors 1 and 2, Patent Owner’s Preliminary Response states that Petitioner had not sought a stay in the parallel litigation and argues that the court has entered an order setting trial to begin 8 months before a Final Written Decision would be entered in this proceeding. Prelim. Resp. 9–13; Ex. 2006, 1 (Order setting trial to occur in July 2025).

¹ See *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A)

² Guidance Memo rescission available at <https://www.uspto.gov/about-us/news-updates/uspto-rescinds-memorandum-addressing-discretionary-denial-procedures>

Subsequent to the filing of Patent Owner's Preliminary Response, on February 24, 2025, the District Court ordered all deadlines and hearings stayed pending further order of the court. *See* Ex. 1066. The District Court's order notes that Patent Owner asserts 8 patents in the litigation, that *inter partes* reviews (IPRs) have been instituted on 4 of those patents covering 10 of the 14 claims asserted in the litigation, and that further consideration of a stay will depend upon whether IPRs are instituted on patents including the 4 remaining claims. *Id.* at 1, 3. The District Court also ordered the parties to update their positions on a stay within one week of a decision on institution. It is unclear if, and when, a new trial date would be set. Thus, *Fintiv* factors 1 and 2 weigh against exercising discretion to deny institution.

The subject matter of the challenged claims is closely related to the subject matter of the claims of the patents in the previously instituted IPRs and the remaining pending petitions, as evidenced by the overlap of the asserted references and arguments advanced in these cases. As detailed in the substantive sections of this Decision, the Petition meets the standard for institution, i.e., there is a reasonable likelihood that Petitioner would prevail with respect to at least 1 of the claims challenged in the Petition. Under *Fintiv* factor 6, these circumstances weigh against exercising discretion to deny institution.

In view of these circumstances, we determine that factors 1, 2, and 6 strongly weigh against exercising discretion to deny institution.

2. *Fintiv* Factors 3 and 4

Patent Owner emphasizes the advanced state of the parallel litigation, arguing that the District Court and the parties have expended significant time and resources in preparing the parallel litigation for trial. Prelim. Resp. 13–

15. Patent Owner advises that the District Court has appointed a technical advisor, considered extensive claim construction briefs, held a hearing and entered a *Markman* ruling on 16 claim terms, and had yet to decide *Daubert* motions at the time Patent Owner filed its Preliminary Response. *Id.* at 13–14. Patent Owner points to its Infringement Contentions containing over 850 pages of claim charts alleging infringement of 14 claims over 8 asserted patents, as well as its investments in preparing opening and rebuttal expert reports and depositions to be conducted between the filing of its Preliminary Response and trial in the parallel litigation. *Id.* at 13. Patent Owner also cites the parties’ investment of time and resources in assessing Petitioner’s invalidity contentions based on over 115 prior art references including 16 for the patent and patent application references relied on in the Petition. *Id.* at 14. With the parallel litigation currently stayed and several months remaining before the pre-stay trial date in the District Court, much work remains to be completed in that forum.

Patent Owner states that “Petitioner’s expert report on validity repeats all of the assertions in this Petition.” Prelim. Resp. 14. Petitioner has presented a *Sotera* type stipulation in this case and in related cases. *See* Ex. 2015. In view of the rescinded Guidance, such stipulations are not determinative. Nonetheless, as compliance with Petitioner’s stipulation would reduce issues to be tried by the District Court and technical analysis already performed by the parties and the District Court likely would overlap with issues before us in an IPR, Petitioner’s stipulation remains a relevant consideration that weighs against exercising discretion to deny institution.

Thus, in view of these circumstances, we weigh *Fintiv* factors 3 and 4 as strongly weighing against exercising discretion to deny institution.

3. *Fintiv Factor 5*

Patent Owner notes that Petitioner and its real party-in-interest (WatchGuard Video, Inc., acquired by Petitioner in 2019) are the only defendants in the parallel litigation. Prelim. Resp. 17 (citing Ex. 2013). Under factor 5 the identity of the parties favors exercising discretion to deny institution.

4. *Discretionary Denial Conclusion*

In view of the stay currently in place in the District Court, Petitioner's stipulation, the potential use of overlapping subject matter in this proceeding from other proceedings, and the of the reasonable likelihood that Petitioner will succeed in its challenges, we determine that, taken as a whole, the *Fintiv* factors weigh against exercising discretion to deny institution.

V. THE '901 PATENT (EX. 1048)

The '901 patent, titled "Wearable Recording System With Memory Designation" relates to a surveillance apparatus processing images by "(1) continuously recording a stream of imaged data, (2) write protecting segments of the recorded stream, and (3) sending write protected segments from a local memory to a remote memory using a wireless transmitter." Ex. 1048, code (54), 2:18–23. As background, the '901 patent notes that "[o]ne of the major shortcomings of the existing camcorder technology is that the memory runs out too soon" and "when the memory is full, users have to return to their home/work computer or media station to transfer the recorded data from the camera to free up the memory." *Id.* at 1:38–39, 1:41–44. According to the '901 patent, there have been descriptions of cameras that can continuously save recorded images to a circular buffer, but notes that "there is still a need for a recording camera that provides better recording and editing functions." *Id.* at 1:46–2:14.

Figure 1 of the '901 patent, reproduced below, shows “a camera mounted on a pair of glasses connected to a circular buffer in a local memory that is controlled by a ring.” Ex. 1048, 3:52–54.

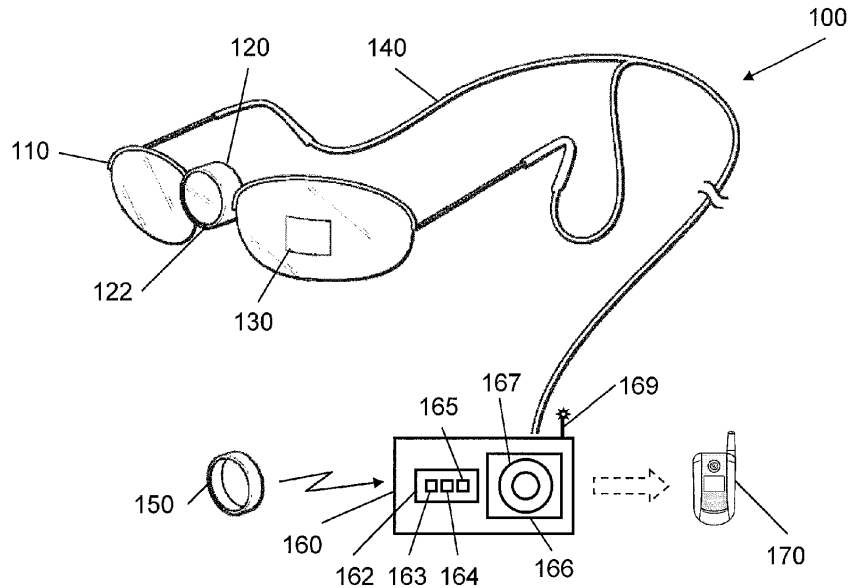


FIG. 1

Figure 1 depicts a surveillance apparatus 100 comprising eyeglasses 110 having a camera 120 mounted at the nose bridge, wherein the camera 120 is coupled to a belt-worn recorder 160 by a data and power cord 140. *Id.* at 3:64–67. Recorder 160 records audio/video data. *Id.* at 4:65–66. According to the '901 patent,

a recording facility 163 could record the data stream from camera 120 to local memory 166, a protecting facility 164 could protect segments (not shown) of recorded data on memory 166, or a sending facility 165 could transmit protected segments (not shown) of recorded data to remote memory 170.

Id. at 5:43–48. The '901 patent describes that “image data received by recorder 160 is stored in a circular buffer 167 on memory 166.” *Id.* at 6:4–6. The '901 patent also describes that signaling device 150 can be used to control the system “by turning the camera on and off, recording a portion of

image data, stop the recording, zooming in and out of image data; or transmitting protected data into the remote memory 170.” *Id.* at 7:9–14.

Figure 3 of the ’901 patent, reproduced below, shows the circular buffer of Figure 1. Ex. 1048, 3:57–58.

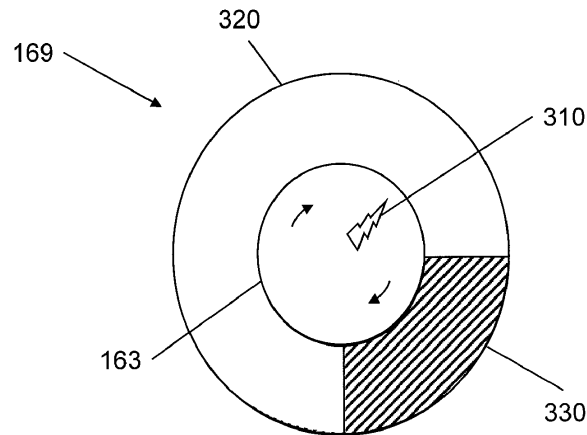


FIG. 3

Figure 3 depicts “circular buffer 167 in memory 166, with unprotected segment 320 and write-protected segment 330.” *Id.* at 7:48–50. As the recording facility 163 continuously records the data stream 310 into circular buffer 167, it records over unprotected segment 320, while skipping over protected segments 330. *Id.* at 7:52–56. According to the ’901 patent, “the portion of the circular buffer that is marked as write-protected data cannot be overwritten once the recorder loops back to the beginning of the media.” *Id.* at 7:56–59.

VI. ILLUSTRATIVE CLAIM

Claim 1, reproduced below using element numbers and paragraph numbers consistent with those in the Petition, is illustrative of the subject matter of the ’901 patent.

1[a] [(Preamble)] A recording system for saving a sequence of clips comprising:

- [b] [(Element 1)] a pair of eyeglasses having a sensor that captures sensor data;
- [c] [(Element 2)] a first memory communicatively coupled with the sensor; and
- [d] [(Element 3)] a computer processor configured to: record the sensor data in the first memory;
- [e] [(Element 4)] in response to a first trigger signal, designate for saving a first portion of the sensor data that was captured prior to occurrence of the first trigger signal, wherein the portion of the sensor data occupies a portion of the first memory that is less than the entirety of the first memory and corresponds to a length of time prior to the first trigger signal;
- [f] [(Element 5)] contiguously continuing to record the sensor data in the first memory while the first portion of the sensor data is designated for saving;
- [g] [(Element 6)] in response to a subsequent second trigger signal, designate for saving a second portion where in the second portion occupies less than the remaining entirety of the first memory not designated for saving and corresponds to a length of time prior to the second trigger signal; and
- [h] [(Element 7)] automatically overwrite portions of the sensor data that were recorded in the first memory that were not designated for saving.

VII. ASSERTED GROUNDS

Petitioner asserts that claims 1–25 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1–14, 19–25	103	Yerazunis, ³ Campbell ⁴
15, 16	103	Yerazunis, Campbell, Lewellen ⁵
17, 18	103	Yerazunis, Campbell, Fiore ⁶

³ U.S. Patent 7,158,167 B1 (Ex. 1017)

⁴ U.S. Patent No. 4,516,157 (Ex. 1059)

⁵ U.S. Patent Publication No. 2004/0008255 A1 (Ex. 1019)

⁶ U.S. Patent Publication No. 2002/0191952 A1 (Ex. 1009)

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1, 7–14, 19–25	103	Ely, ⁷ Campbell
2–6	103	Ely, Campbell, Yerazunis
15, 16	103	Ely, Campbell, Lewellen
17, 18	103	Ely, Campbell, Fiore

In support of its challenges to the claims of the '901 patent, Petitioner also cites the Declaration of Dr. Nabil J. Sarhan. Ex. 1062, Sarhan Decl.⁸

VIII. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner describes a person of ordinary skill in the art (POSITA or “ordinarily skilled artisan”) as having at least a Bachelor’s Degree in electrical engineering, computer science, or computer engineering, or undergraduate training in an equivalent field and at least two years of relevant experience in electronics technology. Pet. 8 (citing Ex. 1062, Sarhan Decl. ¶¶ 26–30). Petitioner adds that additional graduate education could substitute for professional experience, and significant work experience could substitute for formal education. *Id.* Patent Owner does not comment specifically on the level of ordinary skill in the art.

The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). As Petitioner’s description of an ordinarily skilled artisan appears consistent with the subject matter of the '901 patent and the references, we apply it for purposes of this Decision.

⁷ U.S. Patent 5,982,418 (Ex. 1020)

⁸ Another Declaration of Dr. Sarhan has also been made of record in this proceeding. *See* Ex. 1003. This Decision distinguishes references to the Sarhan Declarations by Exhibit number.

IX. CLAIM CONSTRUCTION

We interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2024). In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citations omitted).

Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

“The Board is required to construe ‘only those terms ... that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner contends that the claim terms should be given their plain meaning. Pet. 10. Nevertheless, the Petition comments on the construction of one term. *Id.*

A. A computer processor configured to

Petitioner notes that in the parallel litigation Patent Owner contends that this term is not a means plus function limitation. Pet. 10. Petitioner states that for purposes of the Petition it has applied means plus function and non-means plus function interpretations to this limitation. *Id.* For purposes of this Decision, we need not construe this claim limitation.

X. ANALYSIS

A. Introduction

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to

support the legal conclusion of obviousness”)); *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Instead, Petitioner must articulate a reason why a person of ordinary skill in the art would have combined the prior art references. *In re NuVasive*, 842 F.3d 1376, 1382 (Fed. Cir. 2016).

A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the “interrelated teachings of multiple patents”; “any need or problem known in the field of endeavor at the time of invention and addressed by the patent”; and the background knowledge, creativity, and common sense of the person of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328–29 (Fed. Cir. 2009) (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–21 (2007)).

In determining whether a claim would have been obvious in light of the prior art, when in evidence, we consider any relevant objective evidence of non-obviousness. *See Graham*, 383 U.S. at 17. Notwithstanding what the teachings of the prior art would have suggested to one of ordinary skill in the art at the time of the invention, the totality of the evidence submitted, including objective evidence of non-obviousness, may lead to a conclusion

that the challenged claims would not have been obvious to one of ordinary skill. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). At this stage of the proceeding Patent Owner does not present evidence of such objective considerations

We analyze the asserted grounds of unpatentability in accordance with these principles to determine whether Petitioner has met its burden to establish a reasonable likelihood of success at trial.

B. Petitioner’s contentions that claims 1–14 and 19–25 would have been obvious under 35 U.S.C. § 103 over Yerazunis in view of Campbell

1. *Yerazunis (Ex. 1017)*

Yerazunis discloses a video recording device that records video frames successively in a circular buffer in a continuous loop by overwriting the oldest frame stored within a buffer memory with a more recently received frame. Ex. 1017, 2:14–23. Upon detection of a trigger signal the video recording device records a predetermined number of additional frames and ceases to record further frames, resulting in a video record commencing before the triggering event and extending in time after the triggering event. *Id.* at 2:23–25, 2:55–58. In one application, such a video recording device is mounted to a targetable weapon, e.g., a gun, such that specified frame data before and after a firing event is preserved and cannot be overwritten as a result of further use of the gun or subsequent firing events. *Id.* at 3:9–31. In this embodiment, frame data associated with each subsequent firing event is stored in an unused portion of the circular buffer. *Id.* at 3:31–33.

Yerazunis states that any number of storage methods may be employed via selective addressing of the semiconductor memory. Ex. 1017, 10:42–44. In one example, Yerazunis segregates buffer segments into groups of segments, each organized as a circular buffer. *Id.* at 11:50–12:43,

Fig. 6; *see also id.* at 12:44–14:44, Figs. 7, 8 (discussing other approaches), 17:1–38 (discussing memory storage option in the gun application).

Yerazunis also states that any appropriate data transfer link and protocol, e.g., a serial output, may be used to permit downloading of recorded data to a computer for viewing. Ex. 1017, 3:1–4.

2. *Campbell (Ex. 1059)*

Campbell discloses an eyeglass frame mounted charge coupled device (CCD) video camera that transmits CCD signals to a storage means, e.g., a storage device mounted on a user's person. Ex. 1059, 2:3–10, 2:46–52, 4:43–55, 5:1–14, Figs 1–2. Campbell notes that a small buffer memory may be associated with the camera to store information from a particular frame to reduce bandwidth requirements. *Id.* at 5:18–34.

3. *Contentions concerning reason to combine the teachings of Yerazunis and Campbell*

Noting that both Yerazunis and Campbell disclose compact, mountable video recording systems, Petitioner contends an ordinarily skilled artisan would have had reason to combine the eyeglass mounted apparatus of Campbell with the teachings of Yerazunis in order to provide a hands-free instantaneous recording apparatus that for use in policing and security and in military fields. Pet. 16. Petitioner further contends that an ordinarily skilled artisan would have had a reasonable expectation of success with such a combination because Yerazunis provides a detailed disclosure of its buffer-based approach and because applying those techniques to Campbell's eyeglass mounted apparatus would have been a routine matter. *Id.* at 17 (citing Ex. 1017, 10:37–49; Ex. 1062, Sarhan Decl. ¶ 165).

Patent Owner contends that an ordinarily skilled artisan would not have had reason to combine the teachings of Yerazunis and Campbell

because Yerazunis ceases to record the data after a predetermined number of frames following a trigger. Prelim. Resp. 35–36 (citing Ex. 1017, 2:53–55). According to Patent Owner, Yerazunis contemplates capturing subsequent firing events after the initial trigger and storing subsequent event data in an unused portion of the circular buffer; and Yerazunis goes on to describe how this unused portion may be rationed in the recording of subsequent firing events until the buffer memory is full. Prelim. Resp. 36 (citing Ex. 1017, 3:28–33, 16:66–17:61, 8:53–55). Patent Owner further contends that Yerazunis uses different data decimation algorithms to save semiconductor buffer space and argues that Petitioner does not cite to any evidence in Campbell that addresses this issue. *Id.* Patent Owner does not identify claims that recite such data decimation algorithms and does not provide any further analysis of this argument.

Patent Owner summarizes its arguments by stating that, combining the teachings of Yerazunis with those of Campbell would simply yield the shortcomings of Yerazunis in the physical form factor contemplated by Campbell. *Id.* We note, however, that Petitioner cites Campbell for its disclosure of an eyeglass mounted camera form factor and not as disclosing the characteristics identified above by Patent Owner.

We are persuaded that Petitioner has demonstrated that an ordinarily skilled artisan would have had reason to combine the teachings of Yerazunis and Campbell to provide an eyeglass mounted event triggered recording device using a circular buffer. In our discussion below, we address Patent Owner’s further contentions concerning the merits of the disclosures in Yerazunis and Campbell in the context of the claimed subject matter.

4. *Claim 1*

a) *Petitioner's Contentions*

(1) *Preamble*

Petitioner cites the video recording device of Yerazunis as disclosing “[a] recording system for saving a sequence of clips” in the preamble of claim 1. Pet. 17 (citing Ex. 1017, 1:17–43, 2:12–14, 14:45–64, 15:9–13). Petitioner further notes that Campbell discloses eyeglass-mounted apparatus that can be used to record moving pictures and still pictures, using, e.g., CCD devices. *Id.* at 20 (citing Ex. 1059 code (57), 2:47–52, 3:27–33, 3:49–59). Citing the need to record certain specific events, e.g., a police-involved incident, Petitioner argues that an ordinarily skilled artisan would have had reason to combine the teachings of Yerazunis, which satisfies a need to preserve important data but allows overwriting unimportant data, and Campbell’s eyeglass camera, which was known to facilitate hands free operation and immediate recording. *Id.* at 16–17.

(2) *Elements 1 and 2*

Elements 1 and 2 (limitations 1[b] and 1[c]), respectively, recite a pair of eyeglasses having a sensor that captures data and a memory communicatively coupled with the sensor. Petitioner cites Campbell as disclosing implementing Yerazunis’s sensors in a pair of eyeglasses. Pet. 20. As evidence that Yerazunis discloses the sensor limitations, Petitioner references Figures 3 and 14 of Yerazunis, and notes that Yerazunis’s video recording device includes camera 40 having lens 44 and image sensor 46, e.g., CCD array, coupled to one or more analog to digital (A/D) converters 48 that sample of the output of image sensor 46 at predetermined intervals. Pet. 18–21. Petitioner further notes that in Yerazunis A/D converters 48 are

coupled to microprocessor 54, which may include DRAM 58 and is coupled via bus 62 to DRAM 60. *Id.* at 22–23.

(3) *Element 3*

Petitioner contends that, under any proposed claim construction, Yerezunis discloses the claimed processor configured to record the sensor data (Element 3, limitation 1[d]). Pet. 23–27. Petitioner cites Yerezunis as disclosing microprocessor 54 records sensor data (captured video) from camera 40, compresses the digitized frame data, and stores the compressed frame data in a circular buffer formed in DRAM 58. *Id.* at 23–24 (citing Ex. 1017, 6:24–26, 6:52–7:6, 10:55–67, 11:50–14:44, 17:50–59, and Figs. 3, 4a, 4b, 5–8, 14). In the alternative context of a means plus function construction, Petitioner cites Yerezunis as disclosing hardware and software that performs the claimed functions, e.g., performing the circular buffer algorithm. *Id.* at 24–27.

(4) *Element 4*

Petitioner argues that Yerezunis discloses Element 4 (limitation 1[e]) under any proposed construction. Pet. 27–33. As to the portion of the limitation that recites designating for saving a first portion of the sensor data captured prior to a first trigger, Petitioner cites Yerezunis as disclosing a device in which, in response to event sensor 70 generating a signal indicative of a gun firing event, microprocessor 54 causes specified frame data before and after the event to be preserved. *Id.* at 27. Petitioner argues that Yerezunis describes such data is write protected and cannot be overwritten as a result of further use of the gun or subsequent firing events because data associated with a subsequent firing event is stored in an unused portion of the circular buffer memory. *Id.* at 28 (citing Ex. 1017, 3:25–38, 8:26–30, 15:9–13).

Petitioner further argues that an ordinarily skilled artisan would have understood that Yerazunis indexes the write protected segment of a file in the buffer, as claimed, using a conventional tagging approach, i.e., by storing in a table, pointers that identity a collection of data for write protection and using the pointers to facilitate later retrieval of gun firing event video data. *Id.* at 33–34 (citing Ex. 1017, 6:1–13, 6:33–36, 7:23–32, 10:37–39, 10:63–67, 11:31–43, 17:45–61; Ex. 1003, Sarhan Decl. ¶ 198).

As to the claim recitation in Element 4 that the sensor data occupy a portion of memory that is less than the entirety of the memory and corresponds to a length of time prior to the trigger signal, Petitioner further notes that Yerazunis discloses the circular memory may be subdivided to accommodate a predetermined a number of gun firing events, such that the first firing event occupies less than the full buffer. *Id.* at 28 (citing Ex. 1017 19:9–29; Ex. 1062, Sarhan Decl. ¶ 190). In the context of a means plus function construction of this limitation, Petitioner identifies microcontroller⁹ 54 as the corresponding structure that performs a circular buffer algorithm. *Id.* at 29–32. Petitioner further points out that microprocessor 54 of Yerazunis write protects sensor data in the circular buffer by indexing it to an electronic index using pointers that define areas of the circular buffer not to be overwritten. *Id.* at 32 (citing Ex. 1017, 17:45–61).

(5) *Element 5*

Element 5 (limitation [1f]) recites “contiguously continuing to record the sensor data in the first memory while the first portion of the sensor data is designated for saving.” Pet. 33. Petitioner states that Yerazunis expressly

⁹ The Petition uses the terms “microcontroller” and “microprocessor” for device 54 interchangeably.

discloses “frame data ‘is protected from overwriting while video capture within the circular buffer continues,’” and cites the gun camera embodiment under the control of microprocessor 54 (a corresponding structure) as successively storing additional frames in the unused portion of the buffer memory after protecting event data. *Id.* at 33–37 (quoting Ex. 1017, 9:34–38).

(6) *Element 6*

Element 6 (limitation [1g]) recites, in response to a subsequent second trigger signal, designating for saving a second portion that occupies less than the remaining entirety of the first memory not designated for saving and corresponds to a length of time prior to the second trigger signal. Pet. 37. Petitioner notes that in the gun camera embodiment of Yerazunis microprocessor 54 (a corresponding structure) is configured to protect a second portion of sensor data based on a second trigger signal generated by event sensor 70 or capture button 72 subsequent to the first trigger signal. *Id.* at 37–40.

(7) *Element 7*

Element 7 recites automatically overwriting portions of the sensor data recorded in the first memory that were not designated for saving. Pet. 40. Petitioner cites Yerazunis as disclosing that, under the control of microprocessor 54 (a corresponding structure), absent a trigger event, the video recording device records frames successively in at least one circular buffer memory organized as a continuous loop, overwriting the oldest frame data with more recently received frame data. *Id.* at 40–41.

b) *Patent Owner’s Contentions*

Patent Owner contends that Yerazunis does not disclose the limitations that recite “designate for saving a first portion of the sensor data

that was captured prior to occurrence of the first trigger signal, wherein the portion of the sensor data occupies a portion of the first memory that is less than the entirety of the first memory and corresponds to a length of time prior to the first trigger signal” (Element 4, limitation 1[e]) and “automatically overwrite portions of the sensor data that were recorded in the first memory that were not designated for saving” (Element 7, limitation 1[h]). Prelim. Resp. 26–30. According to Patent Owner, Yerazunis fails to teach these limitations because Yerazunis “discloses a system whereby the entire buffer (*i.e.*, all data) is preserved in response to a triggering signal by ceasing to record over previously *used* (*i.e.*, recorded) portions of the buffer.” *Id.* at 27.

Patent Owner characterizes Yerazunis’s car implementation as a “simple ‘buffer-record-and-stop’” system that stores video data in a buffer until a trigger event causes the system to record a small amount of additional video and then stops recording entirely. Prelim. Resp. 28 (citing Ex. 1017, 2:19–25, 8:26–32). As discussed above, however, Petitioner also relies on the gun implementation Yerazunis discloses. Patent Owner acknowledges that Yerazunis discloses a gun implementation that pre-designates portions of the memory for multiple firing events, *e.g.*, by subdividing the circular buffer into evenly sized segments using head and tail pointers that reset upon a trigger event to allow continued recording into another unused portion of the circular buffer. Prelim. Resp. 28–29 (citing Ex. 1017, 17:9–15, 17:56–58). Patent Owner contends that in this scenario there is no write protection because Yerazunis does not designate a portion of the buffer as write protected, but instead uses pointers to switch recording to unused blocks of memory for each firing event. *Id.* at 28–29.

Patent Owner also argues that video data preservation in Yerazunis “is a step that occurs *after*, not as part of, the step of ‘continu[ing] to record for a brief interval,’” and that Yerazunis’s disclosure of a purge button to erase the contents of the circular buffer is further evidence that the entire buffer content is protected and unprotected as a whole. *See* Prelim. Resp. 29 (citing Ex. 1017, 9:47–51).

c) Claim 1 Analysis

Petitioner has demonstrated that, contrary to Patent Owner’s arguments, Yerazunis discloses write protecting a segment of the buffer. Yerazunis explicitly states that “[u]pon a firing event, specified frame data associated with that firing event both before and after the event is preserved and cannot be overwritten as a result of further use of the gun or subsequent firing event.” Ex. 1017, 3:28–31. In addition, switching from a first portion of memory to a second portion of memory to avoid overwriting the data in the first portion of memory upon the occurrence of a second trigger event is an effective approach to designating the first portion of memory as write protected. As Petitioner points out, an ordinarily skilled artisan would have understood from Yerazunis that retrieving video data for gun firing events necessitates the ability to locate the relevant video data within the buffer and that using pointers in a table to index the data allows for its later retrieval. Pet. 32 (citing Ex. 1062, Sarhan Decl. ¶ 198).

We find unavailing Patent Owner’s argument that Yerazunis’s disclosure of a purge button to erase the contents of the circular buffer is further evidence that the entire buffer content is protected and unprotected as a whole. Prelim. Resp. 29 (citing Ex. 1017, 9:47–51). It is unclear how providing an “optional” purge feature that erases the contents of the circular buffer and captured still images a “user does not desire to retain” supports

Patent Owner’s argument that Yerazunis does not disclose write protecting segments of the buffer associated with a trigger event. Ex. 1017, 9:49–53. Inclusion of this feature further supports Petitioner’s argument, as the segments of a circular buffer associated with an event are not overwritten, unless the user invokes the purge feature to erase the contents of the circular buffer.

Also unavailing is Patent Owner’s argument that video data preservation in Yerazunis “is a step that occurs *after*, not as part of, the step of ‘continu[ing] to record for a brief interval.’” See Prelim. Resp. 29. Claim 1 is an apparatus claim and does not recite “continuing to record for a brief interval.” See Ex. 1048, 12:14–42 (claim 1). Claim 1 recites “a computer processor configured to . . . contiguously continuing to record the sensor data in the first memory while the first portion of the sensor data is designated for saving.” Ex. 1048, 12:22, 30–32. Yerazunis discloses that upon detection of a trigger event a predetermined number of frames, e.g., two frames, are stored in successive frame locations within the circular buffer. Ex. 1017, 8:26–32; 12:14–28. Yerazunis further discloses that “any desired percentage of frames may be captured prior to or after the trigger event by specifying how many frames are to be captured and stored after the trigger event.” *Id.* at 8:39–42.

Patent Owner does not address the remaining limitations of claim 1. Having considered the evidence and arguments of record, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Yerazunis and Campbell and that in combination the references would have disclosed or suggested all the limitations of claim 1 to such an ordinarily skilled artisan.

5. *Claims 2–14 and 19–25*

Claim 2 recites that the processor is configured to copy the first designated portion to a second memory; claim 3 depends from claim 2 and recites that the second memory comprises a different part of the first memory; claim 4 depends from claim 2 and recites that the first designated portion is stored in the second memory using compression. Ex. 1048, 12:43–49. Petitioner cites Yerazunis as disclosing microprocessor 54 controls writing data from DRAMs to a different part of semiconductor memory, i.e., nonvolatile memory 83, and storing of compressed frame data in the next sequential location of the circular buffer. Pet. 41–42 (citing Ex. 1017, 18:4–28, 2:45–47, 6:52–55, 7:7–14, 10:63–67).

Claim 5 depends from claim 2 and recites that the processor is configured to copy to the second memory another portion of the sensor data that was captured after the occurrence of the first trigger signal. Ex. 1048, 12:50–53. Claim 6 depends from claim 2 and recites that the processor is configured to copy to the second memory another portion of the sensor data that was captured after the occurrence of the first trigger signal. *Id. at* 12:54–57. As to claims 5 and 6, Petitioner argues that because Yerazunis discloses write-protecting video data before and after an event and records continuously, it discloses capturing sensor data after the occurrence of the first trigger signal (claim 5) and during the occurrence of the first trigger signal (claim 6) and would necessarily copy that data as part of the write protected portion. Pet. 42. Claim 7 depends from claim 1 and recites including with the first designated portion another portion of the sensor data that was captured after occurrence of the first trigger signal. Ex. 1048, 12:58–61. As to claim 7, Petitioner notes that Yerazunis discloses write protecting video data before and after an event and that the pre-and post-

event data comprise an indexed, identifiable collection of data in the circular buffer. Pet. 42–43.

Claim 8 depends from claim 1 and recites that the processor is configured to transmit, via a wireless transmitter, the first designated portion to a remote memory. Ex. 1048, 12:62–64. Petitioner cites Yerazunis as disclosing microprocessor 54 includes serial output channel 78 that downloads captured and stored video images of the circular buffer of the ramp 58 to a radio transmitter to transmit signals to a base station. Pet. 43–44 (citing Ex. 1017, 3:1–2, 6:45–51, 9:60–10:3, 18:60–66, Figs. 3, 14; Ex. 1062, Sarhan Decl. ¶ 229).

Claims 9–13 depend from claim 1. Claim 9 recites that the sensor data comprises at least one of image data and video data, claim 10 recites that the first memory comprises a circular buffer, claims 11 and 12 recite that the first designated portion is stored using time compression (claim 11) or frame compression (claim 12), claim 13 recites that the recording system comprises a camera that includes the sensor interface, the first memory and the computer processor. Claim 14 depends from claim 13 and recites that the camera comprises a security camera.

Claim 19 recites that the first trigger signal represents the detection of at least one of several types of events, including motion, sound, and images.

Claim 20 depends from claim 1 and recites that the processor is configured to write-protect the first designated portion as a write-protected portion in the first memory. Claim 21 depends from claim 20 and recites that the processor is further configured to free the write-protected portion following the transmission of the first designated portion.

Claims 22 and 23 depend from claim 1 and recite that the processor is configured to index in the first memory the first designated portion (claim

22) and to index the first designated portion while the recording facility is still recording the sensor data into the first memory (claim 23).

Claim 24 depends from claim 1 and recites that the processor is configured to record the sensor data continuously from before the first trigger signal, through a pre-designated time period, and after the pre-designated time period.

Claim 25 depends from claim 1 and recites that the first portion of the sensor data also corresponds to a predetermined length of time after the trigger signal.

Petitioner cites Yerazunis as disclosing the limitations recited in claims 2–14 and 19–25 and cites specific references to support its contentions. Pet. 41–51. Patent Owner does not rebut Petitioner’s contentions concerning these claims. Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated that Yerazunis would have disclosed or suggested to an ordinarily skilled artisan the limitations recited in 2–14 and 19–25.

C. Petitioner’s contentions that claims 15 and 16 would have been obvious over Yerazunis in view of Campbell in further view of Lewellen

1. *Lewellen (Ex. 1019)*

Lewellen discloses a vehicle video system, e.g., in a passenger car, having a camera that records video information in a digital video recorder using digital media, e.g., a hard disk or recordable CD. Ex. 1019 ¶ 10. Lewellen’s vehicle video system includes a local wireless interface, e.g., a Bluetooth compatible interface, that automatically connects to a compatible device in an area where the vehicle parks that is coupled to a database, such that recorded data from the vehicle can be automatically transferred to the database when the vehicle is parked. *Id.* ¶¶ 42–45. The local wireless

interface also allows other devices, e.g., a handheld device in a different vehicle, to access the stored video information. *Id.* ¶ 47.

2. *Claims 15 and 16*

Claim 15 depends from claim 1 and further recites a cell phone including the sensor interface, the first memory, and the computer processor. Claim 16 depends from claim 1 and recites that the recording system further comprises a personal area network coupled to the computer processor and includes at least two of the following: the sensor interface¹⁰, the first memory, and the computer processor. Petitioner argues that, to the extent Yerazunis and Campbell do not explicitly disclose the limitations of claims 15 or 16, a person of ordinary skill would have had reason to combine their teachings with those of Lewellen to arrive at the claimed subject matter. Pet. 51–55. Petitioner cites Lewellen as disclosing a cell phone with the camera, memory, and processor, (claim 15), long-distance wireless interface 382 in mobile data terminal 380 that enables communication with police headquarters, and local wireless interface 390 that enables communication with nearby devices via short range wireless communications. *Id.* at 52 (citing Ex. 1019 ¶¶ 30–31, Fig 3). As to claim 16, Petitioner argues that Lewellen discloses the claimed personal area network because it discloses the use of a Bluetooth wireless interface for coupling to Bluetooth-compatible devices, similar to that disclosed in the subject '901 patent. *Id.* at 53 (citing Ex. 1048, 6:31–36, 7:22–28, 10:17–49). According to Petitioner, an ordinarily skilled artisan would have had reason to apply Lewellen's teachings of a personal area network to the combined teachings

¹⁰ There is no antecedent for the sensor interface recited in claims 13, 15, and 16.

of Yerazunis and Campbell, at least in the context of law enforcement applications discussed in all three references, to allow a police officer to offload critical video evidence for safe storage on another device. *Id.* at 53–54.

Patent Owner does not rebut Petitioner’s contentions concerning these claims. Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated that an ordinarily skilled artisan would have had reason to combine the teachings of Lewellen with those of Yerazunis and Campbell and that in combination these teachings would have disclosed or suggested to an ordinarily skilled artisan the limitations of claims 15 and 16.

D. Petitioner’s contentions that claims 17 and 18 would have been obvious over your Yerazunis in view of Campbell, and further view of Fiore

1. *Fiore*

Fiore discloses recording and playback devices that record using a circular buffer that over-writes older data and responds to a trigger (or event) by transferring the contents of the circular buffer to an intermediate storage location for future playback based on predetermined pre-trigger and post-trigger times, such that the data at an intermediate location is stored as a plurality of sequential files, each containing a small time duration. Ex. 1009 ¶¶ 5–6, 21. In one implementation, a memory device is adapted to receive and temporarily store input data signals for a monitoring device as time stamped data frames, and a circular storage buffer has a memory mapped file with the same address space as the memory device. *Id.* ¶ 20. The circular buffer is adapted to receive the temporarily stored data from the memory device and store the input signal data in the memory mapped file. *Id.*

An event process copies a plurality of data frames stored in the circular buffer that have time stamps proximate to the time of the event into additional secondary memory mapped files, each containing a single event, indexed from a database; an access controller is adapted to receive the plurality of data frames that have time stamps proximate to the time of the event from the event database, allowing a client device to display the plurality of data frames copied from the circular storage buffer without interrupting simultaneous recording of new input signal data into the circular storage buffer. *Id.* ¶¶ 22–23. Upon the occurrence of an external event (as indicated via an event signal generated by a sensor, time stamps associated with the event are stored in event database 23, and “the input signal data being stored in the circular storage buffer 15 [is marked] . . . to thereby flag the location of an occurrence of an external event in the circular storage buffer.” *Id.* ¶¶ 41, 48, 50–51. An event processor copies data frames associated with the event—including “frames before, during, and after the event”—to file system 17. *Id.* ¶¶ 48, 51. The use of files in the circular storage buffer 15 for indexing event data enables such data to be offloaded to the file system 17 for permanent preservation. *Id.* ¶¶ 22, 51.

2. *Contentions concerning reasons to combine the teachings of Yerazunis and Fiore*

Petitioner contends that an ordinarily skilled artisan wanting further guidance as to methods for implementing the circular buffer disclosed in Yerazunis would have had reason to consider the teachings of Fiore, which discloses circular storage buffer 15 storing data frames of an input signal from monitoring device 6. Pet. 56 (citing Ex. 1009 ¶¶ 3, 40; Ex. 1062, Sarhan Decl. ¶¶ 141–150). In particular, Petitioner identifies as relevant disclosure in Fiore its description of indexing collections of frame data for

respective events as files within a memory mapped file to improve access speed by making the indexing of the data in the memory mapped file transparent to the circular storage buffer. *Id.* at 57–58 (citing Ex. 1009 ¶¶ 65, 67–68, 72).

Patent Owner contends that Petitioner fails to articulate reasons why an ordinarily skilled artisan would have combined the teachings of Yerazunis (and/or Campbell) with those of Fiore, because Fiore distinguishes itself from specialized devices by discouraging reliance on proprietary hardware architectures that are not readily transferable to event recording and playback devices. Prelim. Resp. 36–37 (citing Ex. 1009 ¶ 9). Patent Owner adds that Fiore is directed to programmable computers such as personal computer and servers. *Id.* Patent Owner’s arguments are not persuasive as Fiore “generally relates to a data recording and playback systems for monitoring processes or occurrences of events which allows the replay and/or an analysis of a time sampled signal.” Ex. 1009 ¶ 3. Fiore also notes the desirability of providing flexibility to operate in different environments and explicitly states “a computer based implementation of the event recording and playback devices is desirable since such computers provide the flexibility to be adapted for various applications.” *Id.* ¶ 9.

For the reasons discussed above, we are persuaded that Petitioner has demonstrated an ordinarily skilled artisan would have had reason to combine the teachings of Yerazunis (and/or Campbell) with those of Fiore.

3. *Claims 17 and 18*

Claim 17 depends from claim 1 and recites that the first memory is configured to record the first designated portion of the sensor data in a file; claim 18, which also depends from claim 1, recites that the first memory is configured to record the first designated portion of the sensor data in a single

file. Ex. 1048, 19–24. Arguing that the term “file” should be interpreted as “an identifiable collection of data,” Petitioner cites Yerazunis as disclosing that during write-protection microprocessor 54 stores pointers that define areas of the circular buffer not to be overwritten, thus providing an electronic index to each write-protected segment, i.e. “a single file” in the buffer to allow later retrieval. Pet. 55–56 citing Ex. 1017, 17:45–61). To the extent Yerazunis is found not to disclose the limitations recited in claims 17 and 18, Petitioner cites Fiore’s circular storage buffer 15 as disclosing a single, memory-mapped file and argues that Fiore discloses indexing collections of frame data for respective events as files within the memory-mapped file. Pet. 56–57 (citing Ex. 1009, 3, 22–23, 40, 47, 51, 59–60, 68; Ex. 1062, Sarhan Decl. ¶¶ 141–150).

Emphasizing that Yerazunis does not use the term “file,” Patent Owner contends that Yerazunis contemplates outputting data by a serial file transfer for download to another device, e.g., a computer for viewing recorded frame data. Prelim. Resp. 31–32. According to Patent Owner, nowhere does Yerazunis, Campbell, or Fiore disclose storing a “file” within the circular buffer itself. *Id.* at 32. Patent Owner’s contentions are based on its assertion that in the ’901 patent the term “file” is not an identifiable collection of data, but indicates something that would facilitate the exchange of data and eliminate the need for further processing. *Id.* Patent Owner cites arguments made to the Examiner during prosecution of related U.S. Patent 7,593,034 (“the ’034 patent”) that the data streams are recorded in a circular buffer as a first file using a digital video file format and a write protected portion is indexed in a second distinct file in the circular buffer. *See id.* at 31 (citing Ex. 1013, 285–286).

The arguments Patent Owner references in the prosecution of the '034 patent were made in support of language added to claim 1 of the '034 patent that explicitly recites “indexing the write-protected portion as a second distinct file in the circular buffer.” *See* Ex. 1013, 282, 284, 286. The claims of the '901 patent do not recite such a limitation. Claim 1 recites that the first portion of the sensor data, i.e., data captured prior to a first trigger signal, is designated for saving (the first designated portion of the sensor data) to occupy a portion of the memory that is less than the entirety of the memory. Ex. 1048, 12:23–28. The additional recitation in claim 17 reciting that the memory is configured to record the first designated portion of the sensor data in a file does not limit the file to any particular form and does not require a second file in the circular buffer, as argued by Patent Owner.

We further note that Patent Owner's arguments in the Preliminary Response and its arguments in the prosecution history of the '034 patent do not cite written description support for Patent Owner's assertion. Prelim. Resp. 31–32; Ex. 1013, 285–286. The Specification of the '901 patent describes one embodiment in which the protected data is copied to a memory separate from the circular memory, e.g., to a separate file within a local memory. Ex. 1048, 10:6–8. The Specification also states that multiple segments of protected data can be stored as a series of protected files in a directory structure, and that upon completion of copying of the protected data to the remote memory, i.e., memory that is not part of the circular buffer, the corresponding segment of the circular buffer can be re-designated as not protected. *Id.* at 10:6–16. Moreover, the '901 patent Specification refers to treating and storing the data in the circular buffer as a single file when the recorder is turned on, and states that if no recording is protected, “the entire file will be erased and recording will start at the beginning of the

circular buffer.” *Id.* at 6:22–31. The implication of treating the entire buffer as a file (or a single file) is that portions of the buffer are also treated as files, i.e., a protected portion of the memory is treated as a file of data within the circular buffer.

In consideration of the above, we are persuaded that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of the references and that in combination they would have disclosed or suggested the limitations of claims 17 and 18 to such an ordinarily skilled artisan.

E. Petitioner’s contention that claims 1, 7–14, and 19–25 would have been obvious over Ely in view of Campbell

1. *Ely*

Ely discloses a video surveillance system that responds to a sensor device alarm condition by generating a storage signal that inhibits overwriting of the oldest stored video data, e.g., compressed digital video data in a ring buffer storage device. Ex. 1020, 2:55–3:21, 3:56–4:8, Figs. 2–3. Analog video signals from camera 130 are routed to memory board 136, where they are converted by digitizer 146 and coder/decoder 148, e.g., according to the H.261 digital video compression standard, and are stored in a RAM, EEPROM, or flash memory device 150. *Id.* at 6:48–7:11. Control circuit 134 controls addressing and writing of video data into memory 150, such that the memory functions as a ring buffer. *Id.* at 7:28–31, Fig. 4. In ring buffer 150, currently generated compressed video data overwrites the oldest compressed video data until the occurrence of an alarm event inhibits such overwriting; live compressed video is then written into a portion of memory device 150 that does not hold video data to be preserved. *Id.* at 7:31–38; Fig. 4. In operation, controller 134 carries out process 160 to

protect from overwriting stored compressed digital data in ring buffer 150 that corresponds to a time interval beginning at a predetermined time before receipt of the alarm command and continuing for a predetermined time after receipt of the alarm command. *Id.* at 7:45–55, Fig. 4. The protected data is then available for retrieval, display, and permanent recording via VCR 110. *Id.* at 10:11–23. In response to a clear command, the control circuit removes a previously protected block of stored video data from protection, thereby permitting live video data to write over the now unprotected stored video data. *Id.* at 8:7–12.

2. *Petitioner's contentions concerning reasons to combine the teachings of Ely and Campbell*

Noting that, like Ely, Campbell discloses a recording device useful in the security and military fields, Petitioner contends that an ordinarily skilled artisan would have been motivated to implement Ely's surveillance system in Campbell's eyeglass mounted apparatus to provide hands free and almost instantaneous recording of the scene. Pet. 60. Petitioner also contends that an ordinarily skilled artisan would have had reason to implement Ely's circular buffer and Campbell's eyeglass mounted device to capture multiple events without overwriting event data in response to a trigger signal. *Id.* at 61 (citing Ex. 1020, 1:52–56, 5:50–55).

Noting that an objective of Ely is to provide a video surveillance system in which a human operator can control the buffering and permanent recording of video signals generated by all the video cameras in the system, Patent Owner contends that Petitioner has not demonstrated a reason to combine the teachings of Ely and Campbell. Prelim. Resp. 41 (citing Ex. 1020, 2:43–47). Citing the prosecution history of Ely, Patent Owner argues that Ely's emphasis on transmitting recorded video to a central station from

the remote camera unit is fundamentally at odds with the self-contained camera disclosed in Campbell. *Id.* (citing Ex. 2014, 82–84, 92–93, 99–100, 108–109). According to Patent Owner, an ordinarily skilled artisan would not have been motivated to combine Ely with Campbell to arrive at the system recited in claim 1 because neither reference contemplates that principle. *Id.* (citing Ex. 1048, 12:14–41). Patent Owner’s motivation to combine arguments are unavailing because, as discussed above, in Ely controller 134 carries out process 160 to protect from overwriting stored compressed digital data in ring buffer 150 that corresponds to a time interval beginning at a predetermined time before receipt of the alarm command and continuing for a predetermined time after receipt of the alarm command. *Id.* at 7:45–55, Fig. 4.

3. *Claim 1*

a) *Elements 1–3*

As to the recording system for saving a sequence of clips recited in the preamble of claim 1, Petitioner cites Ely as disclosing a video surveillance system in which a camera unit or units respond to an alarm command by protecting buffered video data that corresponds to a pre- and post- alarm time period. Pet. 62 (citing Ex. 1020, 10: 10–15, 10:59–11:8). Petitioner further notes that Campbell discloses such a device. *Id.*

As to the sensor in Element 1, Petitioner cites Ely’s video surveillance system as including camera 130 in which an image formed by optical system 138 is converted at CCD 142 into an electrical signal that is subjected to conventional analog signal processing at video processing circuit 144. Pet. 62 (citing Ex. 1020, Fig. 3; Ex. 1062, Sarhan Decl. ¶¶ 266–267). Petitioner cites Campbell as capturing such a sensor data in a pair of eyeglasses. *Id.* at 63–64.

As to the memory recited in Element 2, Petitioner cites Ely as disclosing that camera 130 is coupled to memory board 136, which receives, digitizes, compresses, and stores the video signal in memory device 150. Pet. 64 (citing Ex. 1020, 6:48–65, Fig. 3).

As to the computer processor recited in Element 3, Petitioner cites Ely’s camera unit 114 as including control circuit 134 (“computer processor”) for controlling the storage device to operate as a ring buffer in which digital data representative of the video signal currently formed by the video camera is written over the oldest digital data stored in the device. Pet. 65 (citing Ex. 1020, 4:1–7, Fig. 3). Petitioner contends that Ely discloses Element 3 whether or not the claim is interpreted as a means plus function limitation. *Id.* at 65–68. Petitioner notes that under the control of control circuit 134, memory device 150 functions to record sensor data as a ring buffer for the video signals generated by camera 130 and currently generated compressed video data is written over the oldest compressed video data previously stored in the memory. *Id.* (citing 7:28–34).

Patent Owner does not explicitly respond to Petitioner’s contentions concerning the preamble and Elements 1–3 of claim 1. We are persuaded that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Ely and Campbell and that their combined teachings would have disclosed or suggested Elements 1–3 to such an ordinarily skilled artisan.

b) Element 4

Petitioner cites Ely as disclosing process 160 in which control circuit 134 protects compressed digital video data previously recorded in memory 150 from being overwritten when an alarm command is received. Pet. 68 (citing Ex. 1020, 7:48–55). Petitioner notes that the alarm data corresponds

to a time interval that begins at a predetermined time prior to receipt of the alarm command and continues for a predetermined time after receipt of the alarm command. *Id.* Thus, according to Petitioner, control circuit 134 of Ely performs the claimed function of element 4. *Id.* at 69 (citing Ex. 1062, Sarhan Decl. ¶¶ 283–285). Petitioner further notes that Ely discloses the camera unit’s buffer memory may contain multiple blocks of event data such that the first event occupies less than the entirety of the buffer, as claimed. *Id.* (citing Ex. 1020, 10:56–11:8; Ex. 1062, Sarhan Decl. ¶ 286). Noting that Ely’s control circuit 134 uses software to accomplish the function of element 4, Petitioner contends that Ely discloses Element 4, whether or not the limitation is treated as a means plus function limitation. *Id.*

Patent Owner acknowledges that Ely discloses recording in a circular buffer by overwriting the next oldest frames and inhibiting the overwriting of previously recorded data in response to an event signal. Prelim. Resp. 38 (citing Ex. 1020, 2:65–3:16, 4:1–8). According to Patent Owner, the protection mechanism in Ely is different from the claimed subject matter because the protection mechanism applies to the entire circular buffer, not a select portion. *Id.* at 38–39. Patent Owner argues that in response to an alarm signal Ely’s ring buffer stops overwriting its oldest data, as a circular buffer would otherwise be configured to do, but instead looks to store new (live compressed video) data into a different portion of memory in order to preserve previously captured data. *Id.* at 39 (citing Ex. 1020, 7:28–38). According to Patent Owner, preserving data by inhibiting the overwriting of the oldest data in response to an alarm signal is at odds with the claimed requirement of “automatically overwrit[ing] portions of the sensor data that were recorded in the first memory that were not designated for saving.” *Id.*

Patent Owner's argument that Ely's approach is distinguished from element 4 of claim 1 is unavailing. Ely discloses using memory 150, configured to serve as a ring buffer in which the oldest data is overwritten until an event alarm triggers the system, to protect against overwriting compressed video stored in circular memory 150 in a section of memory that corresponds to a time interval beginning at a predetermined time prior to receipt of the alarm and continuing for a predetermined time after receipt of the alarm. Ex. 1020, 7:29–38, 45–55. Thus, Ely's ring buffer operates to overwrite previously stored data, except in the sections designated as protected.

c) Elements 5 and 6

As to claim Element 5, the continuous recording of sensor data in the first memory while the first portion of the sensor data is designated for saving, Petitioner cites Figure 4 of Ely as illustrating that the protection of alarm data at block 160 loops back to the beginning of the process, which includes block 154, i.e. storing live compressed video data. Pet. 72 (citing Ex. 1020, Fig. 4, 7:45–48, 8:3–6). Petitioner notes that, because the recording of the live video data is ongoing, Ely discloses the protection of the alarm data necessarily occurs while continuing to record the sensor data in the first memory. *Id.* at 73. Noting that Ely also discloses write protecting multiple blocks (events) in a ring buffer, Petitioner argues an ordinarily skilled artisan would have understood that to preserve video for multiple events in the ring buffer Ely must “contiguously” continue to record the sensor data in memory, while designating the first portion for saving. *Id.* (citing Ex. 1062, Sarhan Decl. ¶¶ 295–297).

As to Element 6, Petitioner argues that Ely's control circuit 134 is configured to protect a second portion of sensor data in the ring buffer

associated with the second alarm in much the same way that Ely operates relative to a first alarm. Pet. 74–75.

Petitioner contends that Ely discloses claim Elements 5 and 6, whether or not the limitations are considered to be means plus function limitations. Patent Owner does not respond explicitly to Petitioner’s contentions concerning Elements 5 and 6, and we are persuaded that Petitioner has demonstrated that Ely would have disclosed or suggested these limitations to an ordinarily skilled artisan.

d) Element 7

Element 7 recites automatically overwriting portions of the sensor data in the memory that were not designated for saving. Petitioner cites Ely’s control circuit 134 as controlling memory addressing and writing of data into the memory, such that the memory 150 serves as a ring buffer in which data not designated for saving is overwritten. Pet. 76–77 (citing Ex. 1020, 7:28–34, 7:45–48, 7:56–8:6, 10:11–23, Fig. 4). Petitioner further contends that Ely teaches this element whether or not it is considered to be a means plus function limitation. *Id.*

Patent Owner contends that “[a]s with Yerazunis, the Ely approach to data preservation by ‘*inhibiting*’ the overwriting of the oldest data in response to an alarm signal is at odds with the claim limitation ‘automatically overwrite portions of the sensor data.’” Prelim. Resp. 39 (alteration omitted). Consistent with our conclusion that Yerazunis teaches this limitation, we are persuaded that Petitioner has demonstrated the limitation is taught by Ely. *See* Section X.B.5 herein

e) Claim 1 conclusion

Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated a person of ordinary skill would

have had reason to combine the teachings of Ely and Campbell and that these combined teachings would have disclosed or suggested all the limitations of claim 1 to such an ordinarily skilled artisan.

4. *Claims 7–14 and 19–25*

Claims 7–14 and 19–25 depend directly or indirectly from claim 1 and recite additional system details. These details are discussed above in our analysis of Petitioner’s challenges under Yerazunis. Petitioner cites similar disclosure in Ely and Campbell as to the subject matter of claims 7–14 and 19–25. Pet. 77–83. Patent Owner does not explicitly respond to Petitioner’s contentions concerning the additional limitations recited in claims 7–14 and 19–25.

Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Ely and Campbell and that these combined teachings would have disclosed or suggested all the limitations of claims 7–14 and 19–25 to such an ordinarily skilled artisan.

F. Petitioner’s contentions that claims 2–6 would have been obvious over Ely in view of Campbell, in further view of Yerazunis

Petitioner contends that an ordinarily skilled artisan would have had reason to apply the teachings of Yerazunis concerning copying protected data to a second memory to the teachings of the Ely/Campbell combination to provide nonvolatile data storage and redundancy. Pet. 83–84. Petitioner further contends that, to the extent Ely and Campbell do not disclose the limitations of claims 2–6, these limitations would have been obvious in view of Yerazunis for reasons similar to those addressed in our discussion of Yerazunis above. *Id.* Patent Owner does not respond explicitly to Petitioner’s contentions for claims 2–6.

Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Yerazunis with those of Ely and Campbell and that these combined teachings would have disclosed or suggested all the limitations of claims 2–6 to such an ordinarily skilled artisan.

G. Petitioner’s contention that claims 15 and 16 would have been obvious over Ely in view of Campbell, in further view of Lewellen

As to claim 15, Petitioner contends that an ordinarily skilled artisan would have recognized the advantages of modifying the Ely/Campbell combination to implement Lewellen’s teachings regarding personal area networks for transmitting alarm data preserved with the file based circular buffer approach disclosed in Ely and Campbell. Pet. 84–85. As to claim 16, citing the ubiquity of Bluetooth-compatible mobile phones carried by security professionals on a daily basis, Petitioner contends that an ordinarily skilled artisan would have had reason to implement the Ely/Campbell combination or component thereof (e.g., a camera unit) using a cell phone comprising a sensor interface, memory, and computer processor. *Id.* at 85–86. Patent Owner does not respond explicitly to Petitioner’s contentions concerning claims 15 and 16.

Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Lewellen with those of Ely and Campbell and that these combined teachings would have disclosed or suggested all the limitations of claims 15 and 16 to such an ordinarily skilled artisan.

H. Petitioner's contention that claims 17 and 18 would have been obvious over Ely in view of Campbell, in further view of Fiore

Petitioner argues that to the extent an ordinarily skilled artisan wanted further guidance as to methods of implementing Ely's ring buffer and recording sensor data into it, such a person would have been motivated to consider the teachings of Fiore because Ely and Fiore describe similar technologies and solve similar problems. Pet. 86. Similar to its reliance on Fiore in combination with Yerazunis, Petitioner relies on Fiore for its teachings of memory-mapped files in the context of Ely and Campbell. *Id.*

Similar to its arguments concerning the combination of Fiore with Yerazunis, Patent Owner argues that an ordinarily skilled artisan would not have had reason to combine the teachings of Ely and Fiore because Ely's goals are at odds with the objectives of Fiore. Prelim. Resp. 42–43. Patent Owner also repeats its arguments that Fiore does not disclose creating or storing individual event files within a buffer. *Id.* at 44–45.

For reasons similar to those discussed above in our analysis of the combined teachings of Yerazunis and Fiore, we determine that Petitioner has demonstrated that a person of ordinary skill in the art would have had reason to combine the teachings of Fiore with those of Ely and Campbell and that in combination these teachings would have disclosed or suggested the limitations of claims 17 and 18 to such an ordinarily skilled artisan.

XI. CONCLUSION

Having considered the arguments and evidence currently of record, for the reasons discussed above, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will succeed on each of its challenges to patentability. These are:

Claims 1–14 and 19–25 as obvious over Yerazunis in view of Campbell;

Claims 15 and 16 as obvious over Yerazunis in view of Campbell, and in further view of Lewellen;

Claims 17 and 18 as obvious over Yerazunis in view of Campbell, and in further view of Fiore;

Claims 1, 7–14, and 19–25 as obvious over Ely in view of Campbell;

Claims 2–6 as obvious over Ely in view of Campbell, in further view of Yerazunis;

Claims 15 and 16 as obvious over Ely in view of Campbell, and in further view of Lewellen;

Claims 17 and 18 as obvious over Ely in view of Campbell, and in further view of Fiore.

XII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a) an *inter partes* review of the '901 patent is hereby instituted, commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

FURTHER ORDERED that the trial is authorized on all grounds set forth in the Petition, and

FURTHER ORDERED that the trial will be conducted in accordance with a corresponding separately issued Scheduling Order.

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Patent 10,523,901 B2

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