

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.,
Petitioner,

v.

STELLAR LLC,
Patent Owner.

IPR2024-01206
Patent 9,485,471 B2

Before BRIAN J. McNAMARA, ROBERT L. KINDER, and
NABEEL U. KHAN, *Administrative Patent Judges*.

McNAMARA, *Administrative Patent Judge*.

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

I. INTRODUCTION

Motorola Solution, Inc. (“Petitioner”) filed a petition, Paper 1 (“Petition” or “Pet.”), to institute an *inter partes* review (“IPR”) of claims 1–13 (the “challenged claims”) of U.S. Patent No. 9,485,471 B2 (“the ’471 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. 35 U.S.C. § 314 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.”

A decision to institute under § 314 may not institute on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). In addition, 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

The Petition identifies itself (Motorola Solutions, Inc.) and WatchGuard Video, Inc. as real parties-in-interest. Pet. 77. Patent Owner identifies itself (Stellar LLC) as its real party-in-interest. Paper 4, 1.

III. RELATED MATTERS

The parties state that the '471 patent is asserted in the following litigation: *Stellar, LLC v. Motorola Solutions, Inc., et al.*, 4:23-cv-750 (EDTX) (“the parallel litigation”). Pet. 77; Paper 4, 1.

IV. EXERCISE OF DISCRETION

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

In the Preliminary Response, Patent Owner contends that we should exercise our discretion to deny the Petition in favor of the parallel litigation. Prelim. Resp. 5–18. 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 several clarifications concerning the application of the *Fintiv* Factors. *See Interim Procedure For Discretionary Denials In AIA Post-Grant Proceedings With Parallel District Court Litigation*, issued June 21, 2022 (“Guidance Memo”).¹ The Director’s memo states that “the precedential import of *Fintiv* is limited to the facts of that case.” Guidance Memo 2. Under the Guidance Memo “the PTAB will not rely on the *Fintiv* factors to discretionarily deny institution in view of parallel district court litigation where a petition presents compelling evidence of unpatentability.” Guidance Memo 2.

[C]ompelling, meritorious challenges will be allowed to proceed at the PTAB even where district court litigation is proceeding in parallel. Compelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence.”

Guidance Memo 4.

The Guidance memo further states

[c]onsistent with *Sotera Wireless, Inc.*, the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.

Guidance Memo, 3. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A).

The Guidance memo also states

¹ Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

when considering the proximity of the district court's trial date to the date when the PTAB final written decision will be due, the PTAB will consider the median time from filing to disposition of the civil trial for the district in which the parallel litigation resides.

Guidance Memo 3². With these factors and guidance in mind, we consider parties' contentions.

1. *Factors 1, 2, and 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. 16 (citing Ex. 2013). Patent Owner also notes that Petitioner has not sought a stay in the parallel litigation and argues that a stay is unlikely because the court has entered an order setting trial to begin shortly after a Decision to Institute would be entered in this proceeding. Prelim. Resp. 9–10; Ex. 2006, 1 (Order setting trial date for March 10, 2025). Taken alone, factors 1, 2, and 5 favor exercising discretion to deny institution.

2. *Factors 3, 4, and 6*

Patent Owner emphasizes that, given the advanced state of the parallel litigation, 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

² See <https://www.uscourts.gov/statistics-reports/analysis-reports/federal-court-management-statistics>.

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 12–13. 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 13.

Although we are sensitive to the expenditure of time and effort preparing for trial in the parallel litigation, we also recognize the limited time and resources available in conducting a trial in the parallel litigation. Patent Owner’s infringement case alone, involving over 850 claim charts, could present a substantial, if not overwhelming, burden on the district court’s resources. Trying invalidity issues adds to that burden.

Patent Owner acknowledges that “Petitioner’s expert report on validity repeats all of the assertions in this Petition.” Prelim. Resp. 13. Thus, a significant portion of the resources consumed in preparing for trial would likely be useful in this proceeding. On November 11, 2024, Petitioner offered a stipulation, stating that, upon institution of this proceeding, Petitioner “will not pursue as to the challenged claims any ground raised or that reasonably could have been raised during the IPR” in the parallel litigation. *See* Ex. 1043 (filed in this proceeding Nov. 27, 2024). Petitioner’s stipulation applies to the following proceedings, which includes this proceeding: IPR2024-01205, challenging claims 1–20 of U.S. Patent No. 7,593,034; IPR2024-01206, challenging claims 1–13 of U.S. Patent No. 9,485,471; IPR2024-01207, challenging claims 1–22 of U.S. Patent No.

8,692,882; and IPR2024-01208, challenging claims 1–23 of U.S. Patent No. 9,912,914.

As all the claims of the '471 patent are challenged in this proceeding, Petitioner's stipulation applies to the entirety of the '471 patent. In view of Petitioner's stipulation, the substantial number of issues to be addressed in the District Court, Patent Owner's acknowledgement that Petitioner's expert report in the parallel litigation repeats the assertions in this Petition, and the potential reduction of issues to be tried in the parallel litigation, our weighing of the factors is against exercising discretion to deny institution. As discussed below, we also recognize that Petitioner's contentions have merit.

In consideration of the above, we decline to exercise discretion to deny institution. We now address the substantive issue presented in the Petition.

V. THE '471 PATENT

The '471 patent concerns a surveillance apparatus that processes images by (1) continuously recording a stream of image 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 1001, 2: 12–17. Such an apparatus includes a camera, e.g., a camera mounted on a pair of glasses, coupled to a local memory with a circular buffer organized into a series of memory segments that loops back on itself; the memory is organized into available segments and write protected segments that can be skipped over. *Id.* at 2:18–33; Fig. 1).

A video stream is recorded continuously (every half second over a 10 second loop period) until a signal generated, e.g., by a change in the image, a sound, or a user-initiated signal, is sent to a protecting facility that

designates a segment of the circular buffer to be write protected, preventing that segment from being overwritten during the next recording loop. *Id.* 2:35–44. The write protected memory portions can be electronically indexed using a memory heap or a clustered index and are preferably stored as separate files in the memory, such as in physically dis-contiguous parts of the circular buffer. *Id.* at 2:53–56.

VI. ILLUSTRATIVE CLAIM

Claim 1 reproduced below with paragraph designations corresponding to those used in the Petition³ is illustrative of the subject matter of the '471 patent.

- 1[a]. An apparatus, comprising:
 - [b] a sensor having a data capturing component that captures sensor data;
 - [c] a local memory functionally coupled to the sensor,
 - [d] a recording facility that records the sensor data into available portions of a buffer in the local memory; and
 - [e] a protecting facility that responds to a signal to record the sensor data by designating a segment of the buffer as a write-protected segment and by indexing the write protected segment as a file in the buffer, wherein the write-protected segment includes a pre-recorded subset recorded before the signal is received and a post recorded subset to be recorded after the signal is received.

See Pet. 24–31.

VII. ASSERTED GROUNDS

Petitioner asserts that claims 1–13 would have been unpatentable on the following grounds:

³ Petitioner designates paragraph 1[a] as the Preamble and limitations 1[b]–1[d] as Elements 1–4.

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1, 2, 4–7, 10, 12, 13	103	Yerazunis, ⁴ Fiore ⁵
3, 8, 9	103	Yerazunis, Fiore, Lwellen ⁶
11	103	Yerazunis, Fiore, Mann ⁷
1, 2, 4–7, 10, 12, 13	103	Ely, ⁸ Fiore
3, 8, 9	103	Ely, Fiore, Lewellen
11	103	Ely, Fiore, Mann

In support of the Petition, Petitioner also cites the testimony of Dr. Nabil J. Sarhan. Ex. 1003, Declaration of Nabil J. Sarhan (“Sarhan Decl.”).

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. 7 (citing Ex. 1003, Sarhan Decl. ¶¶ 24–25). Petitioner further states that “[a]dditional graduate education could substitute for professional experience, and significant work experience could substitute for formal education.” *Id.* Patent Owner does not address the qualifications of a person of ordinary skill in the art. *See generally* Prelim. Resp.

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*

⁴ U.S. Patent 7,158,167, issued Jan. 2, 2007 (Ex. 1017)

⁵ U.S. Patent Publication No. 2002/191952, published Dec. 19, 2002 (Ex. 1009)

⁶ U.S. Patent Publication No. 2004/008255, published Jan. 15, 2004 (Ex. 1019)

⁷ EP 1,064,783, published June 4, 2003 (Ex. 1015)

⁸ U.S. Patent 5,982,418, issued Nov. 9, 1999 (Ex. 1020)

re Oelrich, 579 F.2d 86, 91 (CCPA 1978). As Petitioner’s proposed description of a person of ordinary is commensurate with the subject matter of the ’471 patent and the references, we apply Petitioner’s description for purposes of the Decision.

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) (2019). 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) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1582 (Fed. Cir. 1996) (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 (citing *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)).

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 proposes constructions for two terms, as discussed below.

A. A local memory functionally coupled to the sensor

Noting that the term is explicitly defined in the '471 patent Specification, Petitioner proposes that we construe “a local memory functionally coupled to the sensor” to mean “a memory that is distanced less than 20 cm from the camera and is coupled to the camera using entirely physical connectors.” Pet. 9 (citing Ex. 1001, 2:18–27). Patent Owner does not comment on Petitioner’s proposed construction. *See* Prelim. Resp. As Petitioner’s proposed construction is consistent with the definition of the term in the Specification, we apply Petitioner’s proposed construction for purposes of this Decision.

B. File

Petitioner proposes that we construe “file” to have its plain an ordinary meaning, which Petitioner argues is “an identifiable collection of data. Pet. 10 (citing Ex. 1003, Sarhan Decl. ¶¶ 122–128). Petitioner cites extrinsic evidence in the fom of dictionaries as being consistent with its proposed construction. *Id.* at 13 (citing Ex. 1025, 581 (American Heritage Dictionary defining file to mean a collection of related data or program records stored as a unit with a single name); Ex. 1027, 467 (Merriam-Webster’s Collegiate Dictionary (defining file to mean a collection of related data records, as for a computer)). Petitioner also asserts that intrinsic evidence is consistent with its proposed construction. *Id.* at 10–12.

Patent Owner does not propose a construction of “file” but states that “Petitioner’s vague and unduly broad definition of ‘file’ is not only contradicted by the prosecution history, but also the extrinsic evidence it relies upon.” Prelim. Resp. 4–5 (citing Ex. 1013 ¶¶ 285–285 as

demonstrating Applicant distinguished over the prior art by pointing out that storing captured data in a circular buffer as files facilitates exchange of data with other remote devices without requiring post processing or finalization of the data).

For purposes of this Decision, we do not adopt a specific construction of file and address this issue further in our analysis of the parties' substantive arguments.

A final determination as to claim construction will be made at the close of the proceeding, after any hearing, based on all the evidence of record. The parties are expected to assert all their claim construction arguments and evidence in the Petition, Patent Owner's Response, Petitioner's Reply, Patent Owner's Sur-reply, or otherwise during trial, as permitted by our rules.

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 is 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, 2, 4–7, 10, 12, and 13 Would Have Been Obvious Over Yerazunis Alone Or As Combined With Fiore

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. 1001, 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. 1001, 3:1–4.

2. *Fiore (Ex. 1009)*

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.

3. *Contentions Concerning Reasons to Combine Teachings of Yerazunis and Fiore*

Noting that Yerazunis and Fiore both concern recording devices with circular buffers that preserve data before and after a trigger event, Petitioner contends that an ordinarily skilled artisan would have had reason to combine the teachings of the references to incorporate into Yerazunis the benefits Fiore articulates concerning its file-based storage approach in such systems. Pet. 23–24. Petitioner emphasizes Fiore’s discussion of how implementing a circular buffer as a memory mapped file that indexes event data combines

the access speed of the RAM memory with the large capacity of a disk file, making the indexing of data in memory mapped file 110 transparent to the circular buffer's access objects. *Id.* Petitioner also emphasizes that an ordinarily skilled artisan would have had a reasonable expectation of success, given Fiore's detailed disclosure of applying its techniques in a system like that of Yerzunis. *Id.* at 24 (citing Ex. 1003, Sarhan Decl. ¶¶ 168–172).

Patent Owner contends that a person of ordinary skill would not have had reason to combine the teachings of Yerazunis and Fiore because, in one embodiment Yerazunis is a system that stops recording a short time after an event and, in another embodiment, Yerazunis, after an initial firing event, stores data in an unused portion of the circular buffer. Prelim. Resp. 33–34. According to Patent Owner, an ordinarily skilled artisan would not have considered combining the teaching of Yerazunis with those of Fiore because Fiore does not disclose selectively write protecting individual events time-stamped within a buffer or creating individual event files within a buffer. *Id.* at 35–36.

Patent Owner's arguments that an ordinarily skilled artisan would not have had reason to combine the teachings of Yerazunis and Fiore are similar to its substantive arguments that the references fail to disclose the limitations of the claims. We address these arguments in the context of the claim limitations separately below. We note that Petitioner does not rely on Fiore as disclosing all the claim limitations, and instead cites Fiore as disclosing a memory management structure applicable to the system disclosed by Yerazunis. In the context of the claimed subject matter, we determine that, for purposes of this Decision, Petitioner has demonstrated a person of ordinary skill would have had reason to apply the memory mapping structure

taught by Fiore in a system that write-protects portions of a circular buffer from being overwritten, as taught by Yerazunis.

4. *Analysis of Claim 1*

a) *Preamble (Limitation 1[a]) and Element 1 (Limitation 1[b])*

Limitation 1[a] identified as the Preamble in the Petition, and limitation 1[b], designated as Element 1 in the Petition, recite “[a]n apparatus comprising a sensor having a data capturing component that captures sensor data.” Pet. 24–25. Petitioner cites Yerazunis as disclosing a video recording device (an apparatus) that includes camera 140 with lens 46 disposed a distance “d” from image sensor 46, e.g., a CCD array, that provides an analog output signal to one or more A/D converters to generate a digital representation of a video image. *Id.* at 26 (citing Ex. 1017, 2:37–41, 5:43–49, Figs. 1, 3). Patent Owner does not explicitly respond to Petitioner’s contentions concerning the preamble and limitation 1[b]. We determine that Petitioner has demonstrated that Yerazunis teaches this feature.

b) *Element 2 (Limitation 1[c])*

Limitation 1[c], designated as Element 2 by Petitioner, recites “a local memory functionally coupled to the sensor.” Pet. 26. Petitioner cites Yerazunis’ disclosure of video electronics 42 with DRAMs 58,60 coupled to camera 40 by physical connectors as the claimed local memory and notes that microprocessor 54 and DRAM 58 may also be an integrated unit. *Id.* at 26–29 (citing Ex. 1017, 5:40–43, 6:24–36, Figs. 3, 14). Petitioner further notes that in Yerazunis A/D converter 48 is coupled to camera 40 via signal path 50 to enable sampling of the camera’s output image sensor 46 at pre-determined intervals and argues that an ordinarily skilled artisan would have

understood the signal path to use a physical conductor. *Id.* at 28 (citing Ex. 1017, 5:40–67; Ex. 1003, Sarhan Decl. ¶472). Consistent with its proposed claim construction, Petitioner argues an ordinarily skilled artisan would have understood DRAMs 58, 60 are less than 20 cm from camera 40 (and image sensor 46 within camera 40), e.g., in the gun embodiment of Figures 10a, 10b, where video recording device 300 is mounted below gun barrel 302 and includes lens 314 at the forward end. *Id.* at 28–29 (citing Ex. 1017, 2:12–14, 15:24–36 Figs 2a, 2b, 10a, 10b).

Patent Owner does not explicitly respond to Petitioner’s contentions concerning this limitation. We determine that Petitioner has demonstrated that Yerazunis teaches these features.

c) Element 3 (Limitation 1[d])

Limitation 1[d], designated as Element 3 by Petitioner, recites “a recording facility that records the sensor data into available portions of a buffer in the local memory.” Pet. 29. Petitioner cites Yerazunis as disclosing camera 40 captures video in analog-to-digital converter 48 converts the captured video into a digital signal. Pet. 30 (citing Ex. 1017, 5:40–67). Petitioner further notes that in Yerazunis the digital signal is provided to inputs of microprocessor 54, which compresses the digitalized frame data and stores it in the next sequential location of the circular buffer (DRAM 58), i.e., a local memory. *Id.* at 30–31 (citing Ex. 1017, 2:45–47, 6:24–26, 6:52–7:6, 10:55–67, 17:50–59, Figs. 6–8). Petitioner further argues that applicant conceded this limitation is known in the art during patent prosecution. *Id.* at 31 (citing Ex. 1013, 94–95, 101, 107).

Patent Owner does not explicitly respond to Petitioner’s contentions concerning this limitations. We determine that Petitioner has demonstrated that Yerazunis teaches this feature.

d) Element 4 (Limitation 1[e])

Limitation 1[e], designated as Element 4 by Petitioner, recites “a protecting facility that responds to a signal to record the sensor data by designating a segment of the buffer as a write-protected segment and by indexing the write protected segment as a file in the buffer, wherein the write-protected segment includes a pre-recorded subset recorded before the signal is received and a post recorded subset to be recorded after the signal is received.” Pet. 31. Petitioner cites Yerazunis as disclosing a device wherein, in response to event sensor 70 generating a signal indicative of a gun firing event, microprocessor 54 write protects a segment of a buffer containing gun associated data obtained both before and after the gun firing event. *Id.* at 31–33 (citing Ex. 1017, 3:25–38, 8:26–30, 15: 9–13, 17:45–61). 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. ¶482).

Noting that Yerazunis does not refer to indexing of write protected segments as files, Petitioner cites Fiore as disclosing circular buffer 15 as a memory mapped file and indexing collections of frame data for respective events as files within the memory mapped file. *Id.* at 34 (citing Ex. 1009 ¶¶ 22–23, 51, 59–60). Petitioner further cites Fiore’s description of the benefits of its file-based approach to enable playback of video data for a specific event from the circular buffer without interrupting simultaneous recording of new data into the buffer. *Id.* (citing Ex. 1009 ¶¶ 65, 67–68, 72).

Patent Owner contends that Yerazunis does not disclose the claimed “protecting facility that responds to a signal to record sensor data by designating a segment of the buffer as a write protected segment.” Prelim. Resp. 26–29. Patent Owner contends that, instead, Yerazunis discloses a system that, in response to a triggering signal, preserves the entire buffer by preventing recording over previously used portions of the buffer. *Id.* at 26.

Patent Owner further contends that in combination Yerazunis and Fiore do not disclose file storage in the buffer. Prelim. Resp. 29–33. Patent Owner characterizes Yerasunis’ car implementation as a “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 stop recording entirely. *Id.* (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. *Id.* at 27–28 (citing Ex. 1017, 17:9–15, 17:56–58). Patent Owner contends that in this scenario, Yerazunis does not designate a segment of the buffer as write protected, but instead uses pointers to switch recording to an unused second portion of the memory. *Id.*

Patent Owner’s argument is unavailing. Yerazunis explicitly discloses write protecting a segment of the buffer, stating that “[upon] 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, 3:29–31. 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.

According to Patent Owner, Yerazunis' disclosure of a purge button to erase the contents of the circular buffer is further evidence that that entire buffer contents is protected and unprotected as a whole. *Id.* at 28–29 (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. 1, 12:14–27 (claim 1). Claim 1 recites a “protecting facility that responds to a signal to record sensor data by designating a segment of the buffer as a write protected segment and by indexing the write protected segment as a file with the buffer.” *Id.* at 12:20–23. “The write-protected segment includes a pre-recorded subset recorded before the signal is received and a post-recorded subset to be recorded after the signal is received.” *Id.* at 12:24–27. Yerazunis discloses that upon detection of a trigger event a predetermined number of frames, e.g., 2 frames, are stored in

successive frame locations within the circular buffer. Ex. 1017, 8:26–32; 12:14–28.

Patent Owner also asserts that Petitioner has not demonstrated that in combination Yerazunis and Fiore would have disclosed or suggested the claimed “indexing of the write protected segment as a file in the buffer.” Prelim. Resp. 30–33. Although Patent Owner did not propose a construction of the term “file,” Patent Owner references the ’471 patent prosecution history, stating that Patent Owner made clear “it was not merely introducing the concept of a *‘file’* to indicate any *‘identifiable collection of data’*. Rather, Patent Owner used the term *‘file’* to indicate something that would *‘facilitate [the] exchange of data’* and eliminate the need for further *‘processing’* of the data.” Prelim. Resp. 31–32 (citing Ex. 1013, 285–286). Patent Owner also reprises arguments advanced during prosecution that in the claimed approach files are stored within a buffer, as opposed to being stored elsewhere, and argues the neither Yerazunis nor Fiore disclose the non-obvious feature of storing a file within the buffer itself. *Id.* at 32.

According to Patent Owner, Petitioner attempts to equate a file with Yerazunis’ disclosure of a table that stores information associated with firing-event data. Prelim. Resp. 32 (citing Pet. 32–33; Ex. 1017, 17:50–56). Noting that a table is not a file, which is stored, named and otherwise manipulated as a unit (e.g., retrieved, deleted, or transferred using appropriate software), and that the references do not disclose storing a table within a buffer, Patent Owner contends that Petitioner improperly attempts to construe all stored data to be a file because it could be identified based on its storage location, making all locatable data identifiable data. *Id.* The subject matter discussed by Patent Owner concerns an embodiment of Yerazunis in which pointers are used to identify segments of the circular

buffer to facilitate preservation of data within certain segments after a trigger event, so that the data can be retrieved later. Petitioner cites Yerazunis' disclosure of tagging, i.e., identifying segments by storing their identity in a table, as a form of indexing. Pet. 33. Such tagging does not alter the underlying data within those segments as constituting files, e.g., Patent Owner cites nothing that precludes a segment's data from being retrieved as a unit and processed accordingly.

e) Conclusion

In consideration of the above, we are persuaded for purposes of this Decision that Petitioner has cited sufficient evidence to demonstrate that a person of ordinary skill would have been motivated to combine the teachings of Yerazunis and Fiore and that the teaching of Yerazunis alone or in combination with those of Fiore would have disclosed or suggested all the limitations of claim 1 to an ordinarily skilled artisan.

5. Claims 2, 4–6, 7, 10, 12, and 13

Petitioner's challenges to claim 2, 4–6, 7, 10, 12, and 13 under this ground are summarized below. Patent Owner does not present any argument drawn to the specific limitations of these claims.

a) Claim 2

Claim 2 depends from claim 1 and recites that the apparatus comprises a sending facility configured to transmit the file from a local memory to a remote memory. As teaching the claimed sending facility, Petitioner cites microprocessor 54 of Yerazunis as including serial output channel 78 that transmits protected files stored in DRAM 58 (the claimed local memory) to an external computer having a remote memory. Pet. 35–36 (citing Ex. 1017, 3:1–4, 6:45–51, 9:60–62, 18:60–66, Figs, 3, 14.

b) Claims 4–6

Claim 4 depends from claim 1 and recites that the apparatus comprises a sensor that automatically triggers the signal (to record the sensor data) to record upon detecting identified content in at least one of the captured images. Noting that Yerazunis discloses an event sensor 70 triggering event may include a signal representing a change in a video image or acoustic signal, Petitioner argues that an ordinarily skilled artisan would have understood recognizing a change in the video image would have involved detecting identified content in a captured image, e.g., in the disclosed gun application detecting a suspected criminal's movement to draw a weapon on an officer as triggering recording. Pet. 37–38.

Claim 5 depends from claim 1 and recites that the apparatus comprises an interface through which a tactile switch triggers the signal (to record the sensor data). As a tactile switch, Petitioner cites Yerazunis' disclosure that a triggering event may include a user's actuation of capture button 72, providing a trigger signal to be detected by control processor 54. Pet. 38–39 (citing Ex. 1017, 2:58–64, 9:17–22). In addition to arguing that the applicator admitted this feature is known in the art, Petitioner also notes cites the gun trigger in Yerazunis' gun application. *Id.* at 39 (citing Ex. 1013, 96, 103; Ex. 1017, 16:59–62)

Claim 6 depends from claim 1 and recites that the apparatus comprises an interface through which an audio receiver triggers the signal (to record the sensor data) when an audio command is recognized. Petitioner cites Yerazunis as disclosing a microphone in its gun-camera embodiment in which event sensor 70 is operative to begin recording upon detecting a sound associated with the firing of a gun. Pet. 39–40 (citing Ex. 1017, 16:43–55).

c) Claim 7

Claim 7 depends from claim 1 and recites that the apparatus comprises an interface through which a human can designate a length of time of at least one of the pre-recorded subset (recorded before the signal is received), the post-recorded subset (recorded after the signal is received), and the segment (of the buffer). Petitioner cites Yerazunis as teaching this limitation because it discloses that the number of frames recorded before and after a trigger event is a matter of design choice limited only by the frame capacity of the semiconductor memory. Pet. 40 (citing Ex. 1017, 6:11–13, 8:51–55, 10:42–46, 12:37–42). Petitioner also notes Yerazunis’ explanation that for a memory holding 14.9 seconds of video data the trigger can be adjusted to provide one half of the frames to be recorded before the trigger event and one half after the trigger event, such that 7.5 seconds of record time is achieved surrounding the event of interest. *Id.* In addition, Petitioner argues that Yerazunis discloses the claimed interface because the user can adjust the length of time recorded before and after the trigger event and that, when prosecuting the ’471 patent, the applicant admitted this feature was known in the art. *Id.* (citing Ex. 1013, 90, 60, 99, 111; Ex. 1017, 11:31–43),

d) Claim 10

Claim 10 depends from claim 1 and recites that the apparatus comprises a mount for the sensor. Petitioner cites Yerazunis as disclosing a video recording device with image sensors mounted to its housing, e.g., Yerazunis’ description of the gun mount embodiment states that the camera is mountable to the gun. Pet. 41 (citing Ex. 1017, 2:12–15, 3:9–17, 14:45–50, 15:24–30, 15:37–38, 15:56–57, Figs. 10a, 10b).

e) Claim 12

Claim 12 depends from claim 1 and recites that the apparatus comprises an electronic index that provides a directory to the file within the buffer. Petitioner asserts that Yerazunis alone or in combination with Fiore teaches this limitation. Pet. 42. As to Yerazunis teaching the claimed feature, Petitioner points to its disclosure of microprocessor 54 carrying out write protection by storing pointers that define areas of the buffer not to be overwritten, thus providing a directory to the file within the buffer. *Id.* (citing Ex. 1017, 17:45–61). As further guidance to an ordinarily skilled artisan, Petitioner cites Fiore’s description of a circular buffer as a memory mapped file that indexes collections of frame data for respective events. *Id.* (citing Ex. 1009 ¶¶ 22–23, 51, 59–60).

f) Claim 13

Claim 13 depends from claim 1 and recites that the protecting facility automatically overwrites at least some of the sensor data when the memory is full. Petitioner cites Yerazunis as disclosing a circular buffer memory organized as a continuous loop that overwrites the oldest frames with more recently received frame data. Pet. 43 (citing Ex. 1017, 15:56–16:3, 18:4–12).

g) Conclusion – Claims 2, 4–6, 7, 10, 12, and 13

As noted above, Patent Owner does not present arguments drawn to the specific limitations of claims 2, 4–6, 7, 10, 12, and 13. Having considered the arguments and evidence currently of record, we are persuaded for purposes of this Decision that Petitioner has cited sufficient evidence to demonstrate that a person of ordinary skill would have been motivated to combine the teachings of Yerazunis and Fiore and that the teachings of Yerazunis alone or in combination those of Fiore, would have

disclosed or suggested all the limitations of claim 1 to an ordinarily skilled artisan.

C. Petitioner's Contentions That Claims 3, 8, and 9 Would Have Been Obvious Yerazunis Alone or In Combination With Fiore and 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 3, 8, and 9*

The subject matter recited in claims 3, 8 and 9 is related. Claim 3 depends from claim 1 and recites that the sending facility comprises a wireless transmitter. Claim 8 depends from claim 1 and recites that the local memory is configured to provide access to the file to a mobile phone. Claim 9 depends from claim 8 and recites that a mobile phone automatically receives the file and automatically forwards the file to a remote memory.

Petitioner contends that Yerazunis' radio transmitter is a wireless transmitter. Pet. 48 (citing Ex. 1017, 9:63–10:3). In addition, Petitioner points out that Lewellen discloses local wireless interface 390 wirelessly transmits data to Bluetooth devices, including mobile phones. *Id.* at 48–49.

As to claim 9, Petitioner cites Lewellen as disclosing that the wireless interface automatically transmits digital video to compatible devices. *Id.* at 49–50 (citing Ex. 1019 ¶¶ 31, 37, 41, 43).

3. *Motivation to Combine*

Petitioner contends that an ordinarily skilled artisan would have had reason to combine the teachings of Yerazunis and Lewellen because they both deal with video recording systems specifically designed for law enforcement applications. Pet. 45–46. Petitioner asserts that an ordinarily skilled artisan would have recognized that in many law enforcement situations RF transmitters and serial outputs may not always be available, e.g., when an officer is away from his or her cruiser. *Id.* at 46. According to Petitioner, given such circumstances, a person of ordinary skill would have understood the advantage of automatically forwarding a file wirelessly to a device for storage, e.g., a mobile phone, without requiring intervention by an otherwise occupied user, such as a police officer on a call, to allow the circular memory to overwrite previously recorded information. *Id.* at 46–47 (citing Ex. 1019 ¶¶ 31, 42, 43, 45).

4. *Conclusion*

Patent Owner does not present arguments drawn to the specific subject matter in Petitioner’s challenge to claims 3, 8, and 9 based on Yerazunis, Fiore, and Lewellen. Having considered the evidence and arguments of record, we are persuaded that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Yerazunis or Yerazunis and Fiore with those of Lewellen and that in combination, they would have disclosed or suggested all the limitations of claim 3, 8, and 9 to an ordinarily skilled artisan.

D. Petitioner's Contentions That Claim 11 Would Have Been Obvious Over Yerazunis Alone or In Combination with Fiore and Mann

Claim 11 depends from claim 9 and recites that the (sensor) mount is selected from a group consisting of: a pair of wearable glasses, a lapel pin, a hat, a visor, a hair pin, a pen, and the front of a purse. Claim 9, which depends from claim 1, recites a sensor, but does not recite a mount, rendering claim 11 indefinite. Claim 10, which depends from claim 1, recites a mount. *See* Pet. 53, n.2. For completeness, we assume the '471 patent contains a typographical error and we address the mount in claim 11 as that recited in claim 10.

Petitioner cites Mann as disclosing a wearable viewfinder, e.g., one built into eyeglass frames, that, when activated, records into a five-minute circular buffer. Pet. 51–53 (citing Ex. 1015 ¶¶ 1, 56, 65, Fig. 1). Petitioner further notes that during prosecution applicant admitted that Mann discloses a mount for a camera, such as a pair of wearable glasses. *Id.* at 53 (citing Ex. 1013, 103). Petitioner contends that a person of ordinary skill would have had reason to combine the teachings of Mann with those of Yerazunis because both disclose compact, mountable systems and because Mann's wearable viewfinder allows a user to record a portion of his or her eye's visual field of view. *Id.* at 52 (citing Ex 1015 ¶44).

Patent Owner does not present arguments drawn to the specific subject matter in Petitioner's challenge to claim 11 based on Yerazunis, Fiore, and Mann. Having considered the evidence and arguments of record, we are persuaded that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of these references and that the teachings of Yerazunis alone or in combination with Fiore and those of

Mann would have disclosed or suggested all the limitations of claim 11 to an ordinarily skilled artisan.

E. Petitioner's Contentions That Claims 1, 2, 4-7, 10, 12, and 13 Would Have Been Obvious Over Ely Alone or In Combination Fiore

1. *Ely (Ex. 1020)*

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 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. *Motivation to Combine Teachings of Ely and Fiore*

Petitioner contends that a person of ordinary skill would have had reason to combine the teachings of Ely and Fiore because both describe similar systems, i.e., a surveillance system that uses a ring buffer to continuously record a video signal generated by a camera and write protect portions of the video data recorded both before and after an alarm command. Pet. 57. Petitioner further asserts that an ordinarily skilled artisan would have recognized the benefits described by Fiore’s detailed disclosure of a file-based approach that implements the circular storage buffer as a memory mapped file and indexes event data as files within the circular storage buffer. *Id.* (citing Ex. 1009 ¶¶ 22–23, 51, 59–60, 65, 67–68, 72; Ex. 1003, Sarhan Decl. ¶¶ 257–260).

Patent Owner argues that, because Ely is directed to a system in which data stored in its buffers is converted to analog video for playback by a VCR, an ordinarily skilled artisan would not have had reason to consider approaches disclosed by Fiore, which is directed to recording and playback devices that utilize a circular storage buffer during recording. Prelim. Resp. 39–40 (citing Ex. 1009 ¶ 5). As Patent Owner acknowledges, Ely describes a ring buffer for storing digital video data in a circular buffer. *Id.* at 40 (citing Ex. 1020, 10:43–45). Similar to arguments Patent Owner advanced concerning the combination of Yerazunis and Fiore, Patent Owner again argues that Fiore does not teach selectively write protecting segments of data within a buffer, and that Petitioner conflates storing individual event files within a buffer with Fiore’s memory mapped files. Prelim. Resp. 39–42. As these arguments are the basis of Patent Owner’s contentions concerning

Element 4 (imitation 1[e]) of claim 1, we address them in our discussion of that limitation. *See* Section X.E.3.d herein. As discussed below, we determine that Petitioner has demonstrated a person of ordinary skill would have had reason to combine the teachings of Ely and Fiore.

3. *Analysis of Claim 1*

a) *Preamble (Limitation 1[a]) and Element 1 (Limitation 1[b])*

Petitioner cites Ely's disclosure of a video surveillance system with camera 130 as teaching the claimed apparatus and sensor. Pet. 58–59. Patent Owner does not explicitly respond to Petitioner's contentions concerning the preamble and limitation 1[b]. We determine that Petitioner has demonstrated that Ely teaches these features.

b) *Element 2 (Limitation 1[c])*

Petitioner cites Ely's memory board 136 with memory device 150 as disclosing the claimed local memory and contends that an ordinarily skilled artisan would have understood that the memory is coupled to the camera using physical connectors and is adjacent to and less than 20 cm from the camera. Pet 60–61 (citing Ex. 1020, 6:48–65, Fig. 3; Ex. 1003, Sarhan Decl. ¶¶ 529–530). Patent Owner does not explicitly respond to Petitioner's contentions concerning this limitation. We determine that Petitioner has demonstrated that Ely teaches these features.

c) *Element 3 (Limitation 1[d])*

As disclosing the claimed recording facility that records sensor data in an available portion of a buffer in the local memory, Petitioner cites Ely's memory device 150, which may be, e.g., RAM, EEPROM, or flash memory. Pet. 61. Petitioner notes Ely's disclosure that, under the control of control circuit 134, local memory 150 serves as a ring buffer in which currently

generated compressed video data is written over the oldest compressed video data. *Id.* at 61–62 (citing Ex. 1020, 7:28–34). Patent Owner does not explicitly respond to Petitioner’s contentions concerning this limitation. We determine that Petitioner has demonstrated that Ely teaches these features.

d) Element 4 (Limitation 1[e])

Petitioner cites Ely, alone or in combination with Fiore, as disclosing the claimed protecting facility. Pet. 62–64. Petitioner notes that, in response to an alarm command, Ely initiates process 160 in which control block 134 protects overwriting compressed data in memory 150 that corresponds to a predetermined time before receipt of the alarm to a predetermined time after receipt of the alarm; Petitioner notes that Ely refers to this data as alarm data. *Id.* at 62 (citing Ex. 1020, 7:48–55, 10:11–15). Petitioner also notes that after the compressed video has been protected from overwriting, it can be selectively retrieved for display or recording. *Id.* at 62–63 (citing Ex. 1020, 10:17–23). Petitioner acknowledges that Ely does not refer to its alarm data as a file, but argues that an ordinarily skilled artisan would have understood that selective retrieval of data associated with an alarm necessitates the ability to locate the data within the buffer and that indexing was a well-known approach for doing so. *Id.* at 63 (citing Ex. 1003, Sarhan Decl. ¶ 536).

As evidence that indexing memory contents as files would have been known to an ordinarily skilled artisan, Petitioner cites Fiore. Petitioner emphasizes that Fiore discloses implementing its circular storage buffer 15 as a memory mapped file and indexing collections of frame data for respective events as files within the memory mapped file, facilitating retrieval of video data from a specific event for playback without

interrupting simultaneous recording of new data into the buffer. Pet. 63 (citing Ex. 1009 ¶¶ 22–23, 51, 59–60, 65, 67–68, 72).

Emphasizing that Ely does not use the term “file,” Patent Owner argues that Ely’s goal of storing data in analog format as a sequence of frames to be played back by a VCR is incompatible with Fiore’s storage of digital data as a file. Prelim. Resp. 38 (citing Ex. 1020, (code 57), 3:39–36, 4:31–35). According to Patent Owner, Ely contemplates serial data transmission of data that will be read out from a buffer to a central station over a common transmission channel. *Id.* (citing Ex. 1020, 3:37–41). The claim limitation before us, however, concerns a protecting facility that designates as write protected a segment of the buffer that includes data stored before and after receipt of a particular signal. Ex. 1001, 12:20–27. As discussed above, Petitioner cites Fiore as disclosing one approach to identifying or locating the memory segment Ely designates as write protected, i.e., the data not to be overwritten. Pet. 63. In the context of this limitation Ely and Fiore are applicable whether the data is transmitted serially to a central location or is further converted to analog form for VCR playback.

Having reviewed the arguments and evidence of record, we determine that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Ely and Fiore and that Ely alone or combined with Fiore would have disclosed or suggested all the limitations of claim 1 to such an ordinarily skilled artisan.

4. *Claims 2, 4–7, 10, 12, and 13*

Petitioner cites Ely as disclosing the sending facility recited in claim 2, noting that Ely teaches upon a host transmitting a retrieve command,

alarm data is read out from a buffer and transmitted vis LAN 112 (a sending facility). Pet. 64–65 (citing Ex. 1020, 10:24–47, 9:51–58, Fig. 5B).

As to claim 4, Petitioner cites Ely’s disclosure of conventional sensor devices 120 that detect motion or hear, or unauthorized opening of doors and windows as teaching the claimed sensor that automatically triggers the signal to record upon detecting identified content in an image. Pet. 66–67 (citing Ex. 1020, 5:50–55). We also note that Ely discloses inside housing 124 there is camera unit 124, which includes camera 130, control circuit 134 and memory board 136. Ex. 1020, 6:4–47, Figs. 2–3.

As to the tactile switch recited in claim 5, Petitioner cites Ely as disclosing an operator can generate a system alarm using computer peripheral and a system interface. Pet. 67 (citing Ex. 1020, 5:60–6:3, 11:42–47). As to the audio trigger recited in claim 6, Petitioner cites Fiore’s disclosure of a monitoring device that may include a video camera, or microphone and explicit disclosure of a change in audio signal amplitude as triggering an event. *Id.* at 67–68 (citing Ex. 1009 ¶¶ 40, 46).

As to claim 7’s recitation of an interface through with a human can designate record times, Petitioner cites Ely’s disclosure that a user can predetermine such times and notes that such capability requires a user interface. Pet. 68–69 (citing Ex. 1020, 7:45–55, 10:11–23, 5:60–64, 8:16–27).

As to claim 10, which recites a mount for the sensor, Petitioner cites Ely’s disclosure that each camera may be mounted at a ceiling or another appropriate location includes a housing having at least a base portion and a dome portion. Pet. 69 (citing Ex. 1020, 6:7–15).

As to claim 12’s recitation of an electronic index that provides a directory to the file within the buffer, Petitioner cites Ely as disclosing that

after compressed data stored one of the camera units has been protected pursuant to an alarm command, the alarm data can be selectively retrieved in response to user instruction. Pet. 70 (citing Ex. 10:17–23). Petitioner asserts that a person of ordinary skill in the art would have understood that the ability to locate the alarm data within the buffer necessarily discloses the claimed electronic index. *Id.* Petitioner also asserts that Fiore’s implementation of circular storage buffer 15 as a memory-mapped file describes indexing collections of frame data for respective events as files within the memory-mapped file. *Id.* (citing Ex. 1003, Sarhan Decl. ¶ 558; Ex. 1009 ¶¶ 22–23, 51, 59–60).

As to claim 13’s recitation that the protecting facility automatically overwrites sensor data when the memory capacity is full, Petitioner cites Ely’s control circuit 134 is controlling memory addressing and writing of data into the memory 150 serves as a ring buffer in which currently generated compressed video is written over the oldest compressed video data previously stored in the memory. Pet. 71 (citing Ex. 1020, 7:28–34).

Patent Owner does not respond explicitly to Petitioner’s contentions concerning the additional limitations recited in claims 2, 4–7, 10, 12, and 13. Having considered all the arguments and evidence of record, we determine that Petitioner has demonstrated a person a person of ordinary skill would have had reason to combine the teachings of Ely and Fiore and that Ely alone or combined with Fiore would have disclosed or suggested all the limitations of claims 2, 4–7, 10, 12, and 13 to such an ordinarily skilled artisan.

F. Petitioner's Contentions That Claims 3, 8, and 9 Would Been Obvious Over Ely Alone Or As Combined With Fiore, In Further View Of Lewellen

Petitioner's arguments that an ordinarily skilled artisan would have had reason to combine the teachings of Lewellen wireless implementations with those of Ely alone or in combination with Fiore are similar to those we found persuasive in Petitioner's articulation of its arguments concerning the combination of Lewellen and Yerazunis alone or in combination with Fiore. Pet. 72–74. For similar reasons, 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 alone or in combination with Fiore.

Petitioner's arguments concerning the limitations of claims 3, 8, and 9 taught by Lewellen in combination with Ely alone or Ely and Fiore are similar to arguments we found persuasive in Petitioner's discussion concerning the combination of Lewellen and Yerazunis alone or in combination with Fiore. Pet. 74–75. For similar reasons, we determine that Petitioner has demonstrated that the combined teachings of Lewellen and Ely alone or in combination with Fiore would have disclosed or suggested to an ordinarily skilled artisan the limitations of claims 3, 8, and 9.

G. Petitioner's Contentions That Claim 11 Would Have Been Obvious Over Ely Alone or In combination With Fiore and Mann

Petitioner asserts that an ordinarily skilled artisan would have had reason to combine Mann's teachings of an eyeglass mounted sensor with the circular buffer taught by Ely and that in combination these teachings would have disclosed or suggested all the limitations of claim 11. Petitioner's analysis is similar to that Petitioner articulated in its discussion of combining Mann's teachings with those of Yerazunis. For similar reasons, we

determine that Petitioner has demonstrated that the combined teachings of Lewellen and Ely alone or in combination with Fiore would have disclosed or suggested to an ordinarily skilled artisan the limitations of claim 11.

XI. CONCLUSION

Having considered the evidence and arguments of record, for the reasons discussed above, we determine that Petitioner has demonstrated a reasonable likelihood that it will succeed on the following challenges to patentability:

Claims 1, 2, 4–7, 10, 12, and 13 would have been obvious over Yerazunis alone or combined with Fiore;

Claims 3, 8, and 9 would have been obvious Yerazunis alone or in combination with Fiore and in further view of Lewellen;

Claim 11 would have been obvious over Yerazunis alone or in combination with Fiore and Mann;

Claims 1, 2, 4–7, 10, 12, and 13 would have been obvious over Ely alone or in combination Fiore;

Claims 3, 8, and 9 would be obvious over Ely alone or as combined with Fiore, in further view of Lewellen; and

Claim 11 would have been obvious over Ely alone or in combination with Fiore and Mann.

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 '471 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

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

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