Trials@uspto.gov
571-272-7822

Paper 11
Date: February 13, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.,
Petitioner,

v.

STELLAR LLC,
Patent Owner.

IPR2024-01208
Patent 9,912,914 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 Solutions, Inc. ("Petitioner") filed a petition, Paper 1 ("Petition" or "Pet."), to institute an *inter partes* review ("IPR") of claims 1–23 (the "challenged claims") of U.S. Patent No. 9,912,914 B2 (Ex. 1031, "the '914 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, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition "shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

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

Petitioner identifies itself (Motorola Solutions, Inc.) and WatchGuard Video, Inc. as real parties-in-interest. Pet. 80. Patent Owner identifies itself (Stellar, LLC) as its real party-in-interest. Paper 4, 1.

III. RELATED MATTERS

The parties state that the '914 patent is asserted in the following litigation: *Stellar, LLC v. Motorola Solutions, Inc., et al*., 4:23-cv-750 (EDTX) ("the parallel litigation"). Pet. 81; Paper 4, 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 parallel litigation. Prelim. Resp. 5–17. 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 impact 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." *Id.*

> Compelling, 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.

Id. at 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 (emphasis omitted, footnote omitted); *see Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A).

---

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

The Guidance Memo also states

> 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 3[2]. 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 the because the court has entered an order setting trial to begin shortly after a Decision to Institute would be entered in this proceeding. *Id.* at 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. 13–16. 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–

[2] *See* https://www.uscourts.gov/statistics-reports/analysis-reports/federal-court-management-statistics.

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 if 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 on 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. 18, 2024). Petitioner 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 claims of the ’914 patent are challenged in this proceeding, Petitioner’s stipulation applies to the entirely of the ’914 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 ’914 PATENT

The ’914 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. 1031, 2:14–19. 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 2:20–36, 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. Ex. 1031, 2:37–46. 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 2:54–58.

VI. ILLUSTRATIVE CLAIM

Claim 1 reproduced below with paragraph designations corresponding to those used in the Petition is illustrative of the subject matter of the '914 patent.

> 1[a]. A recording system, comprising:
> [b] a sensor interface that captures data from at least one;
> [c] a memory coupled with the sensor interface,
> [d] a recording facility coupled with the sensor interface and memory, and that records at least some of the sensor data into an available portion of at least one buffer in the memory; and
> [e] a protecting facility coupled with the recording facility that responds to a trigger signal to record the at least some of the sensor data by designating a segment of the at least one buffer as a write-protected segment and by storing the write-protected segment as at least one file in the at least one buffer,
> [f] wherein the write-protected segment includes a pre-recorded subset recorded before the trigger signal is received and a post-recorded subset to be recorded after the signal is received.

See Pet. 22–33.

VII. ASSERTED GROUNDS

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

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–10, 13–16, 18–23	103	Yerazunis,[3] Fiore[4]
11, 12, 17	103	Yerazunis, Fiore, Lewellen[5]
1–10, 13–16, 18–23	103	Ely,[6] Fiore
11, 12, 17	103	Ely, Fiore, Lewellen

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* 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 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

[3] U.S. Patent 7,158,167 (Ex. 1017)
[4] U.S. Patent Publication No. 2002/0191952 (Ex. 1009)
[5] U.S. Patent Publication No. 2004/0008255 (Ex. 1019)
[6] U.S. Patent 5,982,418 (Ex. 1020)

of the '914 patent and the references, we apply Petitioner's description for purposes of tie 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) (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.

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. File

Petitioner proposes that we construe "file" to have its plain an ordinary meaning, which Petitioner argues is "an identifiable collection of data. Pet. 9 (citing Ex. 1003, Sarhan Decl. ¶¶ 122–128). Petitioner cites extrinsic evidence in the form of dictionaries as being consistent with its proposed construction. *Id.* at 11 (citing Ex. 1025, 518 (American Heritage Dictionary defining file to mean a collection of related data or program records stored as a unit with a single name); Ex. 1026, 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 9–11.

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 (*see id.* 4–5 n.1, citing Ex. 1013 ¶¶ 285–286 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) (footnote omitted). We address this issue further in our analysis of the parties' substantive arguments and do not adopt a specific construction of "file."

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 1–10, 13–16, And 18–23, Would Have Been Obvious Over Yerazunis Alone Or As Combined With Fiore

1. *Yerazunis (Exhibit 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. *Id.* at 3:1–4.

2. *Fiore (Exhibit 1009)*

Fiore discloses recording and play back 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 even 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. 21. 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.* at 21–22. 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 22 (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, Yerazunis 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 34–36.

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 Limitation [1b])

The preamble, designated as limitation 1[a] and limitation 1[b], designated as Element 1 in the Petition, recite "[a] recording system comprising a sensor interface that captures sensor data from at least one sensor." Pet. 22–23. Petitioner cites Yerazunis as disclosing a video recording device that includes camera 40 with lens 44 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 23–24 (citing Ex. 1017, 2:37–41, 5:43–49, Figs. 1, 3).

Patent Owner does not explicitly respond to Petitioner's contentions concerning limitations 1[a] and 1[b]. We determine that Petitioner has demonstrated that Yerazunis teaches the preamble and limitation 1[b].

b) Limitation 1[c]

Limitation 1[c], designated as Element 2 by Petitioner, recites "a memory coupled with the sensor interface." Pet. 25. Petitioner cites Yerazunis' disclosure of video electronics 42 with DRAMs 58, 60 coupled camera 40 as the claimed "memory coupled with the sensor interface." *Id.* at 25–26 (citing Ex. 1017, 5:40–43, 6:24–36). Petitioner notes that microprocessor 54 and DRAM 58 may also be an integrated unit. *Id.* at 26 (citing Ex. 1017, 6:24–36, Figs. 3, 14). Petitioner further notes that in Yerazunis DRAM 60 is coupled to microprocessor 54 via bus 62. *Id.* (citing Ex. 1017, 6:30–36). Petitioner also notes that 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 DRAMs 58, 60 (the memory) are therefore coupled to the sensor interface. *Id.* (citing Ex. 1017, 5:40–67; Ex. 1003, Sarhan Decl. ¶¶ 101, 107).

Patent Owner does not explicitly respond to Petitioner's contentions concerning limitation 1[c]. We determine that Petitioner has demonstrated that Yerazunis teaches this limitation.

c) Limitation 1[d]

Limitation 1[d], designated as Element 3 by Petitioner, recites "a recording facility coupled with the sensor interface and memory, and that records at least some of the sensor data into an available portion of at least one buffer in the local memory." Pet. 26. Petitioner cites Yerazunis as disclosing Element 3, noting that a digital signal developed by ADC 48 from video captured by camera 40 is provided to inputs of microprocessor 54,

which compresses the digitized frame and stores the compresses frame data in the next sequential location of a circular buffer formed in DRAM 58. *Id.* at 26–28 (citing Ex. 1017, 2:19–23, 2:45–47, 6:24–26, 6:52–7:6, 7:7–61, 10:55–67, 11:15–14:44, 17:9–20, 17:50–59, 18:7–12, Figs. 3, 6–8, 14). Petitioner also contends that, during prosecution of a related application, Applicant acknowledged that this limitation is known in the art. *Id.* at 28 (citing Ex. 1013, 94–95, 101, 107).

Patent Owner does not explicitly respond to Petitioner's contentions concerning limitation 1[d]. We determine that Petitioner has demonstrated that Yerazunis teaches this limitation.

d) Limitations 1[e] and 1[f]

Limitation 1[e], designated as Element 4 by Petitioner, recites "a protecting facility coupled with the recording facility that responds to a trigger signal to record the at least some of the sensor data by designating a segment of the buffer as a write-protected segment and by storing the write-protected segment as at least one file in the buffer, in the at least one buffer." Pet. 28, 31. Petitioner contends that Yerazunis alone, or combined with Fiore, discloses this limitation. *Id.* at 28. Limitation [1f], designated as Element 5 by Petitioner, recites "wherein the write-protected segment includes a pre-recorded subset recorded before the trigger signal is received and a post recorded subset to be recorded after the trigger signal is received." *Id.* at 33. Petitioner contends that Yerazunis discloses this limitation. *Id.* (citing Ex. 1017, 3:25–38 as disclosing that the write-protected segment includes frame data associated with a firing event both before and after the event; Ex. 1003, Sarhan Decl. ¶ 593).

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 causes '"specified frame data associated with [the] firing event both before and after the event' to be 'preserved,' such that it 'cannot be overwritten as a result of further use of the gun or subsequent firing events.'" Pet. 28 (citing Ex. 1017, 3:20–33, 8:8–30, 14:55–61,15:9–13) (alteration in original). Thus, according to Petitioner, Yerazunis write protects a segment of a buffer containing gun associated data obtained both before and after the gun firing event. *Id.* at 29–30 (citing Ex. 1017, 3:25–38, 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 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 that identify a collection of write protected data to facilitate later location and retrieval of gun firing event video data. Pet. 30–31 (citing Ex. 1017, 17:45–61; Ex. 1003, Sarhan Decl. ¶ 482). Noting that Yerazunis does not refer explicitly to storing write protected segments as files, Petitioner contends that a person of ordinary skill would have understood Yerazunis as describing or rendering obvious "storing the write-protected segment as at least one file in the at least one buffer," as claimed. *Id.* at 31 (citing Ex. 1017, 6:1–13, 6:33–36, 7:23–32, 10:37–39, 10:63–67). As further supporting its contention, Petitioner cites the prosecution history rejecting proposed claims of the '914 patent on the basis of non-statutory double patenting over claims in related patents that recite indexing a write protected segment. *Id.* at 30. According to Petitioner, the claimed "storing" is unpatentable because "storing" is even broader than the indexing in the related patents. *Id.* at 30–31.

Petitioner also 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. Pet. 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 video data for a specific event from the circular buffer without interrupting simultaneous recording of new data into the buffer. *Id.* at 32 (citing Ex. 1009 ¶¶ 65, 67–68, 72).

Patent Owner contends that Yerazunis fails to teach at least the following two features of the '914 patent's independent claims: (1) selective write protection within a buffer and (2) storing data corresponding to an event signal as a distinct file within the buffer. Prelim. Resp. 26–33. Patent Owner contends that, instead of disclosing a system that responds to a trigger signal by designating a segment of the at least one buffer as write protected, Yerazunis discloses a system that, in response to a triggering signal, preserves the entire buffer by preventing recording over previously used (i.e., recorded) 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. *Id.* at 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. Prelim. Resp. 29–33 (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 camera 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. 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. As Petitioner points out, Yerazunis explicitly discloses write protecting a segment of the buffer, stating 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. Petitioner demonstrates that switching from a first portion of memory specified by a pointer (i.e., a designated first portion of memory) to a second portion of memory to avoid over writing the data in the designated 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 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. Prelim. Resp. 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 that 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.

Patent Owner argues that video data preservation in Yerazunis "is a step that occurs after, not as part of, the step of 'continuing to record for a brief interval.'" *See* Prelim. Resp. 29 (emphasis omitted). Claim 1 is an apparatus claim and does not recite "continuing to record for a brief interval." *See* Ex. 1031, 12:10–26 (claim 1). Claim 1 recites a "a protecting facility coupled with the recording facility that responds to a trigger signal to record the at least some of the sensor data by designating a segment of the at least one buffer as a write-protected segment." *Id.* at 12:18–23. "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 12:23–26. 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 "storing the write protected portion as at least one file in the . . . buffer." Prelim. Resp. 30–33. Although Patent Owner did not propose a construction of the term "file," Patent Owner references the prosecution history of the related '034 patent, 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.'" *Id.* at 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 that 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. 29–30, referencing Ex. 1017, 17:45–61). 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. 30. 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.

Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated that Yerazunis and Fiore teach limitations 1[e] and 1[f].

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 Yerasunis and Fiore, and that the teachings 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 2–10, 13–16, and 18–23*

a) Claim 2

Claim 2 recites a sending facility coupled with the memory and configured to transmit data associated with at least one file from the memory to a remote memory. Ex. 1031, 12:27–30. As teaching this limitation, Petitioner cites Yerazunis' disclosure that microprocessor 54 includes serial output channel 78 (or other appropriate data transfer link) employed to download captured and stored video images, including write protected files, from the circular buffer of DRAM 58 to an external personal computer. Pet. 34 (citing Ex. 1017, 9:60–62).

b) Claims 3–9

Claim 3–9 recite limitations that relate to the sensor data. Ex. 1031, 12:31–49. Petitioner cites Yerazunis as disclosing the video recording device includes camera 40 with a sensor that captures video data (claim 3) and that the limitations concerning the number of pixels (claim 4) and image resolution (claim 5) would have been obvious. Pet. 35. Petitioner further cites Yerazunis as disclosing microprocessor 54 (claim 6) and argues that the limitations reciting time compression (claim 7) and frame compression (claim 8) would have been obvious. *Id.* at 36–37. As to claim 9, which recites sensor data comprises audio or motion data, Petitioner cites

Yerazunis as disclosing an example in which a first vehicle backs into a second vehicle having a Yerazunis video recording device mounted on it. *Id.* at 37–38.

c) Claims 10, 13

Petitioner cites Yerazunis as disclosing DRAMs 58 and 60 (claim 10) and a circular buffer organized as a continuous loop in which the oldest frame within the buffer is overwritten with a more recently received frame (claim 13). Pet. 39–40 (citing Ex. 1017, 2:19–23 5:40–43, 6:24–36, 7:7–61, 17:9–20, 17:50–59, 18:7–12).

d) Claims 14–16

Claims 14–16 recite limitations concerning the nature of the system's integration of components. Petitioner cites Yerazunis as disclosing a camera including the sensor interface, the memory, and the recording facility, as recited in claim 14. Pet. 40–41 (citing Ex. 1003, Sarhan Decl. ¶ 616, stating that in June 2007 the term "camera" often referred to systems with imaging components, microprocessor controllers, and memory for storing a video images and data like the systems depicted in figures 3 and 14 of Yerazunis). Petitioner also cites Yerazunis as disclosing a security camera (claim 15) and a cell phone including a sensor interface, memory, and recording facility (claim 16). *Id.* at 41–42.

e) Claims 18–19

As to the single file recited in claim 18, Petitioner cites Yerazunis as disclosing microprocessor 54 includes storing pointers that define areas of the circular buffer that are not to be overwritten, thus providing an electronic index to a write protected segment, i.e. a single file in the buffer, to allow its later retrieval. Pet. 42–43 (citing Ex. 1017, 17:45–61). As further guidance to a particular method for indexing event data files in Yerazunis, Petitioner

points to Fiore's implementation of its circular storage buffer 15 as a memory mapped file. *Id.* at 43.

As to claim 19, which recites the single file comprises an entirety of the at least one buffer, Petitioner cites Yerazunis alone or combined with Fiore. Pet. 43–44 (citing Ex. 1003, Sarhan Decl. ¶¶ 625–627). In particular, Petitioner cites Fiore as disclosing an implementation of its circular storage buffer as a single contiguous disk file. *Id.* (citing Ex. 1009 ¶ 71).

f) Claim 20

As to claim 20, which recites the trigger signal represents the detection of motion, sound, image, or other criteria, Petitioner cites Yerazunis as disclosing event sensor 70 is operative to respond to a signal from a microphone or other suitable sensor that can detect the characteristic associated with the firing of a gun. Pet. 44 (citing Ex. 1017, 16:43–55).

g) Claims 21–23

Claims 21–23 are drawn to features of the protecting facility. As to claim 21, which recites the protecting facility is configured to update the write protected segment as being non-protected and free for recording, Petitioner cites Yerazunis' purge button 76 that is electrically coupled to microprocessor 54, and upon activation erases the contents of the circular buffer. Pet. 44–45 (citing Ex. 1017, 9:47–48). As to claim 22, which recites the protecting facility is configured to store the at least one file by indexing the write protected segment and the at least one buffer, Petitioner references its discussion of claim 1. *Id.* at 46. As to claim 23 which recites the protecting facility is configured to index the right-protected segment while the recording facility is still recording the sensor data into the memory, Petitioner cites Yerazunis as disclosing that in its gun application recording of data continues during and after a first firing event since a subsequent

firing event may occur. *Id.* (citing Ex. 1017, 17:45–50). Petitioner asserts Yerazunis achieves this result using indexing, as demonstrated in Petitioner's discussion of claim 1. *Id.* at 46–47 (citing Ex. 1017, 2:19–23, 4:45–49, 7:7–61, 9:34–38, 17:45–61).

h) Conclusion as to Claims 2–10, 13–16, and 18–23

Patent Owner does not present arguments drawn to the specific subject matter in Petitioner's challenge to claims 2–10, 13–16, and 18–23 based on Yerazunis alone or in combination with Fiore. 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 and Fiore and that in combination, they would have disclosed or suggested all the limitations of claims 2–10, 13–16, and 18–23 to an ordinarily skilled artisan.

C. Petitioner's Contentions That Claims 11, 12, and 17 Would Have Been Obvious Over Yerazunis, Alone or Combined With Fiore and 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 and couples 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 11–12, 17*

Claim 11 depends from claim 1 and recites "the sensor interface comprises a wireless interface to the at least one sensor." Ex. 1031, 12:52–53. Claim 12 depends from claim 11 and recites that the wireless interface comprises a Bluetooth wireless interface. *Id.* at 12:54–55. As to both claims 11 and 12, Petitioner cites Lewellen as disclosing local wire interface 3904 wirelessly coupling to Bluetooth-compatible devices. Pet. 51–52 (citing Ex. 22, 31, 42–48; Ex. 1003, Sarhan Decl. ¶¶ 637, 639).

Claim 17 recites that the system further comprises a personal area network including at least tow of the sensor interface, the memory, and the recording facility. Ex. 1031, 12:66–13:2. Petitioner notes that the '914 patent merely states that the personal area network recited in claim 17 can be implemented with a Bluetooth wireless interface or other suitable interface and can be used to couple the recording system to other Bluetooth-compatible components. Pet. 52–53 (citing Ex. 1031, 6:25–29, 7:15–22, 10:16–44). Petitioner notes that Lewellen discloses a Bluetooth wireless interface to couple to Bluetooth-compatible devices. *Id.* at 53 (citing Ex. 1019 ¶¶ 22, 31, 42–48).

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. 49. 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 49–50 (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 11, 12, and 17 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 11, 12, and 17 to an ordinarily skilled artisan.

D. Petitioner's Contentions That Claims 1–10, 13–16, and 18–23 Would Have Been Obvious Over Ely Alone or as Combined With Fiore

1. *Ely*

Ely discloses a video surveillance system that responds to a sensor device alarm condition by generating a storage signal that inhibits over-writing 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 against 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 the 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.* at 58 (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. *Claim 1*

a) Preamble, Elements 1, 2, and 3 (Limitations 1[a]–1[d])

Petitioner cites Ely's video surveillance system including a central control station and a plurality of video cameras, each mounted inside a dome housing unit, as disclosing the recording system identified in the preamble of claim 1. Pet. 58–59. Petitioner cites Ely as disclosing camera unit 114 includes optical system 138 forming an image that is converted at CCD 142 into an electrical signal that undergoes analog processing. *Id.* at 59 (citing

Ex. 1020, 6:21–28). Petitioner notes that analog video signal output from camera 130 is forwarded to memory board 136, which digitizes, compresses, and stores the video signal. *Id.* (citing Ex. 1020, 6:48–51). Petitioner asserts that the connection between camera 130 and memory board 136 discloses the "sensor interface" recited in Element 1. *Id.* at 60.

As to the memory coupled to the sensor interface recited in Element 2, Petitioner cites Ely's disclosure of a surveillance system with memory board 136 having memory device 150. Pet. 60 (citing Ex. 1020, 6:17–21, 6:48–53, 6:61–65, Fig. 3). As to the recording system coupled with the sensor interface and memory that records at least some of the senor data into an available portion of the memory recited in Element 3, Petitioner cites Ely's disclosure that memory device 150 may constitute RAM, EEPROM, flash memory, and so forth, and, under the control of control circuit 134, functions as a ring buffer for camera generated video signals by writing over the oldest compressed video data with currently generated compressed video data. *Id.* at 60–62 (citing Ex. 1020, 6:37–52, 6:63–65, 7:5–11, 7:28–34, Fig. 3).

b) Element 4 (Limitations 1[e] and 1[f])

Petitioner contends that Ely alone or combined with Fiore teaches Element 4, i.e., the protecting facility coupled with the recording facility that responds to a trigger signal to record at least some of the sensor data by designating a segment of a buffer as a write protected segment and storing the write protected segment as a file in the buffer. Pet. 62–64. Petitioner notes that, in response to an alarm command, Ely initiates process 160 in which control block 134 protects against 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 62–63 (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 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 such data as files 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. 1031, 12:20–27. As discussed above, Petitioner cites Fiore as disclosing that one approach to

identifying or locating the memory segment Ely designates as write protected, i.e., the data not to be overwritten, is the use of memory mapped files. 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.

c) Conclusion

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 2–10, 13–16, 18–23*

As to the sending facility recited in clam 2, Petitioner cites Ely's disclosure that data buffer to the dome units may be selectively protected from overwriting in response to alarm signals and then retrieved for display or tape-recording by a central control system. Pet. 65–66 (citing Ex. 1020 code (57), 10:24–47, 9:51–58, Fig. 5B).

As to the sensor data limitations recited in claims 3–9, Petitioner cites Ely as disclosing image and video data (claim 3) from camera 130, and argues the pixel and resolution limitations of claim 4 and 5 would have been known to an ordinarily skilled artisan. Pet. 67–68 (citing Ex. 1020, 6:21–28, Ex. 1003, Sarhan Decl. ¶¶ 667–669). As to the compression of sensor data recited in claims 6, Petitioner cites Ely's disclosure of processing circuitry applying a data compression algorithm to the digital video data and storing the compressed video in a ring buffer; Petitioner also argues that time compression (claim 7) and frame compression (claim 8) were well known compression techniques. *Id.* at 68–69 (citing Ex. 1020, 2:65–3:5, 3:56–67,

4:49–56; Ex. 1003, Sarhan Decl. ¶ 673). Petitioner also argues that an ordinarily skilled artisan would have understood that the video data comprises motion data (claim 9). *Id.* at 69 (citing Ex. 1020, 1:39–47, 5:50–53, 10:1–23; Ex. 1003, Sarhan Decl. ¶ 675).

As to the memory limitations in claims 10 and 13, Petitioner cites Ely as disclosing memory device 150 may be RAM, EEPROM, flash memory and so forth (claim 10) and serves as a ring buffer, i.e., the circular buffer recited in claim 13. Pet. 70 (citing Ex. 1020, 6:61–65, 7:28–34; Ex. 1003, Sarhan Decl. ¶ 680).

Turning to claim 14, Petitioner cites Ely as disclosing a sensor interface between camera 130, memory board 136, memory device 150 and control circuit 134 including the claimed recording facility. Pet. 71 (citing Ex. 1020, Fig. 3; Ex. 1003, Sarhan Decl. ¶¶ 682–683). Petitioner further cites Ely as disclosing sensors, e.g., security cameras (claim 15), for advising the system of alarm conditions, such as unauthorized opening of doors and windows. *Id.* at 71–72. Petitioner also states that a cell phone including a sensor interface, memory, and recording facility (claim 16) was known. *Id.* at 72 (citing Ex. 1003, Sarhan Decl. ¶ 687).

As to the single file recited in claim 18, Petitioner cites Ely as disclosing alarm data can be selectively retrieved and argues that an ordinarily skilled artisan would have understood that such selective retrieval of alarm data from the buffer necessitates an ability to locate the alarm data as a single file within the buffer. Pet. 72–73 (citng Ex. 1020, 10:17–23; Ex. 1003, Sarhan Decl. ¶ 689). As further guidance to a particular method for indexing event data files in Yerazunis, Petitioner points to Fiore's implementation of its circular storage buffer 15 as a memory mapped file. *Id.* at 73.

As to claim 19, which recites the single file comprises an entirety of the at least one buffer, Petitioner cites Ely alone or combined with Fiore. Pet. 73–74 (citing Ex. 1003, Sarhan Decl. ¶ 692). In particular, Petitioner cites Fiore as disclosing an implementation of its circular storage buffer as a single contiguous disk file. *Id.* (citing Ex. 1009 ¶ 71).

As to claim 20, which recites the trigger signal represents the detection of motion, sound, image, or other criteria, Petitioner cites Ely as disclosing sensor devices 120 operative to detect unauthorized activity, e.g., opening of doors and windows, and conventional motion and heat sensing devices. Pet. 74 (citing Ex. 1020, 5:50–55).

Claims 21–23 are drawn to features of the protecting facility. As to claim 21, which recites the protecting facility is configured to update the write protected segment as being non-protected and free for recording, Petitioner cites Ely as disclosing control circuit 134 responds to a clear command by removing a protected block of stored video and permitting live video to write over the now unprotected data. Pet. 75–76 (citing Ex. 1020, 8:7–12, Fig. 4; Ex. 1003, Sarhan Decl. ¶¶ 689–700). As to claim 22, which recites the protecting facility is configured to store the at least one file by indexing the write protected segment and the at least one buffer, Petitioner references its discussion of claim 1. *Id.* at 76. As to claim 23, which recites the protecting facility is configured to index the write protected segment while the recording facility is still recording the sensor data into the memory, Petitioner cites Ely as disclosing that control circuit 134 responds to commands to read out and transmit previously stored compressed video data without interrupting ongoing storage of live video data. *Id.* at 77 (citing Ex. 1020, 7:66–8:6). Petitioner argues that an ordinarily skilled artisan would have understood that the selective retrieval and transmission of alarm

data without interrupting ongoing storage of "live" video data necessitates that the control circuit 134 be configured to index the alarm data (*i.e.*, the write-protected segment) while continuing to record the video data into the memory. *Id.* at 72 (citing Ex. 1003, Sarhan Decl. ¶ 704).

Patent Owner does not respond explicitly to Petitioner's contentions concerning the specific limitations recited in claims 2–10, 13–16, and 18–23. 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 2–10, 13–16, and 18–23 to such an ordinarily skilled artisan.

E. Petitioner's Contentions That Claims 11, 12, and 17 Would Have Been Obvious Over Ely Alone or as Combined With Fiore in View of Lewellen.

Petitioner's arguments that an ordinarily skilled artisan would have had reason to combine the teachings of Lewellen's 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. 77–79. 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 11, 12 and 17 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. 79–80. 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.

XI. CONCLUSION

For the reasons discussed above, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will succeed on the following challenges to patentability:

Claims 1–10, 13–16, and 18–23 would have been obvious over Yerazunis alone or as combined with Fiore;

Claims 11, 12, and 17 would have been obvious over Yerazunis alone or as combined with Fiore, in further view of Lewellen;

Claims 1–10, 13–16, and 18–23 would have been obvious over Ely alone or as combined with Fiore; and

Claims 11, 12, and 17 would have been obvious over Ely alone or as combined with Fiore, in further view of Lewellen

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 '914 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.

FOR PETITIONER:

Joshua R. Nightingale
John A. Marlott
JONES DAY
jrnightingale@jonesday.com
jamarlott@jonesday.com

FOR PATENT OWNER:

Jason Shapiro
Timothy Devlin
James Lennon
DEVLIN LAW FIRM LLC
jshapiro@devlinlawfirm.com
tdevlin@devlinlawfirm.com
jlennon@devlinlawfirm.com