

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.
Petitioner

v.

STELLAR, LLC
Patent Owner

Case No. – Not Yet Assigned
U.S. Patent No. 8,692,882

**PETITION FOR *INTER PARTES* REVIEW
OF U. S. PATENT NO. 8,692,882**

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I. INTRODUCTION

Motorola Solutions, Inc. (“Petitioner” or “Motorola”) requests *inter partes* review of U.S. Patent No. 8,692,882. The ’882 patent is directed to surveillance devices that use loop recording to constantly record video data to a buffer in memory. In such devices, when the end of the buffer is reached, data is then recorded to the beginning of the buffer—hence the term “loop” recording—erasing the earliest-recorded data. Loop recording techniques were well-known years before the ’882 patent, including in patents and literature, consumer devices (*e.g.*, TiVo DVRs of the late 1990s), and law enforcement applications (*e.g.*, mounted in police cruisers).

The ’882 patent also describes write protecting a portion of the buffer in response to an event occurrence, with the write-protected portion including data from before and after the event. Protecting both pre- and post-event data helps to ensure that unexpected moments—*e.g.*, a speeder going through a redlight and a police officer’s subsequent pursuit—are preserved and not overwritten in the next recording loop. But this technique was likewise well-known, and the Applicant of the ’882 patent conceded this in prosecuting a related patent. EX1013, 95, 101, 107-08. In fact, the Applicant admitted that *the majority* of the features claimed in the ’882 patent were known in the art. *Id.*, 89-112; EX1003, ¶¶30-44. And the few ’882 patent features that Applicant did not concede as conventional were also known in the art, as detailed herein.

Motorola requests institution of IPR and cancellation of claims 1-22.

II. BACKGROUND

A. Summary Of The '882 Patent

The '882 patent is directed to an “apparatus, systems, and methods in which a surveillance apparatus processes images by (1) continuously recording a stream of imaged data, (2) write protecting segments of the recorded stream, and (3) sending write protected segments from a local memory to a remote memory using a wireless transmitter.” EX1033, 2:8-17. In Figure 1, a camera 120 is coupled to a belt-worn recorder 160 via a data and power cord 140. Also depicted is a remote memory 170 and a ring-shaped signaling device 150, both of which “cooperate” with the recorder 160. *Id.*, 3:52-63.

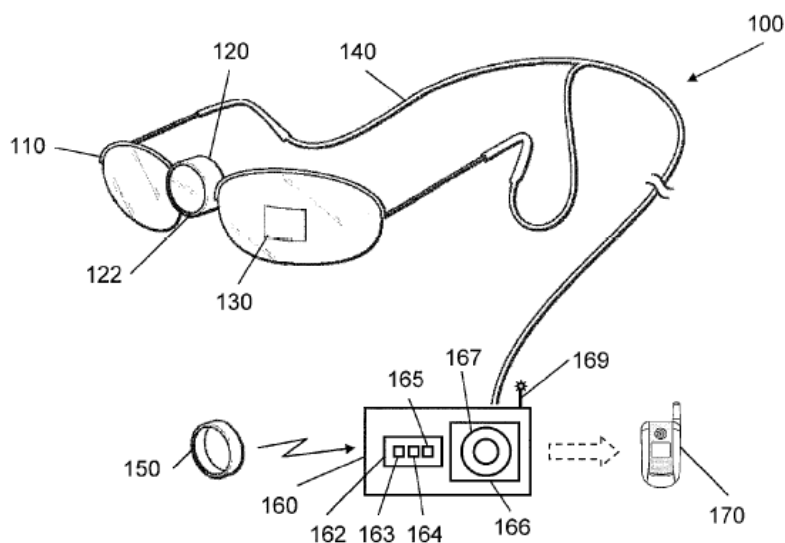


FIG. 1

Recorder 160 is described as “any recording device that records video and/or audio/video data, including conventional recorders,” and “preferably includes a processor 162 with software or hardware that accomplishes the functions described

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herein, or one or more physical memories that are collectively referred to herein as memory 166.” *Id.*, 4:50-55.

“In preferred embodiments, image data received by recorder 160 is stored in a circular buffer 167 on memory 166.” *Id.*, 5:52-55. Figure 3 depicts this circular buffer with unprotected segment 320 and write-protected segment 330. *Id.*, 7:23-25. “The recording facility 163 continuously records [a] data stream 310 [from the recorder 160] into circular buffer 167.” *Id.*, 7:26-28. “The recording facility 163 records over unprotected segment 320 of circular buffer 167, while skipping over protected segments 330 of circular buffer 167.” *Id.*, 7:28-8:31.

“The circular buffer is preferably organized into a series of memory segments that loops back on itself,” and receipt of a “record signal” causes “a segment of the circular buffer to be write-protected to prevent that segment from being overwritten during the next recording loop.” EX1033, Abstract, 2:23-26, 4:36-39.

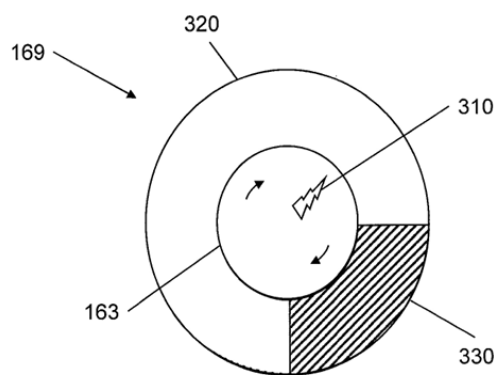


FIG. 3

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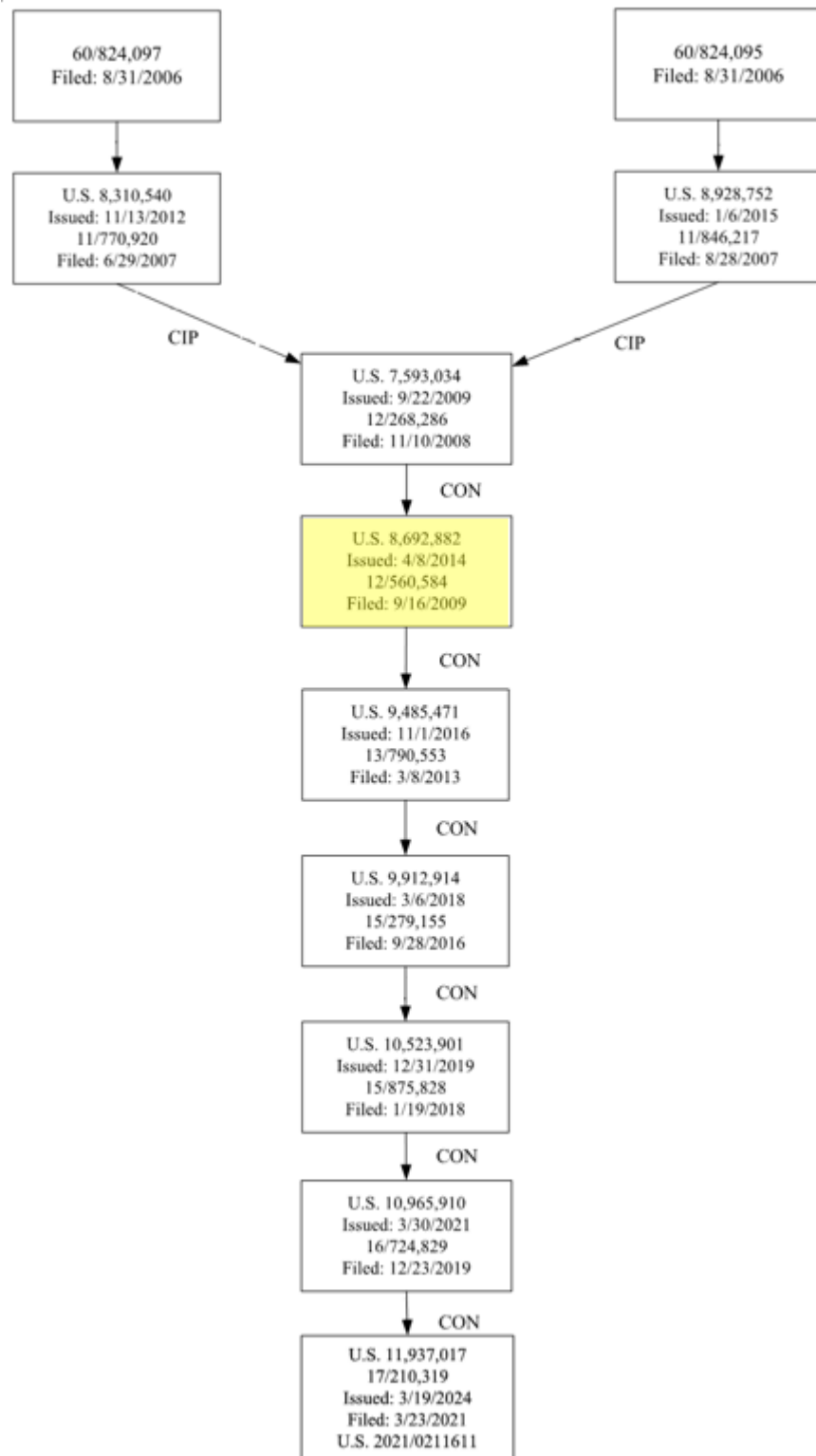
Id., Fig. 3. The write-protected segment includes video data from both before and after the record signal. *Id.*, 2:40-43.

As detailed in Dr. Nabil Sarhan's declaration, all of these features were widely known and used before Applicant's claimed priority date for the '882 patent, including in real-world situations (*e.g.*, video recording systems in police cars). EX1003, ¶¶45-112; EX1007, 2; EX1024.

B. Patent Family And Relevant File Histories

The '882 patent is one of several patents in a family of related patents:

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As seen above, the '882 patent claims priority back to U.S. Patent No. 7,593,034 (the '034 patent, EX1010), filed November 10, 2008, as a continuation application.

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EX1033 at 1:3-17. The '034 patent, in turn, claims priority as a continuation-in-part to U.S. App. No. 11/770,920 (the '920 application, EX1011), filed on June 29, 2007, and U.S. App. No. 11/846,217 (the '217 application, EX1012), filed August 28, 2007.

In the district court litigation, patent owner Stellar, LLC (“Stellar”) asserts that the claims of the '882 patent are entitled to claim priority to the June 29, 2007 filing date of the '920 application. EX1006 at 4. Without conceding its propriety, Petitioner applies June 29, 2007 as the priority date of the challenged claims in this petition. Petitioner reserves its right to challenge priority in this or other proceedings.

1. '034 Patent File History

The file history of the '034 patent contains admissions relevant to the unpatentability of the '882 patent claims. Specifically, Applicant filed a document (i) identifying the prior art allegedly most relevant to the claimed subject matter, and (ii) conceding that many claim limitations were disclosed in these references. EX1013, 89-112. As relevant to this proceeding, many of the features conceded by Applicant as being known in the prior art are recited in the claims of the '882 patent. *Id.*; EX1003, ¶¶30-44. Applicant’s document also included a “Statement of the Utility” of the purported invention. EX1013, 112.

2. '882 Patent File History

Application No. US 12/560,584, which eventually issued as the '882 patent, was filed on September 16, 2009, with 22 claims. EX1039, 1-36. The Office’s examination was not rigorous: It rejected all claims on the basis of nonstatutory double patenting

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over the '034 patent and other commonly-owned patents but never applied any prior art against the claims. *Id.*, 182-190. Applicant submitted terminal disclaimers (*id.*, 195-200, 208-11), and the Office then allowed claims 1-22. *Id.*, 215-21.

C. Level Of Skill In The Art

For purposes of this proceeding, Petitioner maintains a person having ordinary skill in the art (POSITA) at the time of the '882 patent would have been a person 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. EX1003 at ¶¶24-25. Additional graduate education could substitute for professional experience, and significant work experience could substitute for formal education. *Id.*

III. REQUIREMENTS FOR *INTER PARTES* REVIEW UNDER 37 C.F.R. § 42.104

A. Grounds For Standing Under 37 C.F.R. § 42.104(a)

Petitioner certifies that the '882 patent is available for IPR and that the Petitioner is not barred or estopped from requesting IPR challenging the claims of the '882 patent on the grounds identified herein.

B. Identification Of Challenge Under 37 C.F.R. § 42.104(b) And Relief Requested

Ground 1a: Claims 1-6, 9, 11-18, 21, and 22 would have been obvious under 35 U.S.C. § 103 over USP 7,158,167 to Yerazunis ("Yerazunis") (EX1017) alone or as combined with U.S. Patent Pub. 2002/191952 to Fiore ("Fiore") (EX1009).

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Ground 1b: Claims 7 and 8 would have been obvious under 35 U.S.C. § 103 over Yerazunis alone or as combined with Fiore, in further view of U.S. Patent Pub. 2004/008255 to Lewellen (“Lewellen”) (EX1019).

Ground 1c: Claim 10 would have been obvious under 35 U.S.C. § 103 over Yerazunis alone or as combined with Fiore, in further view of European Patent No. 1,064,783 to Mann (“Mann”) (EX1015).

Ground 1d: Claims 19 and 20 would have been obvious under 35 U.S.C. § 103 over Yerazunis alone or as combined with Fiore, in further view of USP 6,804,638 to Fiedler (“Fiedler”) (EX1037).

Ground 2a: Claims 1, 2, 4-6, 9, 11-18, and 21 would have been obvious under 35 U.S.C. § 103 over USP 5,982,418 to Ely (“Ely”) (EX1020) alone or as combined with Fiore.

Ground 2b: Claims 3, 7, 8, and 22 would have been obvious under 35 U.S.C. § 103 over Ely alone or as combined with Fiore, in further view of Lewellen.

Ground 2c: Claim 10 would have been obvious under 35 U.S.C. § 103 over Ely alone or as combined with Fiore, in further view of Mann.

Ground 2d: Claims 19 and 20 would have been obvious under 35 U.S.C. § 103 over Ely alone or as combined with Fiore, in further view of Fiedler.

C. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

In this proceeding, claims are interpreted under the same standard applied by Article III courts. Under this standard, words in a claim are given their plain meaning,

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which is the meaning understood by a POSITA in view of the patent and file history. In this Petition, all of the claim terms are given their plain meaning, as understood by a POSITA, unless otherwise noted below.

1. “a local memory functionally coupled to the camera”

The term “a local memory functionally coupled to the camera” appears in claim 1. The specification expressly defines this term: “As used herein, the term ‘a local memory functionally coupled to the camera’ means that the memory that is distanced less than 20 cm from the camera, and is coupled to the camera using entirely physical connectors (e.g., wires, pins, conductive paths, etc.).” EX1033, 2:16-21.

Petitioner proposes the term “a local memory functionally coupled to the sensor” be construed to mean “a memory that is distanced less than 20 cm from the camera and is coupled to the camera using entirely physical connectors.” In the corresponding district court litigation, the parties have agreed to this construction, EX1021, 1, and it is expected the district court will adopt this construction.

2. “file”

Independent claim 1 recites “a recording facility that records the image data into available portions of a circular buffer in the local memory as a first *file*” and “indexing the write-protected portion as a second *file* in the circular buffer.”¹ EX1033,

¹ All emphasis is added herein unless otherwise noted.

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11:47-64. Independent claim 12 includes similar recitations of the term “file.” *Id.*, 12:26-39. For all claims of the ’882 patent, the term “file” should be given its plain and ordinary meaning as of June 2007, which was “an identifiable collection of data.” EX1003, ¶¶122-128.

Intrinsic Evidence: The ’882 patent describes its purported invention as utilizing a file-based approach for the circular buffer. The patent states the entire circular buffer can be treated as a file. EX1033, 5:66-6:7. The patent further states write-protected portions of the circular buffer can be stored as files within the circular buffer. *Id.*, 2:29-51, 9:18-26. Thus, in Figure 3, the entire circular buffer 167 (misabeled with reference numeral 169) is treated as a file, and write-protected segment 330 is also treated as a file stored in the circular buffer:

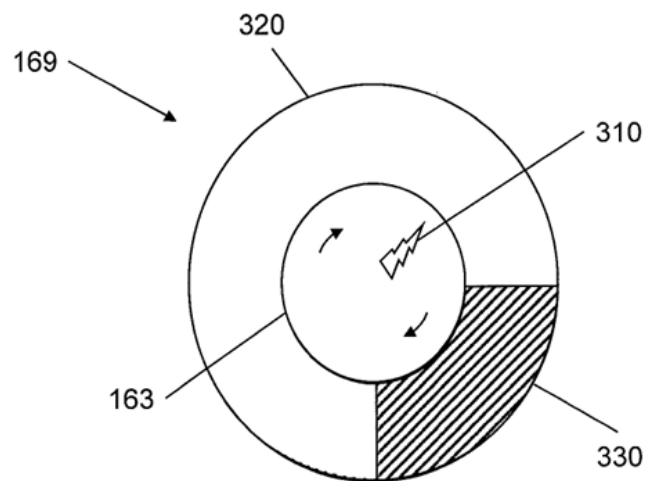


FIG. 3

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Id., Fig. 3. In this example, circular buffer 167 and write-protected portion 330 are “files” inasmuch as they comprise identifiable collections of data, although the patent does not describe any particular file type or structure for these files.

Figure 4H depicts a “C data stream ... saved as a physically dis-contiguous file” (*id.*, 9:20-28):

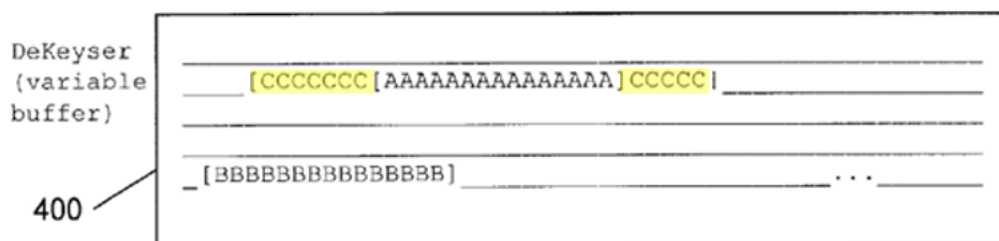


FIG. 4H

Id., Fig. 4H (color added). The file shown collects together the physically dis-contiguous “C” portions to form an identifiable collection of data. Once identified as such, the data making up the file can be used in various ways (*e.g.*, the file can be offloaded to a remote memory or played back). *Id.*, 9:29-39.

In sum, the ’882 patent uses “file” in a manner consistent with its plain and ordinary meaning as of June 2007, *i.e.*, “an identifiable collection of data.” The patent does not suggest any particular type of file is required and thus provides no basis for departing from this plain and ordinary meaning. EX1003, ¶125.

The prosecution histories of the patent family likewise do not compel a narrower construction. During prosecution, Applicant reiterated what was recited in the various

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pending claims but did not otherwise limit the claimed “files” to any particular types of files. EX1011, 77; EX1013, 285-86.

Extrinsic Evidence: General-purpose and technical dictionaries confirm the plain and ordinary meaning of “file” as “an identifiable collection of data.” The American Heritage Dictionary defined “file” as “[a] collection of related data or program records stored as a unit with a single name” (EX1025, 518), and Merriam-Webster’s Collegiate Dictionary defined it as “a collection of related data records (as for a computer)” (EX1026, 467). A technical dictionary, the Wiley Electrical and Electronics Engineering Dictionary, defined “file” as “[a] collection of information which is stored as a unit.” EX1027, 283.

IV. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. Ground 1a: Claims 1-6, 9, 11-18, 21, And 22 Would Have Been Obvious Over Yerazunis Alone Or As Combined With Fiore

1. Summary Of Yerazunis

Yerazunis, EX1017, entitled “Video Recording Device for a Targetable Weapon,” was filed September 9, 1998 and issued January 2, 2007. Yerazunis is prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (e).

Yerazunis discloses a “compact video image recording device” for different applications. EX1017, Abstract, 1:21-31, 3:5-10, 9:8-16. In one application, it is “mounted to a targetable weapon, such as a gun,” for “recording video images before

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and after the firing of the gun.” *Id.*, Abstract, 3:9-10, 4:28-30, 8:8-25, 9:60-10:11, 16:4-8, 16:43-17:38.

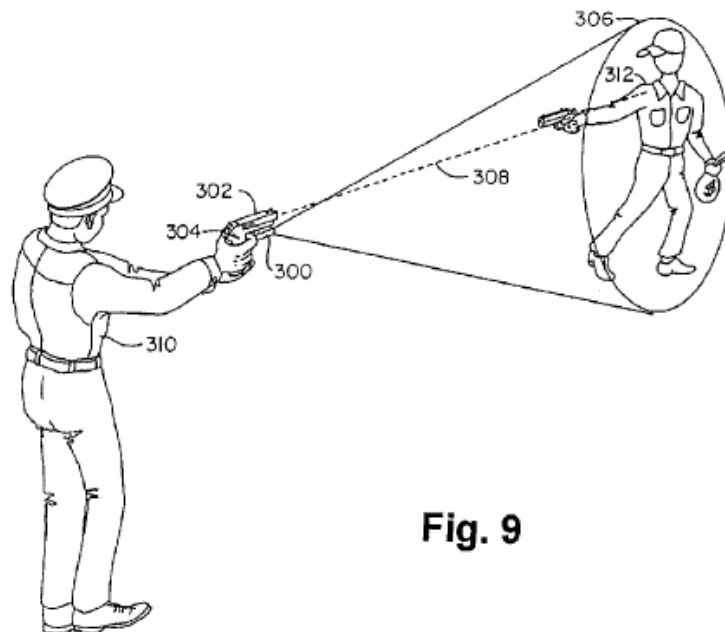


Fig. 9

Id., Fig. 9.

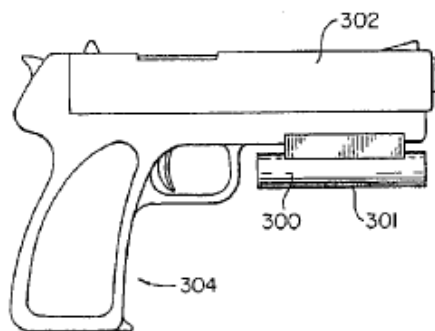


Fig. 10a

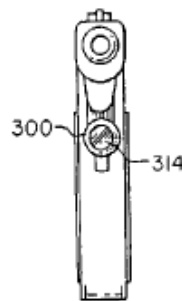


Fig. 10b

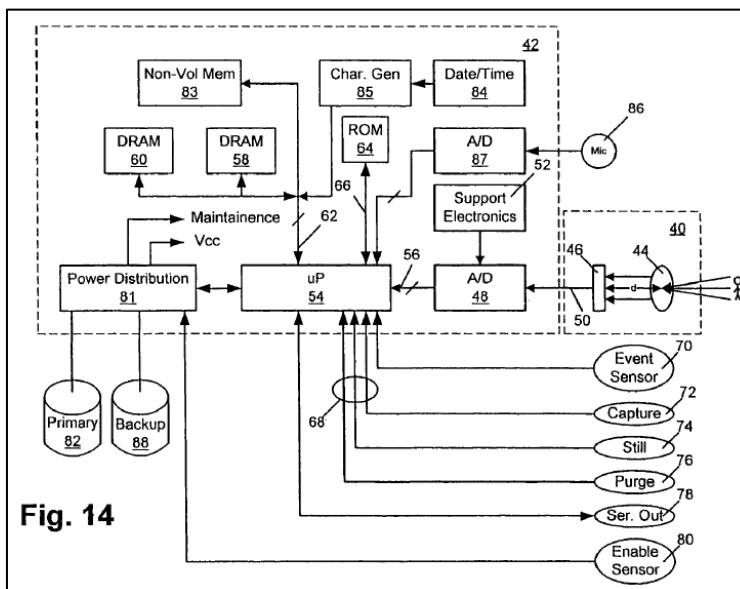
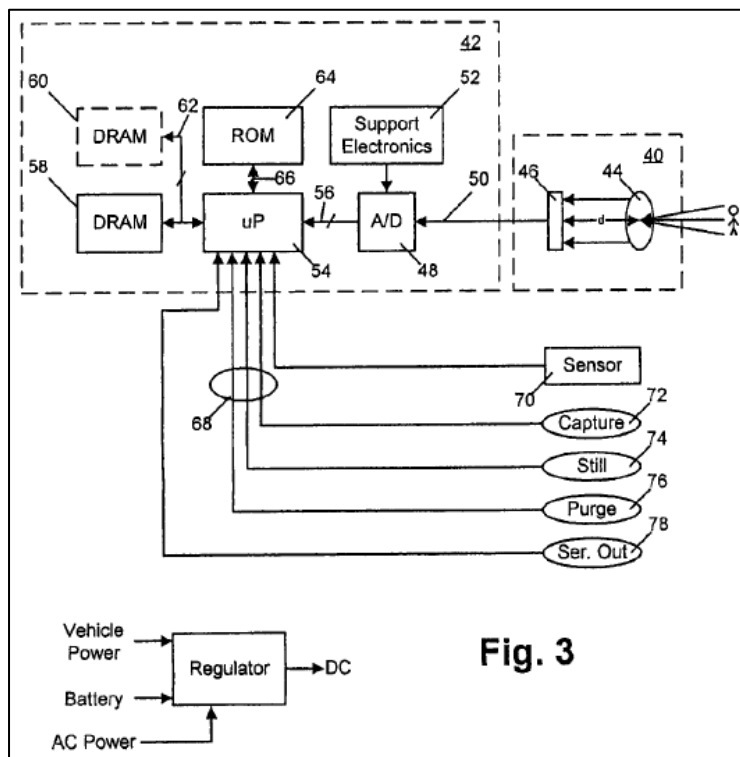
Id., Figs. 10a, 10b.

Yerazunis’s video recording device “records video frames successively in at least one circular buffer memory organized as a continuous loop overwriting the oldest frame within the respective buffer memory with a more recently received frame.” *Id.*,

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2:19-23. For a gun-mounted application, Yerazunis discloses that a “gun firing signal is generated upon discharge of the gun,” and “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 events.” *Id.*, 3:19-31. “Frame data associated with each subsequent firing event[] is stored within an unused portion of the circular buffer memory.” *Id.*, 3:31-33.

Figure 3 depicts an “electrical block diagram of a video recording device” (*id.*, 3:55-56), and Figure 14 illustrates “a video recording device in accordance with the present invention for use with a gun” (*id.*, 4:28-30).



Id., Figs. 3, 14; *id.*, 16:4-8, 17:34-38. These figures and other relevant disclosure of Yerazunis are described in further detail below and in Dr. Sarhan's declaration. EX1003, ¶¶129-135.

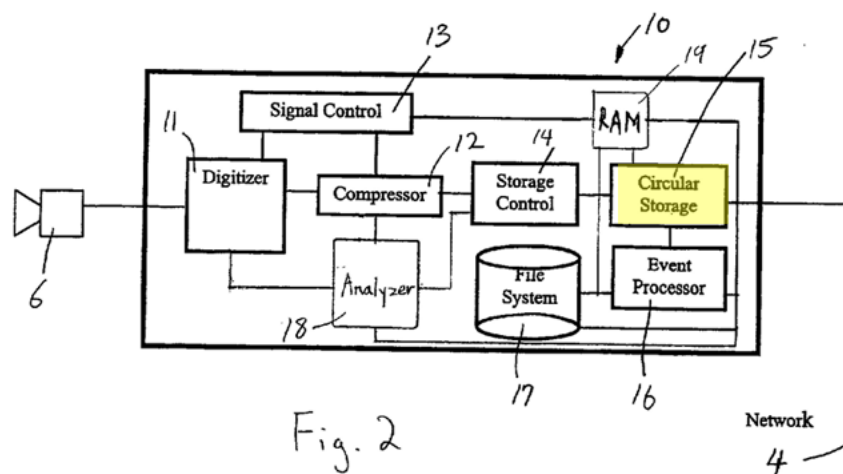
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Yerazunis was neither cited nor applied during prosecution. While certain patents related to the '882 patent list on their face U.S. Patent Pub. 2002/005895 to Freeman (EX1028), an application to which Yerazunis is a continuation-in-part, Yerazunis includes significant additional disclosures not included in Freeman. For example, Yerazunis discloses the above-described gun-camera embodiment that is not described in Freeman. This petition relies on these additional disclosures of Yerazunis that are not present in Freeman.

2. Summary Of Fiore

Fiore, EX1009, entitled “Data Recording and Playback System and Method,” was filed April 9, 2002 and published December 19, 2002. Fiore incorporates by reference and claims priority to U.S. Provisional Application No. 60/282,162, filed April 9, 2001 (EX1030). Fiore is prior art under at least pre-AIA 35 U.S.C. § 102(a), (b), (e).

Fiore discloses “data recording and playback systems for monitoring processes or occurrences of events which allows the replay and/or analysis of a time sampled signal.” EX1009, [0003]. Fiore’s circular storage buffer 15 stores data frames of an input signal from monitoring device 6 (which may be a video camera, *id.*, [0040]):



Id., Fig. 2 (color added); *id.*, [0048]. Circular storage buffer 15 “may be implemented as a reserved area in memory, a disk file, or as a storage in a looped media.” *Id.*, [0065].

Circular storage buffer 15 is implemented as a memory-mapped file. *Id.*, [0047], [0068]; EX1003, ¶143. Fiore teaches indexing data frames associated with events as files within circular storage buffer 15. Fiore’s Background section describes conventional approaches that do not differentiate event data as files in the circular buffer. EX1009, [0005]-[0006]. In contrast, Fiore describes indexing identifiable collections of data (*i.e.*, files) for respective events in circular storage buffer 15. *Id.*, [0022]-[0023], [0051], [0059]-[0060]. Fiore’s indexing of data as files in the buffer 15 is described in further detail below and in the Dr. Sarhan’s declaration. EX1003, ¶¶141-150.

Fiore was neither cited nor applied during prosecution.

3. Motivation To Combine

A POSITA would have been motivated to combine Yerazunis and Fiore for multiple reasons. EX1003, ¶¶168-72, 328.

As one example, because Yerazunis and Fiore disclose data recording systems that store data in a circular buffer and preserve data associated with an event—before and after an event trigger—a POSITA would have been aware of and motivated to combine the two references.

As another example, a POSITA would have been motivated to implement Yerazunis’s video recording device with Fiore’s file-based approach for the circular storage buffer and event data stored therein. Fiore describes in detail its file-based approach, which includes (i) implementing circular storage buffer 15 as a memory-mapped file, and (ii) indexing event data for events as respective files within the memory-mapped file. EX1009, [0022]-[0023], [0051], [0059]-[0060]. Fiore also describes numerous benefits of its file-based approach, including that it “combines the access speed of the RAM memory with large storage capacity of a disk file” (*id.*, [0065]), “mak[es] the indexing of data in the memory mapped file 110 transparent to the circular storage buffer’s 15 access objects” (*id.*, [0067]), and “avoid[s] issues of switching between Random Access Memory (RAM) and disk files” (*id.*, [0068]; *id.*, [0072] (describing approach as providing “significant performance gains” and allowing “playback from the circular storage buffer without interrupting recording into the circular storage buffer”)).

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In view of these exemplary benefits, and other reasons herein, a POSITA implementing Yerazunis would have been motivated to utilize Fiore’s teachings regarding (i) the circular storage buffer implemented as a memory mapped file, and (ii) indexing of event data as files within the circular storage buffer. EX1003, ¶¶168-172. A POSITA would have had a reasonable expectation of success because Fiore provides a detailed disclosure of its file-based approach, and applying those techniques to Yerazunis would have been routine and well within a POSITA’s skill. *Id.*

4. Independent Claims 1 and 12

Independent claim 1 is directed to a surveillance apparatus, and independent claim 12 is a method claim with similar limitations. EX1040 (chart numbering each element of claims 1 and 12 and comparing similar elements side-by-side). In view of these similarities, claims 1 and 12 are addressed together.²

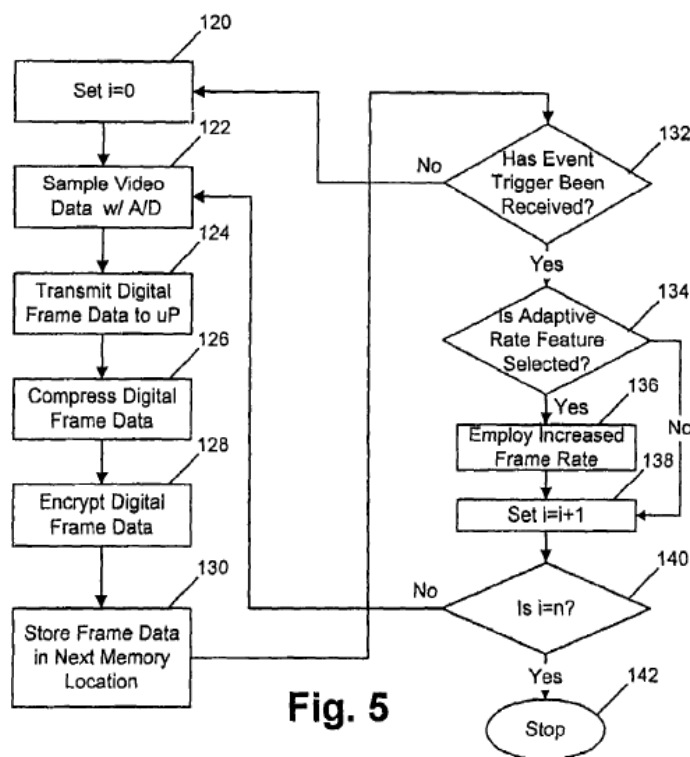
a) Preamble: A surveillance apparatus comprising:

To the extent limiting, Yerazunis discloses the preambles of claims 1 and 12. EX1003, ¶¶330; EX1040. For claim 1, Yerazunis discloses “a video recording device” that “is contained within a compactly sized housing” and captures video images for,

² In the headings that follow, the elements of claim 1 are reproduced. Differences between the language of claims 1 and 12 are addressed in the discussion for each element.

e.g., security purposes. EX1017, 2:12-14; *see also id.*, 1:17-43. Yerazunis therefore discloses a “surveillance apparatus,” and Applicant admitted this limitation is known in the art. EX1013, 94, 100, 106-107.

For claim 12, Yerazunis discloses a “method of operation of the video recording device” illustrated in Figure 5 below (EX1017, 10:55-11:30):



The steps illustrated constitute “processing imaged data.” EX1003, ¶332; *see also* EX1017, 16:4-8, 17:45-61. Yerazunis thus discloses “[a] method of processing imaged data from a camera.”

b) Element 1: a camera having an image capturing component that captures image data;

Yerazunis discloses element 1 for each of claims 1 and 12. EX1003, ¶333; EX1040. For claim 1, Yerazunis’s image sensor 46 in camera 40 is “operative to

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provide an output signal representative of a video image which impinges upon the sensor.” EX1017, 5:45-49. The output signal is “an analog signal which is coupled to one or more A/D converters” (“ADC 48”) that “generate a digital representation of the video image.” *Id.*, 2:37-41.

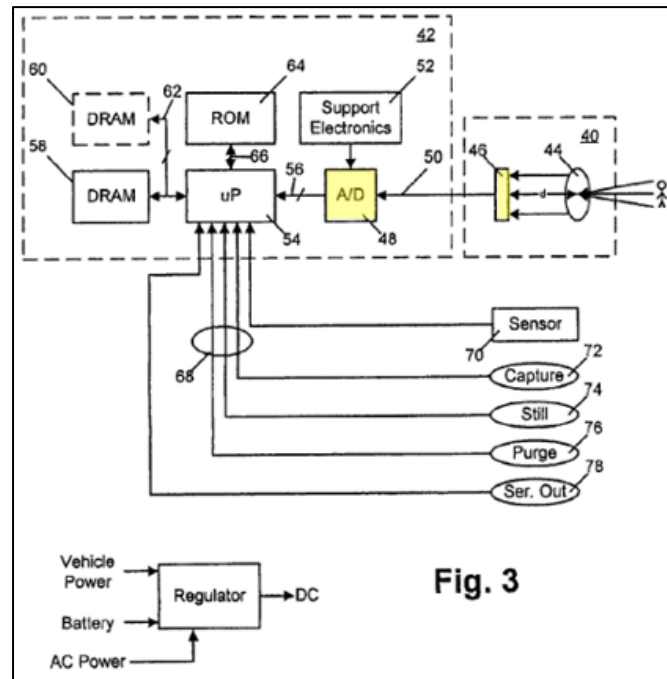


Fig. 3

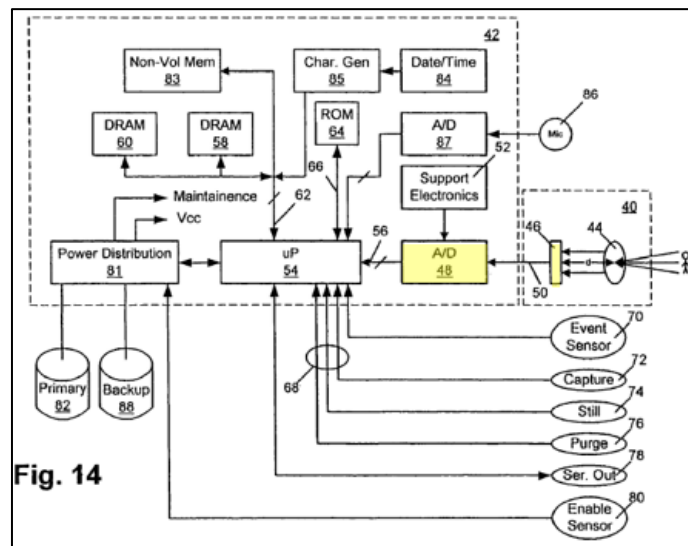


Fig. 14

Id., Figs. 3, 14 (color added).

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Camera 40 and video electronics 42 disclose the claimed “camera” because they collectively include an image sensor 46 (*i.e.*, an “image capturing component”) that captures image data and one or more ADCs 48 that generate a digital representation of the image data. EX1003, ¶334.

For element 1 of claim 12, the image data output by the one or more ADCs 48 is “video data” because it contains video frames in digital form. EX1017, 5:60-67, 6:52-55, 7:26-32; EX1003, ¶335. The digital video data is received at least by microprocessor 54. EX1017, 10:55-63, Fig. 3.

c) Element 2: a local memory functionally coupled to the camera;

Yerazunis discloses element 2 of claim 1. EX1003, ¶336; EX1040. As explained in Section III.C.1, the term “a local memory functionally coupled to the camera” should be construed to mean “a memory that is distanced less than 20 cm from the camera and is coupled to the camera using entirely physical connectors.” Yerazunis’s video recording device includes video electronics 42 with DRAMs 58, 60, *i.e.*, the “local memory” (EX1017, 5:40-43, 6:24-36):

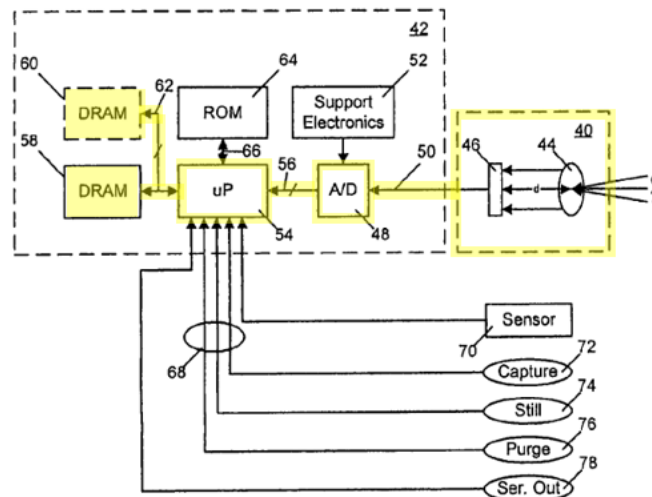


Fig. 3

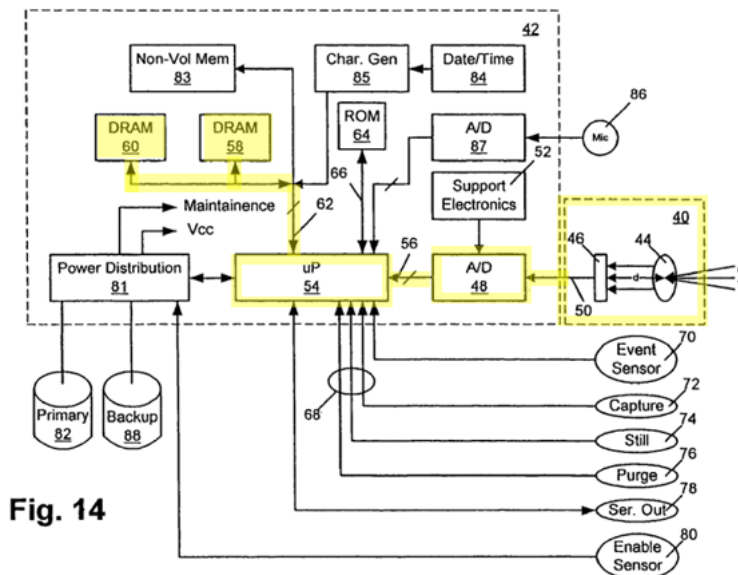
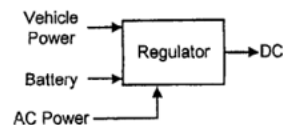


Fig. 14

Id., Figs. 3, 14 (color added).

DRAMs 58, 60 are coupled to the claimed camera using entirely physical connectors. Microprocessor 54 and DRAM 58 “may be obtained as a single integrated circuit [IC]” (*id.*, 6:24-29), meaning their connection would be via one or more

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physical connectors on the IC (*e.g.*, conductive lines and/or vias). DRAM 60 is “coupled to the microprocessor 54 via a bus 62,” which is also a physical connector. *Id.*, 6:30-36. Microprocessor 54, in turn, is coupled to ADC 48 “via signal path 56 which comprises a parallel signal bus,” another physical connector. *Id.*, 6:14-23.

Finally, ADC 48 is coupled to camera 40 “via a signal path 50” to enable ADC 48 to sample the output of the camera’s image sensor 46. *Id.*, 5:40-67. A POSITA would have understood signal path 50 between camera 40 and ADC 48 as using a physical connector. EX1003, ¶338. Accordingly, DRAMs 58, 60 are coupled to the claimed camera “using entirely physical connectors,” as required by the parties’ agreed-upon construction.

A POSITA would have further understood DRAMs 58, 60 are distanced less than 20 cm from the claimed camera (including image sensor 46 and one or more A/D converters 48). *Id.*, ¶339. Yerazunis discloses “a video recording device” that “is contained within a compactly sized housing” (EX1017, 2:12-14; Figs. 2a, 2b) and in an embodiment is “mountable to a gun and useful for recording video images before and after the firing of the gun” (*id.*, Abstract). In Figures 10a and 10b, video recording device 300 is mounted below the barrel of gun 302. *Id.*, 15:24-36.

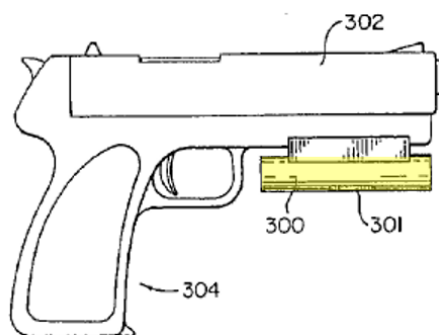


Fig. 10a

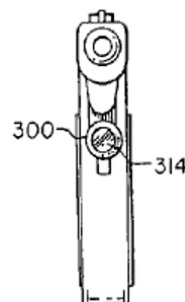


Fig. 10b

Id., Figs. 10a, 10b (color added). A POSITA would have understood that for the video recording device to be compact and mountable to a gun, it would necessitate that the memory be located near—certainly less than 20 cm from—the camera. EX1003, ¶339. In Figure 10a, the entire video recording device (highlighted) is shown attached to a portion of the gun barrel that is less than 20 cm in length. DRAMs 58, 60 and camera 40 contained within the video recording device would therefore necessarily be distanced less than 20 cm apart.

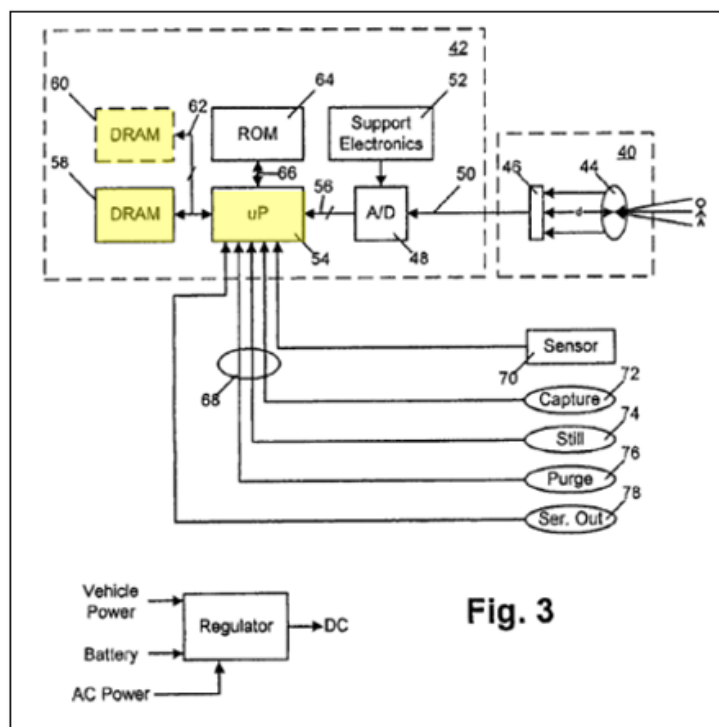
Yerazunis therefore discloses “a local memory functionally coupled to the camera,” as construed by the parties. Applicant admitted this limitation is known in the art. EX1013, 101, 107.

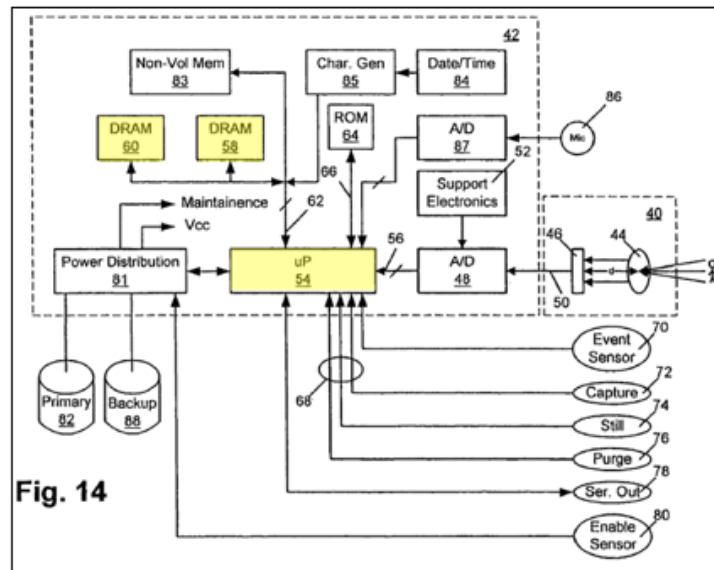
- d) Element 3: a recording facility that records the image data into available portions of a circular buffer in the local memory as a first file using a digital video file format;**

Yerazunis alone or combined with Fiore discloses element 3 of claim 1, and element 2 of claim 12. EX1003, ¶340; EX1040. Yerazunis’s video recording device “records video frames successively in at least one circular buffer memory organized as

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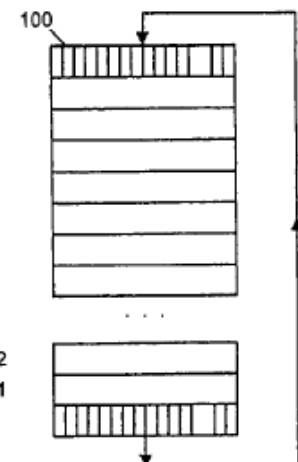
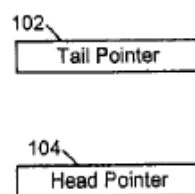
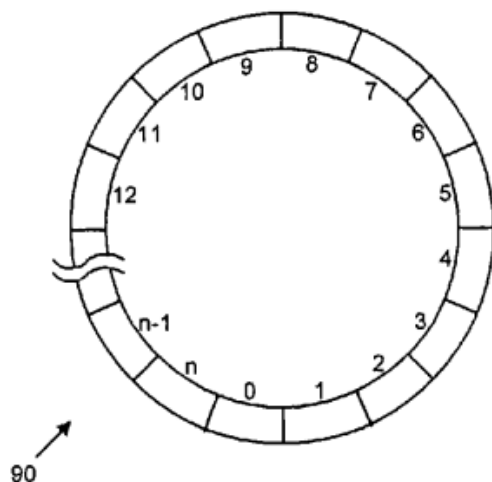
a continuous loop.” EX1017, 2:19-23, 17:9-20, 17:50-59. Camera 40 captures video, and ADC 48 converts that into a digital signal. *Id.*, 5:40-67. The digital signal is provided to microprocessor 54, which “compresses the digitized frame data and stores the compressed frame data in the next sequential location of [a] circular buffer.” *Id.*, 2:45-47, 6:24-26, 6:52-7:6, 10:55-67, 17:50-59; *see also id.*, 11:50-14:44, Figs. 6-8.





Id., Figs. 3, 14 (color added to highlight microprocessor 54 (recording facility) and DRAMs 58, 60 (local memory including circular buffer)). A POSITA would have understood the compressed frame data as “using a digital video file format.” EX1003, ¶341.

Yerazunis’s circular buffer is depicted in Figures 4A and 4B:



EX1017, 3:60-63, 7:9-11.

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Yerazunis's circular buffer is formed in DRAM 58. *Id.*, 7:7-61, 18:7-12. Thus, microprocessor 54 includes "a recording facility" that "records the image data into available portions of a circular buffer in the local memory as a first file using a digital video file format." Yerazunis's disclosure is similar to that of the '882 patent: Like Yerazunis, the '882 patent describes a recorder 160 that uses a processor 162 to perform various "facilities" or "functions." EX1010, 4:50-53, 5:20-22, 5:28-30; EX1003, ¶343.

While Yerazunis does not *expressly* refer to recording the image data into the circular buffer "as a first file," Yerazunis does disclose that in a gun camera embodiment, "the head pointer 104 and the tail pointer 102 ... defining the area(s) of the circular buffer memory, are stored in a table to allow later retrieval of the video data pertaining to each firing of the gun." EX1017, 17:50-56. A POSITA would have found it obvious to record the image data in the circular buffer "as a first file" based on Yerazunis's disclosure of storing video data corresponding to particular events "in a table" for "later retrieval." EX1003, ¶344. And a POSITA would have understood such file-based recording as one of a finite number of identified solutions for recording image data in Yerazunis, evidencing its obviousness. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). A POSITA would have recognized Yerazunis's image data must be recorded to the circular buffer in some way, and using a file was a well-known approach for doing so. EX1003, ¶344; *see also* EX1017, 6:1-13, 6:33-36, 7:23-32, 10:37-39, 10:63-67, 11:31-43.

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To the extent a POSITA wanted further guidance as to particular methods for recording image data as files in Yerazunis's buffer, a POSITA would have been motivated to turn to Fiore. EX1003, ¶345. As explained in Section IV.A.2, Fiore implements circular storage buffer 15 as a memory-mapped file and describes indexing collections of frame data for respective events as files within the memory-mapped file. EX1009, [0022]-[0023], [0051], [0059]-[0060]. Fiore also describes the benefits of its file-based approach, including enabling playback of video data for a specific event from the circular buffer without interrupting simultaneous recording of new video data into the buffer. *Id.*, [0065], [0067]-[0068], [0072]. In view of these exemplary benefits and the additional reasons explained in Section IV.A.3, a POSITA would have been motivated to implement Yerazunis's microcontroller 54 to "record[] the image data into available portions of a circular buffer ... as a first file" in the manner Fiore discloses. In the Yerazunis/Fiore system, the circular buffer implemented as a memory-mapped file discloses the claimed "first file" into which Yerazunis's image data would have been recorded. EX1003, ¶345.

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- e) **Element 4: a protecting facility that responds to a signal to record the image data by designating a segment of the circular buffer as a write-protected portion and by indexing the write-protected portion as a second file in the circular buffer, wherein the 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; and**

Yerazunis alone or combined with Fiore discloses element 4 of claim 1, and elements 3 and 4 of claim 12. EX1003, ¶346; EX1040.

For element 4 of claim 1, Yerazunis's event sensor 70 generates a "gun firing signal" "upon discharge of the gun." EX1017, 3:20-33, 8:8-25, 14:55-61. Upon detecting the gun-firing signal, 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." *Id.*, 3:25-38, 8:26-30, 15:9-13. With the specified frame data write-protected, "[f]rame data associated with each subsequent firing event[]" is stored within an unused portion of the circular buffer memory." *Id.*, 3:31-33.

Yerazunis's protecting facility also "responds to a signal to record the image data ... by indexing the write-protected portion as a second file in the circular buffer." Yerazunis's tagging, use of pointers to identify a collection of data for write-protection, and storage of such pointers in a table "to allow later retrieval" of video data for gun-firing events (EX1017, 17:45-61) discloses "indexing the write-protected portion as a second file in the circular buffer." A POSITA would have understood

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that retrieving video data for gun-firing events necessitates an ability to locate the video data within the buffer, such that Yerazunis necessarily discloses “indexing.” Thus, while Yerazunis does not *expressly* refer to “indexing” write-protected segments as second files in the circular buffer, a POSITA would have understood Yerazunis as describing—or at minimum, rendering obvious—this limitation. *Id.*, 6:1-13, 6:33-36, 7:23-32, 10:37-39, 10:63-67, 11:31-43; EX1003, ¶348.

A POSITA would have recognized the claimed “indexing the write-protected portion as a second file in the circular buffer” as one of a finite number of identified solutions for storing and retrieving data in Yerazunis, further evidencing its obviousness. *KSR*, 550 U.S. at 421. A POSITA would have recognized that Yerazunis’s event data must be stored and retrieved in some way, and indexing such data as a file was a well-known approach for doing so. EX1003, ¶349. Storing and retrieving event data using this conventional approach was not innovative but rather a straightforward application of ordinary skill or common sense. *See KSR*, 550 U.S. at 421.

To the extent a POSITA wanted further guidance as to particular methods for indexing of event data as files in Yerazunis’s buffer, a POSITA would have been motivated to turn to Fiore for at least the reasons above. EX1003, ¶¶168-172, 350. As explained in Section IV.A.2, Fiore discloses a circular storage buffer 15 implemented as a memory-mapped file (EX1009, [0047], [0064]-[0068]), Fig. 9), and identifiable collections of data (*i.e.*, files) for respective events are indexed in the

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circular storage buffer 15 (*id.*, [0022]-[0023], [0041], [0048], [0050]-[0051], [0059]-[0060]). Fiore also describes numerous benefits of its file-based approach. EX1009, [0065], [0067]-[0068], [0072]. In view of these exemplary benefits and the additional reasons explained in Section IV.A.3, a POSITA would have been motivated to implement Yerazunis's microcontroller 54 to "respond[] to a signal to record" by "indexing the write-protected portion as a second file in the circular buffer" in the manner Fiore discloses.

Yerazunis alone or combined with Fiore discloses elements 3 and 4 of claim 12 for the same reasons. EX1003, ¶351; EX1040. A POSITA would have also understood that the segment of the circular buffer to be write-protected must "include[] a newly recorded portion of the buffer" because frame data not "newly recorded" would be overwritten once recording loops back to where that frame data is stored. EX1003, ¶351; EX1017, 2:19-23, 2:45-57, 17:9-20, 17:50-59.

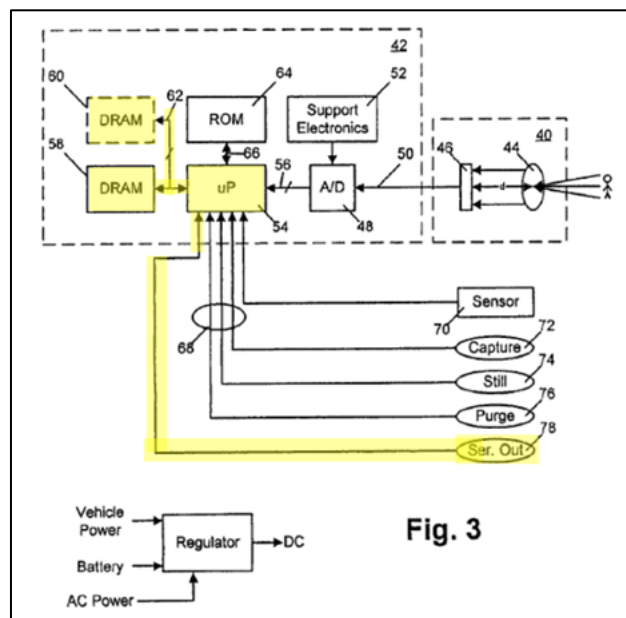
Further, the indexing in Yerazunis alone and in the combined Yerazunis/Fiore system occurs "during the step of recording," as required by claim 12. When Yerazunis's video recording device is used with a gun, "recording of data continues [during and after a first firing event] since a subsequent firing event may occur." EX1017, 17:45-50. This is achieved by indexing, as explained above. *Id.*, 2:19-23, 4:45-49, 7:7-61, 9:34-38, 17:45-61. Yerazunis's indexing thus occurs during recording. EX1003, ¶352.

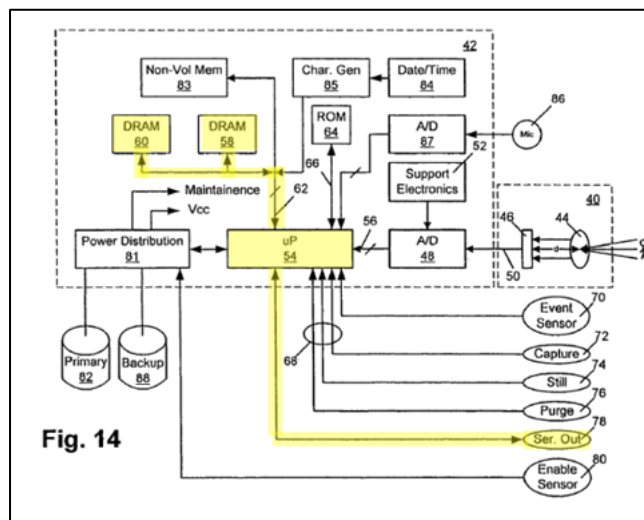
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Finally, the second files disclosed or rendered obvious by Yerazunis and/or Fiore are distinct from the “first file” discussed for element 3 above. EX1003, ¶353. The “first file” in the Yerazunis/Fiore system may be a memory mapped file that implements the circular buffer, whereas the indexed second file comprises portions of the circular buffer that correspond to video data for a particular event (e.g., a gun-firing event).

f) Element 5: wherein the local memory is configured to allow access to at least one of the files.

Yerazunis discloses element 5 of claim 1, and element 5 of claim 12. EX1003, ¶354; EX1040. Yerazunis’s microprocessor 54 includes a serial output channel 78 that is “provided to permit recorded frame data to be downloaded to a computer for viewing.” EX1017, 3:1-2, 6:45-51, 18:60-66.





Id., Figs. 3, 14 (color added).

The microprocessor’s serial output channel 78 (or other appropriate data transfer link, *id.*, 3:3-4, 18:60-64) “is employed to download captured and stored video images” from the circular buffer of DRAM 58 “to an external Personal Computer (PC)” (*id.*), or to “a radio transmitter to transmit RF signals to a base station.” EX1017, 9:60-10:3. Yerazunis therefore discloses that DRAM 58 (*i.e.*, local memory) is configured to allow access to at least one of the files stored therein. Such access is provided to at least the serial output channel 78 and the PC and radio transmitter coupled to the channel 78. EX1003, ¶355.

5. Claims 2 and 21

Claim 2 depends from claim 1 and recites “a sending facility configured to transmit the second file from the local memory to a remote memory.” Claim 21 depends from claim 12 and recites “wherein the step of providing access to the at least one of the distinct files includes transmitting the at least one of the distinct files for storage in

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a remote memory.” Yerazunis discloses these limitations. EX1003, ¶357. The microprocessor 54 includes the claimed “sending facility configured to transmit the file from the local memory to a remote memory.” As detailed above, Yerazunis’s video recording device stores second files containing recorded frame data in the circular buffer of DRAM 58. The microprocessor 54 with serial output channel 78 transmits write-protected second files stored in the DRAM 58 (*i.e.*, “local memory,” as claimed) to an external computer or base station, which a POSITA would have understood as having “remote memory” for storing such files. The microprocessor 54 therefore includes the claimed “sending facility.” *Id.*, ¶357.

6. Claims 3 and 22

Claim 3 depends from claim 2 and recites “wherein the seconding facility comprises a wireless transmitter.”³ Claim 22 depends from claim 21 and recites “wherein the step of transmitting includes wirelessly transmitting the at least one of the distinct files.” Yerazunis discloses these limitations. EX1003, ¶359. As explained above for claim 2, Yerazunis’s microprocessor 54 includes a serial output channel 78 that couples to “a radio transmitter to transmit RF signals to a base station.” EX1017, 3:1-2, 6:45-51, 9:63-10:3, 18:60-66, Figs. 3, 14. A POSITA would have recognized

³ Claim 3 refers to “the seconding facility,” but this appears to be a typographical error. The claim is presumably referring to the “sending facility” of claim 2, from which claim 3 depends.

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that Yerazunis's radio transmitter is a "wireless transmitter," as claimed. EX1003, ¶359.

7. Claim 4

Claim 4 depends from claim 1, reciting "a sensor that automatically triggers the signal to record upon detecting identified content in at least one of the captured images." Yerazunis discloses this. EX1003, ¶361. When event sensor 70 detects certain "condition[s]," it provides a trigger output signal that activates capture of video images, causing them to be write-protected. EX1017, 8:8-25; *see also id.*, 3:25-35, 8:26-30, 15:9-13, 17:45-61. Accordingly, event sensor 70 "automatically triggers the signal to record."

"Triggering events may include" a "signal representing a recognized change in a video image or acoustic signal." EX1017, 2:58-64. A POSITA would have understood that recognizing a change in a video image would have involved detecting identified content in at least one of the captured images. EX1003, ¶363.

Applicant admitted the limitation of claim 4 is known in the art. EX1013, 89, 95-96.

8. Claim 5

Claim 5 depends from claim 1, reciting "an interface through which a human can initiate the signal." Yerazunis discloses this. EX1003, ¶366. The '882 patent describes an "interface" as an input mechanism for receiving user input. EX1033, 2:43-45, 6:8-28, 8:43-54, 8:60-9:13. Yerazunis discloses an input mechanism (*i.e.*, "an interface")

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through which a human triggers a write-protecting signal, including “a button actuated by a user.” EX1017, 2:58-64; *see also id.*, 9:17-18 (describing “capture button 72 which serves as a user activatable trigger event”), Fig. 14 (depicting capture button 72). Pushing this button provides a trigger signal to central control processor 54. *Id.*, 9:19-22.

Yerazunis’s “video recording device may be interfaced directly to the trigger of the gun” such that “the trigger is employed to generate a switching action or signal which is used to indicate a trigger event.” *Id.*, 16:59-62. The trigger is “an interface through which a human can initiate a signal” for reasons similar to the capture button.

Applicant admitted the limitation of claim 5 is known in the art. EX1013, 96, 102.

9. Claims 6 and 17

Claim 6 depends from claim 1, reciting “an interface through which a human can designate a length of time of at least one of the pre-recorded subset, the post-recorded subset, and the segment.” Claim 17 depends from claim 12 and similarly recites “configuring the size of the pre-recorded subset.” Yerazunis discloses these limitations. EX1003, ¶369. Yerazunis teaches “the number of frames that are recorded before and after [a trigger event] are a matter of design choice.” EX1017, 8:51-55; *see also id.*, 6:11-13, 10:42-47, 11:31-43, 12:37-42. Because a human can set the number of frames recorded before and after a trigger event by “design choice,” Yerazunis necessarily discloses the “interface” of claim 6.

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Applicant admitted the limitations of claims 6 and 17 are known in the art. EX1013, 90, 91, 96, 99, 111.

10. Claim 9

Claim 9 depends from claim 1, reciting “a mount for the camera.” Yerazunis discloses this. EX1003, ¶371. Yerazunis’s compact video image recording device with camera “is mountable to a gun.” EX1017, Abstract; *see also id.*, 3:9-17, 14:45-50, 15:24-30, 15:37-38, 15:56-57.

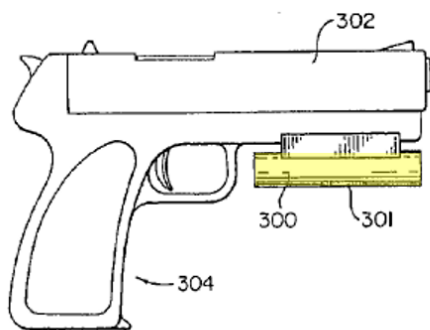


Fig. 10a

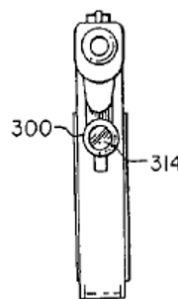


Fig. 10b

Id., Figs. 10a, 10b (color added); *see also id.*, Figs. 2a, 2b, 9, 11a, 11b, 12a, 12b, 13; 3:45-54. Applicant admitted this limitation is known in the art. EX1013, 90, 97, 103.

11. Claim 11

Claim 11 depends from claim 1, reciting “an electronic index that provides a directory to the first and the second files within the circular buffer.” Yerazunis alone or combined with Fiore discloses this. EX1003, ¶373. Yerazunis’s write-protection includes storing pointers that define areas of the circular buffer not to be overwritten, thus providing an electronic index to the write-protected segments “to allow later

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retrieval.” EX1017, 17:45-61; EX1003, ¶373. Yerazunis therefore discloses this limitation.

To the extent a POSITA wanted further guidance as to particular methods for indexing of event data as files in Yerazunis’s buffer, a POSITA would have been motivated to turn to Fiore. EX1003, ¶374. Fiore implements circular storage buffer 15 as a memory-mapped file and describes indexing collections of frame data for respective events as “second files” within a “first file” (*i.e.*, the memory-mapped file that implements the circular buffer). *Id.*; EX1009, [0022]-[0023], [0051], [0059]-[0060]. A POSITA would have been motivated to employ Fiore’s indexing of video data as second files for the reasons stated in Section IV.A.3.

12. Claim 13

Claim 13 depends from claim 12, reciting “storing the distinct files from the write-protected portions as the distinct, separate files in a remote memory.” This would have been obvious in view of Yerazunis. EX1003, ¶376. A POSITA would have understood that a file stored in local memory would be maintained as a file once offloaded to the remote memory, and that it would have been obvious to implement Yerazunis (alone or in combination with Fiore) in this manner. *Id.* Yerazunis specifically discloses offloading video images to a remote memory so that a user can view them (*see, e.g.*, EX1017, 3:1-2, 6:45-47, 9:60-65), and a POSITA would have understood this to mean storing as distinct, separate files in the remote memory.

13. Claim 14

Claim 14 depends from claim 12, reciting “recording the video data as the first file into physically dis-contiguous parts of the circular buffer.” Yerazunis discloses this. EX1003, ¶378. Since frame data associated with a firing event cannot be overwritten, Yerazunis’s video recording device necessarily records to physically discontinuous parts of the circular buffer, as the overwriting process skips preserved event data. *Id.*; EX1017, 3:19-33; *see also* Figs 6-8 (illustrating the non-sequential nature of recording); *accord* EX1010, 9:18-26, Fig. 4H.

14. Claim 15

Claim 15 depends from claim 12, reciting “wherein the signal to save a recording comprises a signal to start recording and a signal to stop recording.” Yerazunis discloses this. EX1003, ¶380. As explained above for claim 1, element 5, and claim 12, element 3, Yerazunis’s video recording device responds to a signal to save a recording by write protecting specified frame data in the circular buffer. EX1017, 3:20-38, 8:8-30, 14:55-61, 15:9-13. Yerazunis’s “signal to save a recording” comprises “a signal to start recording and a signal to stop recording,” as recited in claim 15. EX1003, ¶380. Yerazunis’s “signal to save” tells the video recording device when to (i) “start recording,” *i.e.*, upon detection of the signal, EX1017, 3:25-38, 8:26-30, 15:9-13, and (ii) “stop recording,” *i.e.*, when a predetermined number of frames subsequent to the trigger event have been write protected, *id.*, 2:53-64, 4:35-56, 8:26-61, 11:27-30, 12:14-

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17, 13:3-17, 16:66-17:38. Yerazunis thus discloses the limitations added in claim 15. EX1003, ¶380.

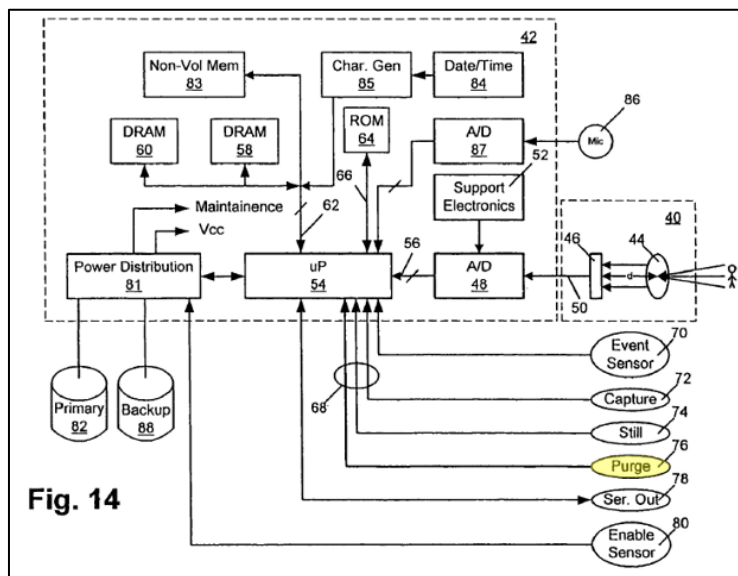
15. Claim 16

Claim 16 depends from claim 12, reciting “receiving the signal to save a recording through at least one of a manually operated switch and an audio signal.” Yerazunis discloses this. EX1003, ¶382. Yerazunis’s “event sensor 70 is operative to generate a trigger signal in response to the discharge of the gun,” and may comprise a microphone “operative to detect the sound associated with the firing of the gun” (*i.e.*, audio signal). EX1017, 16:43-55.

Yerazunis also discloses the “interface through which a human can initiate a signal” of claim 5, teaching a “capture button 72 which serves as a user activatable trigger event” (*id.*, 9:17-18; *see also id.*, 2:58-64), and a gun trigger “interfaced directly” to Yerazunis’s video recording device such that the trigger (*i.e.*, manually operated switch) triggers the signal to write-protect video data (*id.*, 16:59-62).

16. Claim 18

Claim 18 depends from claim 12, reciting “removing write-protection from a transmitted write-protected portion after transmission of its corresponding distinct file.” Yerazunis discloses this. EX1003, ¶385. Yerazunis discloses purge button 76 electronically coupled to the central control processor 54. EX1017, 9:47-48. Pressing the purge button, “the contents of the circular buffer and any still images that have been captured are erased. Thus, in the event that a user captures images which, for any



EX1017, Figs. 3, 14 (color added); *id.*, 19:30-34.

B. Ground 1b: Claims 7 And 8 Would Have Been Obvious Over Yerazunis Alone Or As Combined With Fiore, In Further View Of Lewellen

1. Summary Of Lewellen

Lewellen, EX1019, entitled “Vehicle Video System and Method,” was filed July 11, 2002 and published January 15, 2004. Lewellen is prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), (e).

Figure 3 of Lewellen depicts a vehicle video system 300 having a local wireless interface 390:

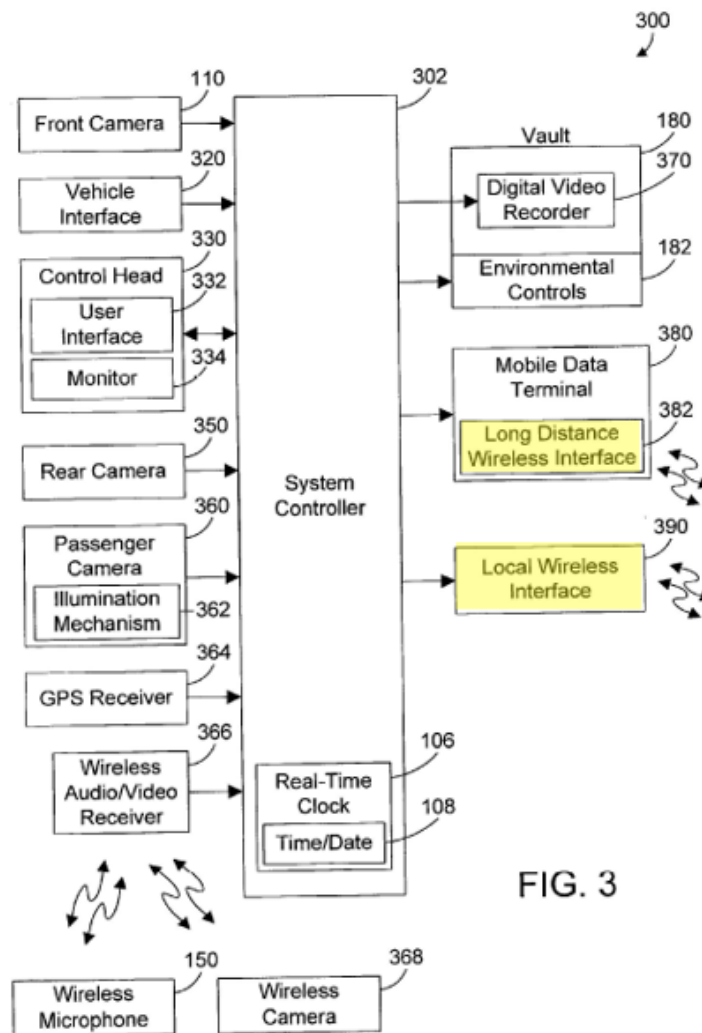


FIG. 3

Id., Fig. 3 (color added).

“The local wireless interface of the vehicle video system allows other devices, such as a handheld device or a vehicle video system in a different vehicle, to access the stored digital video information.” *Id.*, Abstract. Local wireless interface 390 may be “a Bluetooth-compatible interface, which can communicate with other Bluetooth-compatible devices,” including mobile phones. *Id.*, [0031], [0037], [0041].

Lewellen was neither cited nor applied during prosecution.

2. Motivation To Combine

A POSITA would have been motivated to combine Lewellen with the Yerazunis/Fiore system. EX1003, ¶¶234-238, 387. All three references disclose video recording systems, and Yerazunis and Lewellen disclose video recording systems for law enforcement applications. EX1017, 1:32-43, 9:60-10:11; EX1019, [0002]-[0009], [0024]-[0026], [0042].

Further, a POSITA would have been motivated to implement Yerazunis's video recording device with Lewellen's local wireless interface 390. Yerazunis describes using a radio transmitter, "such as found in a police cruiser," to "transmit RF signals to a base station for viewing." EX1017, 9:63-10:3. Likewise, Yerazunis describes a serial output channel permitting recorded data to be read out of memory and downloaded to a computer for viewing. *Id.*, 3:1-4, 6:45-51, 9:60-63, 18:60-66. A POSITA would recognize, however, that RF transmitters or serial outputs may not always be available. For example, when a police officer is using Yerazunis's gun-camera in the field, away from his police cruiser or a computer, the officer may not be able to offload critical video evidence for safe storage on another device. The officer may also not be able to free up space in the buffer for preserving additional video evidence therein.

For these reasons and others herein, a POSITA would have been motivated to implement Yerazunis's video recording device with Lewellen's local wireless interface 390. Lewellen's interface 390 provided "significant advantage[s] over the

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prior art,” including “removing the need for any human intervention” in offloading data and providing a “low power, and very inexpensive” solution for doing so, among others. EX1019, Abstract, [0031], [0042]-[0043], [0045].

In view of these exemplary advantages, a POSITA would have been motivated to implement Yerazunis’s video recording device with Lewellen’s interface 390. A POSITA would have also been motivated to use interface 390 to automatically transmit a file in the Yerazunis/Fiore video recording device to a mobile phone, with the mobile phone automatically forwarding the file to a remote memory, as Lewellen discloses. EX1019, [0010], [0031], [0037], [0041]. Bluetooth-compatible mobile phones were ubiquitous and carried by many officers on a daily basis. EX1003, ¶237. A POSITA would have recognized using these mobile phones to offload files from the video recording device to a remote memory would have been a simple and low-cost method for preserving important video. *Id.* Lewellen recognizes the significant advantages of Bluetooth technology, including that it is “very inexpensive.” EX1019, [0032], [0034], [0042].

A POSITA would have had a reasonable expectation of success in implementing the Yerazunis/Fiore video recording device with interface 390 and related techniques Lewellen describes. EX1003, ¶238. Bluetooth-compatible interfaces were well-known and commercially available, and adding this interface to the Yerazunis/Fiore video recording system would have been routine and well within a POSITA’s skill. *Id.* This combination merely combines familiar elements

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according to known methods to yield predictable results, further evidencing its obviousness.

3. Claim 7

Claim 7 depends from claim 1, reciting “wherein the local memory is configured to provide access to the at least one of the files to a mobile phone.” Lewellen discloses this. EX1003, ¶388. Lewellen’s local wireless interface 390 wirelessly transmits data to Bluetooth-compatible devices, including mobile phones. EX1019, [0022], [0031], [0042]-[0048]. A POSITA would have been motivated to incorporate Lewellen’s interface 390 into the Yerazunis/Fiore system for the reasons in Section IV.B.2 above.

4. Claim 8

Claim 8 depends from claim 1, reciting “wherein a mobile phone automatically receives the second file and automatically forwards the second file to a remote memory.” Lewellen discloses this. EX1003, ¶390. Local wireless interface 390 enables access to the local memory by nearby devices, including Bluetooth-compatible mobile phones. EX1019, Abstract, [0031], [0037], [0041]. Lewellen’s vehicle video system automatically transmits digital video to a “compatible device ... that is coupled to a database,” and the compatible device then “automatically transfer[s]” the video “to the database” (*i.e.*, a remote memory). *Id.*, Abstract, [0010]; *see also id.*, [0043].

In the Yerazunis/Fiore system, files are stored in local memory (*e.g.*, DRAM 58), and adding Lewellen’s interface 390 would have advantageously enabled access to local memory using mobile phones. A POSITA would have been motivated to

implement the Yerazunis/Fiore video recording system with these features for the reasons in Section IV.B.2.

C. Ground 1c: Claim 10 Would Have Been Obvious Over Yerazunis Alone Or As Combined With Fiore, In Further View Of Mann

Mann, EX1015, entitled “Wearable Camera System with Viewfinder Means,” was filed March 25, 1999 and issued June 4, 2003. Mann is prior art under at least pre-AIA 35 U.S.C. § 102(a), (b).

Mann describes a body-worn portable camera system with wearable viewfinder, built into eyeglass frames, as illustrated in Figure 1. EX1015, [0001], [0056].

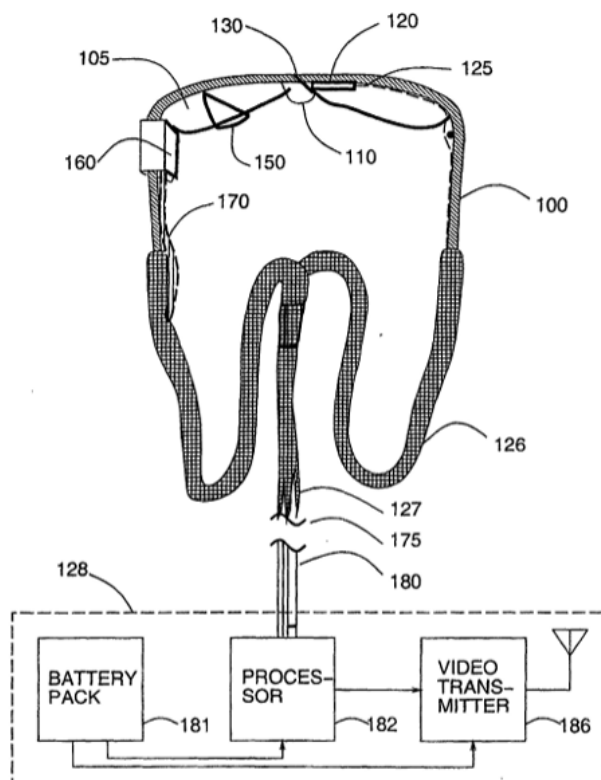


FIG. 1 - FOVEATED EMBODIMENT OF WEARABLE CAMERA SYSTEM

Id., Fig. 1.

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Claim 10 depends from claim 9, reciting “wherein the mount is a pair of wearable glasses.” Mann discloses this. EX1003, ¶393. Mann describes a body-worn portable camera system with wearable viewfinder, built into eyeglass frames 100 with lenses 105 and cameras 110 and 120. EX1015, [0001], [0056]-[0058], Fig. 1. Further, Mann is admitted prior art, with Applicant conceding “Mann describes a camera mountable to a pair of eyeglasses.” *See* EX1010, 1:56-64; *see also* EX1013, 90, 103.

A POSITA would have been motivated to combine Mann with Yerazunis and Fiore. EX1003, ¶¶244, 394. Because Yerazunis, Fiore, and Mann all disclose video recording systems—and Yerazunis and Mann disclose compact, mountable systems—a POSITA would have been aware of and motivated to combine these references. *Id.* Mann also describes why a POSITA would have been motivated to implement the Yerazunis/Fiore system in an eyeglasses-mounted apparatus: Among other reasons, Mann’s wearable viewfinder system advantageously “allows the user to record a portion of his or her eye’s visual field of view.” EX1015, [0044].

D. Ground 1d: Claims 19 And 20 Would Have Been Obvious Over Yerazunis Alone Or As Combined With Fiore, In Further View Of Fiedler

1. Summary Of Fiedler

Fiedler, EX1037, entitled “Device and Method for Selective Recall and Preservation of Events Prior to Decision to Record the Events,” was filed June 20, 2001, published February 27, 2003, and issued October 12, 2004. Fiedler is prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), (e).

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Fiedler describes a “device process for event-activated recording,” where “pressing Capture once may capture the most recent minute, pressing it twice in rapid succession may capture the most recent two minutes, and so on.” EX1037, 9:42-45. The “Capture” button “[t]oggles the capture state of the current block” and “[m]ay be pressed at any time to capture the current block.” *Id.*, 9:5-8. *See also id.*, Abstract, 1:43-54, 2:60-61.

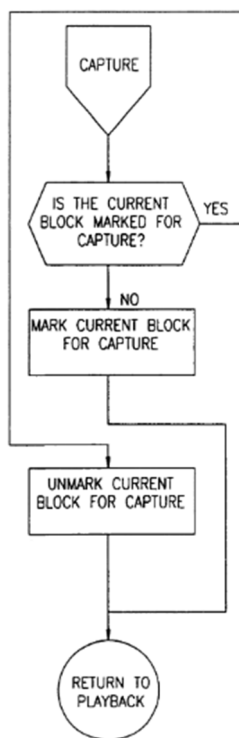


FIG. 9

Id., Fig. 9.

Fiedler was neither cited nor applied during prosecution.

2. Motivation To Combine

A POSITA would have been motivated to use the teachings of Fiedler in the Yerzunis/Fiore system. EX1003, ¶¶249, 396. These references all disclose video

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recording systems for security, law enforcement, or surveillance operations, and Yerazunis and Fiedler both disclose compact, hand-held embodiments. A POSITA therefore would have been aware of and motivated to combine these references. Additional motivations for this combination and a POSITA's reasonable expectation of success are detailed below for the specific features of claims 19 and 20.

3. Claims 19 and 20

Claim 19 depends from claim 12, reciting “sending a warning to a user before the write protected segment of the circular buffer is fully recorded.” Claim 20 depends from claim 19, reciting “extending a length of the write protected segment of the circular buffer in response to at least one of a manually operated switch and an audio signal.” Yerazunis alone or combined with Fiore, in further view of Fiedler discloses these limitations. EX1003, ¶397.

Claim 19: These limitations would have been obvious in view of Yerazunis. EX1003, ¶398. Yerazunis discloses the recording process “continues as each trigger event occurs until the buffer memory is full.” EX1017, 17:50-61. A POSITA would have been motivated to implement the Yerazunis/Fiore system with a warning to inform the user when the buffer is nearly full. EX1003, ¶398. Should the Board disagree, such limitations are obvious in view of Fiedler, which describes a device that “continues to capture data until either the capture button is pressed again or a sufficient pause has been detected. (*The device may sound an audible warning at that point, giving the user a choice whether to continue capturing.*)” EX1037, 9:46-53. The combination merely

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combines familiar elements according to known methods to yield predictable results. *KSR*, 550 U.S. at 414-418.

Claim 20: Yerazunis states: “Since multiple firings of the gun are possible, it is conceivable that the gun may be refired within the post trigger event time period that the video recording device is still recording as a consequence of a prior firing.” EX1017, 17:38-42. “In such event, the recording time may be extended so as to terminate another post event time period after the last such firing.” *Id.*, 17:42-44. The sound of the gun refiring, detected by event sensor 70, discloses the claimed “audio signal.”

Yerazunis also discloses (i) the length of the write-protected segment is a matter of design choice, and (ii) the length of the segment can be extended. EX1017, 8:26-61, 16:66-17:44. It would have been obvious to utilize a manually operated switch or audio signal to extend the length of the segment in view of Yerazunis’s disclosure. EX1003, ¶400. Moreover, such limitations would have been obvious in further view of Fiedler. Fiedler describes “pressing Capture once may capture the most recent minute, pressing it twice in rapid succession may capture the most recent two minutes, and so on.” EX1037, 9:42-45. And a POSITA would have generally known that a user could control and extend the length of recording in a circular buffer. EX1003, ¶400 (citing USP 7,348,895 (EX1035), 28:48-56).

A POSITA would have recognized the advantages of extending a length of a write-protected segment in response to manually operated switch or audio signal in the

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Yerazunis/Fiore system. Yerazunis states an objective of its video recording device is to create an evidentiary record (EX1017, 15:61-64), and a POSITA would have understood extending a length of a write-protected segment in the Yerazunis/Fiore system would have been advantageous at least to ensure important video evidence can be preserved, *e.g.*, when the important video data is captured when write-protection would otherwise end. EX1003, ¶401.

E. Ground 2a: Claims 1, 2, 4-6, 9, 11-18, And 21 Would Have Been Obvious Over Ely Alone Or As Combined With Fiore

1. Summary Of Ely

Ely, EX1020, entitled “Distributed Video Data Storage in Video Surveillance System,” was filed April 22, 1996 and issued November 9, 1999. Ely is prior art under at least pre-AIA 35 U.S.C. § 102(a), (b), (e).

Figure 2 is “a block diagram of a video surveillance system provided in accordance with the present invention.” *Id.*, 5:21-22.

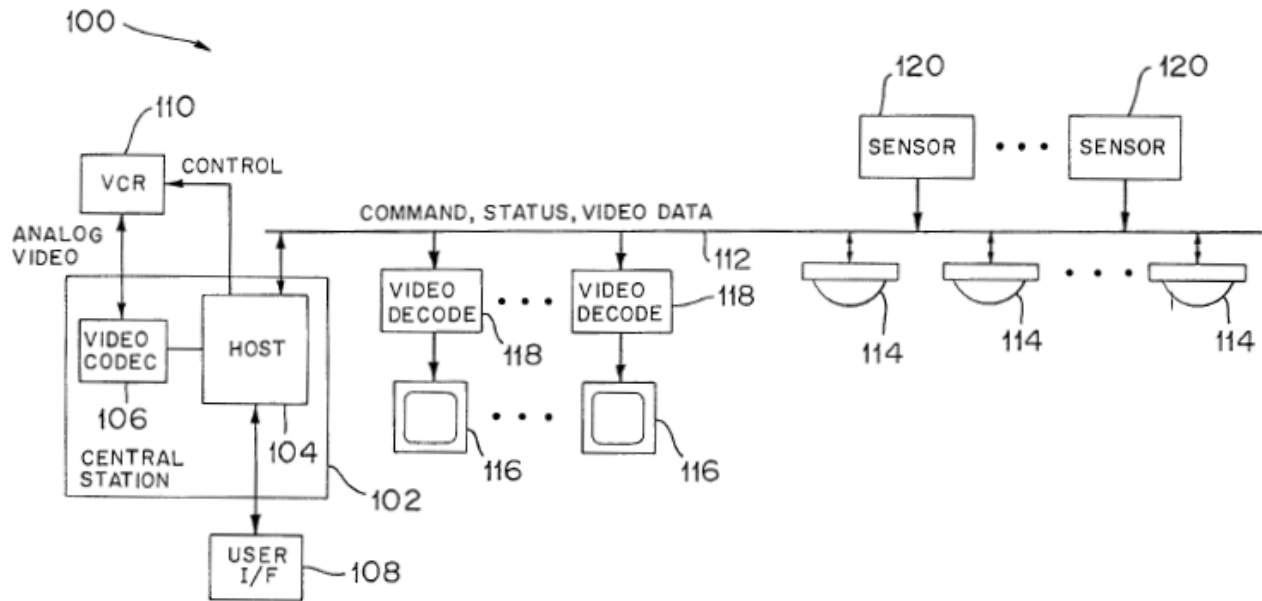


FIG. 2

Id., Fig. 2. Depicted are camera units 114 and sensor devices 120, connected to host computer 104 at central station 102 via a network, which in Figure 3 is a local area network (LAN) 112 (*id.*, 5:46-53):

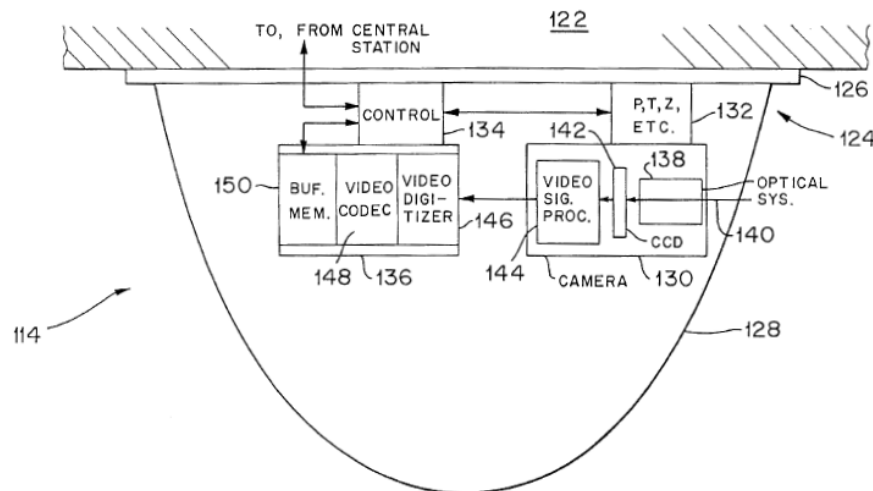


FIG. 3

Id., Fig. 3.

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Ely's network enables video data to be transmitted from a local memory (memory device 150) to a remote memory that uses "conventional analog video tape recording" or "a digital video tape recorder (DVTR)." *Id.*, 9:51-58. Ely's disclosure is described in further detail below and in Dr. Sarhan's declaration. EX1003, ¶¶136-140.

2. Motivation To Combine

A POSITA would have been motivated to combine Ely and Fiore for multiple reasons. EX1003 at ¶¶257-260, 403.

As one example, both references describe similar technologies and solve similar problems. *See* EX1020 (Ely), 6:51-53, 6:61-65, 7:28-39, 7:48-55; EX1009, Abstract, [0048].

As another example, a POSITA would have been motivated to implement Ely's surveillance system with Fiore's file-based approach for the circular storage buffer and event data stored therein. Fiore's file-based approach includes (i) implementing a circular storage buffer as a memory-mapped file, and (ii) indexing event data for events as respective files within the memory-mapped file. EX1009, [0022]-[0023], [0051], [0059]-[0060]. As detailed in Sections IV.A.2-3 and IV.E.2, Fiore also describes numerous benefits of its file-based approach. *Id.*, [0065], [0067]-[0068], [0072]. In view of these exemplary benefits, and other reasons herein, a POSITA implementing Ely would have been motivated to utilize Fiore's teachings on the circular storage buffer implemented as a memory mapped file and the indexing of event data as files

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within the circular storage buffer. EX1003, ¶258-260. A POSITA would have had a reasonable expectation of success because Fiore provides a detailed disclosure of its file-based approach, and applying those techniques to Ely's surveillance system would have been routine and well within a POSITA's skill. *Id.*.

3. Independent Claims 1 and 12

a) Preamble

To the extent limiting, Ely discloses the preambles of claims 1 and 12. EX1003, ¶404; EX1040. For claim 1, Ely discloses a "video surveillance system" including a central control station and video cameras each mounted inside a dome housing unit." EX1020, Abstract. Ely therefore discloses a "surveillance apparatus." EX1003, ¶404.

For claim 12, Ely discloses "operation of the camera unit 114" illustrated in Figure 4, which a POSITA would have understood as including "processing imaged data from a camera." *Id.*

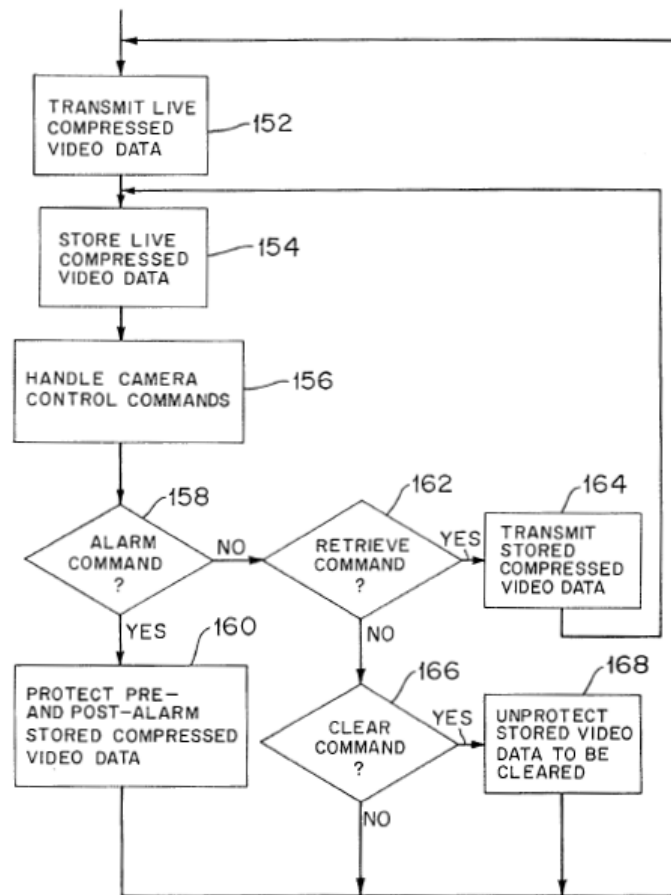


FIG. 4
CAMERA UNIT OPERATION

EX1020, 7:12-8:15.

b) Element 1

Ely discloses element 1 for each of claims 1 and 12.⁴ EX1003, ¶406; EX1040.

For claim 1, in camera 130, an “image formed by the optical system 138 is converted into an electrical signal at CCD 142 [(i.e., “an image capturing component that captures

⁴ The numbered elements of claims 1 and 12, as referred to herein, are identified in EX1040.

images”)] and the resulting signal is subjected to conventional analog signal processing at video signal processing circuit 144.” EX1020, 6:21-28. Camera 130 is coupled to memory board 136 including video digitizer circuit 146. *Id.*, 6:48-61; EX1003, ¶406.

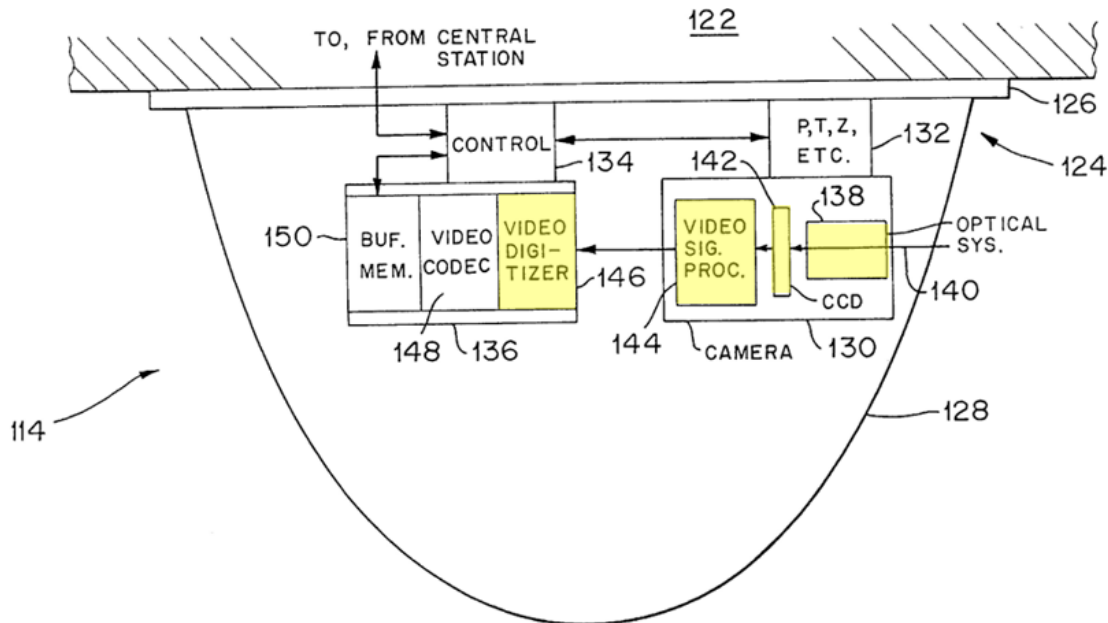


FIG. 3

EX1020, Fig. 3 (color added). A POSITA would have understood the output of video digitizer circuit 146 as being “image data” because the output includes digitized video comprising images. *Id.*, 6:48-7:11, EX1003, ¶406.

For element 1 of claim 12, the digital image data output by the video digitizer circuit 146 is “video data” because it contains video data from the camera in digital form. EX1003, ¶407. This video data is received at least by Ely’s video data coding/decoding circuit 148. *Id.*; EX1020, 6:48-7:11, 7:18-39.

c) Element 2

Ely discloses element 2 of claim 1. EX1003, ¶408. Memory board 136 includes memory device 150, *i.e.*, “local memory” (EX1020, 6:17-21, 6:48-53, 6:61-65):

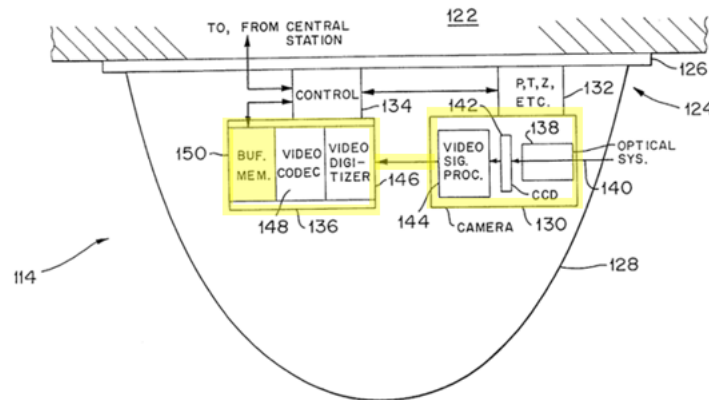


FIG. 3

Id., Fig. 3 (color added).

A POSITA would have understood that memory device 150 is coupled to camera 130 using entirely physical connectors. EX1003, ¶409. Camera 130 is coupled to memory board 136, which is configured “to receive an analog video signal output from the camera 130 and to digitize, compress and store the video signal” in memory device 150. EX1020, 6:48-65. A POSITA would have understood the coupling between camera 130 and memory device 150 as using only physical connectors. Accordingly, memory device 150 is coupled to camera 130 “using entirely physical connectors,” as required by the parties’ agreed upon construction.

A POSITA would have further understood that memory device 150 is distanced less than 20 cm from the camera 130. *Id.*, ¶410. Ely discloses that the memory device

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is “provided adjacent to the camera.” EX1020, 4:17-25, 6:61-63. A POSITA would have understood that memory device 150, located adjacent to the camera within the housing of the “dome unit,” as in Figure 3, is located near (less than 20 cm from) the camera.

d) Element 3

Ely alone or in combination with Fiore discloses element 3 of claim 1, and element 2 of claim 12. EX1003, ¶411; EX1040. Ely’s surveillance system includes a “video data buffer memory, storing compressed video data generated by the camera,” which “is mounted with each camera in the respective dome unit.” EX1020, Abstract. Memory device 150 “functions as a buffer for the video signal generated by the camera 130, and is controlled by the control circuit 134.” *Id.*, 6:61-65. “[M]emory 150 serves as a ring buffer, in which currently generated compressed video data is written over the oldest compressed video data that had previously been stored in the memory 150.” *Id.*, 7:28-34. A POSITA would have understood the compressed video data as “using a digital video file format,” and further understood Ely’s “ring buffer” to mean a “circular buffer” of the type disclosed in the ’882 patent. EX1003, ¶411.

Ely discloses that the camera system responds to an “alarm command by protecting buffered video data which corresponds to a predetermined pre- and post-alarm time period” and the “protected data is then available for subsequent retrieval, display, and permanent recording” EX1020, 10:11-17. In Ely, “[a]fter the compressed video data stored at one of the camera units has been protected pursuant

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to an alarm command, the data (which will sometimes be referred to as ‘alarm data’) can be selectively retrieved in response to user instruction either for display (block 180) or directly for taperecording (block 182).” *Id.*, 10:17-23. A POSITA would have found it obvious to record the image data (“alarm data”) in Ely’s ring buffer “as a first file” based on Ely’s disclosure of storing the alarm data for subsequent, selective “retrieval, display, and permanent recording.” EX1003, ¶412. Further, while Ely never *expressly* refers to recording the image data into the circular buffer “as a first file,” a POSITA would have understood such file-based recording as one of a finite number of identified solutions for recording image data in Ely, evidencing its obviousness. *KSR*, 550 U.S. at 421. A POSITA would have recognized Ely’s image data must be recorded to the circular buffer in some way, and using a file was a well-known approach for doing so. EX1003, ¶412; EX1020, 6:61-65, 7:28-34, 10:17-23.

To the extent a POSITA wanted further guidance as to particular methods for recording image data as files in Ely’s ring buffer, a POSITA would have been motivated to turn to Fiore. *Id.*, ¶413. As explained in Section IV.A.2, Fiore implements circular storage buffer 15 as a memory-mapped file and describes indexing collections of frame data for respective events as files within the memory-mapped file. EX1009, [0022]-[0023], [0051], [0059]-[0060]. Fiore also describes the benefits of its file-based approach, including enabling playback of video data for a specific event from the circular buffer without interrupting simultaneous recording of new video data into the buffer. *Id.*, [0065], [0067]-[0068], [0072]. In view of these

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exemplary benefits and the additional reasons explained in Section IV.E.2, a POSITA would have been motivated to implement Ely's control circuit 134 to "record[] the image data into available portions of a circular buffer ... as a first file" in the manner Fiore discloses. In the Ely/Fiore system, the circular buffer implemented as a memory-mapped file discloses the claimed "first file" into which Ely's image data would have been recorded. EX1003, ¶413.

e) Element 4

Ely alone or combined with Fiore discloses element 4 of claim 1, and elements 3 and 4 of claim 12. EX1003, ¶414; EX1040.

First, Ely states: "When an alarm command is received," the "control circuit 134 protects from over-writing compressed digital video data previously stored in the memory 150." EX1020, 7:48-55. The write-protected video data "correspond[s] to a time interval beginning at a predetermined time prior to receipt of the alarm command, and continu[es] for a predetermined time after receipt of the alarm command." *Id.*; *see also id.*, 10:11-15.

Second, Ely states: "After the compressed video data stored at one of the camera units has been protected pursuant to an alarm command, the data (which will sometimes be referred to as 'alarm data') can be selectively retrieved in response to user instruction," either for display or tape-recording. EX1020, 10:17-23. While Ely never expressly refers to alarm data as a "file," a POSITA would have understood that selectively retrieving alarm data associated with an alarm command necessitates an

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ability to locate alarm data within the buffer. EX1003, ¶416. A POSITA would have therefore understood Ely necessarily discloses—or at minimum, renders obvious—“indexing.” *Id.* Ely’s alarm data must be stored in the buffer in some way, and a POSITA would have understood that indexing data as files was a well-known approach for doing so, further evidencing the obviousness of this limitation. *Id.*

To the extent a POSITA wanted further guidance on the indexing of alarm data as files in Ely’s ring buffer, a POSITA would have been motivated to turn to Fiore for at least the reasons above. *Id.*, ¶417. As explained in Section IV.A.2, Fiore discloses a circular storage buffer 15 implemented as a memory-mapped file (EX1009, [0047], [0064]-[0068]), Fig. 9), and identifiable collections of data (*i.e.*, files) for respective events are indexed in the circular storage buffer 15 (*id.*, [0022]-[0023], [0041], [0048], [0050]-[0051], [0059]-[0060]). Fiore also describes numerous benefits of its file-based approach. *Id.*, [0065], [0067]-[0068], [0072]. In view of these exemplary benefits and the additional reasons explained in Section IV.E.2, a POSITA would have been motivated to implement Ely’s control circuit 134 to “respond[] to a signal to record” by “indexing the write-protected portion as a second file in the circular buffer” in the manner Fiore discloses.

Ely alone or combined with Fiore discloses elements 3 and 4 of claim 12 for the same reasons. *Id.*, ¶418; EX1040. A POSITA would have also understood that the segment of the circular buffer to be write-protected must “include[] a newly

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recorded portion of the buffer” because frame data not “newly recorded” would be overwritten once recording loops back. EX1003, ¶418; EX1020, 7:48-55, 10:11-15.

Further, the indexing in Ely alone and in the Ely/Fiore combination occurs “during the step of recording.” Ely discloses that its “control circuit 134 is also conditioned (as indicated by decision block 162) to receive commands calling for reading-out and transmission to the central station of previously-stored compressed video data.” EX1020, 7:56-59. “The transmission of the compressed video data that was read out from the memory 150 may be in place of, or virtually in parallel with, continued transmission of ‘live’ compressed video data.” *Id.*, 7:66-8:2. “Preferably, ... transmission of stored compressed video data in response to corresponding retrieval commands does not interrupt ongoing storage of ‘live’ video data.” *Id.*, 8:3-6. A POSITA 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. EX1003, ¶419.

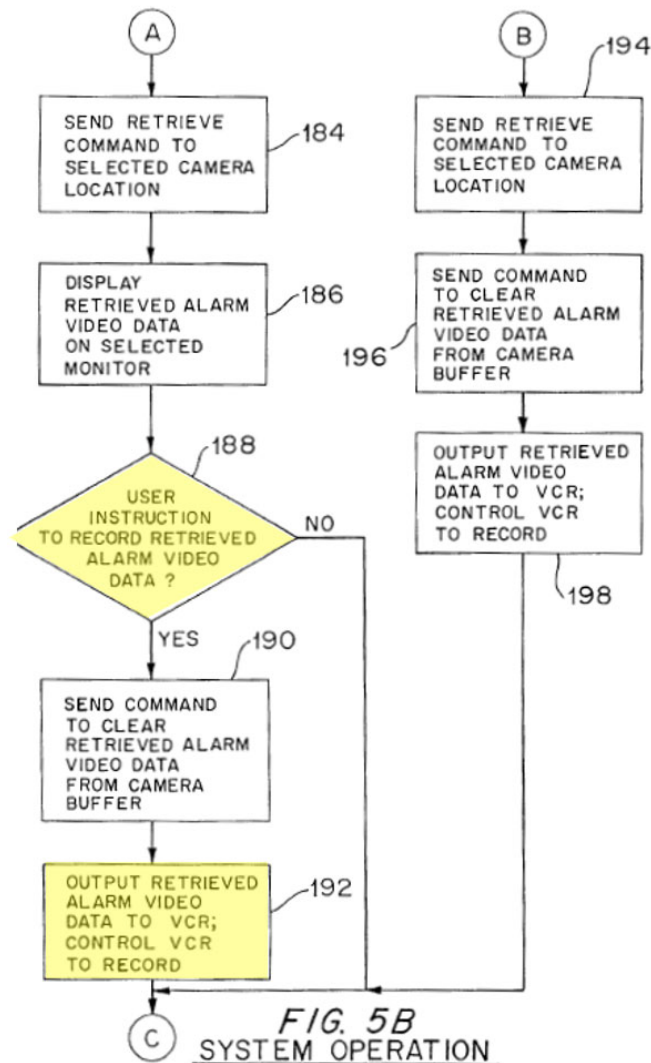
Finally, the second files disclosed or rendered obvious by Ely and/or Fiore are distinct from the “first file” discussed for element 3 above. EX1003, ¶420. The “first file” in the Ely/Fiore system may be the memory mapped file that implements the circular buffer, whereas the indexed second file would comprise portions of the circular buffer that correspond to video data for a particular event (*e.g.*, alarm data).

Id.

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f) Element 5

Ely discloses element 5 for each of claims 1 and 12. EX1003, ¶421; EX1040. Ely discloses that “[d]ata buffered at the dome units may be selectively protected from over-writing in response to alarm signals and then retrieved for display or tape-recording by the central control station.” EX1020, Abstract. As illustrated in Figure 5B, below, “[a]fter the alarm data has been retrieved, the user has the option, indicated at block 188, of recording the retrieved alarm data” on a VCR as shown at block 192. *See id.*, 10:24-47. Ely also discloses that a digital video tape recorder (DVTR) may be used instead of the VCR. *Id.*, 9:51-58.



“If a user indicates that a block of alarm video data is to be displayed, the host 104 sends a retrieve command (via LAN 112) to the selected camera unit 114 (block 184, FIG. 5B (color added)). The desired alarm data is then read out from the buffer memory in the designated camera unit and transmitted via the LAN 112.” *Id.*, 10:24-30. Ely therefore discloses that memory 150 (*i.e.*, local memory) is configured to allow access to at least one of the files stored therein. Such access is provided to at least the LAN 112 and the DVTR or VCR coupled to the LAN 112. EX1003, ¶422.

4. Claims 2 and 21

Ely discloses the limitations added in dependent claims 2 and 21. EX1003, ¶424. As explained above for claim 1, Ely discloses recording alarm data from the memory 150 to a DVTR or VCR at a central command station. EX1020, Abstract, 9:51-58, 10:24-47, Fig. 3. The DVTR or VCR is a “remote memory,” as claimed. Ely further discloses that a retrieve command causes the alarm data (stored as second files in the buffer of memory 150) to be “read out from the buffer memory in the designated camera unit and transmitted via the LAN 112.” *Id.*, 10:24-30. LAN 112 is a “sending facility configured to transmit the file” EX1003, ¶424.

5. Claim 4

Ely discloses the limitations added in dependent claim 4. EX1003, ¶426. Sensors 120 “are preferably of conventional types that detect, for example, unauthorized opening of doors, windows and display cases and the like and generate alarm signals indicative of these occurrences,” and “may also include conventional motion and/or heat sensing devices.” EX1020, 5:50-55.

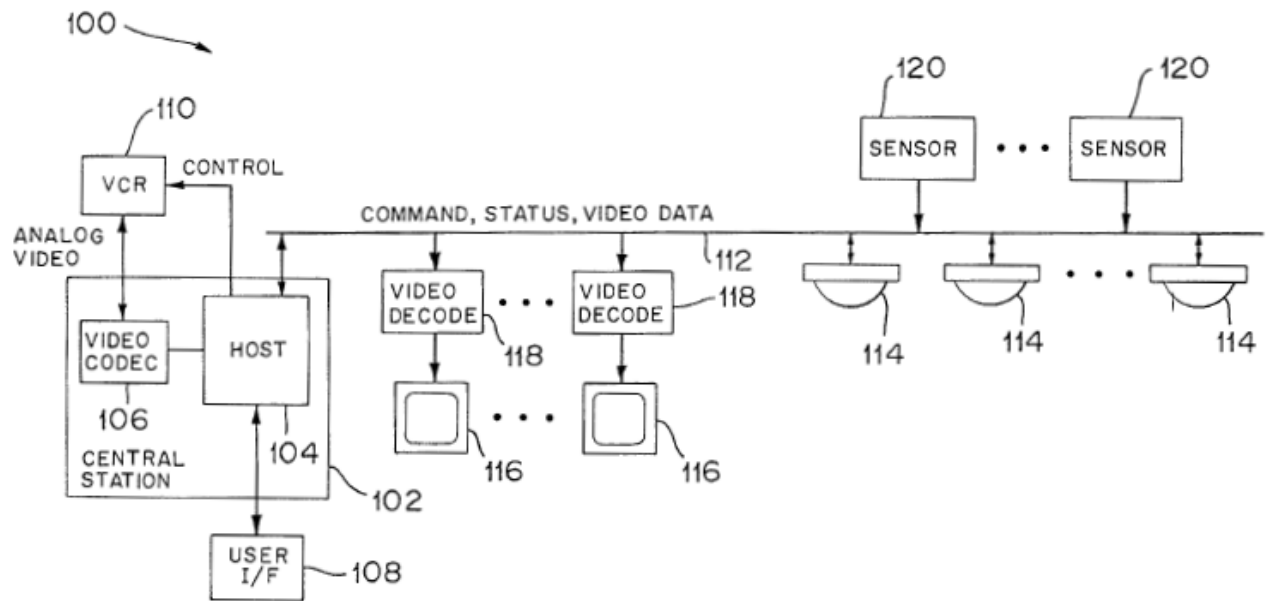


FIG. 2

Further, “an alarm condition can be detected by machine analysis of the content of live video signals generated by one or more of the camera units.” *Id.*, 11:42-47. Thus, Ely discloses the claimed “sensor.”

6. Claim 5

Ely discloses the limitations added in dependent claim 5. EX1003, ¶429. Ely teaches “an alarm condition can be generated by a system operator via the user interface” (EX1020, 11:42-47) and describes the user interface as responding to inputs from common computer peripherals (*e.g.*, a mouse, keyboard) and a “TOUCHTRACKER” control module (*id.*, 5:60-6:3).

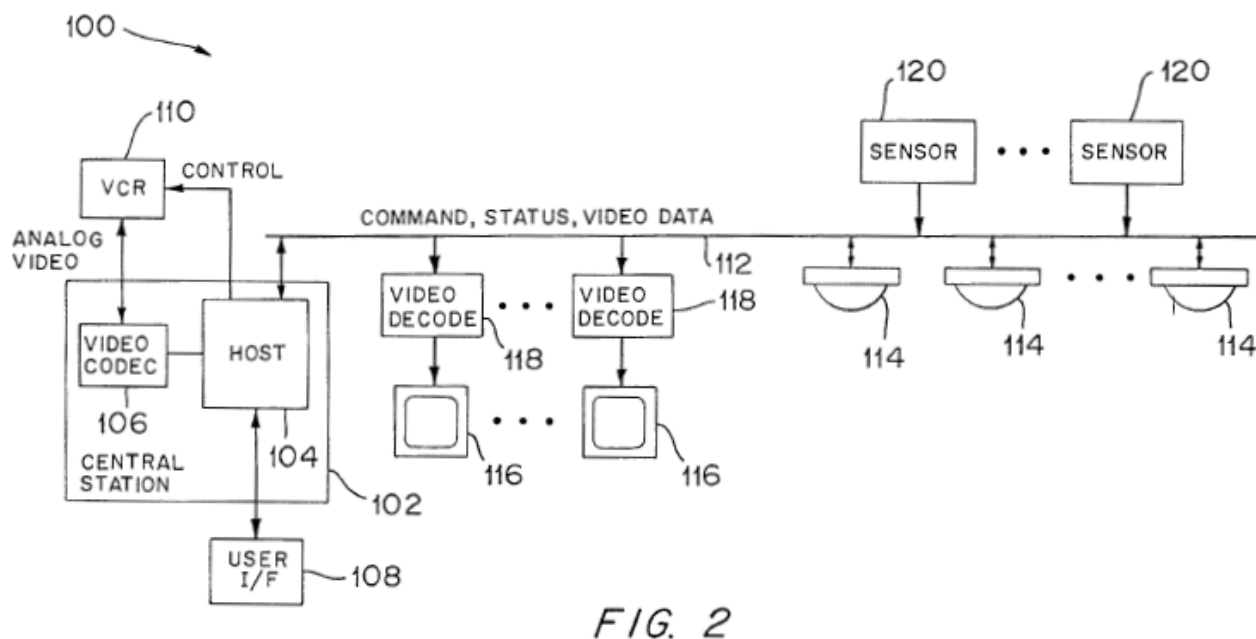
7. Claims 6 and 17

Ely discloses the limitations added in dependent claims 6 and 17. EX1003, ¶431. As explained above for claim 1, when an alarm command is received, Ely’s surveillance system protects from overwriting video data previously stored in the memory that

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“correspond[s] to a time interval beginning at a *predetermined time* prior to receipt of the alarm command, and continuing for a *predetermined time* after receipt of the alarm command.” EX1020, 7:45-55; *see also id.*, 10:10-23. Ely thus discloses the pre-alarm and post-alarm intervals are predetermined. *See also id.*, 10:60-65. For a human to “predetermine” amounts of time to be protected before and after the alarm command, Ely necessarily discloses the “interface” of claim 6.

Ely further discloses a user interface 108 for users to provide instructions, depicted in Figure 2 (EX1020, 5:60-64, 8:16-27):



Id., Fig. 2.

8. Claim 9

Ely discloses the limitations added in dependent claim 9. EX1003, ¶434. “Each camera unit may be *mounted* at a ceiling 122 or at another appropriate location, and

includes a housing 124 constituted, at least in part, by a base portion 126 and a dome portion 128.” EX1020, 6:7-15.

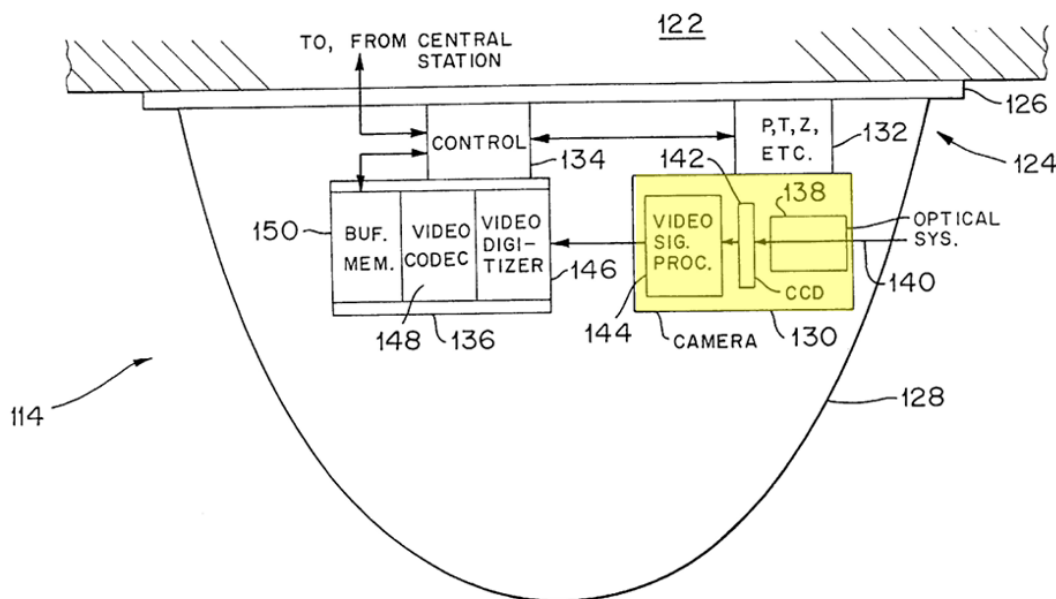


FIG. 3

Id., Fig. 3 (color added).

9. Claim 11

Ely discloses the limitations added in dependent claim 11. EX1003, ¶436. Alarm data “can be selectively retrieved in response to user instruction,” either for display or tape-recording. EX1020, 10:17-23. A POSITA would have understood that selective retrieval of alarm data from the buffer necessitates an ability to locate alarm data within the buffer, such that Ely necessarily discloses “an electronic index that provides a directory to the first and the second files within the circular buffer.”

To the extent a POSITA wanted further guidance as to particular methods for indexing of alarm data as files in Ely’s buffer, a POSITA would have been motivated

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to turn to Fiore. EX1003, ¶¶257-260, 437. As explained in Section IV.A.2, Fiore implements circular storage buffer 15 as a memory-mapped file and describes indexing collections of alarm data as “second files” within a “first file” (*i.e.*, the memory-mapped file that implements the circular buffer). *See, e.g.*, EX1009, [0022]-[0023], [0051], [0059]-[0060]. A POSITA would have been motivated to employ Fiore’s indexing of alarm data as second files to achieve this ability for the reasons stated in Section IV.E.2.

10. Claim 13

The limitations added in dependent claim 13 would have been obvious in view of Ely. EX1003, ¶439. A POSITA would have understood that a file stored in local memory would be maintained as a file once offloaded to the remote memory, and that it would have been obvious to implement Ely (alone or in combination with Fiore) in this manner. *Id.* Ely specifically discloses offloading of video data to remote memory for later retrieval and playback (*see, e.g.*, EX1020, Abstract, 3:29-36, 4:63-5:3, 9:31-58, 10:24-47), and a POSITA would have understood this to mean storing as distinct, separate files in the remote memory.

Ely alone or combined with Fiore renders obvious claim 13.

11. Claim 14

Ely discloses the limitations added in dependent claim 14. EX1003, ¶441. Since alarm data cannot be overwritten, Ely’s video recording device necessarily records to physically dis-contiguous parts of the circular buffer, as the overwriting process skips alarm data. *Id.*; EX1020, 7:34-39.

12. Claim 15

Ely discloses the limitations added in dependent claim 15. EX1003, ¶443. As explained above for claim 1, element 4, and claim 12, element 3, Ely's system responds to an alarm command (*i.e.*, the claimed "signal to save a recording") by write protecting specified digital video data in the ring buffer. EX1020, 7:48-55, 10:11-15. Ely's alarm command comprises "a signal to start recording and a signal to stop recording," as recited in claim 15. EX1003, ¶443. Ely's alarm command tells the video recording device when to (i) "start recording," *i.e.*, upon receipt of the alarm command, and (ii) "stop recording," *i.e.*, when a predetermined amount of time after receipt of the alarm command has passed. EX1020, 7:48-55, 10:11-23. Ely thus discloses the limitations added in claim 15. EX1003, ¶443.

13. Claim 16

Ely discloses the limitations added in dependent claim 16. EX1003, ¶445. Ely discloses the "interface through which a human can initiate a signal" of claim 5, teaching that a user generates an alarm condition through inputs to the interface from peripherals and a "TOUCHTRACKER" control module. EX1020, 11:42-47, 5:60-6:3. Thus, Ely discloses "receiving the signal to save a recording through at least ... a manually operated switch."

14. Claim 18

Ely discloses the limitations added in dependent claim 18. EX1003, ¶447. Control circuit 134 responds to "clear" commands by removing a block of stored video

data from protection, thereby permitting “live” video data to be written over the now-unprotected video data. EX1020, 8:7-12. The clear command may be sent after write-protected alarm data is transmitted and retrieved. *Id.*, 10:24-43, 10:51-55.

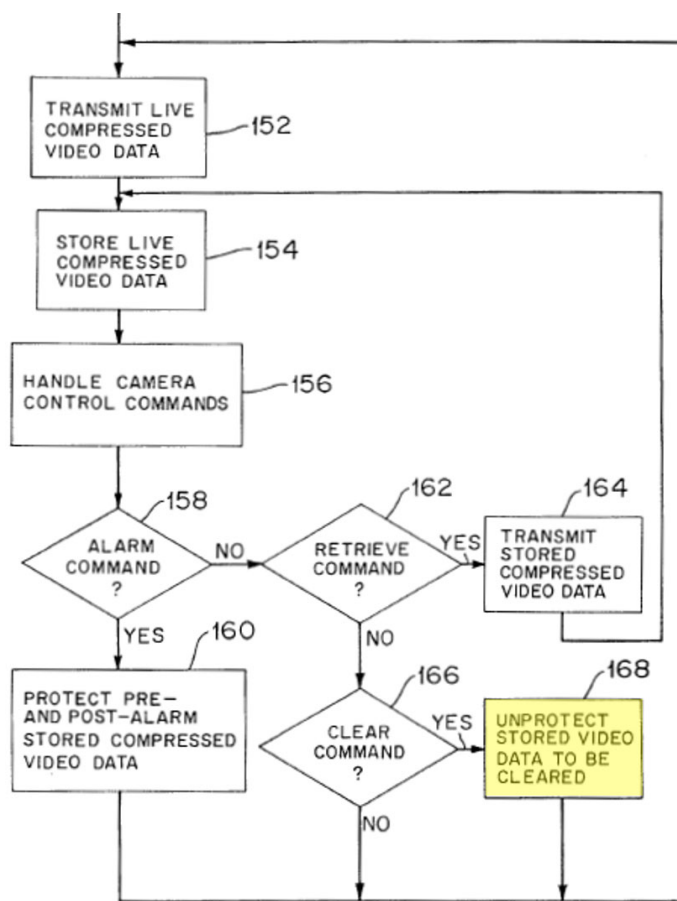


FIG. 4
CAMERA UNIT OPERATION

Id., Fig. 4 (color added); *see also id.*, Fig. 5B (block 190).

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F. Ground 2b: Claims 3, 7, 8, And 22 Would Have Been Obvious Over Ely Alone Or As Combined With Fiore, In Further View Of Lewellen

1. Motivation To Combine

A POSITA would have been motivated to combine Lewellen with Ely alone or Ely as combined with Fiore. EX1003, ¶¶256-265, 449. All three references disclose video recording systems, such that a POSITA would have been aware of and motivated to combine them. A POSITA would have recognized the advantages of modifying the Ely/Fiore system to implement Lewellen's local wireless interface for transmitting alarm data preserved with the file-based circular buffer approach of the Ely/Fiore system. Ely describes a "data communication network" to transmit "command and status data between the system central station and the video cameras," which "may be provided with sufficient capacity to handle transmission of compressed video data buffered or currently generated at the video camera units, in which case separate video signal transmission cabling can be dispensed with." EX1020, 4:63-5:9. Ely discloses it is an "object of the invention to provide a video surveillance system which requires less cabling than conventional systems." *Id.*, 2:52-54.

As detailed in Sections IV.B.1-2, Lewellen's local wireless interface is low power and very inexpensive. EX1019, [0042]. "The benefit of providing the local wireless interface 390 is that digital information recorded by the digital video recorder 370 may be automatically transmitted and received to and from compatible devices.

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Id., [0043]. In view of these advantages, a POSITA would have been motivated to implement the Ely/Fiore system with Lewellen’s wireless interface 390 to further reduce the amount of cabling required, *i.e.*, by enabling wireless—rather than wired—transmission of signals and data. EX1003, ¶262.

A POSITA would have also been motivated to use Lewellen’s interface 390 to automatically transmit a file in the Ely/Fiore video recording device to a mobile phone, with the mobile phone then automatically forwarding the file to a remote memory, as detailed in Section IV.F.1. *Id.*, ¶264; EX1019, [0010], [0031], [0037], [0041]. Lewellen’s techniques for preserving video would have advantageously been available whenever a mobile phone is within range of the video recording system, enabling a security professional to view or preserve recorded video when the professional is not in the vicinity of the DVTR, VCR, or host computer.

A POSITA would have had a reasonable expectation of success in implementing the Ely/Fiore system with Lewellen’s interface 390 and related techniques Lewellen describes. Local wireless interfaces (including Bluetooth-compatible interfaces) were well-known and commercially available, and adding this interface in the Ely/Fiore system would have been routine and well within a POSITA’s skill. EX1003, ¶265.

2. Claims 3 and 22

Ely discloses that alarm data stored in memory device 150 (*i.e.*, “local memory”) can be transmitted to a remote memory. EX1020, 9:51-58, 10:24-47. To the extent Ely

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does not disclose a “wireless transmitter functionally coupled to the local memory” to achieve such transmissions, Lewellen does. EX1003, ¶450. Lewellen’s local wireless interface 390 wirelessly transmits data to Bluetooth-compatible devices, including mobile phones. EX1019, [0022], [0031], [0042]-[0048]. A POSITA would have been motivated to implement the Ely/Fiore system with Lewellen’s interface 390 for at least the reasons in Section IV.F.1 above. EX1003, ¶450. In this system, the interface 390 would have been functionally coupled to the memory device 150 (*i.e.*, “local memory”) to advantageously enable wireless offloading of write-protected files stored in the memory’s buffer to a remote memory. *Id.*

3. Claim 7

Ely discloses transmitting alarm data from its local memory (*i.e.*, memory device 150) to a remote memory. EX1020, 9:51-58, 10:24-47. To the extent Ely does not disclose providing access to the alarm data to a mobile phone, Lewellen does for at least the reasons provided in Ground 1b. EX1003, ¶452. A POSITA would have been motivated to implement the Ely/Fiore system with Lewellen’s local wireless interface for the reasons above in Section IV.F.1. *Id.* Indeed, a POSITA would have found it obvious to use Lewellen’s teachings of a Bluetooth-compatible mobile phone in the context of Ely’s surveillance system using dome-mounted cameras. *Id.* This combination would have advantageously enabled, for example, a security guard patrolling a casino or warehouse to receive video data from a dome-mounted camera onto his mobile phone for viewing, rather than just sending the video data to a central

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office or remote station. *Id.* The security guard could conveniently view the video data from his phone (*e.g.*, while he is patrolling) without needing to be present in the central office or remote station. *Id.*

4. Claim 8

Ely discloses transmitting alarm data from its local memory (*i.e.*, memory device 150) to a remote memory. EX1020, 9:51-58, 10:24-47. To the extent Ely does not disclose a mobile phone receiving the alarm data automatically and then automatically forwarding the alarm data to the remote memory, Lewellen does for at least the reasons provided in Ground 1b. A POSITA would have been motivated to implement the Ely/Fiore system with Lewellen's teaching of a mobile phone that automatically receives video data and automatically forwards it to a remote memory for at least the reasons above in Section IV.F.1. EX1003, ¶453. For example, doing so would have relieved the aforementioned security guard from having to manually request the video data and then forward it to remote memory for permanent storage, and a POSITA would have recognized the benefits of eliminating these manual steps. *Id.*

G. Ground 2c: Claim 10 Would Have Been Obvious Over Ely Alone Or As Combined With Fiore, In Further View Of Mann

Mann discloses the limitations added in dependent claim 10 for at least the reasons discussed above in Ground 1c. A POSITA would have been motivated to combine Mann with Ely and Fiore. EX1003, ¶¶244, 454. Ely discloses a "video surveillance system" with "an improved capability for storage of video signals."

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EX1020, 2:34-36. Like Ely, Mann discloses a camera system used for, *e.g.*, surveillance or public safety. EX1015, [0041]-[0042]. Because Ely, Fiore, and Mann all disclose video recording systems, a POSITA would have been aware of and motivated to combine these references.

Mann also describes why a POSITA would be motivated to implement the Ely/Fiore surveillance system (or components thereof) in an eyeglasses-mounted apparatus: For instance, Mann teaches that, “[a]lthough there are a growing number of video surveillance cameras installed in the environment allegedly for ‘public safety’, there have been recent questions as to the true benefit of such centralized surveillance infrastructures,” noting that such systems can be abused by their owners, whereas an eyeglasses-based application places the system at the wearer’s control. EX1015, [0041]. Mann’s wearable viewfinder system “allows images to be captured in a natural manner, without giving an unusual appearance to others (such as a potential assailant).” *Id.*, [0042]. Mann’s wearable viewfinder also “allows the user to record a portion of his or her eye’s visual field of view” where, “the device will tend to cause the wearer to want to place the recording zone over top of whatever is most interesting in [a] scene.” *Id.*, [0044]. A POSITA would have been motivated to implement the Ely/Fiore surveillance system and/or components thereof (*e.g.*, camera unit 114) in an eyeglasses-mounted apparatus, to give the wearer more control over what is recorded and how recorded data may be used.

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H. Ground 2d: Claims 19 And 20 Would Have Been Obvious Over Ely Alone Or As Combined With Fiore, In Further View Of Fiedler

1. Motivation To Combine

A POSITA would have been motivated to use the teachings of Fiedler in the Ely/Fiore system. EX1003, ¶¶319, 456. All of these references disclose video recording systems for security, law enforcement, or surveillance operations, and Ely and Fiedler specifically disclose recording systems with user controls for operation and playback. A POSITA therefore would have been aware of and motivated to combine these references. Additional motivations for this combination and a POSITA's reasonable expectation of success are detailed below with respect to the specific features of claims 19 and 20.

2. Claims 19 and 20

Ely alone or combined with Fiore, in further view of Fiedler, renders obvious the limitations added in dependent claims 19 and 20. EX1003, ¶¶457-460.

Claim 19: These limitations would have been obvious in view of Ely. EX1003, ¶458. As one “camera buffer management practice[],” Ely's camera unit “send[s] a message to the central station when a predetermined portion of the camera unit's buffer memory has been utilized for protected storage” (*i.e.*, “warning to a user before the write protected segment of the circular buffer is fully recorded”); then, the central station may “direct retrieval of the alarm data from the buffers and clearing from the buffer of the retrieved data.” EX1020, 10:56-11:8. Moreover, the limitations added in

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claim 19 are obvious in view of Fiedler, which discloses the claimed “warning.” *See* Ground 1d above. The addition of Fiedler’s warning to the Ely/Fiore system merely combines familiar elements according to known methods to yield predictable results. *KSR*, 550 U.S. at 414-418.

Claim 20: Ely discloses that the respective lengths of video data protected before and after an alarm command are predetermined. EX1020, 7:45-55, 10:11-23, 10:60-65. Ely also discloses a user interface 108 for providing instructions input by users of the system. *Id.*, 5:60-64, 8:16-27, Fig. 2. It would have been obvious to utilize a manually operated switch or audio signal to extend the length of the write-protected segment in view of Ely’s disclosure. EX1003, ¶459. Moreover, such limitations would have been obvious in further view of Fiedler. Fiedler discloses the limitations added in dependent claim 20 for at least the reasons provided above in Ground 1d. And a POSITA would have generally known that a user could control and extend the length of recording in a circular buffer. *Id.* (citing EX1035, 28:48-56). A POSITA would have recognized the advantages of extending a length of a write-protected segment in response to a manually operated switch or audio signal in the Ely/Fiore system, *e.g.*, to ensure that important alarm data can be preserved, when write protection would otherwise end. *Id.*.

V. CONCLUSION

Petitioner respectfully requests IPR of claims 1-22 of the ’882 patent.

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VI. MANDATORY NOTICES PURSUANT TO 37 C.F.R. § 42.8(a)(1)

Pursuant to 37 C.F.R. § 42.8(a)(1), the mandatory notices identified in 37 C.F.R. § 42.8(b) are provided below as part of this petition.

A. 37 C.F.R. § 42.8(b)(1): Real Parties-In-Interest

The real parties-in-interest are Motorola Solutions, Inc. and WatchGuard Video, Inc.

B. 37 C.F.R. § 42.8(b)(2): Related Matters

Pursuant to 37 C.F.R. § 42.8(b)(2), Petitioner is aware of the following patent infringement lawsuit involving the '882 patent: *Stellar, LLC v. Motorola Solutions, Inc. et al.*, Case No. 4:23-cv-750 (U.S. District Court, Eastern District of Texas).

C. 37 C.F.R. § 42.8(b)(3), (4): Lead And Back-Up Counsel And Service Information

Petitioner provides the following designation of counsel:

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Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney for Petitioner accompanies this petition. Please address all correspondence to lead and back-up counsel at the addresses above. Petitioner also consents to electronic service by email at the email addresses listed above.

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Dated: July 22, 2024

Respectfully submitted,

/ Joshua R. Nightingale /

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PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,692,882

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing petition for *Inter Partes* Review of U.S. Patent No. 8,692,882, including all Exhibits, was served on July 22, 2024 via Express Mail delivery directed to the attorney of record for the patent at the following address:

Fish IP Law, LLP
Attn: Tomas Prieto
19900 MacArthur Blvd, Suite 810
Irvine, CA 92612
United States

In addition, a courtesy copy of the foregoing petition for *Inter Partes* Review of U.S. Patent No. 8,692,882, including all Exhibits, was served on litigation counsel for patent owner Stellar LLC at the following address:

Devlin Law Firm
Attn: Jim Lennon
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Wilmington, DE 1980
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Date: July 22, 2024

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CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(a)

I, the undersigned, do hereby certify that the attached petition contains 13,970 words, as measured by the Word Count function of Microsoft Word. This is less than the limit of 14,000 words as specified by 37 C.F.R. § 42.24(a)(1)(i).

Date: July 22, 2024

By: / Joshua R. Nightingale /

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LIST OF PETITIONER EXHIBITS

EXHIBIT NO.	TITLE
1001	USP 9,485,471 ('471 patent)
1002	File History of '471 Patent
1003	Declaration of Nabil J. Sarhan
1004	USP 8,928,752 ('752 patent)
1005	USP 5,996,023 (Winter)
1006	Stellar's First Amended Infringement Contentions
1007	Special Report – The Patrol Video Project
1008	USP 6,167,186 (Kawasaki)
1009	US 2002/191952 (Fiore)
1010	USP 7,593,034 ('034 patent)
1011	File History of '540 Patent
1012	File History of '752 Patent
1013	File History of '034 Patent

1014	WO 2006/044476 (Vanman)
1015	EP 1,064,783 (Mann)
1016	USP 5,523,799 (Hattori)
1017	USP 7,158,167 (Yerazunis)
1018	USP 8,310,540 ('540 patent)
1019	US 2004/008255 (Lewellen)
1020	USP 5,982,418 (Ely)
1021	Joint Claim Construction and Prehearing Statement
1022	RESERVED
1023	USP 6,163,338 (Johnson)
1024	Digital Mobile Witness Recording System
1025	American Heritage Dictionary, 4th Ed. 2007
1026	Merriam-Webster's Collegiate Dictionary, 11th Ed. 2006
1027	Wiley Electrical and Electronics Engineering Dictionary (2004)
1028	US 2002/005895 (Freeman)

1029	US 2004/0033058 (Reich)
1030	U.S. App. No. 60/282,162 (Fiore provisional)
1031	USP 9,912,914 ('914 patent)
1032	File History of '914 Patent
1033	USP 8,692,882 ('882 patent)
1034	USP 6,831,556 (Boykin)
1035	USP 7,348,895 (Lagassey patent)
1036	US 2006/092043 (Lagassey publication)
1037	US 6,804,638 (Fiedler)
1038	Chart Comparing Independent Claims 1 and 12 of the '034 Patent
1039	File History of '882 Patent
1040	Chart Comparing Independent Claims 1 and 12 of the '882 Patent
1041	Appendix to Declaration of Nabil J. Sarhan
1042	Declaration of Joshua R. Nightingale