IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Alan J. LIPTON et al.	)	
Patent No.:	7,932,923	)	Control No.: Unassigned
Issued:	April 26, 2011	)	
Title:	VIDEO SURVEILLANCE SYSTEM EMPLOYING VIDEO PRIMITIVES	)	
Filing Date:	September 29, 2009	)	

Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Office of Patent Legal Administration
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

ATTACHMENT TO REQUEST FOR *EX PARTE* REEXAMINATION (FORM PTO-SB/57; PTO-1465) PROVIDING INFORMATION ON U.S. PATENT NO. 7,932,923

Pursuant to the provisions of 35 U.S.C. §§ 302-307 and 37 C.F.R. § 1.510, the undersigned, on behalf of an anonymous Requester, requests *ex parte* reexamination of claims 1-41 of U.S. Patent No. 7,932,923 ("the '923 Patent").

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LISTING OF ATTACHMENTS

Attachment A: Copy of U.S. Patent No. 7,932,923, for which reexamination is requested

Attachment B: Day et al, "Object Oriented Conceptual Modeling of Video Data," Proceedings on the Eleventh International Conference on Data Engineering, IEEE, March 1995, pp. 401-408. ("Day-I")

Attachment C: Day et al., "Spatio-Temporal Modeling of Video Data for On-Line Object Oriented Query Processing," Proceedings of the International Conference on Multimedia Computing and Systems, IEEE, May 1995, pp. 98-105. ("Day-II")

Attachment D: United States Patent No. 5,969,755 to Courtney ("Courtney '755")

Attachment E: Shotton et al., "Object Tracking and Event Recognition in Biological Microscopy Videos," Fifth International Conference on Pattern Recognition (ICPR'2000), September 2000. ("Shotton")

Attachment F: United States Patent No. 6,628,835 to Brill ("Brill")

Attachment G: European Patent Application No. EP 0 967 584 to Courtney ("Courtney '584")

Attachment H: Claim Chart - Claims 1-41 are anticipated by Day-I under 35 U.S.C. § 102(b)

Attachment I: Claim Chart – Claims 14 and 35 are obvious in view of Day-I under 35 U.S.C. § 103

Attachment J: Claim Chart – Claims 10, 19, 31 and 41 are obvious in view Of Day-I and Brill under 35 U.S.C. § 103

Attachment K: Claim Chart - Claims 11 and 32 are obvious in view of Day-I and Day-II

Attachment L: Claim Chart – Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Courtney '755 under 35 U.S.C. § 102(b)

Attachment M: Claim Chart – Claim 14 is obvious in view of Courtney '755 under 35 U.S.C. § 103

Attachment N: Claim Chart – Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Shotton under 35 U.S.C. § 102(b)

Attachment O: Claim Chart – Claim 14 is obvious in view of Shotton under 35 U.S.C. § 103

Attachment P: Claim Chart – Claims 8 and 29 to 41 are obvious in view of Shotton and Brill under 35 U.S.C. § 103

Attachment Q: Claim Chart – Claims 1 to 41 are obvious in view of Courtney '584 and Brill under 35 U.S.C. § 103

I. CLAIMS FOR WHICH REEXAMINATION IS REQUESTED

Reexamination is requested of claims 1-41 of U.S. Patent No. 7,932,923 ("the '923 Patent").

Pursuant to 37 C.F.R. § 1.510(b)(5), the attached Certificate of Service indicates that a copy of this Request, in its entirety, has been served on Patent Owner at the following address of the attorney of record for Patent Owner, in accordance with 37 C.F.R. § 1.33(c).

ROTHWELL, FIGG, ERNST & MANBECK, P.C.
607 14th Street, N.W.
SUITE 800
WASHINGTON DC 20005

Also submitted herewith is the fee set forth in 37 C.F.R. § 1.20(c)(1).

II. COPY OF '923 PATENT PURSUANT TO 37 C.F.R. § 1.510(b)(4)

A copy of the entire patent is attached to this Request as Attachment A, as required by 37 C.F.R. § 1.510(b)(4). Requester is not aware of any disclaimer, certificate of correction, or reexamination certificate issued with respect to the '923 Patent.

III. CERTIFICATION REGARDING 35 U.S.C. § 315(e)(1) AND 35 U.S.C. § 325(e)(1)

As required by 37 C.F.R. §1.510(b)(6), Requester certifies that the statutory estoppel provisions of 35 U.S.C. 315(e)(1) or 35 U.S.C. 325(e)(1) do not prohibit the Requester from filing this *ex parte* reexamination request.

IV. PROCEEDINGS RELATED TO THE '923 PATENT

A request for *inter partes* reexamination of the '923 Patent was filed on February 29, 2012, naming Bosch Security Systems, Inc., a subsidiary of Robert Bosch GMBH, as requester. On May 23, 2012, the Patent Office granted the request for *inter partes* reexamination. That *inter partes* reexamination proceeding was assigned reexamination Control No. 95/001,914 ("the '914 reexamination"). In the Order granting the *inter partes* reexamination, the Patent Office determined the following issues proposed in the request had a reasonable likelihood of prevailing (RLP):

Issue (A): Whether there is an RLP as to the proposed rejection of claims 1-7, 9-13, and 15-28 as anticipated by Courtney-US (Courtney '755)

Issue (B): Whether there is an RLP as to the proposed rejection of claim 14 as obvious over Courtney-US

Issue (D): Whether there is an RLP as to the proposed rejection of claims 1-7, 9-13, and 15-28 as anticipated by Shotton

Issue (E): Whether there is an RLP as to the proposed rejection of claim 14 as obvious over Shotton

Issue (F): Whether there is an RLP as to the proposed rejection of claims 8 and 29-41 as obvious over Shotton and Brill

Issue (I): Whether there is an RLP as to the proposed rejection of claims 1-41 as obvious over Courtney-EP (Courtney '584) and Brill

(May 23, 2012 Office Action, Reexamination Control No. 95/001,914, at p.6.)

On December 3, 2012, the Patent Owner filed a "Petition to Terminate Reexamination Proceeding Under 35 U.S.C. § 317(b) and 37 CFR §§ 1.182, 1.907(b)" in the '914 reexamination. As grounds for the petition, Patent Owner identified a "Stipulation and (Proposed) Order of Dismissal" submitted in Civil Action No. 3:11cv217 (E.D. Va.), styled *ObjectVideo, Inc. v. Robert Bosch GmbH, et al.*[1] According to the petition,

> The Order stated: (1) "The parties jointly request that this Court dismiss all claims asserted between them, with prejudice to the right to pursue any such claims in the future," (2) "The parties further stipulate and request that the Court order that the Bosch Defendants, namely Robert Bosch GmbH and Bosch Security Systems, Inc., have not sustained their burden of proving invalidity of any of the claims 1-29 of U.S. Patent No. 6,970,083, any of the claims 1-37 of U.S. Patent No. 6,696,945, any of the claims 1-22 of U.S. Patent No. 7,868,912, any of claims 1-41 of U.S. Patent No. 7,932,923, and any of the claims 1-20 of U.S. Patent No. 7,613,324' and (3) "This Order is a final and non-appealable decision."
>
> (December 3, 2012 Petition, Control No. 95/001,914, at pp. 2-3)

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[1] The petition indicated that the action in the Eastern District of Virginia "had been stayed in its entirety pending the disposition of an ITC investigation (No.337-TA-795)." (Petition at p. 1.)

The petition proceeded to allege that,

> On November 13, 2012, the U.S. District Court for the Eastern District of Virginia signed the Order containing the above-quoted language. Exhibit 6 at 3 ("IT IS SO ORDERED.").
>
> (December 3, 2012 Petition, Control No. 95/001,914, at p. 3)

On February 13, 2013, the Patent Office issued a Decision Granting Petition to Terminate *Inter Partes* Reexamination Proceeding.

Prior to the filing of the petition, Patent Owner filed an Amendment and Reply on August 27, 2012 in the '914 reexamination, which had not been acted upon by the Examiner at the time the '914 reexamination was terminated.

V. THE '923 PATENT AND ITS PROSECUTION

The following summary of the '923 Patent and its Prosecution is incorporated herein substantially as set forth in the '914 reexamination request.

The '116 application, was filed on September 29, 2009. As originally filed, the '116 application contained twenty-six claims, of which claims 1, 22, 25, and 26 were the only independent claims. Application claims 1, 22, 25, and 26 as filed are reproduced below:

> 1. A computer-readable medium comprising software for a video surveillance system, comprising code segments for operating the video surveillance system based on video primitives.
>
> 22. A computer-readable medium comprising software for a video surveillance system, comprising:
>
> code segments for accessing archived video primitives; and
>
> code segments for extracting event occurrences from accessed archived video primitives.
>
> 25. A method comprising the step of operating a video surveillance system based on video primitives.
>
> 26. A method comprising the steps of:
>
> accessing archived video primitives; and
>
> extracting event occurrences from accessed video primitives.

According to the prosecution history of the '116 application, the applicants held an interview with the Examiner on November 24, 2009 and "discussed new claims 27-70." (Interview Summary mailed December 2, 2009, page 1.) On December 30, 2009, the applicants filed a "Preliminary Amendment and Interview Summary" cancelling original claims 1 to 26 and adding new claims 27 to 58. Of the newly added claims, claims 27, 36, 48, and 50 are independent claims. Claims 27, 36, 48, and 50 as presented and are reproduced below:

> 27. A method comprising:
>
> detecting an object in a video;
>
> detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the detected object;
>
> selecting a new user rule; and
>
> after detecting the plurality of attributes, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes;
>
> wherein the plurality of attributes that are detected are independent of which event is identified.

> 36. A video device comprising:
>
> means for detecting an object in a video;
>
> means for detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the detected object;
>
> a memory storing the plurality of detected attributes; and
>
> means for identifying an event of the object that is not one of the detected attributes of the object by applying a selected new user rule to the plurality of attributes stored in *memory,*
>
> wherein the means for identifying an event is capable of identifying the event independent of when the attributes are stored in memory.

> 48. A method comprising:

providing a video device which detects an object upon analyzing a video and which detects plural attributes of the detected object upon analyzing the video; and

then, selecting a rule, which is not a rule used to detect any individual attribute, as a new user rule, the new user rule providing an analysis of a combination of the attributes to detect an event that is not one of the detected attributes,

wherein the attributes to be detected are independent of the event to be detected.

50. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting an object in a video;

detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified.

The "Preliminary Amendment and Interview Summary" filed December 30, 2009 also included a purported summary of the November 24, 2009 interview, reproduced below:

> The Applicant thanks Examiner Vo for his time during the personal interview of November 24, 2009. During the interview, the Applicant discussed draft claims 27-70 presented for the Examiner's consideration to help expedite allowance of the application. Applicant discussed distinguishing features of the invention, and how those features were attempted to be captured by the draft claim language.
>
> (Preliminary Amendment and Interview Summary filed December 30, 2009, page 10.)

Thereafter, the Examiner issued a first Office Action, mailed on June 17, 2010, and rejected claims 27 to 58 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,653,635 ("Paek et al.") in view of U.S. Patent No. 6,721,454 ("Qian et al."). According to the prosecution history of the '116 application, the applicants conducted a second interview with the Examiner on July 22, 2010, where the parties "[d]iscussed Qian reference and claimed limitations" with respect to claims 27 and 45. (Interview Summary mailed July 26, 2010, page 1.)

On October 13, 2010, the applicants filed an "Amendment and Interview Summary" where independent claims 27, 36, and 50 were amended, dependent claims 35 and 58 were amended into independent form, and new claims 59 to 70 were added. The "Amendment and Interview Summary" also included the cancellation of claims 28, 42, and 51 and the amendment of dependent claims 30, 31, 39, 53, and 54. Independent claims 27, 35, 36, 48, 50, and 59 as presented are reproduced below:

> 27. A method comprising:
>
> detecting an object in a video;
>
> detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the detected object;
>
> selecting a new user rule after detecting the plurality of attributes; and
>
> after detecting the plurality of attributes and after selecting of the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes;
>
> wherein the plurality of attributes that are detected are independent of which event is identified, and
>
> wherein the step of identifying the event identifies the event without reprocessing the video.
>
> 35. A ~~the~~ method of claim 27, further comprising:
>
> detecting first and second objects in a video;
>
> detecting a plurality of attributes of each of the detected first and second objects by analyzing the video, each attribute representing a characteristic of the respective detected object;
>
> selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event comprises identifying an event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the event not being one of the detected attributes.

36. A video device comprising:

means for detecting an object in a video;

means for detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the detected object;

a memory storing the plurality of detected attributes; ~~and~~

means for selecting a new user rule, the means for selecting a new user rule capable of selecting the new user rule after the plurality of detected attributes are stored in memory; and

means for identifying an event of the object that is not one of the detected attributes of the object by applying a selected new user rule to the plurality of attributes stored in memory,

wherein the means for identifying an event is capable of identifying the event independent of when the attributes are stored in memory and is capable of identifying the event without reprocessing the video.

48. A method comprising:

providing a video device which detects an object upon analyzing a video and which detects plural attributes of the detected object upon analyzing the video; and

then, selecting a rule, which is not a rule used to detect any individual attribute, as a new user rule, the new user rule providing an analysis of a combination of the attributes to detect an event that is not one of the detected attributes,

wherein the attributes to be detected are independent of the event to be detected.

50. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting an object in a video;

detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the detected object;

selecting a new user rule after detecting the plurality of attributes; and

after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes, the event of the object being identified without reprocessing the video;

wherein the plurality of attributes that are detected are independent of which event is identified.

58. A ~~the~~ non-transitory computer-readable storage medium ~~of claim 50, wherein the method implemented by the computer system further comprises~~ containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting first and second objects in a video;

detecting a plurality of attributes of each of the detected first and second objects by analyzing the video, each attribute representing a characteristic of the respective detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event comprises identifying an event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the event not being one of the detected attributes.

59. A video device comprising:

means for detecting first and second objects in a video;

means for detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the respective detected object;

a memory storing the plurality of detected attributes; and

means for identifying an event of the first object interacting with the second object by applying a selected new user rule to the plurality of attributes stored in memory, the event not being one of the detected attributes,

wherein the means for identifying an event is capable of identifying the event independent of when the attributes are stored in memory.

Subsequently, the applicants filed an "Amendment and Interview Summary" on October 13, 2010 that included a purported summary of the July 22, 2010 interview, reproduced below:

> The Applicant thanks Examiner Vo for his time during the personal interview of July 22,2010. During the interview, the Applicant discussed the Office Action, the applied references to Paek et al. and Qian et al. While no agreement was reached regarding the differences of the invention, the interview was still helpful to help focus the remaining issues with respect to the pending claims. (Amendment and Interview Summary filed October 13, 2010, page 14.)

According to the prosecution history of the '116 application, the applicants conducted a third interview with the Examiner on November 17, 2010, where "[t]he applicants discussed the independent claims." (Interview Summary mailed November 23, 2010, page 1.) On December 2, 2010, the applicants filed a "Supplemental Amendment and Interview Summary," which included a purported summary of the November 17, 2010 interview, reproduced below:

> The Applicant thanks Examiner Vo for his time during the personal interview of November 17,2010 with Patrick Muir and Peter Venetianer. During the interview, the Examiner requested certain amendments to the claims for formal purposes. Claims 27, 35, 36, 41, 43, 48, 58, 59, 64-66 have been amended to address formal issues consistent with this discussion. In addition, 27, 36, 48, and 50 have been amended to add further recitations regarding the recited attributes as suggested by Examiner Vo during the interview. (Supplemental Amendment and Interview Summary, filed December 2, 2010, page 14.)

Independent claims 27, 35, 36, 48, 50, 58, and 59 as set forth in the Supplemental Amendment and Interview Summary, filed December 2, 2010 are reproduced below:

27. A method comprising:

detecting an object in a video;

detecting a plurality of attributes of the object by analyzing the video, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

selecting a new user rule after detecting the plurality of attributes; and

after detecting the plurality of attributes and after selecting of the new user rule,

identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified, and

wherein the step of identifying the event of the object identifies the event without reprocessing the video.

35. A method comprising:

detecting first and second objects in a video;

detecting a plurality of attributes of each of the detected first and second objects by analyzing the video, each attribute representing a characteristic of the respective detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event of the object comprises identifying ~~an~~ a first event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the first event not being one of the detected attributes.

36. A video device comprising:

means for detecting an object in a video;

means for detecting a plurality of attributes of the object by analyzing the video, the plurality of attributes including at least a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

a memory storing the plurality of detected attributes;

means for selecting a new user rule, ~~the means for selecting a new user rule capable of selecting the new user rule~~ after the plurality of detected attributes are stored in memory; and

means for identifying an event of the object that is not one of the detected attributes of the object by applying a selected new user rule to the plurality of attributes stored in memory, ~~wherein the means for identifying an event is capable of~~ for identifying the event independent of when the attributes are stored in memory and is ~~capable of~~ for identifying the event without reprocessing the video.

48. A method comprising:

providing a video device which detects an object upon analyzing a video and which detects plural attributes of the detected object upon analyzing the video, the plurality of attributes including at least a physical attribute and a temporal attribute; and

then, selecting a rule, which is not a rule used to detect any individual attribute, as a new user rule, the new user rule providing an analysis of a combination of the attributes to detect an event that is not one of the detected attributes,

wherein the attributes to be detected are independent of the event to be detected.

50. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting an object in a video;

detecting a plurality of attributes of the object by analyzing the video, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

selecting a new user rule after detecting the plurality of attributes; and

after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes, the event of the object being identified without reprocessing the video;

wherein the plurality of attributes that are detected are independent of which event is identified.

58. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting first and second objects in a video;

detecting a plurality of attributes of each of the detected first and second objects by analyzing the video, each attribute representing a characteristic of the respective detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event comprises identifying ~~an~~ a first event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the first event not being one of the detected attributes.

59. A video device comprising:

means for detecting first and second objects in a video;

means for detecting a plurality of attributes of the object by analyzing the video, each attribute representing a characteristic of the respective detected object;

a memory storing the plurality of detected attributes; and

means for identifying an event of the first object interacting with the second object by applying a selected new user rule to the plurality of attributes stored in memory, and for identifying the

event independent of when the attributes are stored in memory, the event not being one of the detected attributes,

~~wherein the means for identifying an event is capable of identifying the event independent of when the attributes are stored in memory~~.

According to the prosecution history of the '116 application, the applicants conducted a fourth interview with the Examiner on January 26, 2011. Subsequently, the applicants filed a "Second Supplemental Amendment and Interview Summary" on February 4, 2011, which included the following purported summary of the interview:

> The Applicant thanks Examiner Vo for his time during the personal interview of January 26,2011 with Patrick Muir and Peter Venetianer. During the interview, the Applicant and Examiner discussed U.S. Patent Publication 2003/0023612 to Carlbom and its corresponding priority provisional applications (Nos. 60/299,335 and 60/297,539), these documents recently brought to the Applicant's attention by the Examiner. (Second Supplemental Amendment and Interview Summary, page 15.)

The Second Supplemental Amendment and Interview Summary included further amendments to all of the independent claims. Independent claims 27, 35, 36, 48, 50, 58, and 59 as set forth in the Second Supplemental Amendment and Interview Summary are reproduced below:

27. A method comprising:

detecting an object in a video from a single camera;

detecting a plurality of attributes of the object by analyzing the video from said single camera, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

selecting a new user rule after detecting the plurality of attributes; and

after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified, ~~and~~

wherein the step of identifying the event of the object identifies the event without reprocessing the video, and

wherein the event of the object refers to the object engaged in an activity.

35. A method comprising:

detecting first and second objects in a video from a single camera;

detecting a plurality of attributes of each of the detected first and second objects by analyzing the video from said single camera, each attribute representing a characteristic of the respective detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event of the object comprises identifying a first event of the first object interacting with the second object by analyzing the detected

attributes of the first and second objects, the first event not being one of the detected attributes, and

wherein the event of the object refers to the object engaged in an activity.

36. A video device comprising:

means for detecting an object in a video from a single camera;

means for detecting a plurality of attributes of the object by analyzing the video from said single camera, the plurality of attributes including at least a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

a memory storing the plurality of detected attributes;

means for selecting a new user rule after the plurality of detected attributes are stored in memory; and

means for identifying an event of the object that is not one of the detected attributes of the object by applying a selected new user rule to the plurality of attributes stored in memory, for identifying the event independent of when the attributes are stored in memory and for identifying the event without reprocessing the video, and

wherein the event of the object refers to the object engaged in an activity.

48. A method comprising:

providing a video device which detects an object upon analyzing a video from a single camera and which detects plural attributes of the detected object upon analyzing the video from said single camera, the plurality of attributes including at least a physical attribute and a temporal attribute; and

then, selecting a rule, which is not a rule used to detect any individual attribute, as a new user rule, the new user rule providing an analysis of a combination of the attributes to detect an event that is not one of the detected attributes,

wherein the attributes to be detected are independent of the event to be detected, and

wherein the event of the object refers to the object engaged in an activity.

50. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting an object in a video from a single camera;

detecting a plurality of attributes of the object by analyzing the video from said single camera, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

selecting a new user rule after detecting the plurality of attributes; and

after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes, the event of the object being identified without reprocessing the video;

wherein the plurality of attributes that are detected are independent of which event is identified, and

wherein the event of the object refers to the object engaged in an activity.

58. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting first and second objects in a video from a single camera;

detecting a plurality of attributes of each of the detected first and second objects by analyzing the video from said single camera, each attribute representing a characteristic of the respective detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event comprises identifying a first event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the first event not being one of the detected attributes, and

wherein the event of the object refers to the object engaged in an activity.

59. A video device comprising:

means for detecting first and second objects in a video from a single camera;

means for detecting a plurality of attributes of the object by analyzing the video from said single camera, each attribute representing a characteristic of the respective detected object;

a memory storing the plurality of detected attributes; and

means for identifying an event of the first object interacting with the second object by applying a selected new user rule to the plurality of attributes stored in memory, and for identifying the

event independent of when the attributes are stored in memory, the event not being one of the detected attributes,

wherein the event of the object refers to the object engaged in an activity.

Thereafter, the Examiner issued a Notice of Allowance on February 18, 2011. The Notice of Allowance included the following statement of the Examiner's reasons for allowance:

> [T]he prior art does not disclose a method comprising: detecting an object in a video; detecting a plurality of attributes of the object by analyzing the video, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object; selecting a new user rule after detecting the plurality of attributes; and after detecting the plurality of attributes and after selecting of the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent of which event is identified, and wherein the step of identifying the event of the object identifies the event without reprocessing the video as presented by the applicant's arguments filed on 02/04/2011. (Notice of Allowance, page 2.)

The '923 patent issued with forty-one claims on April 26, 2011, of which claims 1, 8, 9, 20, 22, 29, and 30 are the only independent claims. Claims 1, 8, 9, 20, 22, 29, and 30 are reproduced below:

> 1. A method comprising:
>
> detecting an object in a video from a single camera;
>
> detecting a plurality of attributes of the object by analyzing the video from said single camera, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;
>
> selecting a new user rule after detecting the plurality of attributes; and
>
> after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying the event of the object identifies the event without reprocessing the video, and

wherein the event of the object refers to the object engaged in an activity.

8. A method comprising:

detecting first and second objects m a video from a single camera;

detecting a plurality of attributes of each of the detected first and second objects by analyzing the video from said single camera, each attribute representing a characteristic of the respective detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event of the object comprises identifying a first event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the first event not being one of the detected attributes, and

wherein the event of the object refers to the object engaged in an activity.

9. A video device comprising:

means for detecting an object in a video from a single camera;

means for detecting a plurality of attributes of the object by analyzing the video from said single camera, the plurality of attributes including at least a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

a memory storing the plurality of detected attributes;

means for selecting a new user rule after the plurality of detected attributes are stored in memory; and

means for identifying an event of the object that is not one of the detected attributes of the object by applying a selected new user rule to the plurality of attributes stored in memory, for identifying the event independent of when the attributes are stored in memory and for identifying the event without reprocessing the video, and

wherein the event of the object refers to the object engaged in an activity.

20. A method comprising:

providing a video device which detects an object upon analyzing a video from a single camera and which detects plural attributes of the detected object upon analyzing the video from said single camera, the plurality of attributes including at least a physical attribute and a temporal attribute; and

then, selecting a rule, which is not a rule used to detect any individual attribute, as a new user rule, the new user rule providing an analysis of a combination of the attributes to detect an event that is not one of the detected attributes,

wherein the attributes to be detected are independent of the event to be detected, and

wherein the event of the object refers to the object engaged in an activity.

22. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting an object in a video from a single camera;

detecting a plurality of attributes of the object by analyzing the video from said single camera, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object;

selecting a new user rule after detecting the plurality of attributes; and

after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one

of the detected attributes of the object by applying the new user rule to the plurality of detected attributes, the event of the object being identified without reprocessing the video;

wherein the plurality of attributes that are detected are independent of which event is identified, and

wherein the event of the object refers to the object engaged in an activity.

29. A non-transitory computer-readable storage medium containing instructions that when executed by a computer system cause said computer system to implement the following method comprising:

detecting first and second objects m a video from a single camera;

detecting a plurality of attributes of each of the detected first and second objects by analyzing the video from said single camera, each attribute representing a characteristic of the respective detected object;

selecting a new user rule; and

after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes;

wherein the plurality of attributes that are detected are independent of which event is identified,

wherein the step of identifying an event comprises identifying a first event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the first event not being one of the detected attributes, and

wherein the event of the object refers to the object engaged in an activity.

30. A video device comprising:

means for detecting first and second objects in a video from a single camera;

means for detecting a plurality of attributes of the object by analyzing the video from said single camera, each attribute representing a characteristic of the respective detected object;

a memory storing the plurality of detected attributes; and

means for identifying an event of the first object interacting with the second object by applying a selected new user rule to the plurality of attributes stored in memory, and for identifying the event independent of when the attributes are stored in memory, the event not being one of the detected attributes,

wherein the event of the object refers to the object engaged in an activity.

VI. CITATION OF PRIOR PATENTS AND PRINTED PUBLICATIONS

As an initial matter, Requester notes that the '923 patent does not contain a proper claim under 35 U.S.C. § 120 for the benefit of an earlier filing date. As such, none of the claims of the '923 patent are entitled to the benefit of a filing date earlier than the filing date of the '116 application, *i.e.,* September 29, 2009. Requester further notes that the applicants for the '923 patent have not established during prosecution of the '923 patent that any claim of the '923 patent is entitled, under 35 U.S.C. § 120, to the benefit of a filing date earlier than the September 29, 2009 filing date of the '116 application, notwithstanding the fact that the '923 patent includes the statement that "This application claims the priority to U.S. patent application Ser. No. 09/987,707, filed Nov. 15, 2001, which claims priority to U.S. patent application Ser. No. 09/694,712, now U.S. Pat. No. 6,954,498, each of which is incorporated herein by reference in their entirety." ('923 patent, col. 1, lines 7 to 11.)

Because the foregoing statement does not specify a relationship, *i.e.,* continuation, divisional, or continuation-in-part, among the prior application, the foregoing statement does not constitute a "specific reference" to a prior application in the manner required by 35 U.S.C. § 120. M.P.E.P. § 201.11(III)(A) ("Any benefit claim that does not both identify a prior application by its application number and specify a relationship between the applications will not be considered to contain a specific reference to a prior application as required by 35 U.S.C. 120" (emphasis in original)). Accordingly, no claim of the '923 patent is entitled to the benefit of the filing date of U.S. Application Serial No. 09/987,707 or U.S. Patent Application Serial No. 09/694,712. In other words, for the purposes of this reexamination proceeding, none of the claims of the '923 patent are entitled to the benefit of a filing date earlier than the filing date of the '116 application, *i.e.,* September 29, 2009.

To the extent that Patent Owner argues, as it did in the '914 reexamination proceeding, that "the requirement has been met by the relationship between the applications being indicated on the Bib Data Sheet and on the Application Transmittal Sheets for the '116 and '707 Applications" (see '914 reexamination, Amendment and Reply at 29), Requester notes that Patent Owner cited to no authority that such an indication is either adequate or permissible. (*See* M.P.E.P. § 201.11(III)(D. Reference Must Be Included in the Specification or an Application Data Sheet (ADS)).)

Requester in this instant *ex parte* reexamination request is thus entitled to rely on prior art patents and printed publications that constitute prior art to the '923 patent as of the September 29, 2009 filing date of the '116 application. The following prior art patents and printed publications constitute prior art against the '923 patent, under the subsections of 35 U.S.C. § 102 indicated below:

A copy of every prior art patent and printed publication relied upon or referred to herein is submitted herewith as required by 37 C.F.R. § 1.510(b)(3), as follows:

1. Day et al., "Object Oriented Conceptual Modeling of Video Data," Proceedings on the Eleventh International Conference on Data Engineering, IEEE, March 1995, pp. 401-408 ("Day-I"). Day-I was published in March 1995, more than one year before the filing date of the '923 Patent. Day-I was not considered during the examination of the '923 Patent. A copy of Day-I is provided as Attachment B.
2. Day et al., "Spatio-Temporal Modeling of Video Data for On-Line Object-Oriented Query Processing," Proceedings on the International Conference on Multimedia Computing and Systems, IEEE, May 1995 pp. 98-105 ("Day-II"). Day-II was published in May 1995, more than one year before the filing date of the '923 Patent. Day-II was not considered during the examination of the '923 Patent. A copy of Day-II is provided as Attachment C.
3. United States Patent No. 5,969,755 to Courtney ("Courtney '755") Courtney '755 issued on October 19, 1999, more than one year before the filing date of the '923 Patent. Courtney '755 was not considered during the examination of the '923 Patent. A copy of Courtney '755 is provided at Attachment D.
4. Shotton et al., "Object Tracking and Event Recognition in Biological Microscopy Videos," Fifth International Conference on Pattern Recognition (ICPR'2000),

September 2000 ("Shotton"). Shotton was published in September 2000, more than one year before the filing date of the '923 Patent. Shotton was not considered during the examination of the '923 Patent. A copy of Shotton is provided at Attachment E.

5. United States Patent No. 6,628,835 to Brill ("Brill") Brill issued on September 30, 2003, more than one year before the filing date of the '923 Patent. Brill was not considered during the examination of the '923 Patent. A copy of Brill is provided as Attachment F.
6. European Patent Application No. EP 0 967 584 ("Courtney '584") Courtney '584 published on December 29, 1999, more than one year before the filing date of the '923 Patent. A copy of Courtney '584 is provided at Attachment G.

VII. STATEMENTS POINTING OUT SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

Pursuant to 37 C.F.R. § 1.510(b)(1), Requester sets forth a statement pointing out each substantial new question (SNQ) of patentability of the '923 Patent based on prior patents and printed publications.

Proposed grounds of rejection 1-4, as set forth herein and in the appended claim charts, set forth substantial new questions of patentability that were not raised in the '914 reexamination.

Proposed grounds of rejection 5-10 are substantially the same as the rejections proposed in the '914 reexamination (as Issues A, B, D, E, F, and I, respectively) and ***adopted*** by the Office, the Office having found that the requester in the '914 reexamination demonstrated a Reasonable Likelihood of Prevailing (RLP) as to each of those grounds of rejection. Because these proposed grounds of rejection also establish substantial new questions of patentability as to the '923 patent claims as shown herein, which were left wholly unresolved prior to the termination of the '914 reexamination proceeding, these rejections should also be adopted and taken up in the requested *ex parte* reexamination proceeding.

Accordingly, the rejections proposed by the instant request are as follows:

Proposed Rejection 1: Claims 1-41 are anticipated by Day-I under 35 U.S.C. § 102(b)

Proposed Rejection 2: Claims 14 and 35 are obvious in view of Day-I under 35 U.S.C. § 103

Proposed Rejection 3: Claims 10, 19, 31 and 41 are obvious in view of Day-I and Brill under 35 U.S.C.

Proposed Rejection 4: Claims 11 and 32 are obvious in view of Day-I and Day-II under 35 U.S.C. § 103

Proposed Rejection 5: Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Courtney '755 under 35 U.S.C. § 102(b) (adopted as Issue A in the '914 reexamination)

Proposed Rejection 6: Claim 14 is obvious in view of Courtney '755 under 35 U.S.C. § 103 (adopted as Issue B in the '914 reexamination)

Proposed Rejection 7: Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Shotton under 35 U.S.C. § 102(b) (adopted as Issue D in the '914 reexamination)

Proposed Rejection 8: Claim 14 is obvious in view of Shotton under 35 U.S.C. § 103 (adopted as Issue E in the '914 reexamination)

Proposed Rejection 9: Claims 8 and 29 to 41 are obvious in view of Shotton and Brill (adopted as Issue F in the '914 reexamination)

Proposed Rejection 10: Claims 1 to 41 are obvious in view of Courtney '584 and Brill (adopted as Issue I in the '914 reexamination)

A. Proposed Rejection 1: Claims 1-41 are anticipated by Day-I under 35 U.S.C. § 102(b)

Claims 1-4 are anticipated by Day-I under 35 U.S.C. § 102(b). Day-I was not cited during the prosecution of the '923 Patent. Day-I is closer to the subject matter of the '923 Patent than any prior art that was relied upon during prosecution of the '923 Patent, and Day-I provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '923 patent.

As set forth in claim chart appended Attachment H, Day-I discloses all the limitations of claims 1-41 of the '923 patent.

For example, Day-I discloses conceptual modeling of video data allowing for semantically unbiased abstraction of video data using a directed graph model, in which objects are detected and information about the objects is determined:

> For each input video clip, ***using a database of known objects, we first identify the corresponding objects, their sizes and locations, their relative positions and movements***, and then encode this information in the proposed graphical model.

(Section 1 (Introduction) at page 402; emphasis added)

More specifically, Day-I describes detecting ***spatial*** and ***temporal*** attributes of detected objects by analyzing the video:

> The spatial attribute, of a salient physical object present in the frames can be extracted in form of bounding volume, *Z*, that describes the spatial projection of an object, in three dimensions.
>
> Temporal information of objects can be captured by specifying the changes in the spatial parameters associated with the bounding volume (*Z*) of objects over the sequence of frames. At the finest level, these changes can be recorded at each frame.
>
> (Section 2.1 (Spatio-Temporal Modeling over a Sequence of Frames (a Clip)) at page 402)

Day-I also discloses modeling physical objects (PO) by classifying objects (*e.g.*, persons, tree, houses, etc.) (Section 3.1 at page 405.)

Day-I teaches that a Video Semantic Directed Graph (VSDG) model is then generated with the detected spatial and temporal attributes:

> In this section, we use a video clip shown in Figure 3 to illustrate the proposed model. In the example video clip (Figure 3(a)), a car (object 2) and a person (object 1) appear first, then the camera moves toward the right and two persons (object 1 and object 5) are walking toward each other and shake hands. ***Assuming that proper object recognition methods are used to identify these objects, we can appropriately define the bounding volumes information for the objects. The complete VSDG model, for the example video clip is given in Figure 4, which describes the information about various objects and their temporal behaviors.*** The VSDG in Figure 4, has four rectangular nodes which correspond to three different scene changes. The first rectangular node (t_0) marks the start of video clip, t_1 indicates the appearance of objects O_5 t_2 indicates the appearance of object O_6, and t_3 indicates the end of the video clip. There are a total of six objects, O_1, O_2, O_3, O_4, O_5, and O_6, and some objects appear in multiple scenes. For example, O_1, O_2, O_3, and O_4 appear in video segments V_1 and V_2.
>
> (Section 2.3 (An Example of VSDG-Based Modeling) at page 404; emphasis added)

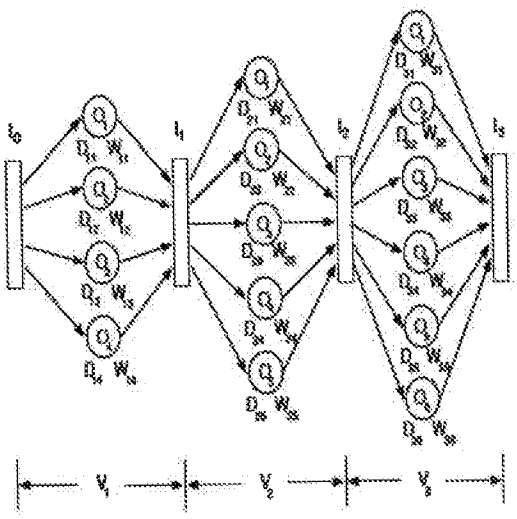


Figure 4: VSDG representation of the example clip

The model "allows to represent spatio-temporal aspects of information associated with objects (persons, buildings, vehicles, etc.) present in video data." (Section 1 at page 401.)

Applying the foregoing to the language of claim 1, as an illustrative example, Day-I teaches the features of "detecting an object in a video from a single camera," "detecting a plurality of attributes of the object by analyzing the video from said single camera," and "the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object."

Conceptual queries, based on predicate logic, can be carried out using Day-I's VSDG model to identify ***specified events***. For instance, Day-I discloses user specified temporal queries:

> Temporal specifications can be applied to higher level of concepts. For example, we can specify the query "*Person A is walking and some time later he passes by someone who is sitting on the sidewalk*" by the following predicate logic:
>
> f_t (walking(A) , sitting(B, sidewalk)),
>
> assuming that 'walking' (with the object walking as parameter) and 'sitting' (with the object sitting and the objects being sit as parameters) are predefined.
>
> (Section 3.2.2 (Temporal Sequence Specification) at page 406; emphasis original)

Day-I discloses spatial queries, such as:

- Querying whether or not an object/person is present in a video clip(s):(x IN v).
- Identifying the relative position of object/person. For example, search for those video clips where Mr. X appears with Mr. Y, with X standing in front of Y. The predicate for such a query is : $\exists f \in frame, \exists x, y \in person$ $x\ IN\ f \wedge y\ IN\ f \wedge x.z.depth < y.z.depth$ Here x, y are circular nodes in VSDG and $z.depth$ is the depth of a bounding volume z of a circular node associated with x or y.

Day-I also discloses spatio-temporal queries, such as:

- Finding the duration of an object. For example, how long has person X appeared on a certain video clip. This query can be expressed as : $X.duration \wedge X\ IN\ v$
- Estimating the speed of an object. For example, how fast is object X walking in a certain clip. $X\ IN\ v \wedge \frac{DP(t_1, t_2, x)}{t_2 - t_1}$ Here, t_1 and t_2 are two variables denoting frame numbers assigned by the system.

Day-I further discloses complex queries that can be constructed, including querying for a "slam-dunk" event, walking, and passing a basketball.

As Day-I explains:

> Theoretically, any concept that requires expression of spatio-temporal interactions among objects can be specified by predicate logic expressions. We have provided only a limited number of examples and even for those examples, only a few possible ways of specifying them have been discussed.
>
> (Section 3.2.3 (Expressing Queries Using Predicate Logic) at pages 406-407)

The result of the queries disclosed by Day-I is an identification of an event of the object, such as the examples of relative position of an object, the speed of an object, a basketball being dunked, a basketball being passed, a person walking, or any other spatio-temporal interaction among objects. The user specified queries allow for the retrieval of corresponding video clips:

> Using propositional logic described in the paper, ***a user can specify queries and hence can retrieve corresponding video clips without ever processing raw video data.*** The proposed methodology employs computer vision and image processing (CVIP) techniques to automate the construction of the video database based on the VSDG model.

(Section 4 (Conclusion) at page 408; emphasis added)

Further, as discussed above, the querying functionality taught by Day-I teaches the features of "selecting a new user rule after detecting the plurality of attributes" and "after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes," recited by claim 1.

Day-I discloses that the spatio-temporal attributes of the physical objects, detected as above, are independent of the identified events. As discussed above, Day-I utilizes its directed graph model to allow for semantically unbiased abstraction of the video data to address prior problems of semantic heterogeneity in video database system. (See Day-I at Introduction, page 401.) To do so, Day-I teaches that the spatial attributes (e.g., bounding volume, *Z*, that describes the spatial projection of a detected physical object, such as a person, in three dimensions) and temporal attributes (e.g., changes in the spatial parameters associated with the bounding volume (*Z*) of objects over the sequence of frames) are independent of the events that are identified for the user specified queries, including the temporal queries, the spatial queries, and the spatio-temporal queries. The specific examples of the queries provided in Day-I are used to identify events that are independent of the detected attributes, such as "Person A is walking and some time later he passes by someone who is sitting on the sidewalk," "video clips where Mr. X appears with Mr. Y, with X standing in front of Y," "Finding the duration of an object," "Estimating the speed of an object," and other events based on complex queries including the "slam-dunk event, walking, and playing basketball. Moreover, the '923 patent likewise relies on many of the same spatial and temporal attributes of detected objects used by Day-I to determine events, and thus the events determined in Day-I are independent of the determined attributes at least in the same sense that the events are "independent" of the attributes in the '923 patent.

Further, the events in Day-I, which are independent of the determined attributes, are identified without reprocessing the video.

> "Another reason for this modeling approach is to provide an efficient indexing mechanism for on-line query processing without performing computations on the raw video data since such computation can be quite extensive. ***The proposed VSDG can be generated off-line and subsequently can be used to process user's queries on-line.*** The architecture of the proposed system is shown in Figure 1."

(Section 1 (Introduction) at page 402; emphasis added)

Accordingly, at least in view of the foregoing, Day-I teaches that "the plurality of attributes that are detected are independent of which event is identified," that "the step of identifying the event of the object identifies the event without reprocessing the video," and that "the event of the object refers to the object engaged in an activity" as recited by claim 1.

Moreover, as shown herein and the attached claim chart at Attachment H, Day-I discloses each of the features the Examiner identified as the basis for allowance, including detecting an object in a video; detecting a plurality of attributes of the object by analyzing the video, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object; selecting a new user rule after detecting the plurality of attributes; and after detecting the plurality of attributes and after selecting of the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent of which event is identified, and wherein the step of identifying the event of the object identifies the event without reprocessing the video. Based on the foregoing, Requester has provided a showing of a substantial new question of patentability with respect to at least one of claims 1-41 in view of Day-I.

As set forth in the appended charts at Attachment H, Day-I discloses all of the limitations of claims 1-41 of the '923 patent and therefore anticipates claims 1-41 of the '923 patent. Therefore, Requester proposes a ground of rejection of claims 1-41 of the '923 patent under 35 U.S.C. § 102(b) as anticipated by Day-I.

B. Proposed Rejection 2: Claims 14 and 35 are unpatentable as obvious over Day-I under 35 U.S.C. § 103(a)

Alternatively, if Day-I is not viewed as anticipatory to claims 14 and 35, these claims would at least be unpatentable as obvious over Day-I under 35 U.S.C. § 103(a). Day was not cited during the prosecution of the '923 Patent. Day-I is closer to the subject matter of the '923 Patent than any prior art that was relied upon during prosecution of the '923 Patent, and Day-I provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '923 patent.

As set forth in the claim chart appended as Attachment I to this request, Day-I renders claims 14 and 35 unpatentable as obvious. Claims 14 and 35 recite the features of "the memory is configured to store at least some of the plurality of attributes for ***at least two months***" and "identifying an event of the object includes means for identifying an event of the object by analyzing only a selected subset of the plurality of attributes including the at least some of the plurality of attributes stored for ***at least two months***." If not literally disclosed by Day-I (i.e., by virtue of Day-I placing no restriction on how long the attributes would be maintained, thus disclosing an infinite retention period by default), this feature would have been obvious in view of Day.

First, Day-I discloses a memory storing the plurality of detected attributes.

> For each input video clip, using a database of known objects, we first identify the corresponding objects, their sizes and locations, their relative positions and movements, and then encode this information in the proposed graphical model.
>
> (Section 1 (Introduction) at page 402)

Day-I makes no limitation on the time period in which the data in the graphical model is stored. As such, Requester submits that Day-I's model inherently is configured to store at least some of the plurality of attributes "for at least two months." To the extent that an explicit time frame for storing the data is required, Requester submits that it would be obvious to modify Day-I's graphical model to retain data "at least two months." It would have been obvious to configure the database of Day-I to store the detected attributes for a specified period of time (*e.g.*, "at least two months") for the well-known and expected benefit of optimizing data storage and/or to maintain the detected attributes for a sufficient period of time to allow for further processing or review of the data to be performed (e.g., surveillance data is routinely maintained for a specified period to allow later detected activity to be investigated).

Moreover, modifying Day-I in this manner is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a

different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

As to the remaining feature of "analyzing only a selected subset of the plurality of attributes including the at least some of the plurality of attributes stored for at least two months, Day-I would meet this limitation, as modified, based on its disclosure of the Video Directed Semantic Graph (VSDG) model for the detected spatial and temporal attributes of objects:

> "In this section, we use a video clip shown in Figure 3 to illustrate the proposed model. In the example video clip (Figure 3(a)), a car (object 2) and a person (object 1) appear first, then the camera moves toward the right and two persons (object 1 and object 5) are walking toward each other and shake hands. Assuming that proper object recognition methods are used to identify these objects, we can appropriately define the bounding volumes information for the objects. The complete VSDG model, for the example video clip is given in Figure 4, which describes the information about various objects and their temporal behaviors. The VSDG in Figure 4, has four rectangular nodes which correspond to three different scene changes. The first rectangular node (t_0) marks the start of video clip, t_1 indicates the appearance of objects O_5 t_2 indicates the appearance of object O_6, and t_3 indicates the end of the video clip. There are a total of six objects, O_1, O_2, O_3, O_4, O_5, and O_6, and some objects appear in multiple scenes. For example, O_1, O_2, O_3, and O_4 appear in video segments V_1 and V_2."
>
> (Section 2.3 (An Example of VSDG-Based Modeling) at page 404)

Based on the foregoing and as shown in Attachment I, Requester has provided a showing of a substantial new question of patentability with respect to at least one of claims 14 and 35 in view of Day-I. Therefore, Requester proposes an alternative ground of rejection of claims 14 and 35 of the '923 patent under 35 U.S.C. § 103(a) as obvious in view of Day-I.

C. Proposed Rejection 3: Claims 10, 19, 31 and 41 are unpatentable as obvious over Day-I and Brill under 35 U.S.C. § 103(a)

Alternatively, if Day-I is not viewed as anticipatory as to claims 10, 19, 31, and 41, these claims would be unpatentable as obvious under 35 U.S.C. § 103(a)based on the combination of Day-I and Brill, as set forth in claim chart appended Attachment J and explained herein.

Claims 10 and 31 are dependent claims that recite the feature of "a video camera operable to obtain the video." Day-I expressly discloses its system receiving "raw video data." (Section 1; Figure 1.)

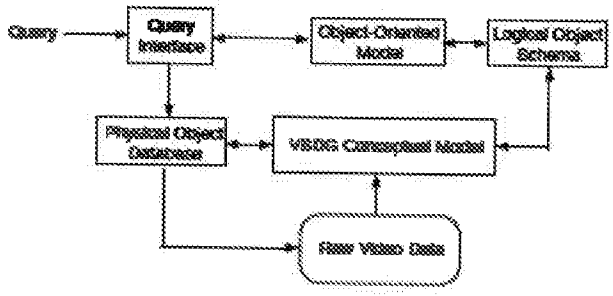


Figure 1: System abstraction

Further, Day-I discloses a camera as the source of video that is analyzed:

> "In this section, we use a video clip shown in Figure 3 to illustrate the proposed model. In the example video clip (Figure 3(a)), a car (object 2) and a person (object 1) appear first, then the camera moves toward the right and two persons (object 1 and object 5) are walking toward each other and shake hands.
>
> (Section 2.3 (An Example of VSDG-Based Modeling) at page 404.)

In a related field, Brill discloses an automated security system including a camera unit:

> The camera unit 12 includes video camera 23. Video camera 23 in the disclosed embodiment is a known monochrome camera that outputs gray-scale images. However, the present invention may be utilized with a color video camera or some other type of two-dimensional image detector, such as an infrared detector.
>
> (col. 2, lines 53-58)

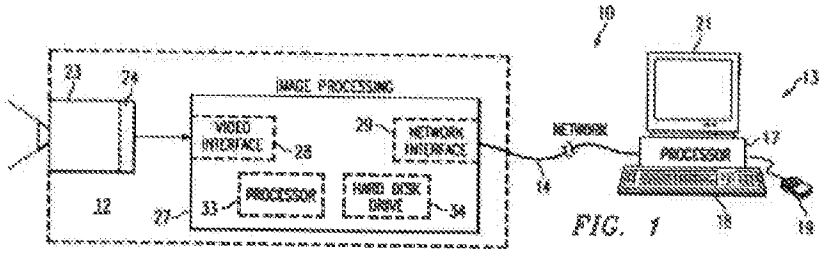


FIG. 1

Thus, at a minimum, it would have been obvious to combine Day-I with Brill so as to include Brill's video camera to directly supply the raw video. Combining Day-I with Brill in this manner is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain

predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Claims 19 and 41 are dependent claims that each recite the feature of "further comprising video sensors." For reasons similar to those discussed above for the "video camera" of claims 10 and 31 and as shown in Attachment I, it would have been obvious to combine Day-I and Brill to include "video sensors."

Moreover, claims 19 and 41 merely require the presence of "video sensors," thus to the extent that the system of Brill is viewed as not disclosing multiple "video sensors," the claims would further have been obvious on the grounds of being a mere duplication of parts, which has long been a well-recognized as a basis of obviousness. *See* M.P.E.P. § 2144.04 VI.B. Separately, it would have been obvious to incorporate multiple video sensors into the combined system of Day-I and Brill in order to provide for different types of video input to the system, such as conventional video, infrared, high-speed, etc., each of which had well-known benefits at the time of the purported invention of the '923 patent that would have motivated one of ordinary skill to incorporate additional types of cameras into such a system.

Based on the foregoing and as shown in Attachment J, Requester has provided a showing of a substantial new question of patentability with respect to at least one of claims 10, 19, 31, and 41 in view of Day-I and Brill. Therefore, Requester proposes an alternative ground of rejection of claims 10, 19, 31, and 41 of the '923 patent under 35 U.S.C. § 103(a) as obvious in view of Day-I and Brill.

D. Proposed Rejection 4: Claims 11 and 32 are unpatentable as obvious in view of Day-I and Day-II under 35 U.S.C. § 103

Claims 11 and 32 of the '923 Patent recite the feature of:

> wherein the means for identifying an event of the object comprises means for identifying a first event of the object ***in real time*** by analyzing, of the plurality of attributes, only a first selected subset of the plurality of attributes.

Although Requester submits that Day-I anticipates the claimed "real time" event identification at least by virtue of its disclosure of complex event identification through user

queries without reprocessing of raw video data (e.g., Day-I at Section 4; see also Attachment H), even if viewed as not anticipating the "real time" requirement, such feature would be obvious in the closely related disclosure of Day-II. Day-II provides further details of aspects of the conceptual video modeling technology in Day-I. For instance, Day-II teaches that the spatio-temporal modeling of video data using a video semantic directed graph (VSDG) model storing attributes of detected objects. (See Day-II at Section 2.2 (Modeling of Spatial Events in a Single Frame) and Section 2.3 (Temporal Events.)

Day-II describes three levels of semantic indexing of the video data, including spatial events, temporal events, and composite temporal events. (See Day-II at Section 3 and Figure 3.)

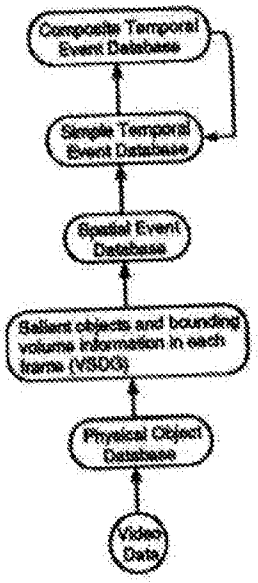


Figure 3: An architecture for spatio-temporal event identification

Day-II teaches the use complex video queries expressed as a function of physical objects, spatial objects, and temporal objects:

> Corresponding to the three entities (physical objects, spatial events and temporal events) used in the modeling of video data, three objects are defined from the user point of view. These are physical objects (PO), spatial objects (SO), and temporal objects (TO). For video data, a user can use combinations of various object-oriented abstractions (such as shown in Figure 4) on these objects to specify queries. The important feature of this hierarchy, and in general for any object-oriented abstraction, is that terminal nodes are either POs, SOS, or TOs. Any complex video query is expressed as a function of these nodes and processing of such queries requires searching the occurrence of SOS and TOs over the specified PO's.

> As an example, consider a sports video database which can be used by multiple users with different interests. Figure 5 describes an object hierarchy of view/knowledge which a user may would like to construct.
>
> (Day II at Section 4, page 103.)

Day-II further teaches that the spatio-temporal modeling of video data using a video semantic directed graph (VSDG) model allows for real-time event determination using an object oriented interface:

> The proposed paradigm induces a multi-level indexing and searching mechanism that models information at various levels of granularity and hence allows for processing of content-based queries in real-time. However, a unified framework is needed for the users to express and for the system to process semantically heterogeneous queries on the encoded data. For this purpose, we propose an object-oriented interface that provides an elegant paradigm for representing heterogeneous views of the users. The architecture of the proposed system is shown in Figure 1.

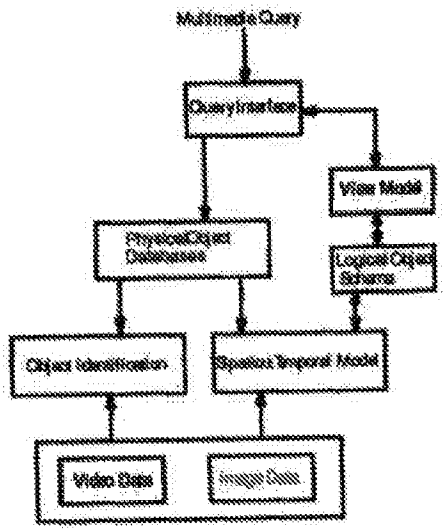


Figure 1: System abstraction

(Day-II at Section I, pages 98-99.)

A person of ordinary skill in the art would have been motivated to combine the teachings of Day-I with the analogous art of Day-II in order to enhance the conceptual modeling of video data for spatial and temporal characteristics of the detected physical objects to allow for processing content-based queries of the data in real-time, as taught by Day-II.

The combination of Day-I and Day-II is merely (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

E. Proposed Rejection 5: Claims 1-7, 9-13, and 15-28 are anticipated by Courtney '755 under 35 U.S.C. § 102(b)

Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Courtney '755 under 35 U.S.C. § 102(b). In the '914 reexamination, the Office determined that Courtney '755 (Courtney US) anticipated claims 1 to 7, 9 to 13, and 15 to 28. The rationale and supporting citations provided by the requester in the '914 reexamination are substantially recited herein and in the claim chart provide as Attachment L.

Although U.S. Patent No. 6,424,370, which issued from a divisional application related to Courtney '755, was cited in an Information Disclosure Statement filed on December 30, 2009, Courtney '755 was not cited during prosecution of the '923 patent and there is no indication of record in the '923 Patent prosecution history that the Examiner appreciated the teachings of Courtney '755. Regardless, "a substantial new question of patentability may be based solely on old art where the art is being presented/viewed in a new light, or in a different way, as compared with its use in the earlier examination(s), in view of a material new argument or interpretation presented in the request. (See M.P.E.P. § 2242(II)(A).)

As set forth in Attachment L, Courtney '755 teaches all of the limitations of claims 1 to 7, 9 to 13, and 15 to 28 of the '923 patent.

For example, Courtney '755 relates to "motion event detection as used for example in surveillance." (Courtney '755, col. 1, lines 13 to 14.) As illustrated in Figures 1 and 5, reproduced below, Courtney '755 discloses an Automatic Video Indexing (AVI) system:

> FIG. 1 shows a high-level diagram of the Automatic Video Indexing (AVI) system 10 according to one embodiment of the present invention. In this view, ***a camera 11 provides input to a vision subsystem 13 including a programmed computer which***

processes the incoming video which has been digitized to populate a database storage 15. The term camera as used herein may be a conventional television (TV) camera or infrared (IR) camera.

(Courtney '755, col. 3, line 65 to col. 4, line 6; emphasis added.)

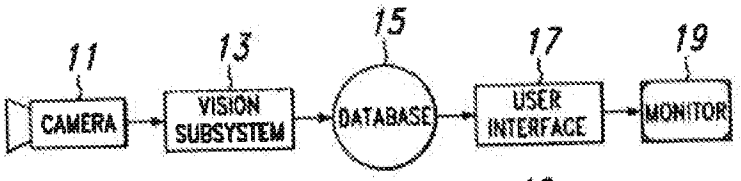


Fig. 1

FIG. 5 shows the AVI system in detail. Note that the motion segmentor 21, object tracker 22, motion analyzer 23, recorder 24, and compressor 25 comprise the vision subsystem 13 of FIG. 1.

(Courtney '755, col. 5, lines 44 to 47.)

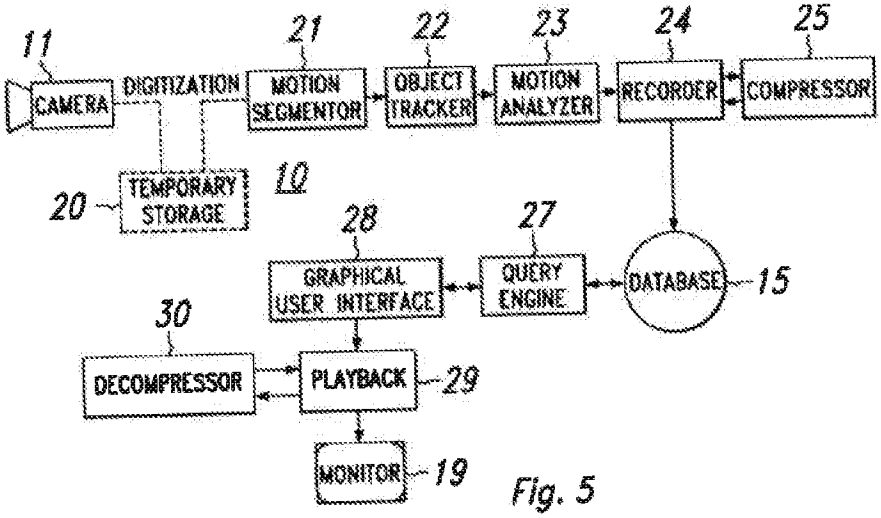


Fig. 5

According to Courtney '755, "the AVI vision subsystem 13 employs motion segmentation techniques to segment foreground objects from the scene background in each frame." (Courtney '755, col. 4, lines 29 to 31.) Additional disclosure regarding motion segmentation is provided with reference to Figure 4, reproduced below:

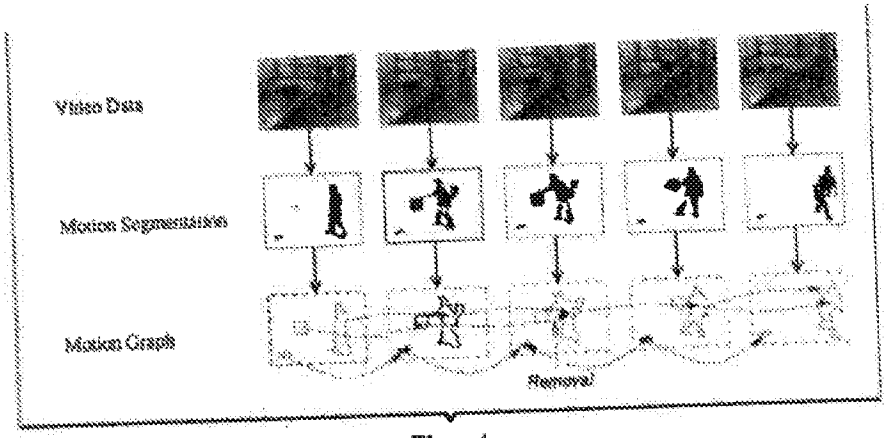


Fig. 4

In processing the video data, the AVI vision subsystem 13 employs motion segmentation techniques to segment foreground objects from the scene background in each frame.

...

It then analyzes the segmented video to create a symbolic representation of the foreground objects and their movement. This symbolic record of video content is referred to as the video 'meta-information' (see FIG. 4). FIG. 4 shows the progression of the video data frames, the corresponding motion segmentation and the corresponding meta-information. ***This meta-information is stored in the database in the form of an annotated directed graph appropriate for later indexing and search.***

The vision subsystem 13 records in the meta-information the size, shape, position, time-stamp, and image of each object in every video frame. It tracks each object through successive video frames, estimating the instantaneous velocity at each frame and determining the path of the object and its intersection with the paths of other objects. It then classifies objects as moving or stationary based upon velocity measures on their path. (Courtney '755, col. 4, lines 29 to 61; emphasis added.)

Applying the foregoing to the language of claim 1, as an illustrative example, the AVI vision subsystem taught by Courtney '755 teaches the features of "detecting an object in a video from a single camera," "detecting a plurality of attributes of the object by analyzing the video from said single camera," and "the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object." Further, as is discussed below, the querying functionality taught by Courtney '755 teaches the features of "selecting a new user rule after detecting the plurality of attributes" and "after detecting the plurality of attributes and after selecting the new user rule, identifying an

event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes," recited by claim 1.

Additionally, Courtney '755 discloses that the AVI system "stores the output of the vision subsystem--the video data, motion segmentation, and meta-information--in the database 15 for retrieval through the user interface 17," and that "the user may specify queries on a video sequence based upon spatial-temporal, event-based, and object-based parameters." (Courtney '755, col. 5, lines 4 to 11.) Courtney '755 describes, as an example, that "user may select a region in the scene and specify the query 'show me all objects that are removed from this region of the scene between 8 am and 9 am'." (Courtney '755, col. 5, lines 12 to 14.) Further disclosure regarding queries is reproduced below:

> The AVI query engine retrieves video data from the database in response to queries generated at the graphical user interface. ***A valid query Y takes the form***
>
> ***Y=(C, T, V, R, E)***
>
> ***where***
>
> ***C is a video clip,***
>
> ***T=(t.sub.i, t.sub.j) specifies a time interval within the clip,***
>
> ***V is a V-object within the clip meta-information,***
>
> ***R is a spatial region in the field of view, and***
>
> ***E is an object-motion event.***
>
> ***The clip C specifies the video sub-sequence to be processed by the query, and the (optional) values of T, V, R, and E define the scope of the query***. Using this form, the AVI system user can make such a request as "find any occurrence of this object being removed from this region of the scene between 8am and 9am." Thus, the query engine processes Y by finding all the video sub-sequences in C that satisfy, T, V, R, and E. (Courtney '755, col. 12, lines 41 to 60; emphasis added.)

Accordingly, at least in view of the foregoing, Courtney '755 teaches that "the plurality of attributes that are detected are independent of which event is identified," that "the step of identifying the event of the object identifies the event without reprocessing the video," and that "the event of the object refers to the object engaged in an activity" as recited by claim 1.

Moreover, as shown herein and the attached claim chart at Attachment L, Courtney '755 discloses each of the features the Examiner identified as the basis for allowance, including detecting an object in a video; detecting a plurality of attributes of the object by analyzing the

video, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object; selecting a new user rule after detecting the plurality of attributes; and after detecting the plurality of attributes and after selecting of the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent of which event is identified, and wherein the step of identifying the event of the object identifies the event without reprocessing the video. Based on the foregoing, Requester has provided a showing of a substantial new question of patentability with respect to at least one of claims 1 to 7, 9 to 13, and 15 to 28 in view of Courtney '755.

As set forth in the appended charts at Attachment L, Courtney '755 discloses all of the limitations of claims 1 to 7, 9 to 13, and 15 to 28 of the '923 patent and therefore anticipates claims 1 to 7, 9 to 13, and 15 to 28 of the '923 patent. Therefore, Requester proposes a ground of rejection of claims 1 to 7, 9 to 13, and 15 to 28 of the '923 patent under 35 U.S.C. § 102(b) as anticipated by Courtney '755.

F. Proposed Rejection 6: Claim 14 is unpatentable as obvious in view of Courtney '755 under 35 U.S.C. § 103(a)

Claim 14 is unpatentable as obvious in view of Courtney '755 under 35 U.S.C. § 103(a). In the '914 reexamination, the Office determined that claim 14 was obvious in view of Courtney '755. The rationale and supporting citations provided by the requester in the '914 reexamination are substantially recited herein and in the claim chart provide as Attachment M.

Although U.S. Patent No. 6,424,370, which issued from a divisional application related to Courtney US, was cited in an Information Disclosure Statement filed on December 30, 2009, Courtney US was not cited during prosecution of the '923 patent and there is no indication the Examiner appreciated the teachings of Courtney '755. Regardless, "a substantial new question of patentability may be based solely on old art where the art is being presented/viewed in a new light, or in a different way, as compared with its use in the earlier examination(s), in view of a material new argument or interpretation presented in the request. (See M.P.E.P. § 2242(II)(A).)

Claim 14 depends from claim 9 and therefore includes all of the limitations included in claim 9. The relevant teachings of Courtney '755 with regard to claim 9 are described in more detail above, and the previous discussions of Courtney '755 are incorporated herein by reference.

As set forth in Attachment M of the appended claim charts, Courtney '755 renders obvious all limitations of claim 14 of the '923 patent. For instance, Courtney '755 makes no limitation on the time period in which the detected data in the database is stored. As such, Requester submits that Courtney '755 inherently is configured to store at least some of the plurality of attributes "for at least two months." To the extent that an explicit time frame for storing the data is required, Requester submits that it would be obvious to modify Courtney '755's database to retain data "at least two months." It would have been obvious to configure the database of Courtney '755 to store the detected attributes for a specified period of time (e.g., "at least two months") for the well-known and expected benefit of optimizing data storage and/or to maintain the detected attributes for a sufficient period of time to allow for further processing or review of the data to be performed (e.g., surveillance data is routinely maintained for a specified period to allow later detected activity to be investigated).

Moreover, modifying Courtney '755 in this manner is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Based on the foregoing, Requester has provided a showing of a substantial new question of patentablity with respect to claim 14 in view of Courtney '755. Therefore, Requester proposes a ground of rejection of claim 14 of the '923 patent unpatentable under 35 U.S.C. § 103(a) as obvious in view of Courtney '755.

G. Proposed Rejection 7: Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Shotton et al. under 35 U.S.C. § 102(b)

Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Shotton under 35 U.S.C. § 102(b). In the '914 reexamination, the Office determined that Shotton anticipated claims 1 to 7, 9 to 13, and 15 to 28. The rationale and supporting citations provided by the requester in the '914 reexamination are substantially recited herein and in the claim chart provide as Attachment N.

Shotton was not cited during prosecution of the '923 patent. Shotton is closer to the subject matter of the '923 patent than any prior art that was relied upon during prosecution of the '923 patent, and Shotton provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '923 patent.

As set forth in Attachment N of the appended claim charts, Shotton teaches all of the limitations of claims 1 to 7, 9 to 13, and 15 to 28 of the '923 patent.

For example, Shotton is directed to "a video analysis and content-based video query and retrieval system for research videos." (Shotton at Abstract.) Shotton describes a step of object detection: "[i]mage processing is required initially to identify the discrete objects in each image sequence, and to track the movement of these objects along the space/time axes." (Shotton, Section 2.) Shotton further states that "[s]pecific intrinsic metadata, resulting from intelligent manual or automated analysis of the images or video frames, describe the spatial positions of specific objects within images, and the spatio-temporal locations of objects and events within videos." (Shotton, Section 2.1.) Shotton provides a discussion of the analysis of moving bacterial cell videos in Section 2.3 with reference to Figure 3, reproduced below:

> These bacterial motility videos contain large numbers of 'characters' (the bacteria), presenting a high level of complexity for the analysis and metadata extraction. In a first stage of the analysis, an initial segmentation of the frame images is undertaken with due regard for the variations in background illumination between frames, using a dynamic thresholding procedure [8,10]. ***Subsequently, individual bacteria are identified using a growing region algorithm, where bacterial "objects" are built from an initial seed point inside each bacterium. For each cell, we can then calculate its initial position, area and orientation in space (Figure 3a).***
>
> (Shotton, Section 2.3; emphasis added.)

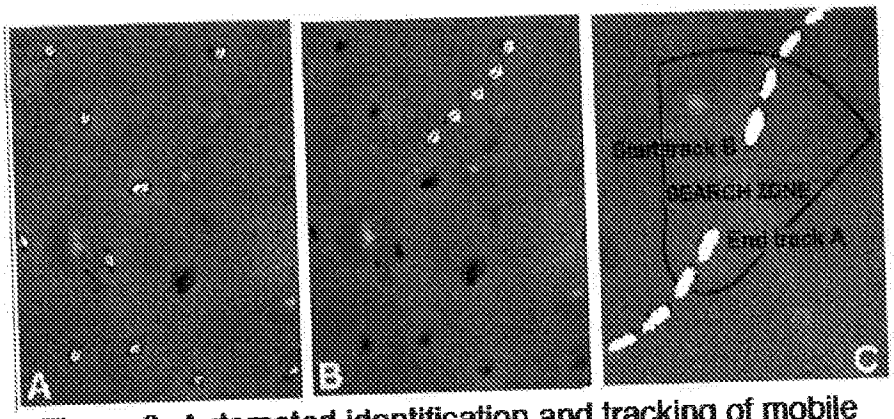


Figure 3. Automated identification and tracking of mobile bacteria

The next step is to track the movements of the cells (Figure 3b). The tracking problem can be defined as one of recognising the same object in consecutive frames of the video. The initial algorithm used to solve this problem is simple, and relies on the fact that any bacterium is likely to show a similar area and orientation on adjacent frames of the video, and that its position in any frame is likely to be close to that in the preceding frame. ***Application of this algorithm results in bacterial trajectories from which features such as speed, direction and curvature can be extracted.*** However, since in the space between the microscope slide and the overlying coverslip the individual bacteria are swimming unrestricted in three dimensions, they may stray from the narrow focal plane of the microscope objective lens and become temporarily lost from view, and hence lost to the initial segmentation and cell recognition algorithms, causing fragmentation of their trajectories. Since for the scientific analysis of bacterial movement is important to have trajectories as long as possible, there is a need to link partial or broken trajectories into longer and continuous ones. ***This is achieved by a post-processing algorithm that checks, for every partial trajectory that ends, whether there is another partial trajectory which is spatially adjacent and which starts within an appropriate time interval (a few frames later), that matches the first one in features such as speed and direction, and the shape and size of the bacterium.*** If these conditions are fulfilled, the two trajectories may be linked to form a longer one (see Figure 3c).

For the rotating tethered bacteria, the task of identifying the same cell in successive video frames is obviously more straightforward, and ***the salient features to record from such videos are the instantaneous speed, handedness and duration of each rotation, accelerations and decelerations, the frequency of reversals, and the duration of stops.***

(Shotton et al., Section 2.3; emphasis added.)

Applying the foregoing to the language of claim 1, as an illustrative example, the video analysis process taught by Shotton teaches the features of "detecting an object in a video from a single camera," "detecting a plurality of attributes of the object by analyzing the video from said single camera," and "the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object." Further, as is discussed below, the querying functionality taught by Shotton teaches the features of "selecting a new user rule after detecting the plurality of attributes" and "after detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes," recited by claim 1.

Additionally, Shotton discloses that "[t]he spatio-temporal attributes of the objects and events detected in the previous steps must be properly organized in a searchable database, to allow subsequent queries to locate particular cells, events or behaviours, correlated with changes of environmental conditions." (Shotton, Section 3.) Shotton further states that "[o]nce the metadata database has been built, the system allows the following types of query to be made concerning such videos" (Section 3) and provides several examples, including the following:

> Examples of queries for videos of *swimming bacteria* are: "Identify all the video clips showing bacteria that swim at a velocity of at least x [m per second", and "Find me all video sequences where, after the administration of drug A, the average tumble frequency decreases by more than 30%". For the first query, ***a simple selection permits identification of the video frames containing all bacteria with a speed, averaged over the preceding 25 frames (1 second), above x μm per second (recorded as derived metadata in the spatio-temporal position table).*** The second question requires ***a calculation of the average tumble frequency in the scenes before and after the drug administration, determined from the temporal information recorded for all tumbles.***
>
> (Shotton, Section 3; some emphasis added.)

Shotton provides further disclosure regarding event detection with reference to Figure 4, reproduced below:

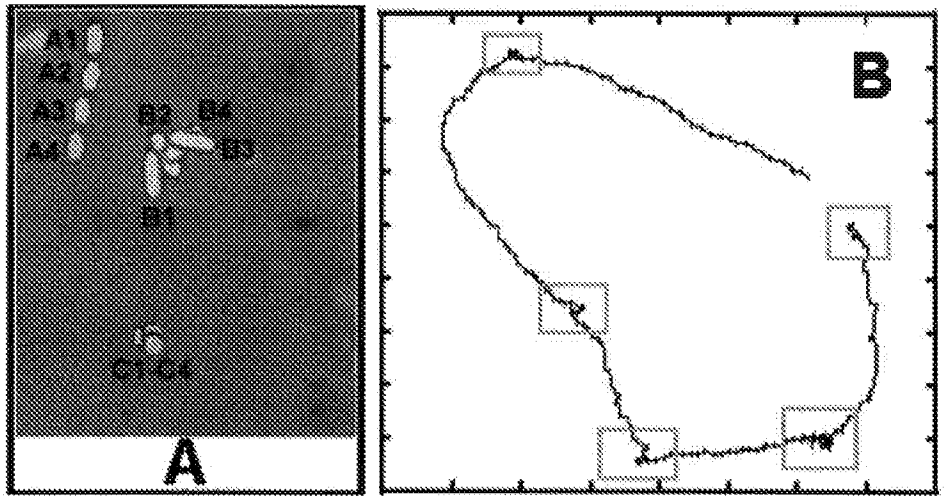


Figure 4. Event detection for assigning behaviour state

For example, for free swimming bacteria, the important events to detect are changes between behavioural states, namely **forward swimming** (Figure 4Aa), with all the flagella rotating counter-clockwise, **tumbling** (Figure 4Ab), with the flagella rotating clockwise, and **stationary** (Figure 4Ac). ***For each bacterium, the system determines and stores specific intrinsic metadata relating to such states (see Figure 4B for an example of typical bacterium tracking where five tumbling states are detected, marked with boxes). The instantaneous velocity, the duration, direction and curvature of individual trajectories, and the frequency, duration and patterns of tumbles and stops, together with spatio-temporal information form the metadata that locates these events or actions within the video as a whole, and that can be used to correlate them with details about the environmental conditions pertaining at the time.***

(Shotton, Section 3; some emphasis added.)

Shotton also states that, in response to a successful query, "a list of pointers to video files together with a set or ranges of frame numbers is returned by the system, allowing the video clips matching the query to be recovered." (Shotton, Section 3.)

Accordingly, at least in view of the foregoing, Shotton teaches that "the plurality of attributes that are detected are independent of which event is identified," that "the step of identifying the event of the object identifies the event without reprocessing the video," and that "the event of the object refers to the object engaged in an activity" as recited by claim 1.

Moreover, as shown herein and the attached claim chart at Attachment N, Shotton discloses each of the features the Examiner identified as the basis for allowance, including detecting an object in a video; detecting a plurality of attributes of the object by analyzing the

video, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object; selecting a new user rule after detecting the plurality of attributes; and after detecting the plurality of attributes and after selecting of the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent of which event is identified, and wherein the step of identifying the event of the object identifies the event without reprocessing the video.

Based on the foregoing, Requester has provided a showing of a substantial new question of patentability with respect to at least one of claims 1 to 7, 9 to 13, and 15 to 28 in view of Shotton.

As set forth in the appended charts at Attachment N, Shotton discloses all of the limitations of claims 1 to 7, 9 to 13, and 15 to 28 of the '923 patent and therefore anticipates these claims. Therefore, Requester proposes a ground of rejection of claims 1 to 7, 9 to 13, and 15 to 28 of the '923 patent under 35 U.S.C. § 102(b) as anticipated by Shotton.

H. Proposed Rejection 8: Claim 14 is unpatentable as obvious in view of Shotton et al. under 35 U.S.C. § 103(a)

Claim 14 is unpatentable as obvious in view of Shotton under 35 U.S.C. § 103(a). In the '914 reexamination, the Office determined that claims 14 was obvious in view of Shotton. The rationale and supporting citations provided by the requester in the '914 reexamination are substantially recited herein and in the claim chart provide as Attachment O.

Shotton was not cited during the prosecution of the '923 patent. Shotton is closer to the subject matter of claim 14 of the '923 patent than any other prior art relied upon during prosecution of the '923 patent, and Shotton provides new, non-cumulative technical teachings that were not otherwise provided in any prior art relied upon during prosecution of the '923 patent.

Claim 14 depends from claim 9 and therefore includes all of the limitations recited in claim 1. The relevant teachings of Shotton with respect to claim 9 are described in more detail above, and the previous discussions of Shotton are incorporated herein by reference.

As set forth in the claim chart provided at Attachment O, Shotton renders obvious all limitations of claim 14 of the '923 patent. For instance, Shotton makes no limitation on the time

period in which the detected data in the database is stored. As such, Requester submits that Shotton inherently is configured to store at least some of the plurality of attributes "for at least two months." To the extent that an explicit time frame for storing the data is required, Requester submits that it would be obvious to modify Shotton's database to retain data "at least two months." It would have been obvious to configure the database of Shotton to store the detected attributes for a specified period of time (e.g., "at least two months") for the well-known and expected benefit of optimizing data storage and/or to maintain the detected attributes for a sufficient period of time to allow for further processing or review of the data to be performed (e.g., surveillance/monitoring data is routinely maintained for a specified period to allow later detected activity to be investigated).

Moreover, modifying Shotton in this manner is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Based on the foregoing, Requester has provided a showing of a substantial new question of patentability with respect to claim 14 in view of Shotton. Therefore, Requester proposes a ground of rejection of claim 14 of the '923 patent unpatentable under 35 U.S.C. § 103(a) as obvious in view of Shotton.

I. Proposed Rejection 9: Claims 8 and 29 to 41 are unpatentable as obvious in view of the combination of Shotton et al. and Brill et al. under 35 U.S.C. § 103(a)

Claims 8 and 29 to 41 are unpatentable in view of the combination of Shotton and Brill under 35 U.S.C. § 103(a). In the '914 reexamination, the Office determined that claims 8 and 29 to 41 were obvious in view of the combination of Shotton and Brill. The rationale and supporting citations provided by the requester in the '914 reexamination are substantially recited herein and in the claim chart provided as Attachment P.

Although Brill was cited in an Information Disclosure Statement filed on December 31, 2009, Brill et al. was not relied upon during prosecution of the '923 patent and there is no indication the Examiner appreciated the teachings of Brill et al. Regardless, "a substantial new question of patentability may be based solely on old art where the art is being presented/viewed in a new light, or in a different way, as compared with its use in the earlier examination(s), in view of a material new argument or interpretation presented in the request. (See M.P.E.P. § 2242(II)(A).)

As stated above, Shotton was not cited during the prosecution of the '923 patent. The combination of Shotton et al. and Brill is closer to the subject matter of claims 8 and 29 to 41 of the '923 patent than any prior art that was relied upon during prosecution of the '923 patent, and the combination of Shotton and Brill provides new, non-cumulative technical teachings that were not otherwise provided in any prior art that was relied upon during prosecution of the '923 patent.

As set forth in the claim chart at Attachment P, the combination of Shotton and Brill renders obvious all of the limitations of claims 8 and 29 to 41 of the '923 patent. The relevant teachings of Shotton are described in more detail above, and the previous discussions of Shotton are incorporated herein by reference.

As to Brill, Brill is directed to "automatic security systems employing computer image processing for detecting complex events in a video sequence." (Brill, col. 1, lines 11 to 13.) Brill describes a surveillance/monitoring system with reference to Figure 1, reproduced below with accompanying disclosure:

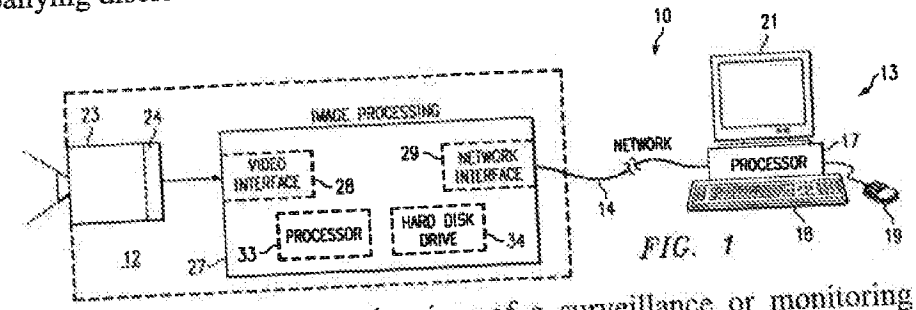


FIG. 1

FIG. 1 is a diagrammatic view of a surveillance or monitoring system 10 which embodies the present invention, and which is used monitor activity in a selected region or area. ***The monitoring system 10 also includes a camera unit 12, a computer workstation 13, which are operatively coupled by a network shown schematically at 14.*** The network 14 may be a local area network, the Internet, some other type of network, a modem link or

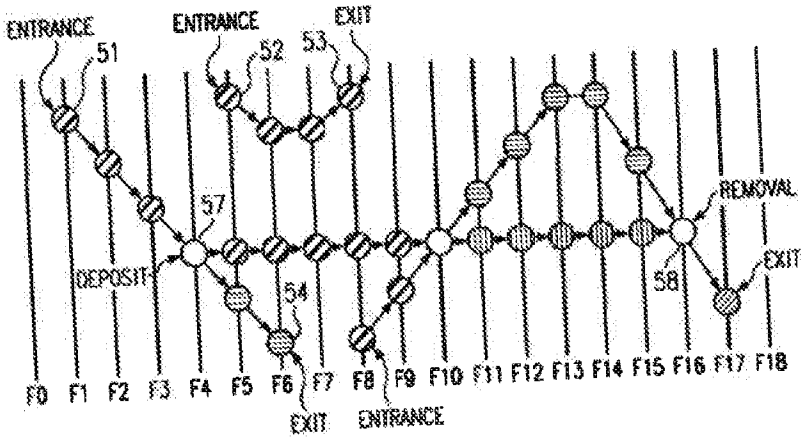
a combination of these technologies. The computer workstation 13 may be a personal computer including a processor 17, a keyboard 18, a mouse 19 and a display unit 21.

(Brill at col. 2, lines 42 to 52; emphasis added.)

According to Brill, "[t]he basic system performs three data processing steps for every image of a video sequence to recognize events. The three steps are detecting objects, tracking objects, and analyzing the motion graph." (Brill, col. 3, lines 24 to 27.) Brill provides the following additional disclosure regarding objection detection and tracking:

> ***Once objects are detected in a video image, the next step is to track each object through the video sequence. This task is done by linking objects in the previous frame to their corresponding objects in the current frame.*** Correspondence is established by matching objects with their nearest neighbors. The path of links which follows a given object through successive frames is called an object's track. ***The objects and their tracks create a directed graph which represents the history of the motion of the objects in a video sequence. This directed graph is called a motion graph. The goal of this step is to create a motion graph for use by the next step in event recognition.*** (Brill, col. 3, lines 28 to 39; emphasis added.)

FIG. 2



In FIG. 2, the nineteen vertical lines F0 through F18 each represent a respective frame or image in a series of successive images from the video camera 12. In FIG. 2, the horizontal, dimension represents time, and the vertical dimension represents one dimension of movement of an object within a two-dimensional image. ***When an object which was not previously present first appears, for example at 51 or 52, it is identified as an entrance or ENTER event. When an object which was previously present is found to no longer be present, for example at 53 or 54, it is designated an EXIT event. If an existing object splits into two***

> ***objects, one of which is moving and the other of which is stationary, for example as at 57, it is designated a DEPOSIT event.*** This would occur, for example, when a person who is carrying a briefcase sets it down on a table, and then walks away.
>
> ***If a moving object merges with a stationary object, and then continues to move while the stationary object disappears, as at 58, it is designated a REMOVE event.*** This would correspond to a situation where a person walks to a notebook resting on a table, and then picks up the notebook and walks away.
>
> (Brill, col. 3, line 60 to col. 4, line 13; emphasis added.)

Applying the foregoing to the language of claim 8, as an illustrative example, the combination of the video analysis process taught by Shotton and the objection detection, object tracking, and motion graph analysis capabilities taught by Brill teaches the features of "detecting first and second objects in a video from a single camera" and "detecting a plurality of attributes of each of the detected first and second objects by analyzing the video from said single camera, each attribute representing a characteristic of the respective detected object." Further, as is discussed below, the combination of the querying functionality taught by Shotton and the complex event definition and detection functionality taught by Brill teaches the features of "selecting a new user rule" and "after detecting the plurality of attributes, identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes," as recited by claim 8.

Additionally, Brill provides the following disclosure relating to the selection of events which make up a complex event with reference to Figure 6, reproduced below:

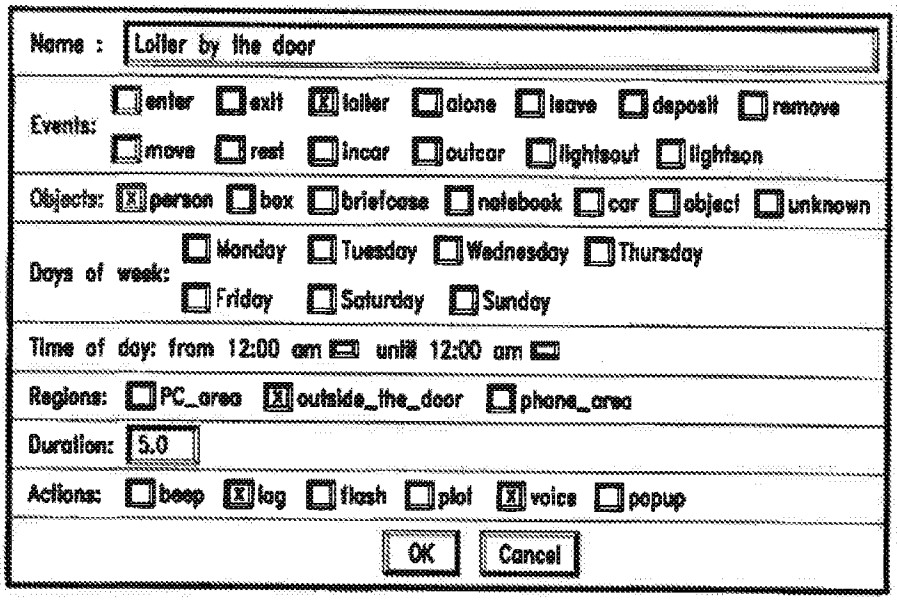


FIG. 6

The user can select which events are to form the complex event via the dialog box interface illustrated in FIG. 6. ***The user selects the event type, object type, time, location, and duration of the event to be defined using a mouse. The user can also select an action for the system to take when the event is recognized. This dialog box defines one simple event of the complex event sequence.*** An arbitrary number of different simple events can be defined via multiple uses of the dialog box. The illustration below shows a dialog box defining an event called "Loiter by the door." This event is triggered when a person loiters any day of the week at any time in the area near the door for more than 5 seconds. This event will generate a voice alarm and write a log entry when the specified event occurs. ***If the event is only being defined in order to be used as a sub-event in a complex event, the user might not check any action box. No action will be taken when the event is recognized except to see if it matches the next sub-event in another complex event activation or generate a new activation if it matches the first sub-event in a complex event.***

(Brill, col. 10, lines 39 to 58; emphasis added.)

Brill further teaches that, after simple events are defined, the user can define a complex event as illustrated in Figure 7, reproduced below with accompanying disclosure:

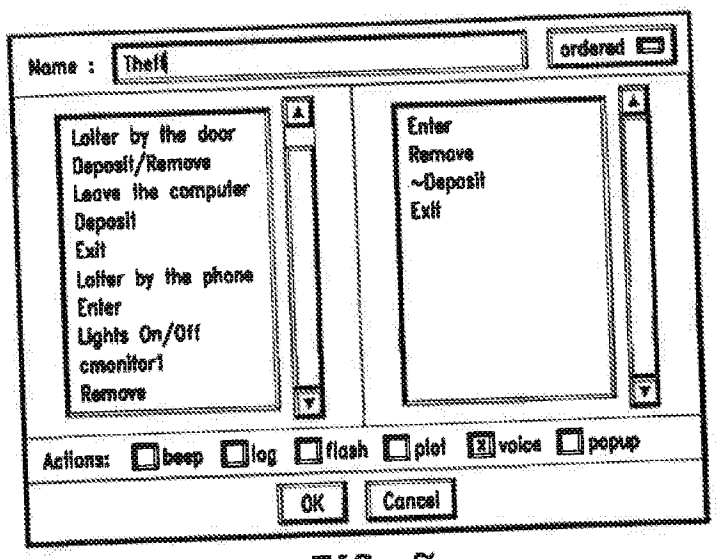


FIG. 7

After one or more simple events have been defined, the user can define a complex event via the dialog box illustrated in FIG. 7. The user provided name of the complex event being defined is shown in the "Name:" dialog box. This user provided name is used in storing the definition of the complex event. This input screen presents two lists. ***The first list on the left is a scrolling list of all the event types that have been defined thus far. This list will generally include both user defined events and system primitive events. The second list on the right is a list of the sub-events of the complex event being defined.*** The sub-event list is initially blank when defining a new complex event. When the user double-clicks with the left mouse button on an item in the event list on the left, it is added as the next item in the sub-event list on the right. When the user double-clicks with the right mouse button on an item in the event list on the left, that item is also added to the sub-event list on the right, but as a negated sub-event. The event name is prefixed with a tilde (~) to indicate that the event is negated.

In the upper right corner of the complex event definition dialog box is an option menu via which the user indicates how the sub-events are to be combined. The default selection is "ordered" to indicate sequential processing of the sub-events. The other options include "all" and "any." ***If "all" is selected, the complex event will be signaled if all of the sub-events are matched, regardless of order.*** Such a complex event is simply the conjunction of the sub-events. If "any" is selected, the complex event occurs if any of the sub-events occurs. Such a complex event is the disjunction of the sub-events. ***At the bottom of the dialog box, the user can select the action to take when the complex event is recognized.*** The user can save the entire set of event definitions to a file so that they may

be read back in at a later time. Labeling of the objects involved in the events as described above is not illustrated in this example.

(Brill, col. 10, line 59 to col. 11, line 25; emphasis added.)

Brill further discloses that "the surveillance system can be programmed to only generate an alarm upon the occurrence of a complex event made up of a series of simple events." (Brill, col. 4, lines 27 to 29.) A description of the process for detecting a complex event is illustrated in Figure 3, reproduced below with accompanying disclosure:

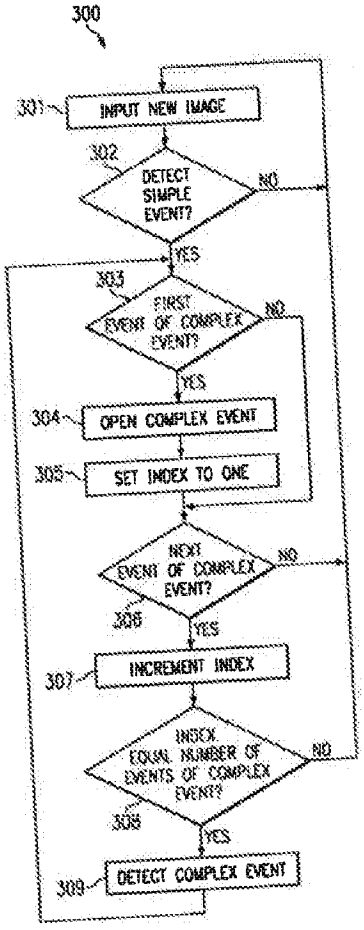


FIG. 3

FIG. 3 illustrates the process 300 for detecting complex events. ***Once the user has defined the complex events and the actions to take when they occur, the event detection system must recognize these events as they occur in the monitored area.*** For the purposes of this disclosure, assume a priori that the simple events can be recognized and that the object involved in them can be tracked (process blocks 301 and 302). The preferred embodiment uses the method any suitable prior art technique. ***In order to recognize a complex event, the system must keep a record of the sub-events that have occurred thus far, and the objects involved in them.***

> ***Whenever the first sub-event in a complex event's sequence is recognized (decision block 303), an activation for that complex event is created (processing block 304).*** The activation contains the ID of the object involved in the event, and an index, which is the number of sub-events in the sequence that have been recognized thus far. The index is initialized to 1 when the activation is created (processing block 305), since the activation is only created when the first sub-event matches. The system maintains a list of current activations for each defined complex event type. ***Whenever any new event is detected, the list of current activations is consulted to see if the newly detected (or incoming) event matches the next sub-event in the complex event (decision block 306). If so, the index is incremented (processing block 307). If the index reaches the total number of sub-events in the sequence (decision block 308), the complete complex event has been recognized (processing block 309), and any desired alarm can be generated.***
>
> (Brill, col. 4, line 61 to col. 5, line 22; emphasis added.)

Accordingly, at least in view of the foregoing, the combination of Shotton and Brill teaches that "the plurality of attributes that are detected are independent of which event is identified," that "the step of identifying an event of the object comprises identifying a first event of the first object interacting with the second object by analyzing the detected attributes of the first and second objects, the first event not being one of the detected attributes," and that "the event of the object refers to the object engaged in an activity" as recited by claim 8.

A person of ordinary skill in the art at the time the alleged inventions claimed in claims 8 and 29 to 41 of the '923 patent were made would have been motivated to combine the features provided by Shotton with the features of Brill in order to enhance the video analysis and content-based video query and retrieval system of Shotton with the "user interface that enables someone to define a complex event" taught by Brill. (Brill, col. 1, lines 43 to 44.) Moreover, combining Shotton and Brill is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Based on the foregoing and as set forth in the appended charts at Attachment P, Requester has provided a showing of a substantial question of patentability with respect to at least one of claims 8 and 29 to 41 in view of the combination of Shotton and Brill.

Therefore, Requester proposes a ground of rejection of claims 8 and 29 to 41 of the '923 patent under 35 U.S.C. § 103(a) as unpatentable as obvious in view of the combination of Shotton et al. and Brill et al.

J. Proposed Rejection 10: Claims 1 to 41 are unpatentable as obvious in view of the combination of Courtney '584 and Brill et al. under 35 U.S.C. § 103(a)

Claims 1 to 41 are unpatentable in view of the combination of Courtney '584 and Brill under 35 U.S.C. § 103(a). In the '914 reexamination, the Office determined that claims 1 to 41 were obvious in view of the combination of Courtney '584 and Brill. The rationale and supporting citations provided by the requester in the '914 reexamination are substantially recited herein and in the claim chart provided as Attachment Q.

Although Brill was cited in an Information Disclosure Statement filed on December 31, 2009, Brill et al. was not relied upon during prosecution of the '923 patent and there is no indication the Examiner appreciated the teachings of Brill et al. Courtney '584 was cited in an Information Disclosure Statement, but was not relied upon during the prosecution of the '923 patent and there is no indication of record that the Examiner appreciated the teachings of Courtney '584. Regardless, "a substantial new question of patentability may be based solely on old art where the art is being presented/viewed in a new light, or in a different way, as compared with its use in the earlier examination(s), in view of a material new argument or interpretation presented in the request. (See M.P.E.P. § 2242(II)(A).)

As set forth in Attachment Q, the combination of Courtney '584 and Brill teaches all of the limitations of claims 1 to 41 of the '923 patent. The relevant teachings of Courtney '584 and Brill are described in more detail above, and the previous discussions Brill are incorporated herein by reference.

For example, Courtney '584 is directed to "a method and apparatus for mapping the physical position of an object from a video image to a map of a monitored area." (Courtney '584, paragraph [0001].) According to Courtney '584, "[a] surveillance or monitoring system may include a video camera which generates images of a monitored area or region, and a computer which receives and processes the images from the video camera.... Then an object of

interest is identified through analysis of the detected images, the location of the object is mapped from the image to the map." (Courtney '584, paragraph [0002].) Further disclosure relating to the initial image processing is provided with reference to Figure 2, reproduced below:

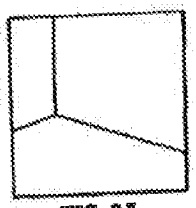


FIG. 2A


FIG. 2B


FIG. 2C


FIG. 2D


FIG. 2E


FIG. 2F


FIG. 2G

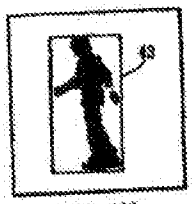


FIG. 2H

The initial processing of video images by work- station 13 will now be described with reference to FIGUREs 2A-2H and FIGURE 3. More specifically, FIGURE 2A is a diagrammatic view of a video image produced by the video camera 12 when it is directed toward an area which, in this example, has arbitrarily been selected to be the corner of a room. The video image of FIGURE 2A is saved as a reference image. ***FIGURE 2B is a similar video image that was obtained from the camera 12 at a later point in time, after an object 41 has been introduced into the monitored area.*** In this case, the object 41 is a person, who has walked into the corner of the room and thus into the field of view of the video camera 12. ***The video camera 12 is stationary, and thus the single difference between the images of FIGUREs 2A and 2B is the presence of the person 41 in FIGURE 2B.***

(Courtney '584, paragraph 28; emphasis added.)

Courtney '584 also describes a capability of the system for "identifying and tracking a moving object in a succession of the detected images, and automatically saving information which identifies the path and movement of the object, the information being retained after the object is no longer present in the detected images." (Courtney '584, paragraph [0015].) Further disclosure regarding motion analysis is provided with reference to Figure 3, reproduced below:

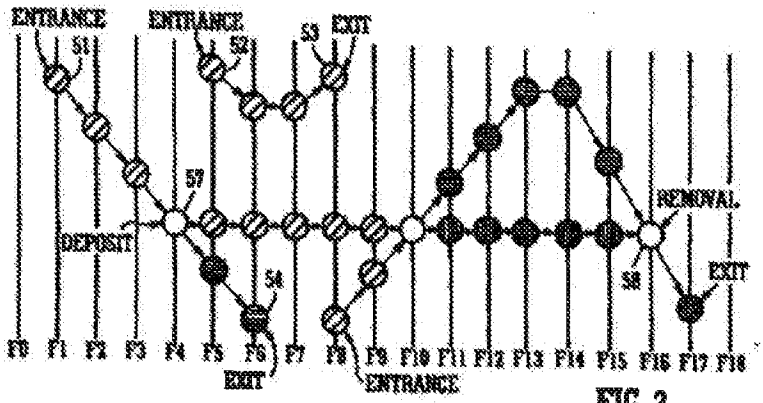


FIG. 3

> In FIGURE 3, the nineteen vertical lines F0 through F18 each represent a respective frame or image in a series of successive images from the video camera 12. In FIGURE 3, the horizontal dimension represents time, and the vertical dimension represents one dimension of movement of an object within a two-dimensional image. ***Then an object which was not previously present first appears, for example at 51 or 52, it is identified as an "entrance" or "enter" event. When an object which was previously present is found to no longer be present, for example at 53 or 54, it is designated an "exit" event. If an existing object splits into two objects, one of which is moving and the other of which is stationary, for example as at 57, it is designated a "deposit" event.*** This would occur, for example, when a person who is carrying a briefcase sets it down on a table, and then walks away.
>
> ***If a moving object merges with a stationary object, and then continues to move while the stationary object disappears, as at 58, it is designated a "remove" event.*** This would correspond to a situation where a person walks to a notebook resting on a table, and then picks up the notebook and walks away. (Courtney '584, paragraphs 36 to 37; emphasis added.)

Applying the foregoing to the language of claim 1, as an illustrative example, the combination of the object identification and tracking capability taught by Courtney '584 and the system of Brill discloses the features of "detecting an object in a video from a single camera" and "detecting a plurality of attributes of the object by analyzing the video from said single camera, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object." Further, as is discussed below, the combination of the event selection and detection functionality taught by Courtney '584 and the event recognition and alarm capabilities taught by Brill teaches the features of "selecting a new user rule after detecting the plurality of attributes" and "after

detecting the plurality of attributes and after selecting the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes" as recited by claim 1.

Courtney '584 further teaches that a user may indicate specific events to be detected with reference to Figure 9, reproduced below with accompanying disclosure:

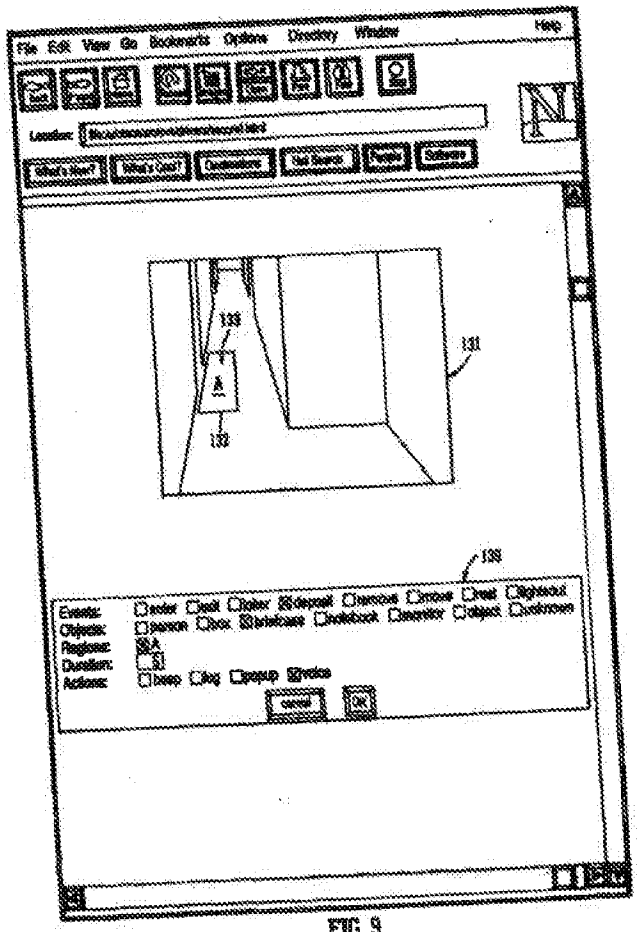


FIG. 9

The web page of FIGURE 9 also includes an event selection box 136, which the operator can use to indicate that the imaging processing section 27 is to check for a specified event, and to indicate what action is to be taken if the specified event occurs. In this regard, the operator can use a mouse to select one of several events identified in box 136, including an enter event, an exit event, a loiter event, a deposit event, a *remove* event, a *move* event, a rest event, and a lightsout event. ***The event selection box 136 allows the user to optionally restrict the monitoring for the specified event to certain types of detected objects, including a person, a box, a briefcase, a notebook, a computer monitor, any type of object, or just an unknown object. Event selection box 136 also allows the user to restrict the monitoring event to a***

> ***particular region by identifying its label letter, such as the region 132 identified by the label letter "A".***
>
> ***For certain events, the event selection box 136 allows the user to specify a time duration in seconds. For example, if the user is instructing the system to monitor for a loiter event within a specified region, the user may specify that the loiter event is to be detected only if the specified object remains within the specified region for a period of at least five seconds.*** The event selection box 136 also allows the operator to specify the action to be taken if the specified event occurs, including an audible beep, the creation of a log entry on the hard disk drive 34, a pop-up window on the display 21 of the workstation 13, or a synthesized voice announcement which indicates that the event of interest has occurred, such as a synthesized announcement of the word "loiter". ***It will be recognized that the event selection box 136 could be modified to allow the identification of other events, objects, conditions, or actions.*** For example, actions could also include making a phone call to a specified number such as that of a security agency, or sending an electronic mail message to a specified electronic mail address.
>
> (Courtney '584, paragraphs 70 to 71; emphasis added.)

Accordingly, at least in view of the foregoing, the combination of Courtney '584 and Brill teaches that "the plurality of attributes that are detected are independent of which event is identified" that "the step of identifying the event of the object identifies the event without reprocessing the video" and that "the event of the object refers to the object engaged in an activity" as recited by claim 1.

A person of ordinary skill in the art at the time the alleged inventions claimed in claims 1 to 41 of the '923 patent were made would have been motivated to combine the features provided by Courtney '584 and Brill in order to enhance the event selection and detection functionality described by Courtney '584 with the user interface and event configuration functionalities of Brill. Moreover, combining Courtney '584 and Brill. is merely: (a) a combination of prior art elements according to known methods to yield predictable results; (b) a simple substitution of one known element for another to obtain predictable results; (c) a use of known technique to improve similar devices in the same way; (d) application of a known technique to a known device ready for improvement to yield predictable results; (e) obvious to try; and/or (f) known work in one field of endeavor prompting variations of it for use in either the same field or a

different one based on design incentives or other market forces since the variations are predictable to one of ordinary skill in the art.

Moreover, as shown herein and the attached claim chart at Attachment Q, the combination of Courtney '584 and Brill discloses each of the features the Examiner identified as the basis for allowance for the 923 Patent claims, including detecting an object in a video; detecting a plurality of attributes of the object by analyzing the video, the plurality of attributes including at least one of a physical attribute and a temporal attribute, each attribute representing a characteristic of the detected object; selecting a new user rule after detecting the plurality of attributes; and after detecting the plurality of attributes and after selecting of the new user rule, identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent of which event is identified, and wherein the step of identifying the event of the object identifies the event without reprocessing the video.

Based on the foregoing and as shown in Attachment Q, Requester has provided a showing of a substantial new question of patentability with respect to at least one of claims 1 to 41 in view of the combination of Courtney '584 and Brill. Therefore, Requester proposes a ground of rejection of claims 1 to 41 of the '923 patent under 35 U.S.C. § 103 (a) as unpatentable as obvious in view of the combination of Courtney '584 and Brill et al.

VIII. EXPLANATION OF PERTINENCY AND MANNER OF APPLYING CITED PRIOR ART TO EVERY CLAIM FOR WHICH REEXAMINATION IS REQUESTED UNDER 37 CFR § 1.510(b)(2)

The claim charts appended hereto as Attachments H to Q detail the manner of applying the cited prior art to every claim for which reexamination is requested as follows:

Attachment H: Claim Chart - Claims 1-41 are anticipated by Day-I under 35 U.S.C. § 102(b)

Attachment I: Claim Chart – Claims 14 and 35 are obvious in view of Day-I under 35 U.S.C. § 103

Attachment J: Claim Chart – Claims 10, 19, 31 and 41 are obvious in view Of Day-I and Brill under 35 U.S.C. § 103

Attachment K: Claim Chart - Claims 11 and 32 are obvious in view of Day-I and Day-II

Attachment L: Claim Chart – Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Courtney '755 under 35 U.S.C. § 102(b)

Attachment M: Claim Chart – Claim 14 is obvious in view of Courtney '755 under 35 U.S.C. § 103

Attachment N: Claim Chart – Claims 1 to 7, 9 to 13, and 15 to 28 are anticipated by Shotton under 35 U.S.C. § 102(b)

Attachment O: Claim Chart – Claim 14 is obvious in view of Shotton under 35 U.S.C. § 103

Attachment P: Claim Chart – Claims 8 and 29 to 41 are obvious in view of Shotton and Brill under 35 U.S.C. § 103

Attachment Q: Claim Chart – Claims 1 to 41 are obvious in view of Courtney '584 and Brill under 35 U.S.C. § 103

IX. COMMENTS ON PATENT OWNER'S AMENDMENT AND REPLY IN RELATED PROCEEDING

A. Comments On Patent Owner's Remarks

As also noted, Patent Owner submitted arguments in response to the Examiner's rejection of claims 1-41 in the Office Action in the '914 reexamination. Although Requester is not required to address the arguments made in the now terminated '914 *inter partes* reexamination, Requester submits the following comments for the Examiner's consideration to the extent the Patent Owner attempts to present similar arguments in connection with this requested *ex parte* reexamination proceeding.

Requester disagrees with each purported distinction Patent Owner attempted to raise with respect to the art applied to reject claims 1-41 in the '914 reexamination proceeding. As to each limitation, Applicant submits that the description of the substantial new question of patentability provided above and as set forth in the appended claim charts, in addition to the Office's rejection of these claims in the '914 reexamination, demonstrates that the claims remain unpatentable and that the grounds of rejection were proper. Below, Requester provides specific comments on some of the arguments raised in the Patent Owner's July 6, 2012 Amendment and Reply. To the extent a particular argument is not directly addressed in the remarks below, Requester does not intend to concede it is meritorious, but instead refers the Examiner to the corresponding disclosure for the claim elements at issue identified in the appended claim charts and the discussion above.

1. Courtney '755

a) Disclosure of Independence-based Events

In the July 6, 2012 Amendment and Reply in the '914 reexamination proceeding, Patent Owner challenged Courtney '755's disclosure of the claim 1 feature "identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent on which event is identified." Patent Owner characterized Courtney '755 as an "event-indexing" system, which allegedly does not disclose "independence-based elements of the claims of the '923 Patent" because Courtney '755 "can only search for events if the event itself has been indexed." Patent Owner then asserted that "the events queried for via the user interface 17 and/or scanned for by the event scanner 103 are the very same events detected by the vision subsystem." ('914 reexamination, August 27, 2012 Amendment and Reply at 8-9.)

Initially, Requester notes the "event-indexing" functionality of Courtney '755 pointed to by Patent Owner is not a valid distinction vis-à-vis the claim language. Rather, Courtney discloses indexing of meta-information by marking the occurrence of certain events to create additional video primitives or ***attributes*** in much the same way described in the '923 Patent:

Courtney '755	'923 Patent
Finally, the vision subsystem 13 scans through the meta-information and places an index mark at each occurrence of eight events of interest: ***appearance/disappearance, deposit/removal, entrance/exit,*** and motion/rest of objects....For example, a moving object that "spawns" a stationary object results in a ***"deposit"*** event. A moving object that intersects and then removes a stationary object results in a ***"removal"*** event. (col. 4, l. 62 to col. 5, l. 3; emphasis added.) Eight events of interest are defined to designate various motion events in a video sequence. ***Appearance***--*An* object emerges in the scene. ***Disappearance***--*An* object disappears from the scene. ... ***Motion***--*An* object at rest beings to move. (col. 10, l. 50-60; emphasis added.)	A video primitive refers to an observable attribute of an object viewed in a video feed. Examples of video primitives include the following: a classification; a size; a shape; a color; a texture; a position; a velocity; a speed; an internal motion; a motion; a salient motion; a feature o f a salient motion; a scene change; a feature of a scene change; and a pre-defined model. ('923 Patent at 7:6-12.) A motion refers to any motion that can be automatically detected. Examples of a motion include: ***appearance of an object; disappearance of an object; a vertical movement of an object; a horizontal movement of an object;*** and a periodic movement of an object. (col. 7, ll. 37-41; emphasis added.)

Courtney '755	'923 Patent
Eight events of interest are defined to designate various motion events in a video sequence. ***Entrance***--*A* moving object enters in the scene. ***Exit***--*A* moving object exits from the scene. ... ***Motion***--*An* object at rest beings to move. (col. 10, 11. 50-60; emphasis added.)	A salient motion refers to any motion that can be automatically detected and can be tracked for some period of time. Such a moving object exhibits ***apparently purposeful motion***. Examples of a salient motion include: ***moving from one place to another;*** and moving to interact with another object. (col. 7, ll 42-47; emphasis added.)
Eight events of interest are defined to designate various motion events in a video sequence. ***Deposit***--An inanimate object is added to the scene. ***Removal***--An inanimate object is removed from the scene. ***Rest***--A moving object comes to a stop. (col. 10, 11. 50-57; emphasis added.)	A scene change refers to any region of a scene that can be detected as changing over a period of time. Examples of a scene change include: ***an stationary object leaving a scene; an object entering a scene and becoming stationary.*** (col. 7, 1. 66 to col. 8, 1. 4; emphasis added.)

Courtney '755 further notes that the vision subsystem 13 "stores the output of the subsystem--the video data, motion segmentation, and meta-information--in the database retrieval through the user interface 17." (Courtney '755, col. 5, lines 4 to 11.) As in the '923 patent, Courtney discloses that a user may "specify queries on a video sequence based upon spatial-temporal, event-based, and object-based parameters" using the user interface 17. (Courtney '755, col. 5, 11. 9-11.) A comparison of the querying functionality of Courtney '755 and the '923 patent is set forth below:

Courtney '755	'923 Patent
Furthermore, the user may specify queries on a video sequence based upon spatial-temporal, event-based, and object-based parameters. (col. 5, ll. 9-11.)	An event discriminator refers to one or more objects optionally interacting with one or more spatial attributes and/or one or more temporal attributes. (col. 7, ll. 2-5.)
For example, the user may select a region in the scene and specify the query "show me all the object that are removed from this region of the scene between 8 am and 9 am." (col. 5, ll. 12-14.)	For example, an event discriminator can be looking for a "wrong way" event as defined by a person travelling the "wrong way" into an area between 9:00 am and 5:00 pm. (col. 11, ll. 1-4.)

Thus, Courtney '755 describes the detection of attributes and determination of events by analyzing the detected attributes exactly as set forth and claimed in the '923 patent.

With respect to Patent Owner's claim that Courtney '775 "can only search for events if the event itself has been indexed," Requester disagrees. Courtney does disclose querying for an event that is *not* an attribute determined by the vision subsystem by analyzing a combination of the received attributes determined, including a V-object, which contains "the label, centroid, bounding box, and shape mask of its corresponding region, as well as *object velocity and trajectory information* by the tracking process" of a real-world object *(see* Courtney, col. 7, ll. 56-60; emphasis added). Additionally, Courtney '775 discloses an object-motion event E. The system of Courtney does so by filtering the video primitives *(i.e.,* attributes) in the same manner performed by the '923 patent:

Courtney '755	'923 Patent
The AVI query engine retrieves video data from the database in response to queries generated at the graphical user interface. A valid query Y takes the form Y=(C, T, V, R, E), where C is a video clip, T =(Ti, Tj) specifies a time interval within the clip, Vis a V-object within the clip meta-information, R is a spatial region in the field of view, and E is an object-motion event. The clip C specifies the video sub-sequence to be processed by the query, and ***the (optional) values of T, V, R, and E define the scope of the query.*** Using this form, the AVI system user can make such a request as ***'find any occurrence of this object being removed rom this region of the scene between 8am and 9am.'*** Thus, the query engine processes Y by ***finding all the video sub-sequences in C that satisfy T, V, R, and E.*** (Courtney '755, col. 12, lines 41 to 60; emphasis added.)	In block 44, event occurrences are extracted from the video primitives using event discriminators. The video primitives are determined in block 42, and the event discriminators are determined from tasking the system in block 23. ***The event discriminators are used to filter the video primitives to determine if any event occurrences occurred.*** For example, an event discriminator can be looking for a "wrong way" event as defined by ***a person traveling the "wrong way" into an area between 9:00 a.m. and 5:00 p.m.*** The event discriminator checks all video primitives being generated according to FIG. 5 and ***determines if any video primitives exist which have the following properties: a timestamp between 9:00 a.m. and 5:00 p.m., a classification o f "person" or "group of people", a position inside the area, and a "wrong" direction o f motion.*** (col. 10, l. 63 to col. 11, l. 9; emphasis added)

In its response in the '914 reexamination proceeding, Patent Owner provided no explanation as to how the "spatial attributes" and "temporal attributes" disclosed in the '923 Patent differ from the corresponding attributes in Courtney '755, or how the events could be independent of the detected attributes when detected by the '923 Patent, but not independent

when the events are determined by Courtney '755. As noted above, Courtney expressly discloses attributes including size, shape, position, time-stamp, and image of each object in every video frame, instantaneous velocity at each frame and determining the path of the object and its intersection with the paths of other objects. The event determination in the '923 patent relies on these ***same attributes***, including ***size, shape, position, trajectory, speed and direction of motion***, ***classification***, object descriptors including, ***carrying an object***, and ***colliding*** among multiple objects. Courtney '755 also determines the same events based on these attributes, such as appearance and disappearance of an object, object motion, movement to a specified location, interaction with another object, and object deposit and removal events. Further, Courtney '755 expressly teaches that these same attributes are used to determine events specified by a user rule without any reprocessing of the video required.

Moreover, "[d]uring reexamination, claims are given the broadest reasonable interpretation consistent with the specification and limitations in the specification are not read into the claims" as set forth in M.P.E.P. § 2258(I)(G). Courtney '755 discloses that a user may formulate queries based upon spatial-temporal, event-based, and object-based parameters *(see* Courtney '755, col. 5, 11. 9-11) once the meta-information is stored in the database 15, and the vision subsystem 13 detects the events prior to the user formulating its query. The determination of attributes by the vision subsystem 13 is thus necessarily performed "independent" of whatever queries the user will later select using the user interface 17. Indeed, claim 1 does not require the events identified by a new user rule to be new, different events from the attributes previously detected and recorded. Rather, the claim language requires that an identified event is not one of the detected attributes of the object.

Further, to the extent Patent Owner contends that claim 1 requires than an event identified by a query must be different from the events previously stored, Requester disagrees. Any event later identified must be a part of video clips previously recorded, *i.e.*, a part of previously recorded events. Thus, even according to claim 1, any event identified by a new user rule is represented in the form of a video clip that was ***previously recorded***. Thus, to argue that the claim requires that an event identified by a query should be different from the events previously stored is not only an improper interpretation of the claim, but such an argument would also not supported by the '923 Patent specification.

In addition, the query "show me all the objects that are removed from this region of the scene between 8 am and 9 am" specified by the user as set forth in Courtney '755 would corresponds to an "event" as recited in the '923 patent claims because the query allows an object engaged in an activity to be identified. In performing such a query, the system of Courtney '755 would analyze attributes including spatial-temporal, event-based, and object-based parameters. Clearly, the query itself is different from the parameters themselves, further demonstrating that Patent Owner's attempt to distinguish Courtney '755 on the basis that an event identified by a query must be "different from the events previously stored" lacks merit.

b) Disclosure of Objects Engaged in Activities

In its response to the Office Action in the '914 reexamination, Patent Owner disputed the presence in Courtney '755 of the claim feature "wherein the event of the object refers to the object engaged in an activity." Given its broadest reasonable interpretation, the detected events of objects in Courtney '755 are plainly "engaged in activity" in the same manner as the objects of the '923 Patent are engaged in activities:

Courtney '755	'923 Patent
Furthermore, the user may specify queries on a video sequence based upon spatial-temporal, event-based, and object-based parameters. (col. 5, ll. 9-11.)	An event discriminator refers to one or more objects optionally interacting with one or more spatial attributes and/or one or more temporal attributes. (col. 7, ll. 2-5.)
For example, the user may select a region in the scene and specify the query "show me all the objects that are removed from this region of the scene between 8 am and 9 am." (col. 5, ll. 12-14.)	For example, an event discriminator can be looking for a "wrong way" event as defined by a person travelling the "wrong way" into an area between 9:00 am and 5:00 pm. (col. 11, ll. 1-4.)

This is underscored by the explicit definitions the '923 Patent provides for the claim terms "object," "activity," and "event":

> An "object" refers to an item of interest in a video. Examples of an object include: a person, a vehicle, an animal, and a physical subject.
>
> An "activity" refers to one or more actions and/or one or more composites of actions of one or more objects. ***Examples of an activity include: entering; exiting; stopping; moving; raising; lowering; growing; and shrinking.***
>
> ...

> An "event" refers to one or more objects engaged in an activity. The event may be referenced with respect to a location and/or a time. ('923 Patent at col. 3, ll. 27-46; emphasis added.)

Further, Requester disagrees with Patent Owner's contention in the '914 reexamination Amendment and Reply that Courtney '755 does not disclose detecting a "physical attribute." Physical attributes are in fact among the specific meta-information recorded by the vision subsystem of Courtney '755:

> The vision subsystem 13 records in the meta-information the size, shape, position, time-stamp, and image of each object in every video frame. It tracks each object through successive video frames, estimating the instantaneous velocity at each frame and determining the path of the object and its intersection with the paths of other objects. It then classifies objects as moving or stationary based upon velocity measures on their path. (Courtney '755, col. 4, ll. 45-52.)

c) *Disclosure of Selecting a New User Rule After Detecting a Plurality of Attributes*

With respect to the feature of "selecting a new user rule after detecting the plurality of attributes," the queries of Courtney '755 are "new user rules" in the same sense of the claims require and no restriction is placed on when the user rule/query is "selected":

> The AVI query engine retrieves video data from the database in response to queries generated at the graphical user interface. A valid query Y takes the form Y=(C, T, V, R, E), where
>
> C is a video clip,
>
> T =(Ti, Tj) specifies a time interval within the clip,
>
> Vis a V-object within the clip meta-information,
>
> R is a spatial region in the field of view, and
>
> E is an object-motion event.
>
> The clip C specifies the video sub-sequence to be processed by the query, and the (optional) values of T, V, R, and E define the scope of the query. Using this form, the AVI system user can make such a request as 'find any occurrence of this object being removed from this region of the scene between 8am and 9am.' Thus, the query engine processes Y by finding all the video sub-sequences in C that satisfy, T, V, R, and E.
>
> (Courtney '755 at col. 12, lines 41 to 60.)

> The system stores the output of the vision subsystem--the video data, motion segmentation, and meta-information--in the database 15 for retrieval through the user interface 17 .... [T]he user may specify queries on a video sequence based upon spatial-temporal, event-based, and object-based parameters. For example, the user may select a region in the scene and specify the query 'show me all objects that are removed from this region of the scene between 8 am and 9 am'.
>
> (Courtney '755 at col. 12, lines 41 to 60.)

Courtney thus plainly discloses this limitation for the reasons set forth in the appended claim charts.

d) Independent claims 9, 20, and 22

In its Amendment and Reply in the '914 reexamination, the Patent Owner's alleged distinctions for these additional independent claims was substantially the same as provided for claim 1. For similar reasons as set forth above, Requester submits that these arguments, to the extent presented again in connection with the requested *ex parte* proceeding, lack merit for at least the same reasons discussed above.

2. Shotton

a) Disclosure of "independence-based" elements

In its Amendment and Reply in the '914 reexamination, the Patent Owner contended that Shotton does not disclose the feature of claim 1 that recites "identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent of which event is identified." ('914 reexamination, Amendment and Reply, pp. 12-14.)

As with Courtney '755, the premise of Patent Owner's attempted distinction in the '914 reexamination proceeding appears to be the fact that detected attributes are stored in a database ***prior to*** allowing for queries of the database to locate particular events (*e.g.*, "Shotton discloses that *after* events have been *identified and stored* as metadata in a video metadata database, the *stored events* may be queried to locate (i.e., identify particular events.") ('914 reexamination, Amendment and Reply at p. 13).

Should this argument be repeated, Requester disagrees with the contention that Shotton does not disclose these features. First, the claim language does not require events identified by the "new user rule" to be new, different events from the events ***previously detected*** and recorded by the system. Rather, the claim only requires that an identified event is ***not one of the detected attributes*** of the object. In Shotton, an exemplary event identified by a query is "all the video clips showing bacteria that swim at a velocity of at least x mm per second." This event is clearly not an attribute of the objects (bacteria), such as metadata representing, for example, spatio-temporal attributes of the objects:

> Once the metadata database has been built, the system allows the following types of query to be made concerning such videos.
>
> ...
>
> Examples of queries for videos of swimming bacteria are: 'Identify all the video clips showing bacteria that swim at a velocity of at least x mm per second', and 'Find me all video sequences where, after the administration of drug A, the average tumble frequency decreases by more than 30%'. For the first query, a simple selection permits identification of the video frames containing all bacteria with a speed, averaged over the preceding 25 frames (1 second), above x mm per second (recorded as derived metadata in the spatio-temporal position table). The second question requires a calculation of the average tumble frequency in the scenes before and after the drug administration, determined from the temporal information recorded for all tumbles.
>
> (Shotton, Section 3)

Further, to the extent Patent Owner contends that claim 1 requires than at event identified by a query must be different from the events previously stored, Requester disagrees. Any event later identified must necessarily be a part of video clips previously recorded, *i.e.*, a part of previously recorded events. Thus, even according to claim 1, any event identified by a new user rule is represented in the form of a video clip ***previously recorded***. Thus, to argue that the claim requires that an event identified by a query should be different from the events previously stored is not only an improper interpretation of the claim but is also not supported by the '923 patent specification.

As to whether the attributes of Shotton are "independent of which event is identified," Shotton plainly discloses the attributes are detected and recorded as metadata without any consideration of which event is to be later identified by a user query. The above cited quotation

in fact describes such independence (*e.g.*, tumble speed decreasing by a specified percentage, all clips meeting a minimum velocity criteria.) Thus, the detected attributes in Shotton are, in fact, ***independent*** of which event is identified.

Under its broadest reasonable interpretation, Shotton plainly discloses the features of "identifying an event of the object that is not one of the detected attributes of the object by applying the new user rule to the plurality of detected attributes; wherein the plurality of attributes that are detected are independent of which event is identified," as well as all other limitations of claim 1.

b) Disclosure of the physical attributes independent of the event

In the '914 reexamination proceeding, Patent Owner contended that Shotton fails to disclose "physical attributes" ('914 Reexamination, Amendment and Reply, pp. 15-16.) Requester disagrees, as Shotton in fact describes numerous physical attributes that are detected:

> The next step is to track the movements of the cells (Figure 3b). The tracking problem can be defined as one of recognising the same object in consecutive frames of the video. The initial algorithm used to solve this problem is simple, and relies on the fact that any bacterium is likely to show a similar area and orientation on adjacent frames of the video, and that its position in any frame is likely to be close to that in the preceding frame. ***Application of this algorithm results in bacterial trajectories from which features such as speed, direction and curvature can be extracted***. (Shotton, Section 2.3)

> For the rotating tethered bacteria, the task of identifying the same cell in successive video frames is obviously more straightforward, and ***the salient features to record from such videos are the instantaneous speed, handedness and duration of each rotation, accelerations and decelerations, the frequency of reversals, and the duration of stops.*** (Shotton, Section 2.3)

Events "independent" of these attributes are subsequently identified by user query in the manner explained above. Thus, Shotton does disclose the claimed physical attributes being independent of the event.

c) Disclosure of the "single camera"

Claim 1 merely requires that the object is detected in a video "from a single camera." This simply requires that the source of the video is the camera. Shotton describes a "video camera" as the source of the video that the system analyzes to detect objects, and perform the other analysis required by claim 1:

> The real time bacterial motility video recordings that we have analysed were made in the laboratory of Professor Judy Armitage. The commercial system presently in use in that laboratory for the analysis of bacterial motility [9] has severe limitations in the number of bacteria that can be simultaneously tracked, and extent of the data that is analysed and stored, both problems related to the fact that it is designed to work with limited hardware resources in real time direct ***from a video camera*** or a videotape. (Shotton, Section 2.3.)

Even without this indication of the "video camera" as the source of the video, it would have been obvious to incorporate a video camera to provide the video. *See, e.g.*, Attachment O demonstrating obviousness of claim 14 in view of Shotton.

d) Independent Claims 9, 20, and 22

In its Amendment and Reply in the '914 reexamination proceeding, Patent Owner's alleged distinctions for independent claims 9, 20 and 22 are substantially the same as those it provided for claim 1. For similar reasons as set forth above, Requester submits that such argument lack merit and should be rejected in presented again in the requested *ex parte* reexamination.

3. Brill

a) Claim 8

In the '914 reexamination proceeding, the Patent Owner challenged the rejection of claim 8 as obvious in view of Shotton and Brill on the following grounds.

With respect to Shotton, Patent Owner alleged that the "querying functionality of Shotton would not have suggested 'identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes' or having the plurality of detected attributes be 'independent of which event is identified,' as required by claim 8." ('914 reexamination, Amendment and Reply, p. 22.) In so doing, Patent

Owner merely referred to the arguments it previously made as to Shotton and claim 1. Requester submits that these attempted distinctions as to Shotton lack merit for the reasons discussed above.

As to the Brill patent, Patent Owner presented a number of arguments regarding features not allegedly disclosed by Brill. First, Patent Owner argued that Brill fails to disclose "identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes" and that "the plurality of attributes that are detected are independent of which event is identified." ('914 reexamination, Amendment and Reply, p. 23.)

Should such arguments be presented again, Requester submits that they should *not* be considered persuasive. According to Brill, "[t]he basic system performs three data processing steps for every image of a video sequence to recognize events. The three steps are detecting objects, tracking objects, and analyzing the motion graph." (col. 3, lines 24 to 27; *see* additional disclosure at col. 3, 11. 28-39, col. 3, 1. 60 to col. 4, 1. 13, and Figure 2.) Brill further discloses that "the surveillance system can be programmed to only generate an alarm upon the occurrence of a ***complex event made up of a series of simple events***." (col. 4, lines 27 to 29; emphasis added.) Brill provides the following disclosure relating to the selection of events which make up a complex event with reference to Figure 6, reproduced below:

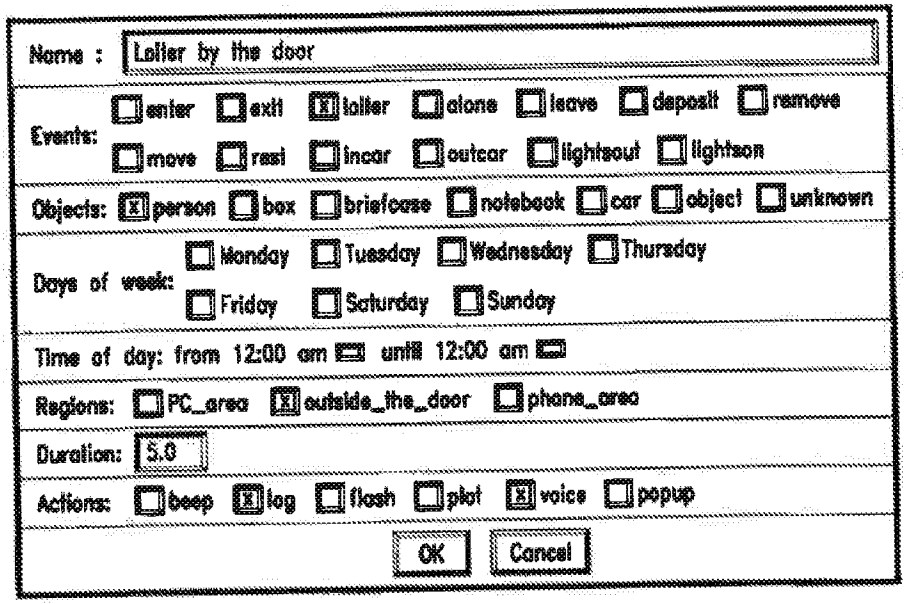


FIG. 6

The user can select which events are to form the complex event via the dialog box interface illustrated in FIG. 6. ***The user selects the event type, object type, time, location, and duration of the event to be defined using a mouse. The user can also select an action for the system to take when the event is recognized. This dialog box defines one simple event of the complex event sequence.*** ...If the event is only being defined in order to be used as a sub-event in a complex event, the user might not check any action box. ***No action will be taken when the event is recognized except to see if it matches the next sub-event in another complex event activation or generate a new activation if it matches the first sub-event in a complex event.*** (col. 10, ll. 39 to 58; emphasis added.)

Brill further teaches that, after simple events are defined, the user can define a complex event as illustrated in Figure 7, reproduced below with accompanying disclosure:

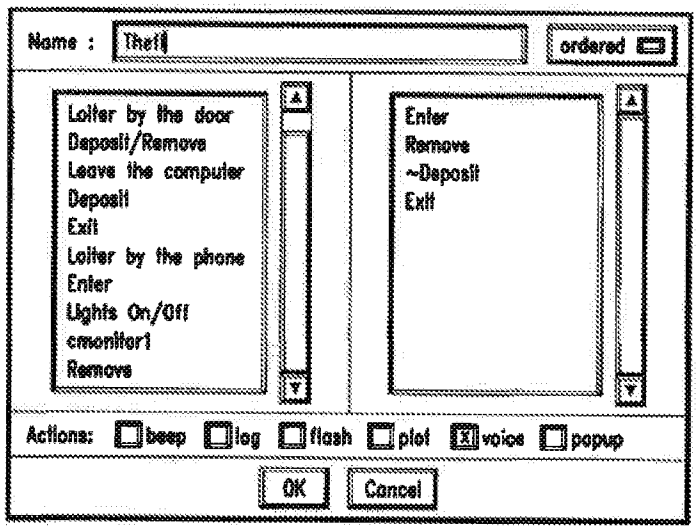


FIG. 7

After one or more simple events have been defined, the user can define a complex event via the dialog box illustrated in FIG. 7.... ***The first list on the left is a scrolling list of all the event types that have been defined thus far. This list will generally include both user defined events and system primitive events. The second list on the right is a list of the sub-events of the complex event being defined.*** The sub-event list is initially blank when defining a new complex event. ***When the user double-clicks with the left mouse button on an item in the event list on the left, it is added as the next item in the sub-event list on the right.*** When the user double-clicks with the right mouse button on an item in the event list on the left, that item is also added to the sub-event list on the right, but as a negated sub-event. The event name is prefixed with a tilde (~) to indicate that the event is negated.

> ***In the upper right corner of the complex event definition dialog box is an option menu via which the user indicates how the sub-events are to be combined.*** The default selection is "ordered" to indicate sequential processing of the sub-events. The other options include "all" and "any."...At the bottom of the dialog box, ***the user can select the action to take when the complex event is recognized.*** (col. 10, l. 59 to col. 11, l. 22; emphasis added.)

This clear disclosure of detection of the "complex event" detection satisfies the claim requirements. As to "identifying an event that is not one of the detected attributes of the first and second objects by applying the new user rule to the plurality of detected attributes," Brill provides for identifying complex events, such as the "the car-bombing scenario," "THEFT," and "CRIME-SPREE" events, which are "events" that are not the "detected attributes." (*See* Brill at col. 3, ll. 28-49, describing event recognition based on analysis of detected object attributes in motion graph.) Brill plainly satisfies this claim requirement, and as explained above with respect to Shotton, the attributes are necessarily recorded without any consideration of which event is to be later specified by a user query. Thus, the events are "independent," in the sense the claims require it, from the detected attributes. For similar reasons, Brill discloses "the plurality of attributes that are detected are independent of which event is identified."

b) Claims 29 and 30

Patent Owner's arguments in the '914 reexamination with respect to dependent claims 29 and 30 were substantially the same as set forth for claim 8. Requester submits that, to the extent such arguments are presented again, those arguments should be found unpersuasive for similar reasons to those discussed above.

c) Dependent Claim 39

Dependent claim 39 requires "the plural attributes detected by the means for detecting are ***defined in the video device independent of a selection*** of the detected plural attributes." This claim literally requires nothing more than the detected attributes being stored (defined) in some fashion prior to a subsequent "selection" of those detected attributes, i.e., for the purpose of a user query. Both Shotton and Brill disclose this functionality, as described in the appended claim charts at Attachment P.

4. Courtney '584 in view of Brill

In the '914 reexamination proceeding, Patent Owner challenged the rejection of claims 1-41 as obvious in view of the combination of Courtney '584 and Brill on the grounds that the references allegedly failed to disclose the "independence-based elements." ('914 reexamination, Amendment and Reply, p. 26.)

If similar arguments are presented in the requested *ex parte* reexamination, Requester submits that they should be rejected. As to Courtney '584, the reference discloses numerous instances where attributes of objects are initially detected and then an "event" is identified:

> In FIGURE 3, the nineteen vertical lines F0 through F18 each represent a respective frame or image in a series of successive images from the video camera 12. In FIGURE 3, the horizontal dimension represents time, and the vertical dimension represents one dimension of movement of an object within a two-dimensional image. Then an object which was not previously present first appears, for example at 51 or 52, it is identified as an "entrance" or "enter" event. When an object which was previously present is found to no longer be present, for example at 53 or 54, it is designated an "exit" event. If an existing object splits into two objects, one of which is moving and the other of which is stationary, for example as at 57, it is designated a "deposit" event. This would occur, for example, when a person who is carrying a briefcase sets it down on a table, and then walks away.
>
> If a moving object merges with a stationary object, and then continues to move while the stationary object disappears, as at 58, it is designated a "remove" event. This would correspond to a situation where a person walks to a notebook resting on a table, and then picks up the notebook and walks away. Three other types of events, which are not specifically illustrated in FIGURE 3, are a "rest" event, a "move" event, and a "lightsout" event. A rest event occurs when a moving object comes to a stop but continues to be present without moving. A practical example is a situation where the objects being monitored are vehicles in a parking lot, and a car pulls into a parking space and thereafter remains stationary. A move event occurs when a detected object which has been stationary begins moving again, for example when a car that has been parked begins moving. A "lightsout" event occurs when the entire detected image suddenly changes, for example when the lights in a monitored room are turned out and the room becomes dark. A "lightsout" event can be detected without all of the image processing described above in association with FIGUREs 2 and 3.
>
> (Courtney '584 at paragraphs 36 to 37.)

As explained above, the claim language does not require that the events identified by the user rule to be new, different events from the attributes of the object detected previously. Rather, the claims only require that an identified event is not one of the detected attributes of the object. Such examples in the case of Courtney '584 include the "remove" event and the "deposit" event, in which the identified event is separate from the mere detection of object attributes, such as object location and movement. Thus, Courtney '584, as well as Brill, discloses the "independence based" limitations of the '923 Patent claims, as properly considered under the broadest reasonable interpretation standard.

With respect to Patent Owner's comments regarding the features of "selecting a new user rule after detecting the plurality of attributes" (claims 1-7 and 22-28), "means for selecting a new user rule after the plurality of detected attributes are stored in memory" (claims 9-19), and "then, selecting a rule…as a new user rule" (claims 20 and 21) which it presented in the '914 reexamination, Requester disagrees that these features are not disclosed by Courtney '584 and Brill. The claim language at issue merely requires some form of "selection" of the new user rule after the attributes are detected. Properly considered, the cited to portions of Courtney '584 and Brill in the appended claim charts each disclose this requirement based on their implementation of the user event definition. Thus, if similar arguments are advanced in the requested *ex parte* reexamination, they should not be found persuasive.

B. Comments On New Claims

As indicated above, the Patent Owner presented no amendments to any of claims 1-41 of the '923 Patent in the '914 reexamination. (July 6, 2012 Amendment and Reply, Control No. 95/001,914.) New claims 42-171 were presented in the Amendment and Reply.

Requester submits the following comments for the Examiner's consideration to the extent the Patent Owner attempts to present similar amendments or arguments in the requested *ex parte* reexamination proceeding. Although not intended to be an exhaustive identification as to each reference relied upon in this request, Requester provides the following exemplary citations corresponding to the subject matter presented in the new claims.

1. "the plurality of attributes of the object includes at least one spatial attribute"

New claims 42, 50, 58, 67, 75, 83, 91, 106, and 127 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes at least one spatial attribute."

Requester submits that this feature is disclosed at least by Courtney '755:

> The vision subsystem 13 records in the meta-information the size, shape, position, time-stamp, an image of each object in every video frame. It tracks each object through successive video frames, estimating the instantaneous velocity at each frame and determining the path of the object and its intersection with the paths of other objects. It then classifies objects as moving or stationary based upon velocity measures on their path.
>
> (Courtney '775 at col. 4, lines 54 to 61.)
>
> The system stores the output of the vision subsystem--the video data, motion segmentation, and meta-information--in the database 15 for retrieval through the user interface 17 .... [T]he user may specify queries on a video sequence based upon spatial-temporal, event-based, and object-based parameters. For example, the user may select a region in the scene and specify the query 'show me all objects that are removed from this region of the scene between 8 am and 9 am'.
>
> (Courtney '775 at col. 5, lines 4 to 14.)
>
> The motion segmentor 21 output is processed by the object tracker 22. Given a segmented image Cn with P uniquely-labeled regions corresponding to foreground objects in the video, the system generates a set of features to represent each region. This set of features is named a "V-object" (video-object), denoted V_n^p, p=1, ..., P. A V-object contains the label, centroid, bounding box, and shape mask of its corresponding region, as well as object velocity and trajectory information by the tracking process.
>
> (Courtney '755 at col. 7, lines 52 to 60.)

This feature is also disclosed by Day-I:

> The spatial attribute, of a salient physical object present in the frames can be extracted in form of bounding volume, Z, that describes the spatial projection of an object, in three dimensions.
>
> Temporal information of objects can be captured by specifying the changes in the spatial parameters associated with the bounding

volume (Z) of objects over the sequence of frames. At the finest level, these changes can be recorded at each frame.

(Section 2.1 (Spatio-Temporal Modeling over a Sequence of Frames (a Clip)) at page 402)

2. "the plurality of attributes of the object includes at color of the object"

New claims 43, 51, 59, 68, 76, 84, 92, 107, and 128 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes at color of the object."

This feature is expressly taught at least by Brill:

However, the present invention may be utilized with a color video camera or some other type of two-dimensional image detector, such as an infrared detector. (col. 2, ll. 55-58)

3. "the plurality of attributes of the object includes a size of the object"

New claims 44, 52, 60, 69, 77, 85, 93, 108, and 129 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes a size of the object."

This feature is taught at least by Courtney 755:

The vision subsystem 13 records in the meta-information the size, shape, position, timestamp, and image of each object in every video frame. (col. 4, lines 54-56.)

This feature is also taught by Day-I:

The spatial attribute, of a salient physical object present in the frames can be extracted in form of bounding volume, Z, that describes the spatial projection of an object, in three dimensions.

(Section 2.1 (Spatio-Temporal Modeling over a Sequence of Frames (a Clip)) at page 402.)

4. "the plurality of attributes of the object includes at least one of a velocity and a speed of the object"

New claims 45, 53, 61, 70, 78, 86, 94, 109, and 130 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes at least one of a velocity and a speed of the object."

This feature is taught at least by Brill:

> The vision subsystem 13 ...tracks each object through successive video frames, estimating the instantaneous velocity at each frame (col. 4, 11. 54-58)

This feature is also taught by Courtney '755:

> "The vision subsystem 13 records in the meta-information the size, shape, position, time-stamp, and image of each object in every video frame. It tracks each object through successive video frames, estimating the instantaneous velocity at each frame and determining the path of the object and its intersection with the paths of other objects. It then classifies objects as moving or stationary based upon velocity measures on their path." (col. 4, lines 54 to 61.)

5. "the plurality of attributes of the object includes a position of the object"

New claims 46, 54, 62, 71, 79, 87, 95, 110, and 131 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes a position of the object."

The feature is taught at least by Courtney '755:

> The vision subsystem 13 ...tracks each object through successive video frames, estimating the instantaneous velocity at each frame (col. 4, 11. 54-58)

This feature is also taught by Brill:

> If a moving object merges with a stationary object, and□then continues to move while the stationary object disappears, as at 58, it is designated a REMOVE event. (col. 4, 11. 8-10)
>
> The user selects the...location (col. 10, 11. 41- 42)

Day-I also discloses this feature:

> For each input video clip, using a database of known objects, we first identify the corresponding objects, their sizes and locations, their relative positions and movements, and then encode this information in the proposed graphical model. (Section 1 (Introduction) at page 402)

6. "the plurality of attributes of the object includes a trajectory of the object"

New claims 47, 55, 63, 72, 80, 88, 96, 111, and 132 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes a trajectory of the object."

This feature is taught by Courtney '755:

> The vision subsystem 13 records in the meta- information the size, shape, position, time- stamp, and image of each object in every video frame. (col. 4, 11. 54-56)
>
> The object tracking process results in a list of V-objects and connecting links that form a directed graph (digraph) representing the position and trajectory of foreground objects in the video sequence. (col. 8, 1. 67 to col. 9, 1. 2)

Day-I also discloses this feature:

> For each input video clip, using a database of known objects, we first identify the corresponding objects, their sizes and locations, their relative positions and movements, and then encode this information in the proposed graphical model.
>
> (Section 1 (Introduction) at page 402)

This feature is also taught by Brill:

> If a moving object merges with a stationary object, and then continues to move while the stationary object disappears, as at 58, it is designated a REMOVE event. (col. 4, ll. 8-10)
>
> The user selects the...location (col. 10, ll. 41- 42)

7. "the plurality of attributes of the object includes a classification of the object"

New claims 48, 56, 64, 73, 81, 89, 97, 112, and 133 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes a classification of the object."

This feature is taught at least by Courtney '755:

> It then classifies objects as moving or stationary based upon velocity measures on their path. (col. 4, 11. 59-61)

Day-I also discloses this feature:

> For each input video clip, using a database of known objects, we first identify the corresponding objects, their sizes and locations, their relative positions and movements, and then encode this

information in the proposed graphical model. (Section 1 (Introduction) at page 402)

This feature is also taught by Brill:

The user selects the... object type (col. 10, 1. 41, Fig.6)

8. "the plurality of attributes of the object includes a shape of the object"

New claims 49, 57, 65, 74, 82, 90, 98, 113, and 134 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of attributes of the object includes a shape of the object."

This feature is taught by Courtney '755:

> The vision subsystem 13 records in the meta- information the size, shape, position, time-stamp, and image of each object in every video frame. (col. 4, 11. 54-56)

9. "each of the plurality of attributes is an observable characteristic of the object"

New claim 66 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "each of the plurality of attributes is an observable characteristic of the object."

Requester submits that all the citations identified above with respect to items 1-8 relate to "observable characteristics" and thus each would disclose this claim feature.

10. "computer system is application specific hardware"

New claims 135 and 136 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "computer system is application specific hardware."

At least Brill discloses "application specific hardware," as shown in Figure 1:

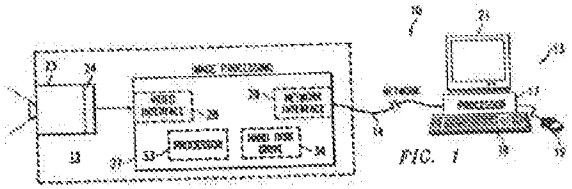


FIG. 1

In fact, all other references relied upon herein are implement in hardware that is "specific" to the application they perform.

11. "retrieving a new user rule that was previously specified"

New claims 141, 142, 143, 144, 145, and 146 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "retrieving a new user rule that was previously specified."

This feature is disclosed at least by Brill:

> Given a system which detects simple events, the invention creates a user interface that enables someone to define a complex event by constructing a list of sub-events. After one or more complex events have been defined, the sub-events of complex events defined later can be complex events themselves. As an alternative user interface, complex events could be constructed in a top-down fashion, defining the highest-level complex event first, and then recursively defining the sub-events until all of the lowest-level events are simple. (col. 4, ll. 51-60.)

12. "the plurality of detected attributes are independent of which event is identified"

New claims 139 and 140 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "the plurality of detected attributes are independent of which event is identified."

This feature corresponds to the "independence-based events" limitations identified by Patent Owner in its Amendment and Reply in the '914 reexamination, which Requester addresses above. (See discussion of Patent Owner's remarks regarding Courtney '755, Shotton, and Courtney '584, above.) This feature is also disclosed by Day-I. (See, e.g., Day-I at Section 2.3, page 404; Section 1 at page 402: "process[ing] semantically heterogeneous queries on the unbiased encoded data"; see also discussion of Day-I's querying functionality pertaining to the claimed "user rule" in Attachment H and the related discussion of Day-I above.)

Additionally, Brill discloses the "independence-based events" functionality. For instance, Brill et al. describes a surveillance/monitoring system in Figure 1, reproduced below with accompanying disclosure:

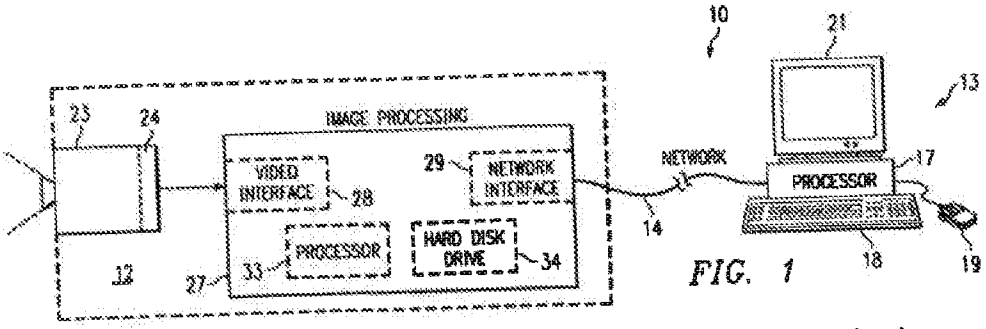


FIG. 1

FIG. 1 is a diagrammatic view of a surveillance or monitoring system 10 which embodies the present invention, and which is used monitor activity in a selected region or area. The monitoring system 10 also includes ***a camera unit 12, a computer workstation 13***, which are ***operatively coupled by a network*** shown schematically at 14....The computer workstation 13 ***may be a personal computer including a processor 17***, a keyboard 18, a mouse 19 and a display unit 21. (col. 2, lines 42 to 52; emphasis added.)

Camera unit 12 further includes an image processing section 27....Image processing section 27 further includes a ***processor 33***. Processor 33 preferably consists of a digital signal processor and its corresponding volatile memory. (col. 2, l. 63 to col. 3, l. 5; emphasis added.)

According to Brill et al., "[t]he basic system performs three data processing steps for every image of a video sequence to recognize events. The three steps are detecting objects, tracking objects, and analyzing the motion graph." (col. 3, lines 24 to 27; see additional disclosure at col. 3, 11. 28-39, col. 3, 1. 60 to col. 4, 1. 13, and Figure 2.) Brill et al. further discloses that "the surveillance system can be programmed to only generate an alarm upon the occurrence of a complex event made up of a series of simple events." (col. 4, lines 27 to 29.) Brill et al. provides the following disclosure relating to the selection of events which make up a complex event with reference to Figure 6, reproduced below:

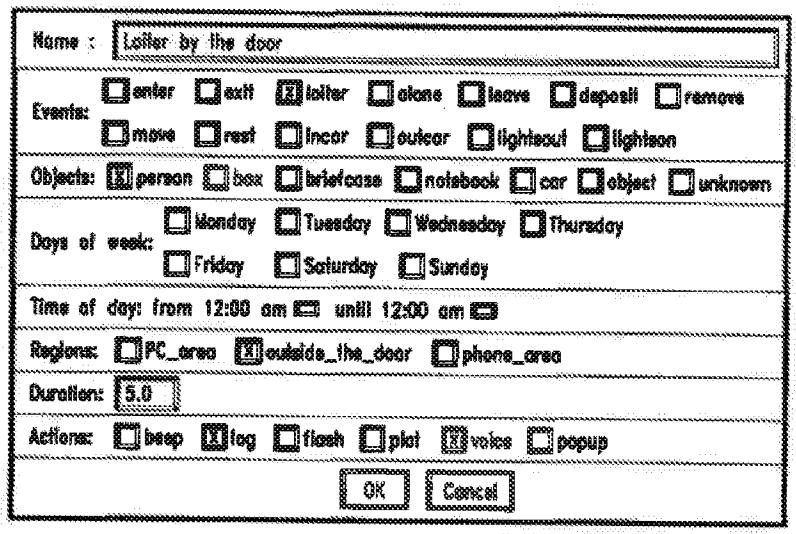


FIG. 6

The user can select which events are to form the complex event via the dialog box interface illustrated in FIG. 6. ***The user selects the event type, object type, time, location, and duration of the event to be defined using a mouse. The user can also select an action for the system to take when the event is recognized. This dialog box defines one simple event of the complex event sequence.*** ...If the event is only being defined in order to be used as a sub-event in a complex event, the user might not check any action box. ***No action will be taken when the event is recognized except to see if it matches the next sub-event in another complex event activation or generate a new activation if it matches the first sub-event in a complex event.*** (col. 10, ll. 39 to 58; emphasis added.)

Brill et al. further teaches that, after simple events are defined, the user can define a complex event as illustrated in Figure 7, reproduced below with accompanying disclosure:

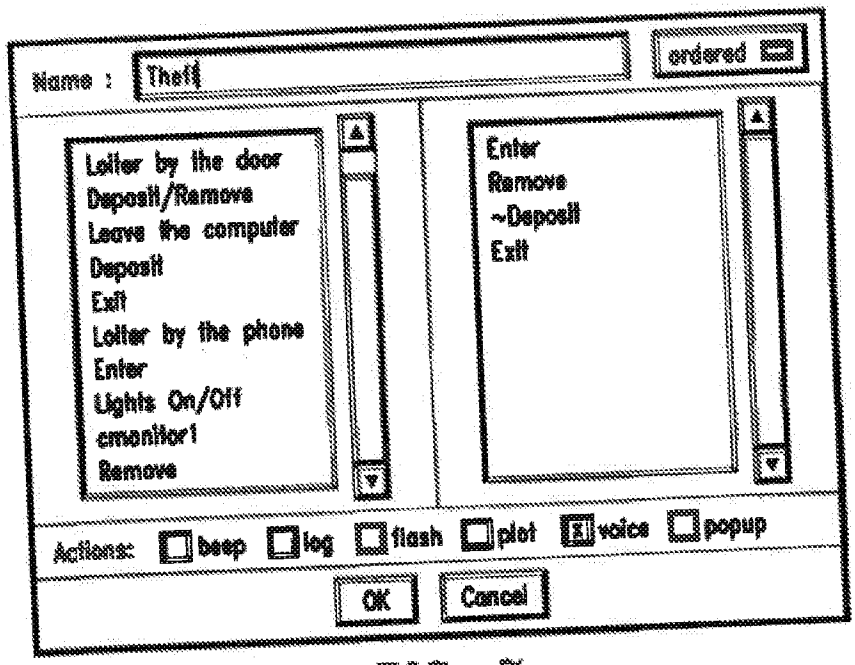


FIG. 7

After one or more simple events have been defined, the user can define a complex event via the dialog box illustrated in FIG. 7....***The first list on the left is a scrolling list of all the event types that have been defined thus far. This list will generally include both user defined events and system primitive events. The second list on the right is a list of the sub-events of the complex event being defined.*** The sub-event list is initially blank when defining a new complex event. ***When the user double-clicks with the left mouse button on an item in the event list on the left, it is added as the next item in the sub-event list on the right.*** When the user double-clicks with the right mouse button on an item in the event list on the left, that item is also added to the sub-event list on the right, but as a negated sub-event. The event name is prefixed with a tilde (~) to indicate that the event is negated.

In the upper right corner of the complex event definition dialog box is an option menu via which the user indicates how the sub-events are to be combined. The default selection is "ordered" to indicate sequential processing of the sub-events. The other options include "all" and "any."...At the bottom of the dialog box, ***the user can select the action to take when the complex event is recognized.*** (col. 10, l. 59 to col. 11, l. 22; emphasis added.)

Thus, at least these references teach the features of the "independence-based elements" and the related features of claims 139 and 140.

13. "plurality of detected attributes are selected from a group consisting of at least one of a size, a shape, a color, a texture, a position, a velocity, and a speed of the detected object"

New claims 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, and 158 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 reexamination proceeding recite, in slightly varying forms, the feature of "plurality of detected attributes are selected from a group consisting of at least one of a size, a shape, a color, a texture, a position, a velocity, and a speed of the detected object."

Requester submits that the citations identified above with respect to items 1-8 disclose one or more of these "attributes" and would satisfy the claim requirement.

14. "identifying the event of the object occurs in real time"

New claims 159, 160, 162, 163, 165, 166, 167, 168, and 170 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "identifying the event of the object occurs in real time."

This feature is substantially similar to at least the "real time" identification in claims 11 and 32, and thus would be disclosed by the references and supporting citations provided for claims 11 and 32 in the appended claim charts.

15. "storing detected attributes in a memory; wherein analyzing the detected attributes occurs after the detected attributes have been stored in the memory"

New claims 161, 164, 169, and 171 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recite, in slightly varying forms, the feature of "storing detected attributes in a memory; wherein analyzing the detected attributes occurs after the detected attributes have been stored in the memory"

The feature of "storing detected attributes in memory" appears in at least claim 7, 9, 28, 30, and all references cited in the appended chart for these claims would teach this feature, as well as the feature of "analyzing the detected attributes occurs after the detected attributes have been stored in the memory."

16. "selecting user rule comprises selecting subset of the plurality of attributes for analysis"

New claim 100 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "selecting user rule comprises selecting subset of the plurality of attributes for analysis"

This feature appears substantially the same in at least claims 2 and 23 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

17. "plurality of attributes that are detected are defined in a device prior to a selection of a subset of the plurality of attributes"

New claim 101 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "plurality of attributes that are detected are defined in a device prior to a selection of a subset of the plurality of attributes"

This feature appears at least in claims 3 and 24 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

18. "no analysis is performed on at least some of the detected attributes to detect an event"

New claim 102 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "no analysis is performed on at least some of the detected attributes to detect an event."

This feature appears at least in claim 4 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

19. "plurality of attributes include plural physical attributes; new user rule applied to a plural number of physical attributes"

New claim 103 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "plurality of attributes include plural physical attributes; new user rule applied to a plural number of physical attributes"

This feature appears substantially the same in claims 5 and 26 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

20. "plurality of attributes include plural temporal attributes; new user rule applied to a plural number of physical attributes"

New claim 104 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "plurality of attributes include plural temporal attributes; new user rule applied to a plural number of physical attributes"

This feature appears at least in claims 6 and 27 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

21. "storing detected attributes in memory; identifying event of the object by analyzing only a subset of the attributes stored in memory"

New claim 105 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "storing detected attributes in memory; identifying event of the object by analyzing only a subset of the attributes stored in memory"

This feature appears at least in claims 7 and 28 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

22. "video camera operable to obtain the video"

New claim 116 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "video camera operable to obtain the video"

This feature appears at least in claims 10 and 31 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

23. "identifying first event in real time by analyzing, of the plurality of attributes, only a first selected subset of the plurality of attributes"

New claims 117 and 118 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "identifying first event in real time by analyzing, of the plurality of attributes, only a first selected subset of the plurality of attributes"

This feature appears substantially the same in claims 11 and 32 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

24. "selecting new user rule comprises analyzing, of the plurality of attributes, only a selected subset of the plurality of attributes"

New claim 119 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "selecting new user rule comprises analyzing, of the plurality of attributes, only a selected subset of the plurality of attributes"

This feature appears in substantially similar for at least in claims 13 and 34 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

25. "memory is configured to store at least some of the attributes for at least two months; identifying the event by analyzing only a selected subset of the plurality of attributes including the attributes stored for at least two months"

New claim 120 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "memory is configured to store at least some of the attributes for at least two months; identifying the event by analyzing only a selected subset of the plurality of attributes including the attributes stored for at least two months"

This feature appears in substantially similar for at least in claims 14 and 35 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

26. "identifying event without reprocessing video"

New claim 121 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "identifying event without reprocessing video"

This feature appears in substantially similar for at least in claims 1, 9, 22, and 36 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

27. "identifying event by analyzing at least two selected physical attributes of the plurality of attributes"

New claim 122 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "identifying event by analyzing at least two selected physical attributes of the plurality of attributes"

This feature appears in substantially similar for at least in claims 15 and 37 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

28. "identify event by analyzing a selection of individual ones of the detected plural attributes"

New claim 123 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "identify event by analyzing a selection of individual ones of the detected plural attributes"

This feature appears in substantially similar for at least in claims 16 and 38 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

29. "plural attributes detected are defined in video device independent of selection of the detected plural attributes"

New claim 124 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "plural attributes detected are defined in video device independent of selection of the detected plural attributes"

This feature appears in substantially similar for at least in claims 17 and 39 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

30. "configured as video surveillance device"

New claim 125 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "configured as video surveillance device"

This feature appears in substantially similar for at least in claims 18 and 40 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

31. "video sensors"

New claim 126 presented in the Patent Owner's July 6, 2012 Amendment Reply in the '914 Proceeding recites the feature of "video sensors"

This feature appears in substantially similar for at least in claims 19 and 41 of the '923 Patent and it does not provide a basis for patentability at least for reasons similar to those set forth in the appended claim charts.

32. New Independent Claims

In the Amendment and Reply in the '914 reexamination, Patent Owner submitted new independent claims 99, 114, 115, 137, 138. The features of each of these claims are either substantially present in existing independent claims of the '923 or features similar to those discussed above with respect to the new dependent claims.

With respect to the limitations of "automatically detecting" set forth in, e.g., claims 114 and 115, Requester submits that such automation of known, manual steps is an insufficient basis to establish patentability. *See, e.g., In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958); M.P.E.P. § 2144.04(III).

X. CONCLUSION

Based on the above remarks, including the charts appended hereto, it is respectfully submitted that substantial new questions of patentability have been raised with respect to claims 1-41 of the '923 Patent. Therefore, reexamination of claims 1-41 is respectfully requested.

Any fee due for this reexamination may be charged to Deposit Account No. 50-3828.

Respectfully submitted,

Date: May 23, 2013

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