Remarks

The Applicants and the undersigned thank Examiner Hasan for the careful review of this application. The Applicants have amended claims, where Claims 1-20 remain pending in the patent application. Claims 1, 10, and 16 are the three independent claims. The Applicants respectfully request reconsideration and allowance of this application in view of the remarks provided below.

Support for this amendment to the claims may be found in at least FIG. 5, and specifically, see Steps 530 and 535, where in decision Step 530, there are at least two conditions that are determined: a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor. In Step 535, the processor wakes the energy conserving processor if at least one of the two conditions has been met.

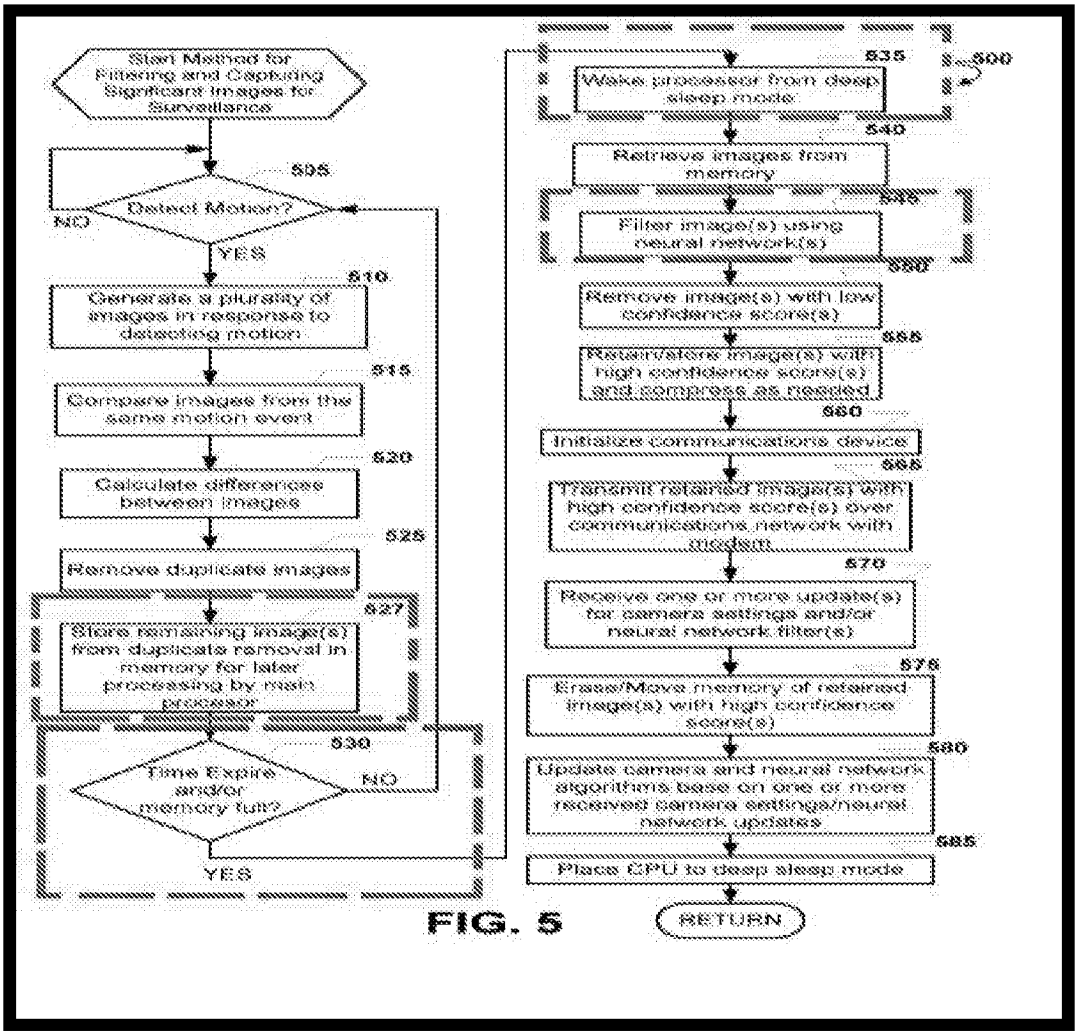


FIG. 5

The Applicants have also submitted a drawing replacement sheet described in further detail below. The Applicants believe that the above amendment to the specification and the amendments to the replacement drawing sheet do not contain any new matter.

Objection to the Drawings

The Examiner has objected to the drawings. Specifically, the Examiner noted that reference character "525" was used twice in FIG. 5. The Applicants respectfully agree and have submitted the attached drawing replacement sheet to correct this error. The Applicants also had to correct the corresponding text in the application which referenced two steps "525", in which the second occurrence of prior step "525"is now referred to as step --527--. Accordingly, the Applicants respectfully request that the Examiner withdraw the Objection to the Drawings.

Objection to the Specification

The Examiner has objected to the specification. Specifically, the Examiner noted that a few informalities in the claims, and specifically, claims 1, 9, 10, and 16. The Applicants have amended the claims in accordance with the Examiner's helpful comments. Accordingly, the Applicants respectfully request that the Examiner withdraw the Objection to the Specification.

Claim Interpretation – 35 U.S.C. §112(f)

The Examiner has interpreted several elements of Claims 10-15 under 35 U.S.C. §112(f) and has interpreted structure(s) in the specification corresponding to these elements. The Applicants generally agree with the Examiner's interpretation of these elements. However, the Applicants note that the structure(s) identified by the Examiner are not exhaustive and that other structure(s) (and/or combination of structure(s)) performing these functions, beyond those identified by the Examiner, may be present in the specification, as understood by one of ordinary skill in the art.

Claim Rejections – 35 U.S.C. §112

The Examiner has rejected claims 1-20 under 35 U.S.C. §112(b) or 35 U.S.C. §112 (pre-AIA), second paragraph, as being unclear. Specifically, the Examiner raised the issue about

what images remain after applying the first filter. The Applicants appreciate the Examiner's detailed comments and have amended the claims in line with these helpful comments from the Examiner. Accordingly, the Applicants respectfully request that the Examiner reconsider and withdraw the Rejections in view of the amendments made by the Applicants.

Claim Rejections – 35 U.S.C. §103

The Examiner has rejected claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over Gope (U.S. Patent Publication No. 2017/0300786, hereafter, the "Gope reference") in view of Morrow et al. (U.S. Patent Publication No. 2005/0125628 A1) and Trundle (U.S. Patent Publication No. 2013/0215266, hereafter, the "Trundle reference"). The Applicants respectfully traverse this rejection in view of the remarks set forth below.

Independent claim 1

The Applicants' amended independent claim 1 is not anticipated or made obvious by the Gope reference and in view of the Trundle reference because these references fail to disclose or suggest the combination of: a processor for detecting motion of an object in a field of view; a processor for generating a plurality of images in response to detecting motion of the object in the field of view; a processor for applying a first filter to the plurality of images to create a reduced set of images; a processor for storing the reduced set of images based on the first filter; a processor for determining if an energy conserving processor should be woken from a sleep mode of operation based on two conditions, a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor, the processor awaking the energy conserving processor if at least one of the two conditions has been met; the energy conserving processor becoming activated in response to the processor determining that the energy conserving processor should be woken from its sleep mode of operation based on at least one of the two conditions; the energy conserving processor applying a second filter to the reduced set of images from the first filter; the energy conserving processor assigning a confidence score to one or more images matching the second filter; and the energy conserving processor designating the one or more images matching the second filter for transmission over a computer network, as recited in amended independent claim 1 [Emphasis added].

The Gope reference

The Gope reference describes a system and method for detecting and recognizing license plates as illustrated in FIG. 6 (reproduced below).

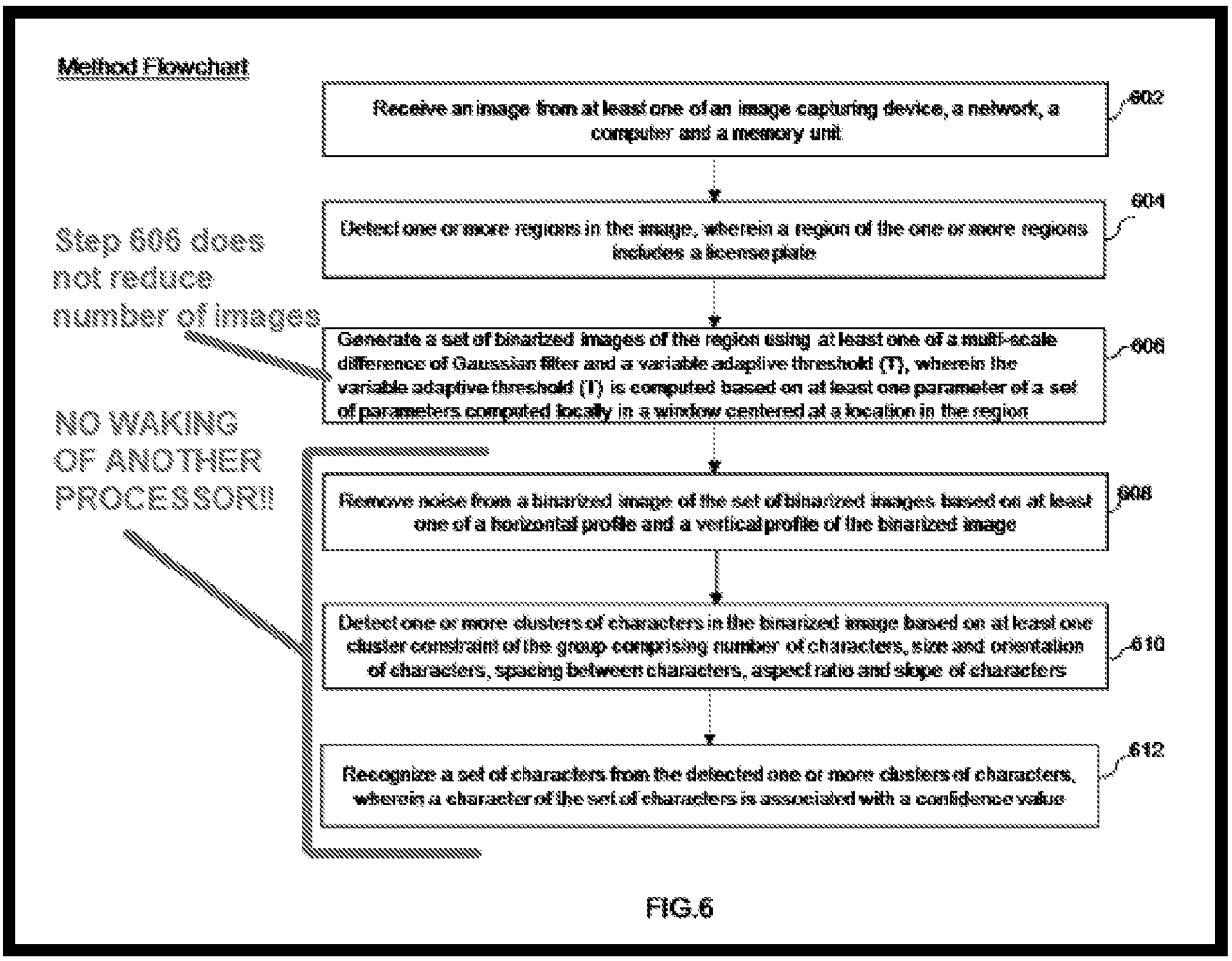


FIG.6

At 602, the LPDR system 102 of the Gope reference receives an image to be analysed. The image is captured by one or more devices. The one or more devices include at least one of an image capturing device, a network, a computer and a memory unit. In an embodiment of the invention, the one or more devices may transfer a video stream instead of an image. For such cases, the LPDR system 102 divides the video stream into a sequence of frames. At 604, the LPDR system 102 detects one or more regions in the image, wherein a region of the one or more regions includes a license plate. Gope reference, paragraph [0038].

At 606 of the Gope reference, the region 502 is converted into a set of binarized images 504 using at least one of a multi-scale Difference of Gaussian (DoG) filter and a Variable Adaptive Threshold (VAT). In case of VAT, a threshold T is computed locally in a window centered at a location in the region 502. This computation is based on at least one parameter of a set of parameters including, but not limited to, mean, median, mode, standard variance, and the like. Next, at 608, the LPDR system 102 filters each binarized image of the set of binarized images 504 to remove noise based on at least one of a horizontal profile and a vertical profile of the binarized image. A noise is essentially non-character data on the boundaries on the license plate in the region 502. After noise removal, the set of binarized images 504 is converted to a set of filtered binarized images 506. Gope reference, paragraph [0040].

The Examiner relies on step 606 of the Gope reference to address the claimed first filter recited in claim 1. However, claim 1 as amended, requires the first filter to create a reduced set of images. Step 606 of the Gope reference only uses a multi-scale Difference of Gaussian (DoG) filter to remove noise, **AND NOT TO CREATE A REDUCED SET OF IMAGES**, as claimed. [Emphasis supplied.]

In addition to not creating a reduced set of images, the Gope reference also does not provide any teaching or suggestion of waking an energy conserving processor for performing image analysis, **as admitted by the Examiner and as agreed by the Applicants**. [Emphasis supplied.].

Further, the Gope reference also does not provide any suggestion or teaching of: a processor for determining if an energy conserving processor should be woken from a sleep mode of operation based on two conditions, a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor, the processor awaking the energy conserving processor if at least one of the two conditions has been met, as recited in amended independent Claim 1. [Emphasis supplied.]

The Trundle reference

The Trundle reference discloses a cameral unit 110 having a processor 111 as illustrated in FIG. 1 reproduced below.

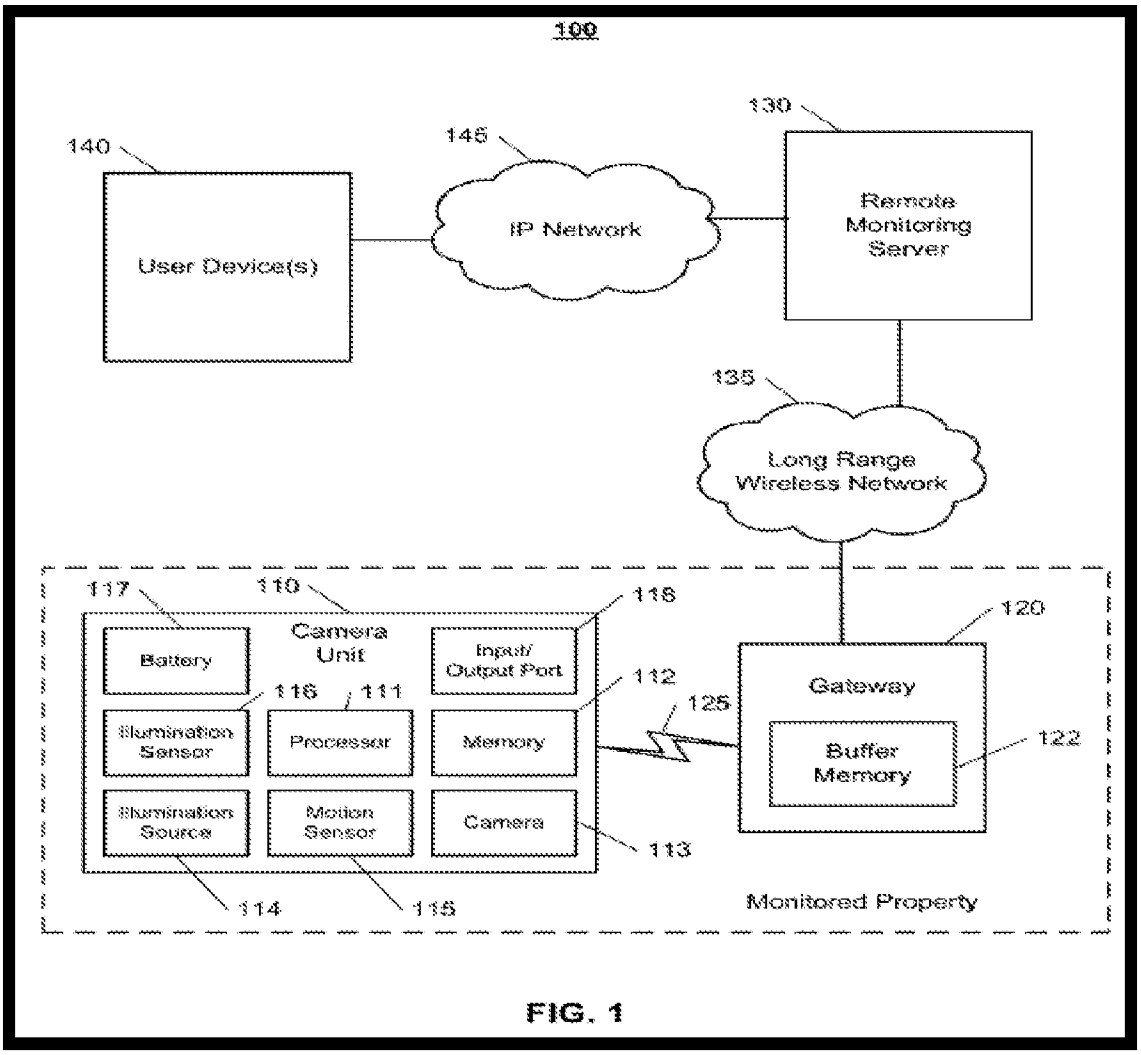


FIG. 1

The Trundle reference explains in paragraph [0034] that to reduce processing power and to conserve battery life, the processor 111 may control components of the camera unit 110 to periodically enter sleep mode operation. For example, the processor 111 may awaken every second to determine whether any communications have been received at the input/output port 118. If no communications have been received, the processor 111 may place itself and other components (e.g., the memory 112, the camera 113, etc.) in a sleep mode for another second before awaking again to determine whether any communications have been received at the input/output port 118. The processor 111 also may awaken from a sleep mode state based on output from the motion sensor 115 indicating that motion has been detected.

While the Trundle reference does suggest conserving power by putting a processor 111 of a camera unit into a sleep mode of operation, the Trundle reference, like the Gope reference, does not provide any teaching of: a first filter creating a reduced set of images; a processor for

determining if an energy conserving processor should be woken from a sleep mode of operation based on two conditions, a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor, the processor awaking the energy conserving processor if at least one of the two conditions has been met; and applying a second filter to the reduced set of images, as recited in amended independent Claim 1. [Emphasis supplied.]

In view of the differences between the Applicants' amended independent claim 1 and the Gope and Trundle references, one of ordinary skill in the art would recognize that these two references do not disclose or suggest the recitations set forth in the Applicants' amended independent claim 1. Accordingly, the Applicants respectfully request reconsideration and allowance of independent claim 1.

Independent claim 10

The Applicants' amended independent claim 10 is not anticipated or made obvious by the by the Gope and Trundle references because these two references fail to disclose or suggest the combination of: means for detecting motion of an object in a field of view; means for generating a plurality of images in response to detecting motion of the object in the field of view; means for applying a first filter to the plurality of images to create a reduced set of images; means for storing the reduced set of based on the first filter; means for determining if an energy conserving processor should be woken from a sleep mode of operation based on two conditions, a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor, the processor awaking the energy conserving processor if at least one of the two conditions has been met; the energy conserving processor becoming activated in response to the means for determining that the energy conserving processor should be woken from its sleep mode of operation based on at least one of the two conditions; the energy conserving processor applying a second filter to the reduced set of images from the first filter; the energy conserving processor assigning a confidence score to one or more images matching the second filter; and the energy conserving processor designating the one or more images matching the second filter for transmission over a computer network, as recited in amended independent Claim 10. [Emphasis added].

Similar to the arguments made above for independent claim 1, these two references do not provide for any teaching of: a first filter to the plurality of images to create a reduced set of images; means for storing the reduced set of based on the first filter; means for determining if an energy conserving processor should be woken from a sleep mode of operation based on two conditions, a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor, the processor awaking the energy conserving processor if at least one of the two conditions has been met; the energy conserving processor becoming activated in response to the means for determining that the energy conserving processor should be woken from its sleep mode of operation based on at least one of the two conditions; the energy conserving processor applying a second filter to the reduced set of images from the first filter, as recited in independent Claim 10.

In view of the differences between the Applicants' amended independent claim 10 and the Gope and Trundle references, one of ordinary skill in the art would recognize that these two references do not disclose or suggest the recitations set forth in the Applicants' amended independent claim 10. Accordingly, the Applicants respectfully request reconsideration and allowance of independent claim 10.

Independent claim 16

The Applicants' amended independent claim 16 is not anticipated or made obvious by the Gope reference in view of the Trundle reference because these two references fail to disclose or suggest: a device for detecting motion of an object in a field of view; a camera module for generating a plurality of images in response to detecting motion of the object in the field of view; the camera module applying a first filter to the plurality of images to create a reduced set of images; the camera module determining if an energy conserving processor should be woken from a sleep mode of operation based on two conditions, a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor, the processor awaking the energy conserving processor if at least one of the two conditions has been met; a memory device for storing the reduced set of images based on the first filter; the energy conserving processor becoming activated in response to the processor determining that the energy conserving

processor should be woken from its sleep mode of operation based on at least one of the two conditions; the energy conserving processor applying a second filter to the reduced set of images from the first filter; the energy conserving processor assigning a confidence score to one or more images matching the second filter; and the energy conserving processor designating the one or more images matching the second filter for transmission over a computer network, as recited in amended independent Claim 16 [Emphasis added].

Similar to the arguments made above for independent claim 1, these two references do not provide any teaching of: applying a first filter to the plurality of images to create a reduced set of images; the camera module determining if an energy conserving processor should be woken from a sleep mode of operation based on two conditions, a first condition comprising an amount of time and a second condition comprising an amount of storage for the reduced set of images based on the first filter which were stored by the processor, the processor awaking the energy conserving processor if at least one of the two conditions has been met; a memory device for storing the reduced set of images based on the first filter; the energy conserving processor becoming activated in response to the processor determining that the energy conserving processor should be woken from its sleep mode of operation based on at least one of the two conditions; and the energy conserving processor applying a second filter to the reduced set of images from the first filter, as is recited in the Applicants' amended independent claim 16.

In view of the differences between the Applicants' amended independent claim 16 and |the two references, one of ordinary skill in the art would recognize that these references do not disclose or suggest the recitations set forth in the Applicants' amended independent claim 16. Accordingly, the Applicants respectfully request reconsideration and allowance of independent claim 16.

Dependent Claims 2-9, 11-15, and 17-20

The Applicants respectfully submit that the above-identified dependent claims are allowable because the independent claims from which they depend are patentable over the cited reference. The Applicants also respectfully submit that these dependent claims recite patentable features that are not taught or suggested by the prior art of record.

The rejections of these dependent claims are believed to be moot in view of their independent base claims being allowable over the art of record for the reasons described above

with reference to independent Claims 1, 10, and 16. For at least these reasons, the Applicant respectfully requests that the Examiner withdraw the pending rejections of dependent Claims 2-9, 11-15, and 17-20.

CONCLUSION

The foregoing is submitted as a full and complete response to the Non-Final Office Action of April 19, 2019. The Applicants respectfully submit that the present application is in condition for allowance in view of these amendments and the remarks. Such Action is hereby courteously solicited.

Should the Examiner have any comment regarding the Applicants' response or believe that a teleconference would expedite prosecution of the pending claims, Applicants request that the Examiner telephone Applicants' undersigned registered patent lawyer listed below.

Respectfully submitted,

SMITH TEMPEL
FOR THE APPLICANT
Customer Number 35856

Date: 19 AUGUST 2019

By: **/SPW/**

Steven P. Wigmore
Direct: (678) 361-4915
Reg. No. 40,447
Registered U.S. Patent Lawyer
Former USPTO Utility Examiner

SMITH TEMPEL
50 GLENLAKE PARKWAY
SUITE 340
ATLANTA, GA 30328 - USA
TELEPHONE: (678) 361-4915
FACSIMILE: (770) 804-0900