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January 27, 2016

U.S. Patent and Trademark Office (USPTO)  
Customer Service Window  
Mail Stop Patent Application  
401 Dulany Street  
Alexandria, VA 22314

Re: **New Utility Patent Application in U.S.**  
Applicant(s): SNAPAID LTD.  
**Title:** *REAL TIME ASSESSMENT OF PICTURE QUALITY*  
Attorney Docket No.: SIVAN-001-US1

Sir/Madam,

Attached herewith is the above-identified application for Letters Patent including:

1. Applicant asserts micro entity status. See Certification Micro Entity Status 37 CFR 1.33(b).
2. Application Data Sheet (PTO/AIA/14);
3. Specification (30 pages), Claims 1-20 (3 pages) and Abstract (1 page).
4. 4 (four) sheets of Drawings (Figures 1-4).
5. Declaration  
[ X ] Newly executed [ ] Copy from prior application no. \_\_\_\_\_
6. Assignment submitted through EPAS  
[ X ] Newly executed [ ] Copy from prior application no. \_\_\_\_\_
7. Power of Attorney
8. Information Disclosure Statement (PTO/SB/08).
9. Certain documents were previously filed or cited to the USPTO in the prior application 14/437,105, which is relied upon under 35 U.S.C. § 120.

Applicant(s) identify these documents by attaching an Information Disclosure Statement listing these documents and request that they be considered and made of record in accordance with 37 CFR § 1.98(d). Per Section 1.98(d), copies of these documents need not be filed in the application.

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10. Electronic Payment in the amount of US\$ 400 is being made by deposit account no. 506726 to cover filing fee calculated as follows:

| Application as Filed     |              |         |        | Fee (US\$) |
|--------------------------|--------------|---------|--------|------------|
| Basic filing fee         |              |         |        | 70.00      |
| Search Fee               |              |         |        | 150.00     |
| Examination Fee          |              |         |        | 180.00     |
| Total Sheets             | Extra Sheets |         | Rate   |            |
| 38/100                   | --           |         | 100.00 | --         |
| Claims                   | # Filed      | # Extra | Rate   |            |
| Total Claims             | 1-20         | --      | 20.00  | --         |
| Independent Claims       | 1            | --      | 105.00 | --         |
| Multiple Dependent Claim |              |         | 195.00 | --         |
| Total Filing Fee         |              |         |        | 400.00     |

11. As in the prior application 14/437,105, please associate the above referenced application with **Customer No. 131926**.

12. The Correspondence Address associated with **Customer No. 131926**.

Submitted by,  
May Patents Ltd.

By: /yb/  
Yehuda Binder  
Registration No. 73,612

## REAL TIME ASSESSMENT OF PICTURE QUALITY

### 5 RELATED APPLICATIONS

This application is a continuation application of US Application No. 14/437,105, which is a national phase of, and claims priority from PCT Application No. PCT/IL2013/050856, filed on October 22, 2013, which claims priority from US  
10 Provisional Application No. 61/717,216 filed on October 23, 2013 and US Provisional Application No. 61/759,643 filed on February 1, 2013, all of which applications are hereby incorporated by reference as fully set forth herein.

### FIELD OF THIS DISCLOSURE

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The present invention relates generally to image processing and more particularly to analysis of photographed images.

### BACKGROUND FOR THIS DISCLOSURE

20

Cameras today, even those with good “auto mode” functions, still rely on the camera user to assess a picture’s quality, either at the time of taking the picture, or at a later stage. Certain software, such as Photoshop, offers tools to enhance a picture to an extent. Many users simply take more than one picture, say 5-6 pictures, so they will be able to choose one good one.

25

Conventional technology constituting background to certain embodiments of the present invention is described in the following publications inter alia:

a. US 20130155474 in which a user of the mobile device is provided with feedback prior to the capturing of at least one image of a paper document which provides the user with at least one instruction for adjusting at least one measured  
30 parameter. Parameter values may be combined into a group threshold or total overall quality score, such that the combination of all of the measured parameter values produces an overall quality score which exceeds a defined threshold value before the image can be captured by the camera. According to this publication, "The user can be provided detailed information to assist the user in taking a better quality image of the

document. For example, the blurriness may have been the result of motion blur caused by the user moving the camera while taking the image. The test result messages can suggest that the user hold the camera steadier when retaking the image."

5 b. WO 2006040761 / US20070195174 which describe a system in which the interface module further enables to define the scene dynamics of the captured image and attributes of the captured image scene dynamics include image motion speed and motion speed of the subjects and the interface module further enables setting the captured image attributes relative weight for the computation of the total image grade.

10 c. US20090278958 which describes inter alia that "The scoring of a current base image may be based on scores which have been given to previously captured base images. In such a manner, redundant calculation may be avoided."

d. Other systems such as the following patent documents: US7362354; WO2003069559; US7688379; US20090263028; US20060017820; US20060056835; US8125557; WO2011148212; US7920727; US20130155474; US8040382.

15 The disclosures of all publications and patent documents mentioned in the specification, and of the publications and patent documents cited therein directly or indirectly, are hereby incorporated by reference. Materiality of such publications and patent documents to patentability is not conceded

## 20 **SUMMARY OF THE INVENTION**

Certain embodiments seek to utilize camera hardware such as accelerometers, gyros and autofocus lenses, inter alia, to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.

25 Typically, each available sensor, e.g. accelerometers, gyros, sends its raw data to a processing component 400 that outputs a quality indicator e.g. as illustrated in Fig. 1. and Fig 3. Data may also be sent to Device/surrounding objects 4D position computation component 230 for 4D positioning computation. Raw data may be combined with quality indication from other sensors, such as the camera/lens module 200, that can send its own quality indications. For example, some lens modules can  
30 estimate the picture focus quality, as it is a part of their auto focus functionality. Some camera/lens modules may have dual cameras or more for achieving 3D data, sophisticated focusing methods like Lytro light field camera, or their own hardware

sensors like Google Glass. All this available data can be sent to component 400 and Device/surrounding objects 4D position computation component 230 for use of their functions. Various quality indicators, depending on device capabilities and implementation, may be employed.

- 5 Prior art has used certain independent quality indicators, each giving a quality of one particular aspect of a picture, for a given picture. Some try to quantify the quality by means of a total quality indicator. Typically this is done as follows:

$$QI_{total} = \sum_{i=1}^n QI(t)_i$$

- 10 Where n is the number of quality indicators (QI), and t is the time of test.

Some implementations use a weight function in computation, but the weight is either constant or can be change by the user manually.

$$QI_{total} = \sum_{i=1}^n QI(t)_i * w_i(t)$$

- 15 However, in this invention, the weight of one indicator will take into account data from other quality indicator/s e.g. their quality indicator value, weight, confidence level (explained forthwith) in them and their previous value, weight and confidence level. For example, if both device shake quality indicator and/or camera focus quality indicator indicate a poor quality, disregard use of aesthetic quality indicator in total computation, even if user indicated that he would like to give it a high priority. This  
20 will prevent the device from taking a picture when the picture is blurry, as is the case in prior art. Once shake is low and focus is optimal, aesthetic QI may be used in total quality computations. One quality indicator's importance or relative weight within the total quality indicator may change over time, if some other quality indicator indicates that the first quality indicator becomes less relevant in quantifying the picture quality.

- 25 Furthermore, since each QI algorithm has its own assumptions, and each sensor may have measurement errors, the quality indication (QI) value may therefore not be reliable. Also, a QI value that fluctuates widely may not be reliable, and in certain cases, re-assessment of the quality indicator may be called for. Thus, a "confidence level" in the QI is obtained. These indicators may be relayed to a

processing component that analyses the current relevance of each indicator, and with suitable configuration, provides a “total” quality value.

5 This total quality indicator and its detailed list of quality indicators can be used to give the user accurate feedback on the picture quality, whether and how it fits user preferences (configured in 151, used in total QI computation), and provide detailed suggestions on how to take a better picture, if possible.

10 Suggestions may be provided as an oral message, typically pre-recorded, as an icon on a screen, or as text. Suggestions may use the recorded images as a template for the suggestions. This may include marking over exposed areas in red, or marking a problematic element with a circle.

The quality indicators’ values and total quality indicator can be shown to the user in real time.

15 Certain embodiments of the present invention include a method which comprises combining data from multiple sensors and multiple quality indicators, using available GPU and CPU, to compute, in real time, each quality indicator, and to form a combined total indicator to be shown to the user before and after he has pressed the shutter button. The user may get, or choose to get, suggestions from the application on how to improve the next shot, using the quality indicators and their correlation.

20 Further indication to the user can be made if the image is below a certain total quality indicator threshold.

25 According to one embodiment, quality indications are used to control the lens module 200. For example, focus distance reported may be below hyper focal distance or very short and accelerometer reports movement in direction perpendicular to focus plan. This can be used to find a way to shorten the shutter speed (increase ISO or change aperture for example). Another example may be to change the focus point and possibly focus distance if the object being tracked has moved.

30 In another embodiment, when the user presses the “shutter” button to take the picture (component 105), the device will wait for the total quality indicator to reach a minimum value/threshold, before taking a full resolution picture as shown in Fig 1. Ideally, this time will be close to the shutter release time. A timeout mechanism can ensure a full resolution picture will be taken, even if the threshold is not reached in a given time after the shutter is released.

A list of suggestions to the users may be for instance “blurred image due to camera shake”, or “blurred subject due to subject movement”, or “Image dynamic range is beyond the sensor dynamic abilities –choose area of interest, or take a high dynamic range (HDR) shot”.

5 Embodiments include but are not limited to:

Embodiment 1. A method for computing the photo quality of a captured image in a device image acquisition system, said method comprising:

computing at least one total quality indicator based on at least two quality indicators  
 computed from said captured image and its previous image frames,  
 10 to determine whether the photo quality is acceptable; and  
 providing a corresponding detailed photo quality feedback.

Embodiment 2. A system according to embodiment 1, where automatically activating the capturing apparatus, once a logical criterion based on said quality indicators is met.

Embodiment 3: A system, according to embodiment 1 where

15 a message provider is operative where at least one appropriate suggestion from a pre-stored table of suggestions on how the digital image can be improved further, where said message is presented as a suggestion to the user.

Embodiment 4: A system, according to embodiment 1 where

20 pictures are taken and saved at each frame, but only pictures with a said logical criterion are marked as so.

Embodiment 5: A system, according to embodiment 1 where the stream of frames is saved as a video and;

quality indicators, user preferences, confidence level, and quality importance are used to quantify video quality.

25 Embodiment 6: A system, according to embodiment 5, used to give a user suggestions on improvement of the video.

Embodiment 7: A system, according to embodiment 1, where computed QI and their confidence levels are used to change parameters in the lens/sensor module to achieve better total QI.

30 Embodiment 8: A system and method as in embodiment 1 used for automatic image capturing of at least one picture once a configured total quality indicator meets a minimum threshold, even without the user pressing a shutter button.

Embodiment 9. A system using blur type detection for alerting the user of object movement in a region.

Embodiment 10. A system using blur type detection for alerting the user he is moving too fast in a vehicle to achieve a non-blurred image.

Embodiment 11. A system and method described herein for evaluating video quality.

5 Embodiment 12. A system with device shake recognition, where a device movement gesture can be used for shutter press indication.

Embodiment 13. A system with device shake recognition, where a device movement gesture can be used for delete picture indication.

10 Also provided, excluding signals, is a computer program comprising computer program code means for performing any of the methods shown and described herein when said program is run on a computer; and a computer program product, comprising a typically non-transitory computer-usable or -readable medium e.g. non-transitory computer -usable or -readable storage medium, typically tangible, having a computer  
15 readable program code embodied therein, said computer readable program code adapted to be executed to implement any or all of the methods shown and described herein. It is appreciated that any or all of the computational steps shown and described herein may be computer-implemented. The operations in accordance with the teachings herein may be performed by a computer specially constructed for the desired purposes  
20 or by a general purpose computer specially configured for the desired purpose by a computer program stored in a typically non-transitory computer readable storage medium. The term "non-transitory" is used herein to exclude transitory, propagating signals or waves, but to otherwise include any volatile or non-volatile computer memory technology suitable to the application.

25 Any suitable processor, display and input means may be used to process, display e.g. on a computer screen or other computer output device, store, and accept information such as information used by or generated by any of the methods and apparatus shown and described herein; the above processor, display and input means including computer programs, in accordance with some or all of the embodiments of  
30 the present invention. Any or all functionalities of the invention shown and described herein, such as but not limited to steps of flowcharts, may be performed by a conventional personal computer processor, workstation or other programmable device or computer or electronic computing device or processor, either general-purpose or specifically constructed, used for processing; a computer display screen and/or printer

and/or speaker for displaying; machine-readable memory such as optical disks, CDROMs, DVDs, BluRays, magnetic-optical discs or other discs; RAMs, ROMs, EPROMs, EEPROMs, magnetic or optical or other cards, for storing, and keyboard or mouse for accepting. The term "process" as used above is intended to include any type  
5 of computation or manipulation or transformation of data represented as physical, e.g. electronic, phenomena which may occur or reside e.g. within registers and /or memories of a computer or processor. The term processor includes a single processing unit or a plurality of distributed or remote such units.

The above devices may communicate via any conventional wired or wireless  
10 digital communication means, e.g. via a wired or cellular telephone network or a computer network such as the Internet.

The apparatus of the present invention may include, according to certain embodiments of the invention, machine readable memory containing or otherwise storing a program of instructions which, when executed by the machine, implements  
15 some or all of the apparatus, methods, features and functionalities of the invention shown and described herein. Alternatively or in addition, the apparatus of the present invention may include, according to certain embodiments of the invention, a program as above which may be written in any conventional programming language, and optionally a machine for executing the program such as but not limited to a general  
20 purpose computer which may optionally be configured or activated in accordance with the teachings of the present invention. Any of the teachings incorporated herein may wherever suitable operate on signals representative of physical objects or substances.

The embodiments referred to above, and other embodiments, are described in detail in the next section.

25 Any trademark occurring in the text or drawings is the property of its owner and occurs herein merely to explain or illustrate one example of how an embodiment of the invention may be implemented.

Unless specifically stated otherwise, as apparent from the following discussions, it is appreciated that throughout the specification discussions, utilizing  
30 terms such as, "processing", "computing", "estimating", "selecting", "ranking", "grading", "calculating", "determining", "generating", "reassessing", "classifying", "generating", "producing", "stereo-matching", "registering", "detecting", "associating", "superimposing", "obtaining" or the like, refer to the action and/or processes of a computer or computing system, or processor or similar electronic

computing device, that manipulate and/or transform data represented as physical, such as electronic, quantities within the computing system's registers and/or memories, into other data similarly represented as physical quantities within the computing system's memories, registers or other such information storage, transmission or display devices.

5 The term “computer” should be broadly construed to cover any kind of electronic device with data processing capabilities, including, by way of non-limiting example, personal computers, servers, computing system, communication devices, processors (e.g. digital signal processor (DSP), microcontrollers, field programmable gate array (FPGA), application specific integrated circuit (ASIC), etc.) and other electronic  
10 computing devices.

The present invention may be described, merely for clarity, in terms of terminology specific to particular programming languages, operating systems, browsers, system versions, individual products, and the like. It will be appreciated that this terminology is intended to convey general principles of operation clearly and  
15 briefly, by way of example, and is not intended to limit the scope of the invention to any particular programming language, operating system, browser, system version, or individual product.

Elements separately listed herein need not be distinct components and alternatively may be the same structure.

20

Any suitable input device, such as but not limited to a sensor, may be used to generate or otherwise provide information received by the apparatus and methods shown and described herein. Any suitable output device or display may be used to display or output information generated by the apparatus and methods shown and  
25 described herein. Any suitable processor may be employed to compute or generate information as described herein e.g. by providing one or more modules in the processor to perform functionalities described herein. Any suitable computerized data storage e.g. computer memory may be used to store information received by or generated by the systems shown and described herein. Functionalities shown and described herein may  
30 be divided between a server computer and a plurality of client computers. These or any other computerized components shown and described herein may communicate between themselves via a suitable computer network.

## BRIEF DESCRIPTION OF THE DRAWINGS

Certain embodiments of the present invention are illustrated in the following  
5 drawings:

Fig. 1 is a functional block diagram of a system and method for real time  
assessment of picture quality produced on a device, e.g. as shown in Fig. 2, having  
multiple sensors including use of hardware sensor data to generate and utilize picture  
quality indications.

10 Fig. 2 illustrates a hardware and operating system (OS) layer which is operative  
in conjunction with the functional block diagram of Fig. 1.

Figs. 3 and 4 illustrates component 400 in detail and a sample of a quality  
indicator computation dependence, all according to certain embodiments.

Computational components described and illustrated herein can be implemented  
15 in various forms, for example, as hardware circuits such as but not limited to custom  
VLSI circuits or gate arrays or programmable hardware devices such as but not limited  
to FPGAs, or as software program code stored on at least one tangible or intangible  
computer readable medium and executable by at least one processor, or any suitable  
combination thereof. A specific functional component may be formed by one particular  
20 sequence of software code, or by a plurality of such, which collectively act or behave  
or act as described herein with reference to the functional component in question. For  
example, the component may be distributed over several code sequences such as but  
not limited to objects, procedures, functions, routines and programs and may originate  
from several computer files which typically operate synergistically.

25 Data can be stored on one or more tangible or intangible computer readable  
media stored at one or more different locations, different network nodes or different  
storage devices at a single node or location.

It is appreciated that any computer data storage technology, including any type  
of storage or memory and any type of computer components and recording media that  
30 retain digital data used for computing for an interval of time, and any type of  
information retention technology, may be used to store the various data provided and  
employed herein. Suitable computer data storage or information retention apparatus  
may include apparatus which is primary, secondary, tertiary or off-line; which is of

any type or level or amount or category of volatility, differentiation, mutability, accessibility, addressability, capacity, performance and energy use; and which is based on any suitable technologies such as semiconductor, magnetic, optical, paper and others.

5

## **DETAILED DESCRIPTION OF THE INVENTION**

Certain embodiments of the present invention include a system and method for real time assessment of picture quality produced on a device having multiple sensors, such as a smartphone. In one embodiment, all of the sensors, such as but not limited to an image sensor, accelerometer or gyroscope, are embedded in one device. It may be that they reside in different devices, but send their data to one device where the total indicators are computed.

Fig. 1 is a functional block diagram of a system and method for real time assessment of picture quality produced on a device, e.g. as shown in Fig. 2, having multiple sensors including use of hardware sensor data to generate and utilize picture quality indications.

Referring now to Fig. 1, a Lens/sensor module 200 such as OmniVision OM8865 may be characterized by and/or generate photographic parameters, including but not limited to some or all of:

- a) The current image the sensor receives, referred to as a frame or image
- b) ISO speed (current, min, max)
- c) Is camera focused (yes/no/estimate if available).
- d) Aperture
- e) Focal length
- f) Shutter speed
- g) Focus rectangle, or area of interest
- h) Sensor type and size – for example BSI2 CMOS 1/2.5 inch
- i) Depth of Field
- j) Scene mode or user preferences.

These parameters may be used for computing quality indicator values and their confidence level, as indicated in Fig 3.

The module 200 sends continuous video frames of the scene in front of the device lens, and data from other sensors is continuously received and analyzed in real

time.

Typically, a smartphone includes all such sensor and hardware inside the smartphone. However, it is possible that the image may be sent to the device from an external camera via a cable or Wi-Fi. The image sensor sends its data to the device operating system that may send the whole image or a preview of it to the GPU 122 of Fig. 2 at a rate of X frames per second. This image data is passed on to various programmed GPU vertex and fragment shaders. It is then used for fast computation of some of the quality indicators.

Fig. 2 illustrates a hardware and operating system (OS) layer, which is operative in conjunction with the functional block diagram of Fig. 1.

### Errors and probability in quality indicators

When prior art computes a quality indicator value, it was done without taking into account the possibility of error in the computed QI, as all sensors give out errors.

For example, a user wishes to compute a quality indicator for device shake based on data from accelerometers. Accelerometers have precision errors and drifting errors over time. If the user wishes to compute a speed vector, this will be relevant. The speed may be assumed to be  $100 \pm 3$ . A GPS can estimate location and speed errors via its location computation. Errors may also occur as a result of blurriness of some sort, or may result from image resolution and many other factors. For example, assuming a device is moving at a constant speed, and  $V_i$  is the computed speed in frame  $i$ , where  $1 \leq i \leq n$ , then if value  $V_n$  is 2 standard deviation from the average speed measured so far, (and assuming a normal distribution), then probability for this value is 5%, denoted  $P_i(t)$ . Most of the time the speed may not be constant, but the above technique can nonetheless can be applied, mutatis mutandis, when errors can be estimated. The probability factor  $P$ , is closely related to the nature of the quality indicator and hardware used. For example, a GPS device has its own algorithm for that e.g. Kalman Filters. Beyond mere errors, recognition or pattern algorithms have assumptions that can be related to “probability” of the feature been searched. For example in object recognition, if 4 out of 5 features for this object (face, lamp, chair) have been recognized, a probability  $P$  of 80% is indicated. Other examples may be comparison to a similar image for same scene recognition, as objects have moved or just look similar. Aesthetic fit algorithms employ “probability” which pertains to this.

### Confidence level of quality indicator

Thus far, only a current image has been illustrated, but previous data can aid in computation of a better confidence level. This depends on the QI in question and the nature of the errors, but assuming a general case, one way of computing the confidence level of QI<sub>i</sub> denoted C<sub>i</sub>(t) is

$$C_i(t) = P_i(t_{j2}) * N(P_i(t_{j2}))$$

$$N(x) = e^{\frac{-(x-\mu)^2}{2\sigma^2}}$$

$$\mu_i = \sum_{k=t_1}^{t_2} \frac{P(t_k)_i}{k_2 - k_1}; \quad \sigma_i = \sqrt{\frac{1}{n} \sum_{k=1}^n (P(t_k)_i - \mu_i)^2}$$

t<sub>j2</sub> is the time of frame j<sub>2</sub>, the last frame so far.

t<sub>j1</sub> is the time of minimum frame j<sub>1</sub> computation which may be used.

N(x) is a formula for a normal distribution, σ the standard deviation and μ the mean value. The values in the distribution here are P<sub>i</sub>(t)

In the formula for computing normal distribution and standard deviation, there is a limit on the “looking back” portion of the computation, so when a significant event occurs at frame j<sub>1</sub>, it may be reset.

This example uses normal distribution, since nothing is known about the QI at hand, but this need not be the only distribution function. For example, if the location is measured by an accelerometer, accelerometer readout errors and drifting errors over time may be used to construct a better distribution function. For example, an accelerometer distribution function may be different for high acceleration and for low acceleration, since in low values the distribution will be more spread out than in high values.

Mean μ<sub>i</sub> and standard deviation σ<sub>i</sub> are computed from a specific frame j<sub>1</sub> until the current time (or just until the previous frame). This way a significant event in j<sub>2</sub> can be an indication to reset j<sub>1</sub> to j<sub>2</sub>, so the computations will not use frames before j<sub>2</sub>.

In another embodiment, one that doesn't use old data N=1, thus

$$C_i(t) = P_i(t_{j2})$$

There may be other methods to compute confidence. For example, GPS location algorithms (such as a Kalman filter) have their own way of computing confidence in the location, especially but not limited to, the mean of error in position.

If current GPS data say location has changed 3 meters in the last 15 milliseconds, but accelerometer data shows no change, and assuming that it is known from past computations that speed is relative zero, then the GPS data may not be trusted, and confidence in the GPS QI for movement, is low.

5 In another example, it may be that the lens module 200 report image is in focus, however independent focus blur QI 244 image is not in focus. This can affect the confidence of QI in component 248, where lens module QI is computed.

One way to compute the confidence level that is dependent on other values can be expressed as

$$10 \quad C_i(t) = P_i(t_{j2}) * N(P_i(t_{j2})) * \prod_{k=1}^n f_{ik}(t, QI(t)_k)$$

Where n is the number of available quality indicators, and i and k are running indices of the current quality indicator in question. The function  $f_{ik}$  denotes a function specific to these quality indicator correlations. If there is no correlation, the function will be regarded as the scalar 1. In the above example, i being QI in component 248, and one  
15 some value  $1 \leq k \leq n; k \neq i$  where k is the index for QI in component 244, the value of  $f_{ik}$  can be 0.5 if  $QI(t)_k < 0.7$ . (In this example all QI and confidence levels are normalized to 1).

More examples of use and computation of confidence levels are now described, as other components and quality indicators are introduced.

20

### **Quality indicators use of previous frames data**

The QI used in the total quality indicator,  $QI\_ForTotal(t)_i$  employs the current value of  $QI_i(t)$  but also the confidence level. The confidence level is a function  
25 of old values inherited by virtue of distribution formula  $N(t)$ . So if the QI value is significantly different then expected, the QI value's confidence level may drop thereby bypassing a current QI that may be problematic.

Other ways to bypass or wholly or partially discount a current wayward QI value include, say, recognition of an object or face. The object may have been in the field of  
30 view one frame ago, with high confidence, say 1/30 of a second ago. Now the QI say the object is no longer there, perhaps with low  $P_i(t)$  value. It is possible however that the object in fact is still there; just the recognition algorithm has misses the object. In

this example the method may override the current QI with the previous one, at least for a frame or two. More generally, old QI may be employed, particularly if its confidence level exceeds newer QI values, to generate an improved current QI value. One embodiment could be an average of the last few frames that had a high confidence level.

5 The availability of old QI, errors in them via  $P_i$ , and the computation of  $C_i$  provide other methods for determining the value of  $QI_i(t)$  e.g. for use in the total indicator. Algorithms of deep learning in neural networks, applied to confidence level data inter alia, may be used to better compute a current value of the quality indicator.

10 The following are examples of quality indicators and computational functionalities therefor, some or all of which may be provided as shown in Fig. 1:

#### **Blur detection in component 244**

15

Image blur can be of 2 types: focus or movement. In order to detect blur, quantify it and alert the user, its origin may be determined, so the user will have information on why the picture has inferior quality.

20 Blur caused by movement can be either due to the imaging device having moved (usually shake) and/or because the object which was photographed, moved. Both movements refer to the time the image is taken, and the shutter speed.

There are many algorithms for testing blur via frequency distribution in k space transformation such as DCT or other Fourier transform variants, for example prior art US20110096180. Other ways may be testing signal-to-noise ratio and searching for  
25 peak signal-to-noise ratio (PSNR). These algorithms can be used to create a blur quality indicator in component 244. This may assist in double checking the camera module 200 own focus assessment used in computation of QI in component 248. This is an advantageous step, since many quality indicators function better when they use previous frames, assuming they are all in focus. Retesting lens/camera module 200 own  
30 focus assessment may therefore be helpful.

#### **Device movement indication based on accelerometer**

Camera shake and movement can be quantified using an accelerometer  
206 to measure device 3D acceleration, and integrating this over time to determine

camera speed. The time of resetting the speed to zero is advantageous, since computation rounding and sensor errors may accumulate over time. This can be done in a few ways, for example: zero speed can be accessed when the device's acceleration is minimal and back and forth over a long time (meaning device is around some point in space).

### Device movement quality indicator 270

A person of skill in the field of photography would recognize the rule of thumb of focal length which may be reciprocal to the shutter speed if one wants to avoid camera shake due to hand shake. Component 200 provides these two parameters. Device/surrounding objects 4D position computation component 230 provides a position of the device as a function of time in some degree of confidence. Given an average hand jitter speed, one can set a threshold of the accepted speed of the device. For example, assume that for a shutter speed 1/15 of a second, speed may be less than 2 mm per second. 1 mm per second may provide excellent quality, 2 mm per second good quality and 2 cm per second very poor quality. Also a depth of field of the picture (DOF) can be computed, using the focus distance, aperture of the lens and so on. If the depth of field is small and subject distance is short (macro photography), then movement of the device in the z axis may have a profound effect on quality but for most pictures and devices this is not the case.

For example, a scene with a baby taken from 50 cm away with a Nikon D300, 50mm focal length lens, aperture of 1.8, means the depth of field may be 2.7 cm. This means that the baby's face may not be fully in focus, and an inferior quality may be indicated. For the same configuration with f/8 aperture, an excellent quality may be indicated.

These computations may aid in determining the importance of movement in the Z axis to the value of the QI. Let a function  $I_3(x)$  be the importance of the z axis. In one embodiment  $I_3(x)$  may be an exponential function of some sort. The other axes, x and y, each have their own function. They can also have an exponential function, but with a different factor. Given the speed  $V_i$  in each direction as given by Device/surrounding objects 4D position computation component 230 the following can be computed:

$$QI_{\text{device motion}} = \frac{\sum_1^3 I_i(x_i) * V_i(t)}{3}$$

This is one possible method for computation of the base QI for device motion which is not intended to be limiting. Other embodiments may for example use confidence levels .

5 Component 200 may have some kind of image stabilization - sensor shift, lens stabilization or other. In this case the lens or sensor movement speed in these image stabilizations may be incorporated into the speed  $V_i(t)$  in the formula above, for the QI to be correct. If this cannot be achieved with sufficient accuracy, the errors may be incorporated into this QI confidence level.

#### 10 **Object movement component 220**

There are many methods of computing a motion vector. A block matching method may be used, or a gradient method, etc., or if the motion vector information is included in the input image signal in some form, this information may be utilized. The motion of the objects in the image frame is caused by the combination of two factors: real object  
15 movement and apparent movement caused by device movement.

When computing object speed in the image frame, one must subtract the device movement as computed in Device/surrounding objects 4D position computation component 230 from the object speed vector computed.

20 Methods of statistical pattern recognition may be used to fully recognize actual objects, such as a chair, a tree, a face or a car. If either the imaging device or object is moving, the identity of the object may be considered as a factor for the related confidence level; e.g. a car is much more likely to be moving during imaging than is a tree. Objects that are in the focus rectangle or area of interest are more significant to quality. If there is some movement at a far end region (or: at a significant distance), this  
25 may not greatly affect the quality indicator.

#### **Object movement quality indicator 260**

The data from component 220 can be used to create a quality indicator about blur due to subject movement. Normally, no movement would indicate excellent quality, and high-speed movement would indicate low quality.

30 Some objects are more important than others for a “good” picture. For example, often a face is more important than a chair. In order to compute this subject movement quality indicator, each object may be recognized and its movement vector and significance may be factored into the quality indicator dependent on this object’s movement.

This computed data may be used to alert the user of motion of a specific object that is considered important such as a face located in the center of an image.

One way of computation of this quality indicator, noted  $QI_{\text{subject movement}}$ , may be:

$$5 \quad QI_{\text{subject movement}} = \frac{\sum_n A(x_i) * B(x_i) * S(x_i)}{n}$$

where  $A(x)$  – binary/multi-value indicator: is object inside or outside of, within, close to or far from, the focus/interest area rectangle

$B(x)$  – importance of object to a picture

10  $S(x)$  – object speed factor. A desired speed may be assigned a “high” value of 1, and 0 may be assigned for non-desired speed, with possible values in the middle. If the object is not to look blurred, it should be standing still relative to the current shutter speed. In that case a high value may be a slow speed. However, speed of an object may be desirable, e.g. to create the artistic impression of movement in the picture. In such a

15 case, a high value may be assigned to a high speed.

Each factor is normalized to 1 in this example.

In one embodiment, if the motion vector’s estimation quality is not sufficient, the camera module may be instructed to take a picture of a different exposure, say a shorter

20 one, to measure the movement more precisely.

### **Computing object motion vector via corners detection**

Algorithms such as Harris corner detection or its variants such as Shi Tomas corners detection may be used to determine whether the new image frame has more or less

25 details than the previous frame. This determination may be combine with data from the gyroscope and accelerometer, if provided, to indicate whether or not the device has moved and/or the quality has severely deteriorated or increased.

The total quality indicator can be shown to the user in real time. Also, given a configurable “minimum” quality, an indication to the user can be made if the image

30 total quality indicator is below this minimum.

In each region, the number of corners are counted and their center of gravity is computed. This is done for each region on each frame. The path of each center of

gravity may then be followed over each region and a motion vector may thereby be computed. This may be feasible if the speed of the object is slow, since when the speed is quick, the corners may become blurred.

## 5 **Image leveled to horizon quality indicator 271**

The device gyroscope 205 and accelerometer 206, both of which may or may not be provided or available, may be used to compute device angle to the horizon, or how the device is leveled. Using this data, a quality indicator for “device leveled according to its orientation”, is computed. For example, zero to 3 degrees is “excellent” quality,  
10 3 to 5 degrees is “good” quality and so on. The user may hold the device either horizontally or vertically.

### **Camera focus quality indicator 248**

As already mentioned, component 200 may send to component 248 data if component 200 is currently in focus, thereby to form an “excellent” quality indicator  
15 level for already-focused and “bad” quality indicator for still-focusing. Some camera modules may provide a focus estimation of their own. In such cases, this may be incorporated into or replace the quality indicator to provide more than a yes/no quality indication.

Furthermore, when the lens focuses, the frames received from the camera module  
20 are blurred, so the quality indicators related to the blur or object motion detection may be affected. In one implementation, the frames with low focus quality, may be removed when computing these quality indicators.

The lens/camera module 200 may also report its own focus confidence level.

Ideally, the focus indication sent by component 200 may coincide with component  
25 244 QI. However, if it does not, say 244 indicates out of focus and 200 indicates in focus, this can be used to lower 248 confidence level, as demonstrated in the confidence level section.

### **Face detection quality indicator 249**

This quality indicator indicates whether there is a face or faces and whether the face  
30 is smiling and/or looking at the camera. These indicators are passed on to a component 249 that analyzes the relevance of each of them, and yields a “total” quality value for this quality indicator.

Furthermore, one may determine if each face is smiling and/or looking at the camera. This data may be used for a quality indicator. For example, a scene in which

over 90% of the faces are looking at the camera and 80% are smiling, equals “excellent” face quality, while a scene in which none are looking and none are smiling indicates “bad” quality. Importance of the smiling/not smiling factor may be configured by the user via component 151.

#### 5           **Recognized face quality indicator 250**

The device may have a list of configured faces to recognize and for each, pre-stored, their importance, say a user family member or work colleague. The data may also include specific face features. This is denoted as component 212,

10           Recognition of these faces in component 217 may be used by component 250 to produce a quality indicator based on importance as well as face quality, as before. Face importance may change over time by the user, or automatically, by learning user preferences. Confidence level may be computed similarly to 249. However, since it is a known person, more data may be obtained to enhance face recognition, such as face features from various angles, glasses, etc.

#### 15           **ISO level and camera hardware exposure data 245**

Data such as ISO level, exposure time, focal length, and aperture and focus area is sent from the lens/camera module 200.

20           Depending on the device capabilities, such as maximum and minimum ISO, a quality indicator is produced. High ISO gives bad quality vs low ISO that gives a high quality indicator.

An optional exposure time quality indicator may be created, if a minimum exposure time is configured.

#### **Lens focal length, aperture, focus distance, sensor type and model and depth of field 247**

25           Depending on the device capabilities to change focal length and aperture, and given a known configured scene, a quality indicator may be provided to indicate how these parameters confront the given scene. For example, if the scene is a portrait and no face is detected by component 216 yields a bad QI.

30           Another example may be to use the sensor type and model (component 200) to yield a QI related to it – professional quality may yield good quality, when a poor quality, less costly component, yields poor quality.

Another embodiment for this QI is for testing background blurring, which may sometimes actually be desired. For example, a scene with face recognition in 216 and a very small aperture, say f10 with focus distance in the hyper focal distance of

component, 200 yields a bad quality, whereas a wide aperture, say f2.8 on these conditions, yields a good quality.

### **Under and overexposed quality indicator 243**

Given configurable under and over thresholds (say 5% from pure white and 3% from pure black) the image frame given to the GPU is processed to compute areas that are underexposed and areas that are overexposed, e.g. similar to the zone system by Ansel Adams known in the field of photography.

The image frame is divided to a configurable number of areas; say 256 areas or 1024 areas. If a configurable number of percentages of pixels in an area (say 95%) are under or over exposed, the area is marked as under or over exposed. If the image sensor or operating system supports scene recognition/ scene mode, or object recognition is present, then the image sensor or operating system may be used in the evaluation of this quality indicator. For example, if the sun or a lamp is the brightest area in the image, they may be ignored. A point of bright light like the sun or a light bulb may be recognized by their pattern and may be ignored.

On another embodiment, the computation may be based on percentage of over and underexposed pixels in the image.

An image in which a large percentage is marked as over or under exposed, say over 40%, may get a bad over/under quality indicator. The same thresholding method may be used for the method of areas described before e.g. if over 40% of 256 areas are considered over exposed.

In another embodiment, pixel or areas inside or outside the focus area of the picture, as given by the lens/camera module 200, may have a different weight e.g. pixels or areas outside the focus area may have a lower affect on the quality indicator value.

This indicator may be used to indicate to the device that an High dynamic range (HDR) shot may be taken, and may be done either automatically or by notifying the user. Depending on the device, this may be done automatically by taking 2 pictures with different exposure settings.

### **Histogram quality indicator 241**

The under/over quality indicator is a special case of a more general quality indicator taking into account not just the histogram extreme, but also its central part, and also taking into account function structure and lens/camera module 200's available dynamic range.

This may be no reference, or a full reference (meaning in computation there is or

there is not a reference to a preferred image), e.g. as in “The Design of High-Level Features for Photo Quality Assessment“ by Yan Ke, Xiaoou Tang and Feng Jing.

#### **Obstructing the lens quality indicator 246**

Obstructing the lens may occur as a result of putting the finger partly or fully on the lens. For example, in bright conditions there may be a brown-red area in one corner. In dark conditions there may be no light at all in that location. Confidence in having recognized the situation may be enhanced as more frames are taken and the camera is moved around because if there is no obstruction on the lens, then the size of the area previously believed to be obstructed, would change significantly. There may be other objects causing obstruction that may be recognized. If they are recognized, their name can be used in feedback to the user, instructing him to remove the obstruction.

The amount of area and confidence may be used to give this quality indicator a degree/rating between “excellent” and “bad”. For example, a finger blocking the lens may look on the image as a brownish area, probably in a corner of the frame. If the color were green, or it is an isolated area in the middle, the confidence would be low.

For the previous example (finger blocking appearing as a brownish area) the confidence is high.

#### **Functionality 230 - Measuring distance to objects and creating a 4D environment measurement in real time e.g. by computation of Device/surrounding objects 4D position**

As already described, the speed of the device in each direction may be measured and the distance traveled may be computed.

With the help of a GPS (e.g. based on unit 202 in Fig. 1) and/or step counting hardware (unit 203) accuracy in the range of a few dozen or a dozen or centimetres or even a single centimetre may be computed by a person skilled in the area for the device 3D relative position in time, thereby to yield 4D position.

This could be used by component 270 to yield better QI accuracy. By measuring the boundaries of an object in one location and again in another location, after moving the device, the distance to the object may be measured (assuming the object is still). e.g. via parallax. Parallax is the apparent displacement of an object because of a change in the observer's point of view. Since cameras today easily achieve 8MP and more, typically, distance can be computed providing parameters such as lens focal length from component 200.

The 3D scene is built according to the input images from the image capturing unit 200 or any other sources. It can be based on multi-view image geometry techniques as introduced in “Multiple View Geometry in Computer Vision” by R. I. Hartley, A. Zisserman, Cambridge University Press (2004). The user may help by moving the  
 5 device, either by walking a few steps or holding the device at full arm’s length and swinging it pointing to the scene in question. However, a full 3D scene reconstruction is not required. A partial reconstruction, including scene change in time, may suffice.

Since the methods used to estimate the distance include integrated estimation, such as the distance is between 2 to 3 meters, a confidence level on each object can be  
 10 constructed, similar to that described in the confidence level section. Also, since the device position itself may have errors or uncertainties, this also can be used in the confidence level of each object. This confidence level can then be used by quality indicators using this component data, so that they may implement their own confidence level.

#### 15 **Aesthetic rules quality indicators 240**

In photography, there exist ‘golden rules’ for fitting of the composition to a section that may give a better aesthetic looking picture. There are heuristics that provide a means of achieving an eye-pleasing composition such as but not limited to: rule of thirds, golden triangle, golden spiral, shapes and lines, amputation avoidance, visual  
 20 balance, and diagonal dominance.

For example, when taking a picture on a beach, the sea and sky meet on the horizon ‘line’. To fit this rule, one must put the line either at one third-height or two-thirds height, thereby fitting the “rule of thirds”. Either one is “correct”. However, putting the line in the middle creates a composition that is considered less favorable to the  
 25 viewer.

There are various methods of testing a fit to this rule, for example in “Photographic”, *Volume 29 (2010), Number 2 “Optimizing Photo Composition”* by L. G. Liu, R. J. Chen, L. Wolf, and D. Cohen-Or.

Further types of aesthetic models exist, based on chroma and exposure. Some may only  
 30 give a non-reference quality indication without suggestion on coordinate change, as in the previous article. For example, a model is described in published US20130188866.

In another embodiment, multiple aesthetic qualities may be used.

This aesthetic QI, can be used for suggestion to the user to move from his

current location to another location, together with the other quality indicators like under/over, it may be suggested to the user that he should move from his current location.

For example, a lamp in the street behind a person at night will not be good even if it fits a golden rule. Using data from Device/surrounding objects 4D position computation component 230, we can assess distance to the person's face, say 2 meters, the distance to a lamp of 4 meters height 4 meters behind him, we can suggest to the user that he should move 2 steps to the right and one forward, tilting the device 20 degrees to the left if he wishes to achieve a better aesthetic QI score and a better total QI.

#### **Functionality 242: Same scene quality indicator**

One of the problems solved by certain embodiments of the present invention include a processing system to reduce or eliminate any need to take multiple pictures of the same scene, in order to get one good picture. If the proposed system negates this need, it may be helpful to indicate to the user he is taking unnecessary pictures that may only be a burden at a later stage.

This is a heuristic quality indicator, taking into account the time, location of device, angle of device, object movement in the device and other parameters, including but not limited to photographic parameters such as ISO and focal length. It may require these parameters of previous pictures taken in recent time. One possible implementation includes comparing each QI and its confidence data to the QI and associated confidence level of a previously recorded and saved image in the last say 5 seconds (configurable). If the data of each QI is the same, it may be concluded that it is a "bad" same scene quality indicator.

#### **Functionality 400 and 401: Combining the separate quality indicators to total quality indicators**

As described herein, some quality indicators and their confidence levels may depend on other QI data. For example, aesthetic QI computation 240 may need the data on image leveled to horizon from component 271. If confidence of 271 is very low, it may not use any other data. Some, but not limited to, examples of QI computation components can be seen in Fig 3.

Some quality indicators may be considered mandatory (unless specifically turned

off) since they cause unacceptable blurring of the image:

- Focus
- Subject movement
- Device movement

5 Each device may have different hardware capabilities, thereby may not yield all the possible quality indicators or may not be able to process detail indicators, due to slow hardware. Some indicators may be ignored, if so configured by the user. One is then left with a set of indicators with which to compute.

10 A QI use in a total indicator may vary depending on situation. For example, “overexposed” quality indicator computation 243 may use data from object recognition in component 220. If the picture shows a sunset, it is likely that there will be over and underexposed areas, so in one embodiment it may be chosen to decrease importance of a sun-lit area and be less sensitive to overexposed QI in total computation. In another example, face exposure check may be increased if the face quality indicator suggests  
15 there is a face.

$$QI\_ForTotal(t)_i = QI(t)_i * \prod_{j=1}^n f_{ij}(t, QI(t)_j, C_j)$$

As can be seen in this formula, there is a dependency in the confidence level  $C_j$  before it is used, so data of QI with low confidence level may not be used. There may be other ways to formulate these connections. This may be employed as a general case.

20

$$QI_{total} = \sum_{i=1}^n QI\_ForTotal(t)_i * w(t, C_i)_i$$

$W(t)_i$  is the weight of each QI in the total and may be used to ignore QI if desired.  $W(t)_i$  is dependent on time, since the user may choose to change it.  $W(t)_i$  may be dependent on the confidence level. For example, if it is not desired to include below say 10% confidence, and  $w_i$  will be zero if  $C_i < 0.1$ .

25 There can be more than one type of total QI. For example, when computing total QI, and only mandatory QI are chosen (QI’s considered mandatory by an application or use case), a mandatory total QI may be provided. This QI may be used to decide when to take the picture, e.g. as described below. Another option is to use all the QI to get a sense of the picture quality as a whole. One can choose to formulate other total QI for  
30 other needs.

This formula is just one way to achieve a total indicator that is dependent on quality

indicators, their confidence levels and their relations. The idea is to enable a general formula as quality indicators are added or removed in some embodiments, or for different implementations with various levels of complexity and interconnections between QI.

5                   **Functionality 502: Taking a picture at the proper time using total quality indicator**

It may be that the picture will not be taken when the shutter is pressed, but only when a minimum threshold on specific QI with specific confidence level is met, when a total QI minimum threshold is met, or timeout occurs.

10 In such cases, the user may be shown, in real time, the QI values and possible suggestions, as indicated in 501. The data for the suggestions may be in 520, where QI and their confidence level may be used to show suggestions. Suggestions can be shown for QI how a value is no good, and confidence level beyond a threshold, say 0.7.

15 The QI indication user interface may be a number, and may even be an icon representing the quality. For example 5 smiles may each represent a quality indicator. Smiling face – good, crying face – bad, and so on.

A picture, once taken, may be shown to the user with its quality indicators, together with further suggestions on how to improve (for example “image is  
20 underexposed in a large area”).

The image may not be saved or may be deleted if total QI or any other predetermined QI is below some quality indicator threshold. After the image is saved, the quality indicators may be saved along with the image (one embodiment may be to use the EXIF convention used in JPEG files) so that they may be used at a later stage, such as when  
25 a user wants to see the picture quality days after it was taken.

**Suggestions to the user on how to improve the picture and component 520**

The user may choose to get suggestions from the application on how to improve the next shot. The application may use the quality indicators and their correlation to  
30 answer that.

This can be done before a final picture is taken and/or after. The application may use quality indicators, their confidence level, importance and their correlation to respond. This is where the database with user suggestions, component 520, is used. The data in this can be a table of text to be shown for every given QI with a low

value. In a more complex embodiment, it can be an SQL table being queried by multiple QI. An example of such a query on the database may be “select \* from suggestion\_table where QI1 > 0.9 and QI2 < 0.2” In this example QI1 can be module 200 ISO speed and QI2 can be device shake QI. The text retrieved can be “Try to use  
 5 higher ISO speed to counteract device shake”. Another example can be QI1 is QI of 248 and QI2 is of 244. The text retrieved can be “focus may be off. Focus one another subject and try again”. There may be more complicated queries and embodiments, as a person in the field of databases can easily construct, given ideas from a person in the field of photography.

10 Text suggestions may be accompanied by an image explaining them. For example, if there is a low quality indicator of under/over exposure, the implication may be presented to the user via text, and overexposed areas on a picture preview may be painted in red, and underexposed areas may be in blue.

The confidence levels may aid in recognizing the best suggestion to be retrieved  
 15 from a table of suggestions. For example, one may use a QI with confidence larger than 0.5, and show suggestions in the order of confidence levels. In another example, certain QIs may always have priority over others, even if their confidence levels are lower than others, as long as they are higher than, say 0.7.

#### **Device movement gestures as indications for shutter press and delete**

20 In another embodiment the user may not need to indicate he is ready by first pressing the shutter. In such cases, the device may assume that the user is ready at any time, or may wait for the device to be stationary hence pointed at some specific point in space for a certain configured time. For example, the user may pull the device out of his pocket and point it to the desired scene and hold it there for a duration of one second.  
 25 The device hardware may detect that the device has been in motion for a few seconds, and then held relatively still in space, pointing at a certain direction for say one second. The system may assume that the user pulls the device out of his pocket in order to take a picture, and thus goes into “take picture” mode, waiting for the quality indicators to be above the threshold, then taking the picture automatically. The user may hear the  
 30 sound of a picture being taken and return the device to his pocket. A shake gesture (available in mobile OS like iOS) may be an indication to the device to delete the picture and start again. Alternatively, the shake gesture may be recognized via the device shake QI.

#### **Using the system to evaluate video quality**

A quality ranking system over continuous frames, may be used to evaluate a video comprising said frames. One method would be to compute and average the total quality indicators over frames.

In another embodiment a different set of weight functions  $w_i$  may be used e.g. different weights for different frames.

**Further examples of system use are as follows:**

- a) If device shake QI is bad or camera focus QI is bad, disregard use of aesthetic QI in total computation, even if user has indicated he would like to give it a high priority. This will prevent the device from taking a picture when the picture is blurry. The suggestion to the user can be “Hold still” or “wait for focus”. Once shake is low and focus is optimal, aesthetic QI in total quality computations may be used.
- b) Quality reported by lens module 200 showing focus is fine, but independent focus blur QI 244 shows the lens is completely out of focus e.g. due to a poor lens module focus application. Therefore, confidence in the lens focus quality indicator drops and the weight of this indicator in the total quality may be reduced.
- c) Device movement QI confidence level computed in 270 is low due to errors in computing location in Device/surrounding objects 4D position computation component 230, or to sub standard accelerometer, but face recognition system 216 with excellent confidence level, insists on a face for 10 frames straight. In this case, use face recognition QI in total QI even if shake in 270 is high, but only at a reduced percentage of, say, 50% of normal face QI.
- d) Device movement importance is high if the depth of field of the lens is very small (for instance, in macro photography). For a quality picture, high confidence and low value of device shake QI in 270 are desirable, and their weight in the total QI may be high. User suggestions can be to hold still or use a flash, for example.
- e) If previous frames indicated a face in the far left or right of the picture, and now there is no face, it is very possible that the picture has “half a face”, amputation, so that may be the feedback to the user. For example, a face has been identified by the face recognizing QI, but attributes low confidence as a result. The system can alert the user of a possible face amputation.
- f) A person may want to take a picture of, say, his spouse in a scenic location, or

near a historic building. He may choose to give aesthetic QI and recognized person a high priority. This priority may enable to build a total QI with that weight, and to instruct the photographer to move a few meters to the right and left for example, to get an approximated 3D environment in Device/surrounding objects 4D position computation component 230. The device may measure all QI, especially the aesthetic QI, and may instruct the photographer on the best location to stand. This may depend on the place with the best total QI.

The system may if desired be implemented as a web-based system employing software, computers, routers and telecommunications equipment as appropriate.

Any suitable deployment may be employed to provide functionalities e.g. software functionalities shown and described herein. For example, a server may store certain applications, for download to clients, which are executed at the client side, the server side serving only as a storehouse. Some or all functionalities e.g. software functionalities shown and described herein may be deployed in a cloud environment.

Clients e.g. mobile communication devices such as smartphones may be operatively associated with but external to the cloud.

It is appreciated that terminology such as "mandatory", "required", "need" and "must" refer to implementation choices made within the context of a particular implementation or application described herewithin for clarity and are not intended to be limiting since in an alternative implantation, the same elements might be defined as not mandatory and not required or might even be eliminated altogether.

It is appreciated that software components of the present invention including programs and data may, if desired, be implemented in ROM (read only memory) form including CD-ROMs, EPROMs and EEPROMs, or may be stored in any other suitable typically non-transitory computer-readable medium such as but not limited to disks of various kinds, cards of various kinds and RAMs. Components described herein as software may, alternatively, be implemented wholly or partly in hardware and/or firmware, if desired, using conventional techniques. Conversely, components described herein as hardware may, alternatively, be implemented wholly or partly in software, if desired, using conventional techniques.

Included in the scope of the present invention, inter alia, are electromagnetic signals carrying computer-readable instructions for performing any or all of the steps or operations of any of the methods shown and described herein, in any suitable order including simultaneous performance of suitable groups of steps as appropriate;

machine-readable instructions for performing any or all of the steps of any of the methods shown and described herein, in any suitable order; program storage devices readable by machine, tangibly embodying a program of instructions executable by the machine to perform any or all of the steps of any of the methods shown and described  
5 herein, in any suitable order; a computer program product comprising a computer useable medium having computer readable program code, such as executable code, having embodied therein, and/or including computer readable program code for performing, any or all of the steps of any of the methods shown and described herein, in any suitable order; any technical effects brought about by any or all of the steps of  
10 any of the methods shown and described herein, when performed in any suitable order; any suitable apparatus or device or combination of such, programmed to perform, alone or in combination, any or all of the steps of any of the methods shown and described herein, in any suitable order; electronic devices each including a processor and a cooperating input device and/or output device and operative to perform in software any  
15 steps shown and described herein; information storage devices or physical records, such as disks or hard drives, causing a computer or other device to be configured so as to carry out any or all of the steps of any of the methods shown and described herein, in any suitable order; a program pre-stored e.g. in memory or on an information network such as the Internet, before or after being downloaded, which embodies any or all of  
20 the steps of any of the methods shown and described herein, in any suitable order, and the method of uploading or downloading such, and a system including server/s and/or client/s for using such; a processor configured to perform any combination of the described steps or to execute any combination of the described modules; and hardware which performs any or all of the steps of any of the methods shown and described  
25 herein, in any suitable order, either alone or in conjunction with software. Any computer-readable or machine-readable media described herein is intended to include non-transitory computer- or machine-readable media.

Any computations or other forms of analysis described herein may be performed by a suitable computerized method. Any step described herein may be  
30 computer-implemented. The invention shown and described herein may include (a) using a computerized method to identify a solution to any of the problems or for any of the objectives described herein, the solution optionally include at least one of a decision, an action, a product, a service or any other information described herein that impacts,

in a positive manner, a problem or objectives described herein; and (b) outputting the solution.

5 The scope of the present invention is not limited to structures and functions specifically described herein and is also intended to include devices which have the capacity to yield a structure, or perform a function, described herein, such that even though users of the device may not use the capacity, they are if they so desire able to modify the device to obtain the structure or function.

Features of the present invention which are described in the context of separate embodiments may also be provided in combination in a single embodiment.

10 For example, a system embodiment is intended to include a corresponding process embodiment. Also, each system embodiment is intended to include a server-centered "view" or client centered "view", or "view" from any other node of the system, of the entire functionality of the system, computer-readable medium, apparatus, including only those functionalities performed at that server or client or node.

Conversely, features of the invention, including method steps, which are described for brevity in the context of a single embodiment or in a certain order may be provided separately or in any suitable subcombination or in a different order. "e.g." is used herein in the sense of a specific example which is not intended to be limiting.

20 Devices, apparatus or systems shown coupled in any of the drawings may in fact be integrated into a single platform in certain embodiments or may be coupled via any appropriate wired or wireless coupling such as but not limited to optical fiber, Ethernet, Wireless LAN, HomePNA, power line communication, cell phone, PDA, Blackberry GPRS, Satellite including GPS, or other mobile delivery. It is appreciated that in the description and drawings shown and described herein, functionalities described or illustrated as systems and sub-units thereof can also be provided as methods and steps therewithin, and functionalities described or illustrated as methods and steps therewithin can also be provided as systems and sub-units thereof. The scale used to illustrate various elements in the drawings is merely exemplary and/or appropriate for clarity of presentation and is not intended to be limiting.

25

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**CLAIMS:**

1. A method for computing photo quality of a captured image in a digital image acquisition system, comprising an image capture component for capturing in a buffer, a current digital image having pixels, where said method comprising combining of:
  - a plurality of quality indicators computed from at least one of:
    - said captured image pixels, camera module 200 current photographic parameters and inertial measurement hardware components readouts;
  - and combining of at least one time-dependent confidence level  $C_i(t)$  computed for at least one quality indicator,
    - where said confidence level is computed via heuristically estimating probability of said quality indicator for said current image and its said parameters;
    - and determining, based on said combining, a total quality indicator for said photo.
2. A method according to claim 1 where one total quality indicator passed a predefined threshold, the captured image is stored in memory.
3. A method according to claim 1 wherein a stream of frames is saved as video and quality indicators are used to quantify quality of said video.
4. A method according to claim 1 where at least one quality indicator is computed based on a hardware component including at least one of an accelerometer, gyro, GPS receiver.
5. A method according to claim 1 wherein at least one of said indicators characterizing quality is computed based on analyzing said photo pixels.
6. A method according to claim 1 wherein at least one of said indicators characterizing quality is computed based on comparing said pixels to previous frame data generated by said image capture component.
7. A method for computing photo photo quality of a captured image in a digital image acquisition system, comprising an image capture component for capturing in a buffer, a current digital image having pixels, where said method comprising combining of:
  - a plurality of quality indicators computed for said photo;
  - and combining of at least one time-dependent confidence level  $C_i(t)$  computed for at least one quality indicator, where said confidence level is based on previous quality indicators made in close succession from stream of frames that came just before said current photo frame, as done is video frames;
  - and determining, based on said combining, a total quality indicator for said photo.

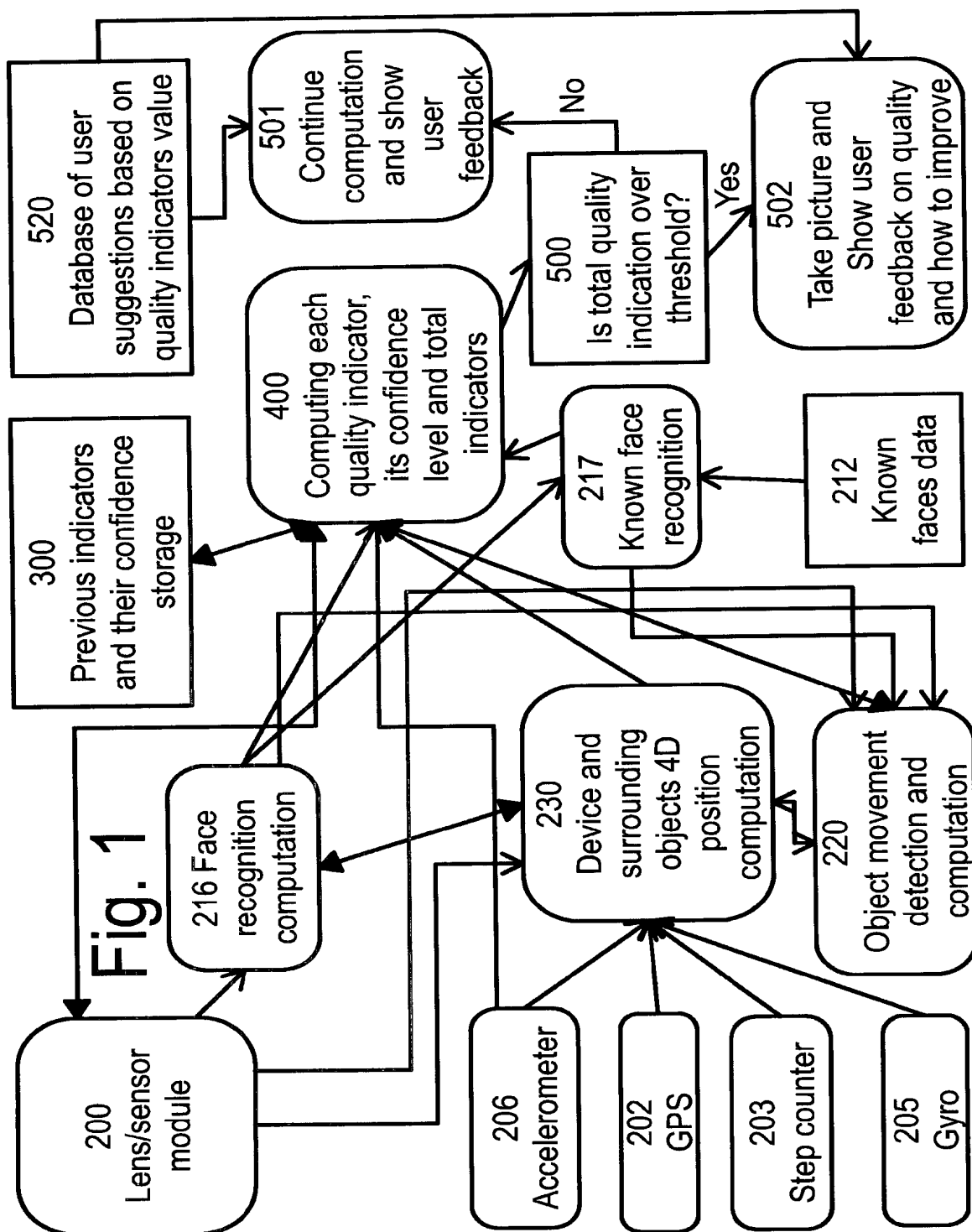
8. A method according to claim 7 where at least one quality indicator is computed based on a hardware component including at least one of an accelerometer, gyro, GPS receiver.
9. A method according to claim 1 wherein at least one of hardware component is based on a flying drone.
10. A method according to claim 7 wherein at least one of hardware component is based on a flying drone.
11. A method according to claim 7 wherein a stream of frames is saved as video and quality indicators are used to quantify quality of said video.
12. A method according to claim 1 wherein based on at least one of: quality indicators, their time-dependent confidence level  $C_i(t)$  or the total quality indicator;  
where said method will include a command for the capturing device camera/lens module 200 to change at least one of its photographic parameters: exposure time, ISO, focus distance, white balance.
13. A method according to claim 7 wherein based on at least one of quality indicators their confidence or the total quality indicator the system will direct the capturing device camera/lens module 200 to change at least one of its photographic parameters: exposure time, ISO, focus distance, white balance.
14. A method for computing photo quality of a captured image in a digital image acquisition system comprising an image capture component for capturing in a buffer, a current digital image having pixels, where said method comprising combining of:  
a plurality of quality indicators, and determining, based on said combining, a total quality indicator for said photo, where at least one weight of one quality indicator is effected by at least one second quality indicator value.
15. A method according to claim 14 wherein second quality indicator value is based on time-dependent confidence level  $C_i(t)$  computed from said probability of second quality indicator value, where probability is computed via use of said second quality indicator values from previous close succession image frames.
16. A method according to claim 14 wherein the system will direct the capturing device camera/lens module 200 to change at least one of its photographic parameters (exposure time, ISO, focus distance etc.) based on at least one of: quality indicators or quality indicators confidence level  $C_i(t)$  or total quality indicator.
17. A method according to claim 14 wherein a stream of frames is saved as video and quality indicators are used to quantify quality of said video.

18. A method according to claim 14 where at least one quality indicator is computed based on a hardware component including at least one of an accelerometer, gyro, GPS receiver.
19. A method according to claim 14 wherein at least one of hardware component is based on a flying drone.
20. A method according to claim 14 where one total quality indicator passed a predefined threshold, the captured image is stored in memory.

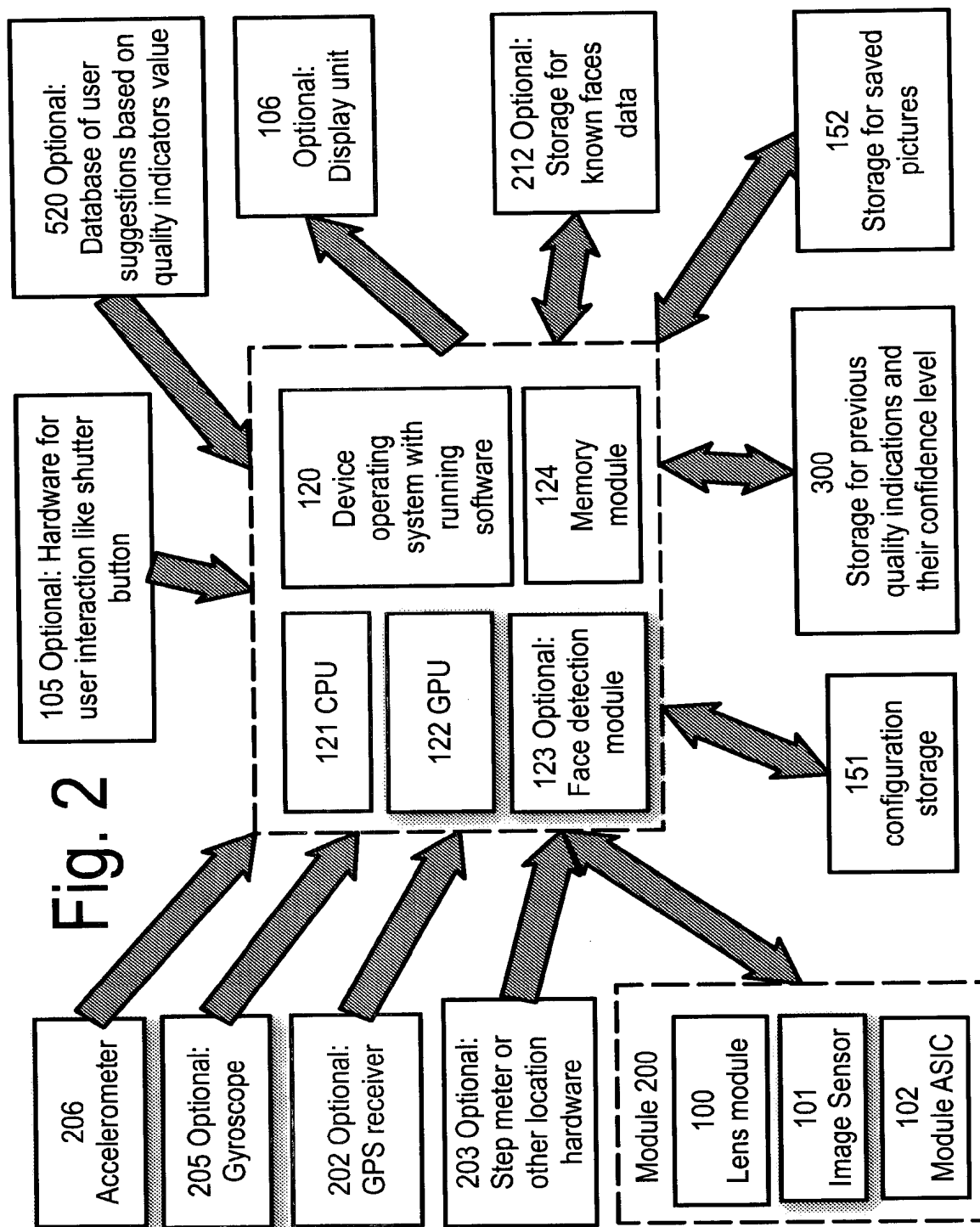
**ABSTRACT**

A computerized method for computing the photo quality of a captured image in a device image acquisition system, comprising on-board combining of a plurality of quality indicators computed from said captured image and its previous image frames quality indicators and a confidence level for at least one of said quality indicators,; and using a processor to determine, based on said combining, whether photo quality is acceptable and taking differential action depending on whether quality is or is not acceptable.

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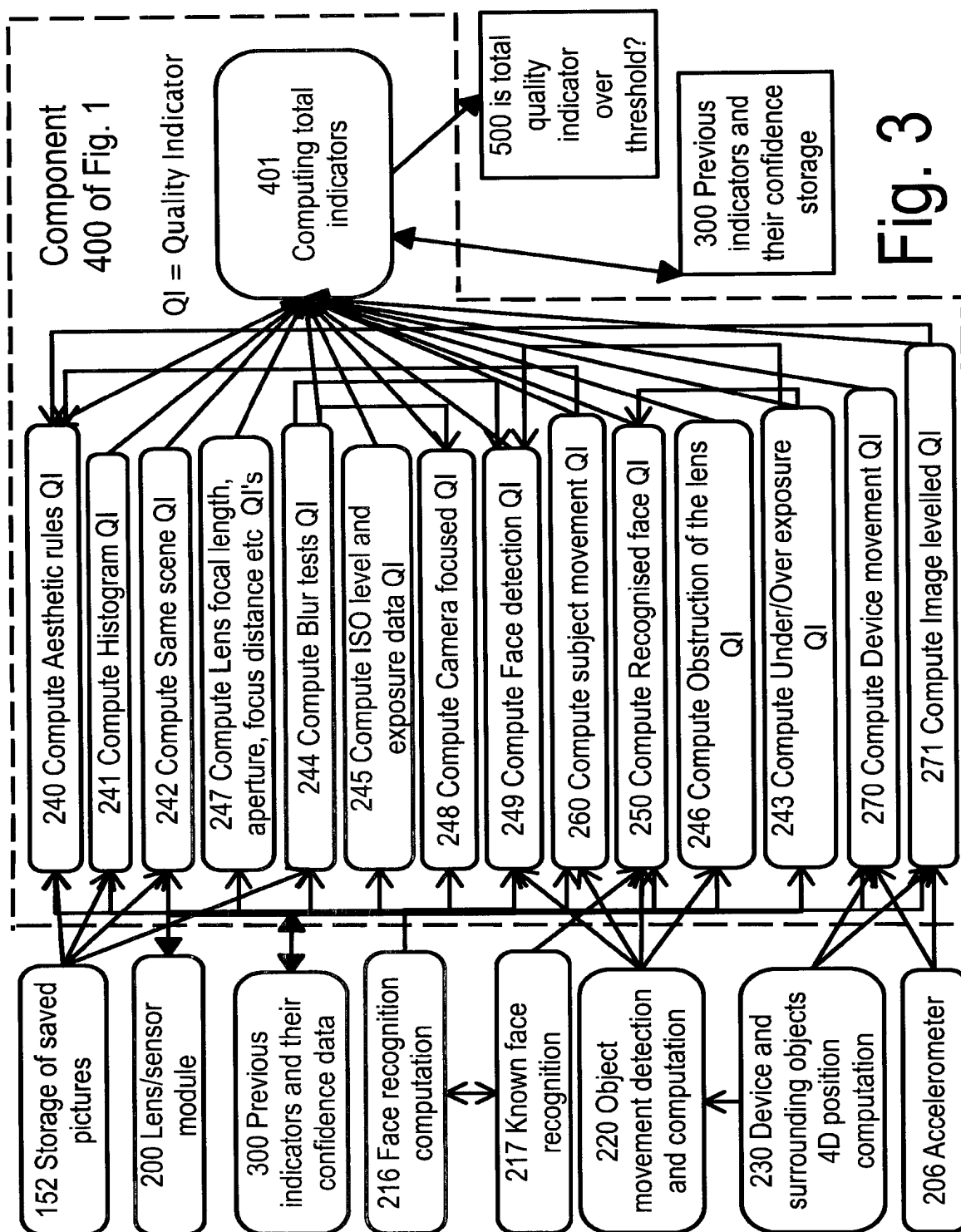
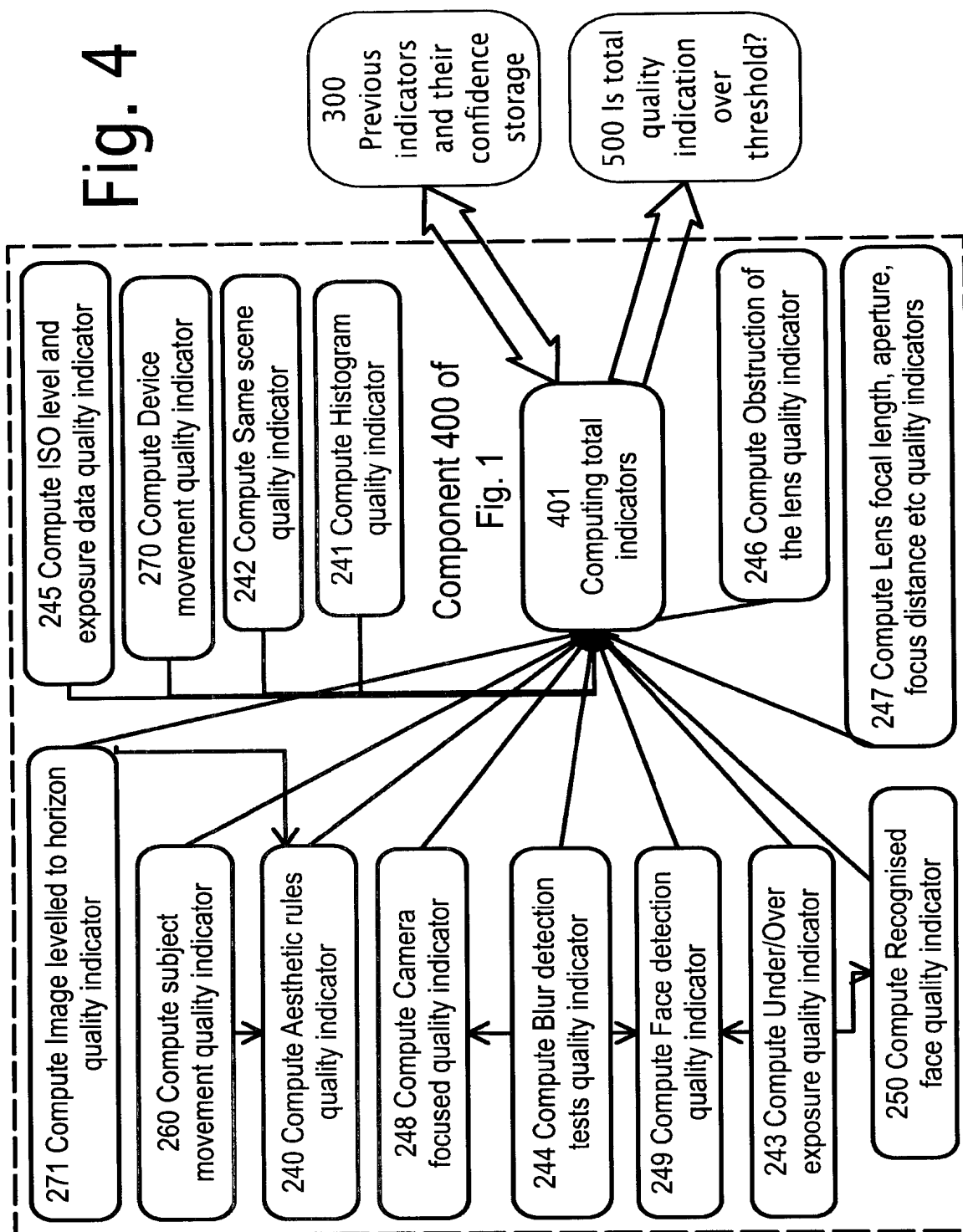


Fig. 3

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |                        |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------|---------------|
| <b>Application Data Sheet 37 CFR 1.76</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         | Attorney Docket Number | SIVAN-001-US1 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         | Application Number     |               |
| Title of Invention                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |                        |               |
| <p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p> |                                         |                        |               |

**Secrecy Order 37 CFR 5.2**

|                          |                                                                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.) |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Inventor Information:**

|                                                                                                                                             |                       |             |                                   |        |        |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------|-----------------------------------|--------|--------|
| Inventor                                                                                                                                    | 1                     |             |                                   |        | Remove |
| Legal Name                                                                                                                                  |                       |             |                                   |        |        |
| Prefix                                                                                                                                      | Given Name            | Middle Name | Family Name                       | Suffix |        |
| Mr. ▾                                                                                                                                       | shay                  |             | SIVAN                             | ▾      |        |
| Residence Information (Select One)    US Residency    •    Non US Residency    Active US Military Service                                   |                       |             |                                   |        |        |
| City                                                                                                                                        | Tel Aviv              |             | Country of Residence <sup>i</sup> | L      |        |
| Mailing Address of Inventor:                                                                                                                |                       |             |                                   |        |        |
| Address 1                                                                                                                                   | 12 Dissentchik Street |             |                                   |        |        |
| Address 2                                                                                                                                   |                       |             |                                   |        |        |
| City                                                                                                                                        | Tel Aviv              |             | State/Province                    |        |        |
| Postal Code                                                                                                                                 | 6935635               |             | Country <sup>i</sup>              | IL     |        |
| All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the <b>Add</b> button. |                       |             |                                   |        |        |

**Correspondence Information:**

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| Enter either Customer Number or complete the Correspondence Information section below.<br>For further information see 37 CFR 1.33(a). |        |           |              |
| <input type="checkbox"/> An Address is being provided for the correspondence information of this application.                         |        |           |              |
| Customer Number                                                                                                                       | 131926 |           |              |
| Email Address                                                                                                                         |        | Add Email | Remove Email |

**Application Information:**

|                                         |                                         |                                           |                                     |
|-----------------------------------------|-----------------------------------------|-------------------------------------------|-------------------------------------|
| Title of the Invention                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |                                           |                                     |
| Attorney Docket Number                  | SIVAN-001-US1                           | Small Entity Status Claimed               | <input checked="" type="checkbox"/> |
| Application Type                        | Nonprovisional ▾                        |                                           |                                     |
| Subject Matter                          | Utility ▾                               |                                           |                                     |
| Total Number of Drawing Sheets (if any) | 4                                       | Suggested Figure for Publication (if any) | 1                                   |

|                                           |                                         |                        |               |
|-------------------------------------------|-----------------------------------------|------------------------|---------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                                         | Attorney Docket Number | SIVAN-001-US1 |
|                                           |                                         | Application Number     |               |
| Title of Invention                        | REAL TIME ASSESSMENT OF PICTURE QUALITY |                        |               |

## Filing By Reference :

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

|                                                        |                          |                                            |
|--------------------------------------------------------|--------------------------|--------------------------------------------|
| Application number of the previously filed application | Filing date (YYYY-MM-DD) | Intellectual Property Authority or Country |
|                                                        |                          |                                            |

## Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

## Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

|                    |                                                  |                                              |                                                         |
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| Please Select One: | <input checked="" type="radio"/> Customer Number | <input type="radio"/> US Patent Practitioner | <input type="radio"/> Limited Recognition (37 CFR 11.9) |
| Customer Number    | 131926                                           |                                              |                                                         |

## Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

|                          |                        |                          |                          |
|--------------------------|------------------------|--------------------------|--------------------------|
| Prior Application Status | Pending                | Remove                   |                          |
| Application Number       | Continuity Type        | Prior Application Number | Filing Date (YYYY-MM-DD) |
|                          | Continuation of        | 14/437105                | 2015-04-20               |
| Prior Application Status | Expired                | Remove                   |                          |
| Application Number       | Continuity Type        | Prior Application Number | Filing Date (YYYY-MM-DD) |
| 14/437105                | a 371 of international | PCT/IL2013/050856        | 2013-10-22               |

|                                                                                                                       |                                         |                                       |                                    |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|
| <b>Application Data Sheet 37 CFR 1.76</b>                                                                             |                                         | Attorney Docket Number                | SIVAN-001-US1                      |
|                                                                                                                       |                                         | Application Number                    |                                    |
| Title of Invention                                                                                                    | REAL TIME ASSESSMENT OF PICTURE QUALITY |                                       |                                    |
| Prior Application Status                                                                                              | Expired                                 | <input type="button" value="Remove"/> |                                    |
| Application Number                                                                                                    | Continuity Type                         | Prior Application Number              | Filing Date (YYYY-MM-DD)           |
| PCT/IL2013/050856                                                                                                     | Claims benefit of provisional           | 61/717216                             | 2012-10-23                         |
| Prior Application Status                                                                                              | Expired                                 | <input type="button" value="Remove"/> |                                    |
| Application Number                                                                                                    | Continuity Type                         | Prior Application Number              | Filing Date (YYYY-MM-DD)           |
| PCT/IL2013/050856                                                                                                     | Claims benefit of provisional           | 61/759643                             | 2013-02-01                         |
| Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the <b>Add</b> button. |                                         |                                       | <input type="button" value="Add"/> |

## Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)<sup>i</sup> the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

|                                                                                                        |                      |                          |                                          |                                       |
|--------------------------------------------------------------------------------------------------------|----------------------|--------------------------|------------------------------------------|---------------------------------------|
| Application Number                                                                                     | Country <sup>i</sup> | Filing Date (YYYY-MM-DD) | Access Code <sup>j</sup> (if applicable) | <input type="button" value="Remove"/> |
|                                                                                                        |                      |                          |                                          |                                       |
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## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

## Authorization to Permit Access:

|                                                                                                                            |                                          |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <input checked="" type="checkbox"/> Authorization to Permit Access to the Instant Application by the Participating Offices | SnapAid Ltd.<br>Exhibit 2033<br>Page #44 |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|

EFS Web 2.2.12

|                                           |                                         |                        |               |
|-------------------------------------------|-----------------------------------------|------------------------|---------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                                         | Attorney Docket Number | SIVAN-001-US1 |
|                                           |                                         | Application Number     |               |
| Title of Invention                        | REAL TIME ASSESSMENT OF PICTURE QUALITY |                        |               |

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

## Applicant Information:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------|
| Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |                                                  |
| <b>Applicant</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                                        | <input type="button" value="Remove"/>            |
| <p>If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.</p> |                                          |                                                  |
| <input type="button" value="Clear"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                          |                                                  |
| <input checked="" type="radio"/> Assignee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Legal Representative under 35 U.S.C. 117 | Joint Inventor                                   |
| Person to whom the inventor is obligated to assign.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | Person who shows sufficient proprietary interest |
| If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                  |

|                                                                                     |                       |                |         |
|-------------------------------------------------------------------------------------|-----------------------|----------------|---------|
|                                                                                     |                       |                |         |
| Name of the Deceased or Legally Incapacitated Inventor :                            |                       |                |         |
| If the Applicant is an Organization check here. <input checked="" type="checkbox"/> |                       |                |         |
| Organization Name                                                                   | SnapAid Ltd.          |                |         |
| <b>Mailing Address Information For Applicant:</b>                                   |                       |                |         |
| Address 1                                                                           | 12 Dissentchik Street |                |         |
| Address 2                                                                           |                       |                |         |
| City                                                                                | Tel Aviv              | State/Province |         |
| Country                                                                             | IL                    | Postal Code    | 6935635 |
| Phone Number                                                                        |                       | Fax Number     |         |

|                                                                                          |                                         |                        |                                    |
|------------------------------------------------------------------------------------------|-----------------------------------------|------------------------|------------------------------------|
| <b>Application Data Sheet 37 CFR 1.76</b>                                                |                                         | Attorney Docket Number | SIVAN-001-US1                      |
|                                                                                          |                                         | Application Number     |                                    |
| Title of Invention                                                                       | REAL TIME ASSESSMENT OF PICTURE QUALITY |                        |                                    |
| Email Address                                                                            |                                         |                        |                                    |
| Additional Applicant Data may be generated within this form by selecting the Add button. |                                         |                        | <input type="button" value="Add"/> |

## Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                |             |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|---------------------------------------|
| <b>Assignee</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1          |                |             |                                       |
| Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication. |            |                |             |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                |             | <input type="button" value="Remove"/> |
| If the Assignee or Non-Applicant Assignee is an Organization check here.                                                                                                                                                                                                                                                                                                                                                                               |            |                |             | <input type="checkbox"/>              |
| Prefix                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Given Name | Middle Name    | Family Name | Suffix                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                |             |                                       |
| <b>Mailing Address Information For Assignee including Non-Applicant Assignee:</b>                                                                                                                                                                                                                                                                                                                                                                      |            |                |             |                                       |
| Address 1                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                |             |                                       |
| Address 2                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                |             |                                       |
| City                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | State/Province |             |                                       |
| Country <sup>i</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | Postal Code    |             |                                       |
| Phone Number                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | Fax Number     |             |                                       |
| Email Address                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                |             |                                       |
| Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.                                                                                                                                                                                                                                                                                                                                      |            |                |             | <input type="button" value="Add"/>    |

## Signature:

|                                                                                                                              |        |                   |            |                                    |
|------------------------------------------------------------------------------------------------------------------------------|--------|-------------------|------------|------------------------------------|
| NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. |        |                   |            |                                    |
| Signature                                                                                                                    | /yb/   | Date (YYYY-MM-DD) | 2016-01-27 |                                    |
| First Name                                                                                                                   | Yehuda | Last Name         | BINDER     | Registration Number                |
|                                                                                                                              |        |                   |            | 73612                              |
| Additional Signature may be generated within this form by selecting the Add button.                                          |        |                   |            | <input type="button" value="Add"/> |

|                                           |                                         |                        |               |
|-------------------------------------------|-----------------------------------------|------------------------|---------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |                                         | Attorney Docket Number | SIVAN-001-US1 |
|                                           |                                         | Application Number     |               |
| Title of Invention                        | REAL TIME ASSESSMENT OF PICTURE QUALITY |                        |               |

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**CERTIFICATION OF MICRO ENTITY STATUS**  
(GROSS INCOME BASIS)

Application Number or Control Number (if applicable):

Patent Number (if applicable):

First Named Inventor:

Ishay Sivan

Title of Invention:

Real Time Assessment of Picture Quality

The applicant hereby certifies the following—

- (1) **SMALL ENTITY REQUIREMENT** - The applicant qualifies as a small entity as defined in 37 CFR 1.27.
- (2) **APPLICATION FILING LIMIT** - Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights or is obligated to assign all ownership rights as a result of the applicant's previous employment.
- (3) **GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS** - Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the "Maximum Qualifying Gross Income" reported on the USPTO website at [http://www.uspto.gov/patents/law/micro\\_entity.jsp](http://www.uspto.gov/patents/law/micro_entity.jsp) which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.
- (4) **GROSS INCOME LIMIT ON PARTIES WITH AN "OWNERSHIP INTEREST"** - Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the "Maximum Qualifying Gross Income" reported on the USPTO website at [http://www.uspto.gov/patents/law/micro\\_entity.jsp](http://www.uspto.gov/patents/law/micro_entity.jsp) which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

SIGNATURE by a party set forth in 37 CFR 1.33(b)

Signature

Name

Ishay Sivan

Date

20 Jan 2016

Telephone

+972-54-6549030

Registration No.



There is more than one inventor and I am one of the inventors who are jointly identified as the applicant. Additional certification form(s) signed by the other joint inventor(s) are included with this form.

|                                                                                                     |                        |               |  |
|-----------------------------------------------------------------------------------------------------|------------------------|---------------|--|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |               |  |
|                                                                                                     | Filing Date            |               |  |
|                                                                                                     | First Named Inventor   | Ishay SIVAN   |  |
|                                                                                                     | Art Unit               |               |  |
|                                                                                                     | Examiner Name          |               |  |
|                                                                                                     | Attorney Docket Number | SIVAN-001-US1 |  |

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|-------------------|---------|---------------|------------------------|------------|-------------------------------------------------|------------------------------------------------------------------------|
| Examiner Initial* | Cite No | Patent Number | Kind Code <sup>1</sup> | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|                   | 1       | 8285067       |                        | 2012-10-09 | Steinberg , et al.                              |                                                                        |
|                   | 2       | 8244053       |                        | 2012-08-14 | Steinberg , et al.                              |                                                                        |
|                   | 3       | 7362354       |                        | 2008-04-22 | Lin; Qian                                       |                                                                        |
|                   | 4       | 7688379       |                        | 2010-03-30 | Forman , et al.                                 |                                                                        |
|                   | 5       | 8125557       |                        | 2012-02-08 | Chen , et al.                                   |                                                                        |
|                   | 6       | 7920727       |                        | 2011-05-04 | Weng , et al.                                   |                                                                        |
|                   | 7       | 8040382       |                        | 2011-10-18 | Kahn , et al.                                   |                                                                        |
|                   | 8       | 7982770       |                        | 2011-07-19 | Kahn , et al.                                   |                                                                        |

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

|                        |               |  |
|------------------------|---------------|--|
| Application Number     |               |  |
| Filing Date            |               |  |
| First Named Inventor   | Ishay SIVAN   |  |
| Art Unit               |               |  |
| Examiner Name          |               |  |
| Attorney Docket Number | SIVAN-001-US1 |  |

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|----|---------|--|------------|-----------------------------------|--|
| 9  | 8131118 |  | 2012-06-03 | Jing , et al.                     |  |
| 10 | 8330826 |  | 2012-11-12 | Cerosaletti; Cathleen D. ; et al. |  |
| 11 | 8081227 |  | 2011-20-12 | Kim , et al.                      |  |
| 12 | 9154692 |  | 2015-06-10 | Son , et al.                      |  |

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|-------------------|---------|--------------------|------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------|
|                   | 1       | 20130155474        |                        | 2013-06-20       | Roach; John J. ; et al.                         |                                                                        |
|                   | 2       | 20090263028        |                        | 2009-10-22       | Kwon; Sung Jin                                  |                                                                        |
|                   | 3       | 20060017820        |                        | 2006-01-26       | Kim; Su-hyun                                    |                                                                        |
|                   | 4       | 20060056835        |                        | 2006-03-16       | Poon; Eunice ; et al.                           |                                                                        |
|                   | 5       | 20090278958        |                        | 2009-11-12       | Bregman-Amitai; Orna ; et al.                   |                                                                        |

**INFORMATION DISCLOSURE  
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|                        |               |  |
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| Application Number     |               |  |
| Filing Date            |               |  |
| First Named Inventor   | Ishay SIVAN   |  |
| Art Unit               |               |  |
| Examiner Name          |               |  |
| Attorney Docket Number | SIVAN-001-US1 |  |

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|----|-------------|--|------------|-------------------------|--|
| 6  | 20070195174 |  | 2007-08-23 | Oren; Halpern           |  |
| 7  | 20120133816 |  | 2012-04-22 | Imai; Francisco         |  |
| 8  | 20100290673 |  | 2010-11-18 | MIYASHITA; Naoyuki      |  |
| 9  | 20130058561 |  | 2014-09-30 | Cheng; Chia-Ming        |  |
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| 13 | 20120182447 |  | 2012-07-19 | Gabay; Chanan           |  |
| 14 | 20130063538 |  | 2013-03-14 | Hubner; Paul ; et al.   |  |
| 15 | 20120086847 |  | 2012-04-12 | Foster; Brett           |  |
| 16 | 20100026872 |  | 2010-02-04 | JIANG; JIN-LIN          |  |

**INFORMATION DISCLOSURE  
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|                        |               |  |
|------------------------|---------------|--|
| Application Number     |               |  |
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| First Named Inventor   | Ishay SIVAN   |  |
| Art Unit               |               |  |
| Examiner Name          |               |  |
| Attorney Docket Number | SIVAN-001-US1 |  |

|    |             |  |            |                                   |
|----|-------------|--|------------|-----------------------------------|
| 17 | 20040174434 |  | 2004-09-09 | Walker, Jay S. ; et al.           |
| 18 | 20110279700 |  | 2011-11-17 | Steinberg; Eran ; et al.          |
| 19 | 20110096180 |  | 2011-04-28 | McCloskey; Scott ; et al.         |
| 20 | 20110075930 |  | 2011-31-03 | Cerosaletti; Cathleen D. ; et al. |
| 21 | 20060017820 |  | 2006-26-01 | Kim; Su-hyun                      |

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**FOREIGN PATENT DOCUMENTS**

| Examiner Initial* | Cite No | Foreign Document Number <sup>3</sup> | Country Code <sup>2</sup> | Kind Code <sup>4</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear | T <sup>5</sup> |
|-------------------|---------|--------------------------------------|---------------------------|------------------------|------------------|-------------------------------------------------|--------------------------------------------------------------------------|----------------|
|                   | 1       | 2008033200                           | JP                        |                        | 2008-02-14       | Nikon Corp                                      |                                                                          |                |
|                   | 2       | 2007208922                           | JP                        |                        | 2007-08-16       | Fujifilm Corp                                   |                                                                          |                |
|                   | 3       | 2006050494                           | JP                        |                        | 2006-02-16       | Casio Comput Co. Ltd.                           |                                                                          |                |
|                   | 4       | 2003069559                           | WO                        |                        | 2003-08-21       | Lin; Qian                                       |                                                                          |                |

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| Application Number     |               |  |
| Filing Date            |               |  |
| First Named Inventor   | Ishay SIVAN   |  |
| Art Unit               |               |  |
| Examiner Name          |               |  |
| Attorney Docket Number | SIVAN-001-US1 |  |

|   |            |    |            |                                        |  |
|---|------------|----|------------|----------------------------------------|--|
| 5 | 2011148212 | WO | 2011-12-01 | Sony Ericsson Mobile Communications AB |  |
| 6 | 2004030378 | WO | 2004-04-08 | Poulsen Anders                         |  |
| 7 | 2013044983 | WO | 2013-04-04 | KLAUS MICHAEL HOFFMAN                  |  |

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| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>5</sup> |
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**EXAMINER SIGNATURE**

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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

|                        |               |
|------------------------|---------------|
| Application Number     |               |
| Filing Date            |               |
| First Named Inventor   | Ishay SIVAN   |
| Art Unit               |               |
| Examiner Name          |               |
| Attorney Docket Number | SIVAN-001-US1 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |               |                     |            |
|------------|---------------|---------------------|------------|
| Signature  | /yb/          | Date (YYYY-MM-DD)   | 2016-01-27 |
| Name/Print | Yehuda BINDER | Registration Number | 73612      |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN  
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of  
Invention

REAL TIME ASSESSMENT OF PICTURE QUALITY

As the below named inventor, I hereby declare that:

This declaration  
is directed to:



The attached application, or



United States application or PCT international application number \_\_\_\_\_  
filed on \_\_\_\_\_.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001  
by fine or imprisonment of not more than five (5) years, or both.

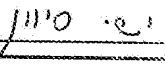
**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: SIVAN Ishay

Date (Optional) January 20, 2016

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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|                                                                                                                                                   |                        |                            |
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| <b>POWER OF ATTORNEY<br/>OR<br/>REVOCATION OF POWER OF ATTORNEY<br/>WITH A NEW POWER OF ATTORNEY<br/>AND<br/>CHANGE OF CORRESPONDENCE ADDRESS</b> | Application Number     |                            |
|                                                                                                                                                   | Filing Date            |                            |
|                                                                                                                                                   | First Named Inventor   | SIVAN, Ishay               |
|                                                                                                                                                   | Title                  | Real time Assessment of pi |
|                                                                                                                                                   | Art Unit               |                            |
|                                                                                                                                                   | Examiner Name          |                            |
|                                                                                                                                                   | Attorney Docket Number | SIVAN-001-US1              |

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

131,926

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

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I am the:

☒ Applicant/Inventor.

OR

☐ Assignee of record of the entire interest. See 37 CFR 3.71.

Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on \_\_\_\_\_

**SIGNATURE of Applicant or Assignee of Record**

Signature

Date

20 Jan 2016

Name

Ishay Sivan

Telephone

+972-54-6549030

Title and Company

CEO, SnapAid LTD

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ \*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

## Electronic Patent Application Fee Transmittal

**Application Number:**

**Filing Date:**

**Title of Invention:**

REAL TIME ASSESSMENT OF PICTURE QUALITY

**First Named Inventor/Applicant Name:**

Ishay Sivan

**Filer:**

Yehuda Binder

**Attorney Docket Number:**

SIVAN-001-US1

Filed as Micro Entity

### Filing Fees for Utility under 35 USC 111(a)

| Description                              | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|------------------------------------------|----------|----------|--------|----------------------|
| <b>Basic Filing:</b>                     |          |          |        |                      |
| BASIC UTILITY PATENT FILING FEE-MCRO-ENT | 3011     | 1        | 70     | 70                   |
| Utility Search Fee                       | 3111     | 1        | 150    | 150                  |
| Utility Examination Fee                  | 3311     | 1        | 180    | 180                  |

**Pages:**

**Claims:**

**Miscellaneous-Filing:**

**Petition:**

**Patent-Appeals-and-Interference:**

| Description                       | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|-----------------------------------|----------|----------|--------|----------------------|
| Post-Allowance-and-Post-Issuance: |          |          |        |                      |
| Extension-of-Time:                |          |          |        |                      |
| Miscellaneous:                    |          |          |        |                      |
| Total in USD (\$)                 |          |          |        | 400                  |

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 24732086                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay Sivan                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 27-JAN-2016                             |
| <b>Filing Date:</b>                         |                                         |
| <b>Time Stamp:</b>                          | 08:12:07                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                                          |                 |
|------------------------------------------|-----------------|
| Submitted with Payment                   | yes             |
| Payment Type                             | Deposit Account |
| Payment was successfully received in RAM | \$ 400          |
| RAM confirmation Number                  | 6609            |
| Deposit Account                          | 506726          |
| Authorized User                          | BINDER, YEHUDA  |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

|                 |                                                    |                            |                                          |                  |                  |
|-----------------|----------------------------------------------------|----------------------------|------------------------------------------|------------------|------------------|
|                 |                                                    |                            |                                          |                  |                  |
| File Listing:   |                                                    |                            |                                          |                  |                  |
| Document Number | Document Description                               | File Name                  | File Size(Bytes)/ Message Digest         | Multi Part /.zip | Pages (if appl.) |
| 1               | Transmittal of New Application                     | Transmittal-letter.pdf     | 373375                                   | no               | 2                |
|                 |                                                    |                            | 8e215d3739f2ca376a2163696329e035bf02041e |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 2               | Specification                                      | Spec.pdf                   | 734905                                   | no               | 30               |
|                 |                                                    |                            | 4324b4e71ef72c5367c165c50f308c3f4ceada18 |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 3               | Claims                                             | Claims.pdf                 | 263246                                   | no               | 3                |
|                 |                                                    |                            | 8dfcdd42d8652bfd459aac0dda0a3b53a825c15f |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 4               | Abstract                                           | Abstract.pdf               | 199074                                   | no               | 1                |
|                 |                                                    |                            | f77184371123861e03a36e959afc38fa666301e  |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 5               | Drawings-only black and white line drawings        | Drawings.pdf               | 192787                                   | no               | 4                |
|                 |                                                    |                            | 25a4619582b3878224f01a1c0a1e7100fbc86a03 |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 6               | Application Data Sheet                             | aia-ADS.pdf                | 1819213                                  | no               | 7                |
|                 |                                                    |                            | 540bffb3ea44e89892e6998174c95f0c02e3caa5 |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 7               | Certification of Micro Entity (Gross Income Basis) | Signed-Microentityform.pdf | 946237                                   | no               | 1                |
|                 |                                                    |                            | fcabcd9307b4ed34d3dc58137a42a490b3fce7bc |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                       |                        |                                                     |    |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------|-----------------------------------------------------|----|---|
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Information Disclosure Statement (IDS)<br>Form (SB08) | IDS.pdf                | 1036374<br>df4380d7e72624f735b98fb4d87472a21dc598bd | no | 7 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                     |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                     |    |   |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Oath or Declaration filed                             | Signed-declaration.pdf | 2370621<br>f6f0470f167e5c5b505234accac62ba832dad765 | no | 2 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                     |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                     |    |   |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Power of Attorney                                     | Signed-POA.pdf         | 2409304<br>895c6211821ea7596e680f063524fa61c6a03f80 | no | 2 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                     |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                     |    |   |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Fee Worksheet (SB06)                                  | fee-info.pdf           | 34613<br>7764cd5b2e898f40f9ee26f19f6f74525ffbd0c4   | no | 2 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                     |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                     |    |   |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        | 10379749                                            |    |   |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p> |                                                       |                        |                                                     |    |   |



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 15/007,253         | 01/27/2016            | Ishay SIVAN           | SIVAN-001-US1          |

CONFIRMATION NO. 1015

FORMALITIES LETTER



\*OC000000080544351\*

131926  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL

Date Mailed: 02/12/2016

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

*Filing Date Granted*

**Items Required To Avoid Abandonment:**

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing.

Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The application search fee must be submitted.
- The application examination fee must be submitted.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.

The surcharge is due for any one of:

- late submission of the basic filing fee, search fee, or examination fee,
- late submission of inventor's oath or declaration,
- filing an application that does not contain at least one claim on filing, or
- submission of an application filed by reference to a previously filed application.

**SUMMARY OF FEES DUE:**

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. Small entity discount is in effect. If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- \$ 70 surcharge.
- \$ 300 search fee.
- \$ 360 examination fee.
- \$( 330) previous unapplied payment amount.
- \$ 400 TOTAL FEE BALANCE DUE.

**Items Required To Avoid Processing Delays:**

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's

oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

**This application, which was filed with an indication of micro entity status, fails to meet the requirements for establishing micro entity status because:**

- The certification of micro entity status is not signed by an authorized party under 37 CFR 1.33(b). (Authorized parties include a registered attorney or agent, the sole inventor identified as the applicant, or all the joint inventors identified as the applicant except that one joint inventor applicant may sign if appointed to prosecute the application by all the other joint inventors.) Note that the name of the authorized party entered in the signature block of the micro entity certification must match any name given for the authorized party in the application file.

If micro entity status is established in reply to this notice by filing an acceptable Certification of Micro Entity Status, the fees itemized in the SUMMARY OF FEES DUE section of this Notice will be reduced to reflect the 75% micro entity discount, and any previous payment amount may be applied to the discounted fees.

If applicant is not entitled to micro entity status under 37 CFR 1.29, applicant may still qualify for a 50% reduction of fees if small entity status can be established under 37 CFR 1.27.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice".  
<https://portal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/qnguyen/

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# PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number  
15/007,253

## APPLICATION AS FILED - PART I

(Column 1)

(Column 2)

### SMALL ENTITY

OR

### OTHER THAN SMALL ENTITY

| FOR                                               | NUMBER FILED                                                                                                                                                                                                                  | NUMBER EXTRA |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))        | N/A                                                                                                                                                                                                                           | N/A          |
| SEARCH FEE<br>(37 CFR 1.16(k), (l), or (m))       | N/A                                                                                                                                                                                                                           | N/A          |
| EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))  | N/A                                                                                                                                                                                                                           | N/A          |
| TOTAL CLAIMS<br>(37 CFR 1.16(i))                  | 20 minus 20 =                                                                                                                                                                                                                 | *            |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))            | 3 minus 3 =                                                                                                                                                                                                                   | *            |
| APPLICATION SIZE FEE<br>(37 CFR 1.16(s))          | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |              |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |              |

| RATE(\$) | FEE(\$) |
|----------|---------|
| N/A      | 70      |
| N/A      | 300     |
| N/A      | 360     |
| x 40 =   | 0.00    |
| x 210 =  | 0.00    |
|          | 0.00    |
|          | 0.00    |
| TOTAL    | 730     |

OR

| RATE(\$) | FEE(\$) |
|----------|---------|
| N/A      |         |
| N/A      |         |
| N/A      |         |
|          |         |
|          |         |
|          |         |
|          |         |
| TOTAL    |         |

\* If the difference in column 1 is less than zero, enter "0" in column 2.

## APPLICATION AS AMENDED - PART II

(Column 1)

(Column 2)

(Column 3)

### SMALL ENTITY

OR

### OTHER THAN SMALL ENTITY

| AMENDMENT A |                                                                 | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
|-------------|-----------------------------------------------------------------|----------------------------------|-------|------------------------------------|---------------|
|             | Total<br>(37 CFR 1.16(i))                                       | *                                | Minus | **                                 | =             |
|             | Independent<br>(37 CFR 1.16(h))                                 | *                                | Minus | ***                                | =             |
|             | Application Size Fee (37 CFR 1.16(s))                           |                                  |       |                                    |               |
|             | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                  |       |                                    |               |

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

OR

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

(Column 1)

(Column 2)

(Column 3)

| AMENDMENT B |                                                                 | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
|-------------|-----------------------------------------------------------------|----------------------------------|-------|------------------------------------|---------------|
|             | Total<br>(37 CFR 1.16(i))                                       | *                                | Minus | **                                 | =             |
|             | Independent<br>(37 CFR 1.16(h))                                 | *                                | Minus | ***                                | =             |
|             | Application Size Fee (37 CFR 1.16(s))                           |                                  |       |                                    |               |
|             | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                  |       |                                    |               |

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

OR

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



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| APPLICATION<br>NUMBER | FILING or<br>371(c) DATE | GRP ART<br>UNIT | FIL FEE REC'D | ATTY. DOCKET NO | TOT CLAIMS | IND CLAIMS |
|-----------------------|--------------------------|-----------------|---------------|-----------------|------------|------------|
| 15/007,253            | 01/27/2016               | 2673            | 400           | SIVAN-001-US1   | 20         | 3          |

CONFIRMATION NO. 1015

## FILING RECEIPT



0000000080544350

131926  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL

Date Mailed: 02/12/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

### Inventor(s)

Ishay SIVAN, Tel Aviv, ISRAEL;

### Applicant(s)

SnapAid Ltd., Tel Aviv, ISRAEL;

**Power of Attorney:** The patent practitioners associated with Customer Number 131926

### Domestic Priority data as claimed by applicant

This application is a CON of 14/437,105 04/20/2015  
which is a 371 of PCT/IL2013/050856 10/22/2013  
which claims benefit of 61/717,216 10/23/2012  
and claims benefit of 61/759,643 02/01/2013

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

**Permission to Access Application via Priority Document Exchange:** Yes

**Permission to Access Search Results:** No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

**If Required, Foreign Filing License Granted:** 02/11/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/007,253**

**Projected Publication Date:** 05/19/2016

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

REAL TIME ASSESSMENT OF PICTURE QUALITY

**Preliminary Class**

358

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

**LICENSE FOR FOREIGN FILING UNDER**  
**Title 35, United States Code, Section 184**  
**Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTY.'S DOCKET: SIVAN-001-US1

|                           |   |                       |
|---------------------------|---|-----------------------|
| In re Application of:     | ) | Confirmation No. 1015 |
|                           | ) |                       |
| Ishay SIVAN               | ) | Art Unit: 2673        |
|                           | ) |                       |
| Appln. No.: 15/007,253    | ) | Examiner:             |
|                           | ) |                       |
| Filed: January 27, 2016   | ) | Washington, D.C.      |
|                           | ) |                       |
| For: Real Time Assessment | ) |                       |
| Of Picture Quality        | ) |                       |
|                           | ) | February 26, 2016     |

**Response to Notice to File Missing Parts:**

Honorable Commissioner for Patents  
U.S. Patent and Trademark Office  
Randolph Building, Mail Stop Amendments  
401 Dulany Street  
Alexandria, VA 22314

Sir:

A Notice to File Missing Parts of Nonprovisional  
Application was issued on February 02, 2016. A payment of a  
total fee of 400 USD is requested.

In response to the Notice, the applicant hereby  
asserts that the requested payment was made with the filing  
on January 27, 2016.

A copy of the Electronic Acknowledgement Receipt  
indicating a payment of 400 USD via the deposit account is  
submitted herewith.

A cancellation of the Notice is being requested.

Respectfully submitted,

By                     /yb/                      
                    Yehuda Binder  
                    Registration No. 73,612  
  
                    Tel: +972-54-4444577  
                    Fax: +972-9-7442619

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 24732086                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay Sivan                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 27-JAN-2016                             |
| <b>Filing Date:</b>                         |                                         |
| <b>Time Stamp:</b>                          | 08:12:07                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                                          |                 |
|------------------------------------------|-----------------|
| Submitted with Payment                   | yes             |
| Payment Type                             | Deposit Account |
| Payment was successfully received in RAM | \$ 400          |
| RAM confirmation Number                  | 6609            |
| Deposit Account                          | 506726          |
| Authorized User                          | BINDER, YEHUDA  |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

|                 |                                                    |                            |                                          |                  |                  |
|-----------------|----------------------------------------------------|----------------------------|------------------------------------------|------------------|------------------|
|                 |                                                    |                            |                                          |                  |                  |
| File Listing:   |                                                    |                            |                                          |                  |                  |
| Document Number | Document Description                               | File Name                  | File Size(Bytes)/ Message Digest         | Multi Part /.zip | Pages (if appl.) |
| 1               | Transmittal of New Application                     | Transmittal-letter.pdf     | 373375                                   | no               | 2                |
|                 |                                                    |                            | 8e215d3739f2ca376a2163696329e035bf02041e |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 2               | Specification                                      | Spec.pdf                   | 734905                                   | no               | 30               |
|                 |                                                    |                            | 4324b4e71ef72c5367c165c50f308c3f4ceada18 |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 3               | Claims                                             | Claims.pdf                 | 263246                                   | no               | 3                |
|                 |                                                    |                            | 8dfcdd42d8652bfd459aac0dda0a3b53a825c15f |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 4               | Abstract                                           | Abstract.pdf               | 199074                                   | no               | 1                |
|                 |                                                    |                            | f77184371123861e03a36e959afc38fa666301e  |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 5               | Drawings-only black and white line drawings        | Drawings.pdf               | 192787                                   | no               | 4                |
|                 |                                                    |                            | 25a4619582b3878224f01a1c0a1e7100fbc86a03 |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 6               | Application Data Sheet                             | aia-ADS.pdf                | 1819213                                  | no               | 7                |
|                 |                                                    |                            | 540bffb3ea44e89892e6998174c95f0c02e3caa5 |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |
| 7               | Certification of Micro Entity (Gross Income Basis) | Signed-Microentityform.pdf | 946237                                   | no               | 1                |
|                 |                                                    |                            | fcabcd9307b4ed34d3dc58137a42a490b3fce7bc |                  |                  |
| Warnings:       |                                                    |                            |                                          |                  |                  |
| Information:    |                                                    |                            |                                          |                  |                  |

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| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Information Disclosure Statement (IDS)<br>Form (SB08) | IDS.pdf                | 1036374<br>df4380d7e72624f735b98fb4d87472a21dc598bd   | no | 7 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                       |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                       |    |   |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Oath or Declaration filed                             | Signed-declaration.pdf | 2370621<br>f6f0470f167e5c5b505234accacae62ba832dad765 | no | 2 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                       |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                       |    |   |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Power of Attorney                                     | Signed-POA.pdf         | 2409304<br>895c6211821ea7596e680f063524fa61c6a03f80   | no | 2 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                       |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                       |    |   |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Fee Worksheet (SB06)                                  | fee-info.pdf           | 34613<br>7764cd5b2e898f40f9ee26f19f6f74525ffbd0c4     | no | 2 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |                        |                                                       |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        |                                                       |    |   |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                        | 10379749                                              |    |   |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p> |                                                       |                        |                                                       |    |   |

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 25028610                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay SIVAN                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 26-FEB-2016                             |
| <b>Filing Date:</b>                         | 27-JAN-2016                             |
| <b>Time Stamp:</b>                          | 05:17:30                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                        |    |
|------------------------|----|
| Submitted with Payment | no |
|------------------------|----|

### File Listing:

| Document Number | Document Description                              | File Name                                    | File Size(Bytes)/<br>Message Digest                | Multi Part /.zip | Pages (if appl.) |
|-----------------|---------------------------------------------------|----------------------------------------------|----------------------------------------------------|------------------|------------------|
| 1               | Applicant Response to Pre-Exam Formalities Notice | Response-to-notice-to-file-missing-parts.pdf | 101917<br>1a77b675c5ad6e808f82c7f9c54172cc1398f794 | no               | 2                |

### Warnings:

### Information:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                                |                                                   |    |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------|---------------------------------------------------|----|---|
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Applicant Response to Pre-Exam Formalities Notice | e filingAck24732086-filing.pdf | 76575<br>ca8d70a85ce4908134fde10e8ebab73d197f5dc3 | no | 3 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                   |                                |                                                   |    |   |
| The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                                |                                                   |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                   |                                |                                                   |    |   |
| Total Files Size (in bytes):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                   |                                | 178492                                            |    |   |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                                   |                                |                                                   |    |   |



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 15/007,253         | 01/27/2016            | Ishay SIVAN           | SIVAN-001-US1          |

**CONFIRMATION NO. 1015**

## FORMALITIES LETTER



131926  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL

Date Mailed: 03/04/2016

## NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL)

### *Filing Date Granted*

The U.S. Patent and Trademark Office has received your reply on 02/26/2016 to the Notice to File Missing Parts (Notice) mailed 02/12/2016 and it has been entered into the nonprovisional application. The reply, however, does not include the following items required in the Notice. A complete reply must be timely filed to prevent ABANDONMENT of the above-identified application. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

Applicant is given **TWO MONTHS** from the date of the Notice to File Missing Parts (Notice) mailed 02/12/2016 within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

### **Items Required to Avoid Abandonment:**

The required items noted below SHOULD be filed along with any items required above. The filing date of this nonprovisional application will be the date of receipt of the items required above.

- The application search fee must be submitted.
- The application examination fee must be submitted.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.

The surcharge is due for any one of:

- late submission of the basic filing fee, search fee, or examination fee,
- late submission of inventor's oath or declaration,
- filing an application that does not contain at least one claim on filing, or
- submission of an application filed by reference to a previously filed application.

### **SUMMARY OF FEES DUE:**

The fee(s) required within **TWO MONTHS** from the date of the Notice to avoid abandonment is/are itemized below. Small entity discount is in effect. If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- \$ 70 surcharge.
- \$ 300 search fee.
- \$ 360 examination fee.
- \$( 330) previous unapplied payment amount.
- \$ 400 TOTAL FEE BALANCE DUE.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice".  
<https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/hkquach/

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# PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number  
15/007,253

## APPLICATION AS FILED - PART I

(Column 1)

(Column 2)

### SMALL ENTITY

OR

### OTHER THAN SMALL ENTITY

| FOR                                               | NUMBER FILED                                                                                                                                                                                                                  | NUMBER EXTRA |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))        | N/A                                                                                                                                                                                                                           | N/A          |
| SEARCH FEE<br>(37 CFR 1.16(k), (l), or (m))       | N/A                                                                                                                                                                                                                           | N/A          |
| EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))  | N/A                                                                                                                                                                                                                           | N/A          |
| TOTAL CLAIMS<br>(37 CFR 1.16(i))                  | 20          minus 20 =                                                                                                                                                                                                        | *            |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))            | 3          minus 3 =                                                                                                                                                                                                          | *            |
| APPLICATION SIZE FEE<br>(37 CFR 1.16(s))          | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |              |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |              |

| RATE(\$) | FEE(\$) |
|----------|---------|
| N/A      | 70      |
| N/A      | 300     |
| N/A      | 360     |
| x 40 =   | 0.00    |
| x 210 =  | 0.00    |
|          | 0.00    |
|          | 0.00    |
| TOTAL    | 730     |

| RATE(\$) | FEE(\$) |
|----------|---------|
| N/A      |         |
| N/A      |         |
| N/A      |         |
|          |         |
|          |         |
|          |         |
|          |         |
| TOTAL    |         |

\* If the difference in column 1 is less than zero, enter "0" in column 2.

## APPLICATION AS AMENDED - PART II

(Column 1)

(Column 2)

(Column 3)

### SMALL ENTITY

OR

### OTHER THAN SMALL ENTITY

| AMENDMENT A |                                                                 | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
|-------------|-----------------------------------------------------------------|----------------------------------|-------|------------------------------------|---------------|
|             | Total<br>(37 CFR 1.16(i))                                       | *                                | Minus | **                                 | =             |
|             | Independent<br>(37 CFR 1.16(h))                                 | *                                | Minus | ***                                | =             |
|             | Application Size Fee (37 CFR 1.16(s))                           |                                  |       |                                    |               |
|             | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                  |       |                                    |               |

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

(Column 1)

(Column 2)

(Column 3)

| AMENDMENT B |                                                                 | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
|-------------|-----------------------------------------------------------------|----------------------------------|-------|------------------------------------|---------------|
|             | Total<br>(37 CFR 1.16(i))                                       | *                                | Minus | **                                 | =             |
|             | Independent<br>(37 CFR 1.16(h))                                 | *                                | Minus | ***                                | =             |
|             | Application Size Fee (37 CFR 1.16(s))                           |                                  |       |                                    |               |
|             | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                  |       |                                    |               |

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

| RATE(\$)        | ADDITIONAL FEE(\$) |
|-----------------|--------------------|
| x =             |                    |
| x =             |                    |
|                 |                    |
|                 |                    |
| TOTAL ADD'L FEE |                    |

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

| <b>CERTIFICATION OF MICRO ENTITY STATUS<br/>(GROSS INCOME BASIS)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                             |                                                                       |           |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------|------------------------|
| Application Number or Control Number (if applicable):<br><b>15/007,253</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                             | Patent Number (if applicable):                                        |           |                        |
| First Named Inventor:<br><b>Ishay Sivan</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                             | Title of Invention:<br><b>REAL TIME ASSESSMENT OF PICTURE QUALITY</b> |           |                        |
| <p>The applicant hereby certifies the following—</p> <p>(1) <b>SMALL ENTITY REQUIREMENT</b> – The applicant qualifies as a small entity as defined in 37 CFR 1.27.</p> <p>(2) <b>APPLICATION FILING LIMIT</b> – Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights, or is obligated to assign all ownership rights, as a result of the applicant's previous employment.</p> <p>(3) <b>GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS</b> – Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at <a href="http://www.uspto.gov/patents/law/micro_entity.jsp">http://www.uspto.gov/patents/law/micro_entity.jsp</a> which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.</p> <p>(4) <b>GROSS INCOME LIMIT ON PARTIES WITH AN "OWNERSHIP INTEREST"</b> – Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at <a href="http://www.uspto.gov/patents/law/micro_entity.jsp">http://www.uspto.gov/patents/law/micro_entity.jsp</a> which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.</p> |  |                                                                                                                                                                                                                             |                                                                       |           |                        |
| <b>SIGNATURE by an authorized party set forth in 37 CFR 1.33(b)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                                                                                                                                                                             |                                                                       |           |                        |
| Signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | /yb/                                                                                                                                                                                                                        |                                                                       |           |                        |
| Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Yehuda BINDER                                                                                                                                                                                                               |                                                                       |           |                        |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | 2016-08-03                                                                                                                                                                                                                  |                                                                       | Telephone | Registration No. 73612 |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | There is more than one inventor and I am one of the inventors who are jointly identified as the applicant. The required additional certification form(s) signed by the other joint inventor(s) are included with this form. |                                                                       |           |                        |

## Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

## Electronic Patent Application Fee Transmittal

|                                                      |                                         |                 |               |                             |
|------------------------------------------------------|-----------------------------------------|-----------------|---------------|-----------------------------|
| <b>Application Number:</b>                           | 15007253                                |                 |               |                             |
| <b>Filing Date:</b>                                  | 27-Jan-2016                             |                 |               |                             |
| <b>Title of Invention:</b>                           | REAL TIME ASSESSMENT OF PICTURE QUALITY |                 |               |                             |
| <b>First Named Inventor/Applicant Name:</b>          | Ishay SIVAN                             |                 |               |                             |
| <b>Filer:</b>                                        | Yehuda Binder                           |                 |               |                             |
| <b>Attorney Docket Number:</b>                       | SIVAN-001-US1                           |                 |               |                             |
| Filed as Micro Entity                                |                                         |                 |               |                             |
| <b>Filing Fees for   Utility under 35 USC 111(a)</b> |                                         |                 |               |                             |
| <b>Description</b>                                   | <b>Fee Code</b>                         | <b>Quantity</b> | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                                 |                                         |                 |               |                             |
| <b>Pages:</b>                                        |                                         |                 |               |                             |
| <b>Claims:</b>                                       |                                         |                 |               |                             |
| <b>Miscellaneous-Filing:</b>                         |                                         |                 |               |                             |
| <b>Petition:</b>                                     |                                         |                 |               |                             |
| Petition Fee-37CFR 1.17(H) (Grp III)                 | 3464                                    | 1               | 35            | 35                          |
| <b>Patent-Appeals-and-Interference:</b>              |                                         |                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>             |                                         |                 |               |                             |

| Description        | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|--------------------|----------|----------|--------|----------------------|
| Extension-of-Time: |          |          |        |                      |
| Miscellaneous:     |          |          |        |                      |
| Total in USD (\$)  |          |          |        | 35                   |

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 25154403                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay SIVAN                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 10-MAR-2016                             |
| <b>Filing Date:</b>                         | 27-JAN-2016                             |
| <b>Time Stamp:</b>                          | 01:22:09                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                                          |                 |
|------------------------------------------|-----------------|
| Submitted with Payment                   | yes             |
| Payment Type                             | Deposit Account |
| Payment was successfully received in RAM | \$35            |
| RAM confirmation Number                  | 9485            |
| Deposit Account                          | 506726          |
| Authorized User                          | BINDER, YEHUDA  |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

| <b>File Listing:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                    |                         |                                          |                  |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------|------------------------------------------|------------------|------------------|
| Document Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Document Description                               | File Name               | File Size(Bytes)/<br>Message Digest      | Multi Part /.zip | Pages (if appl.) |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Certification of Micro Entity (Gross Income Basis) | Signed-Micro-entity.pdf | 119990                                   | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |                         | 6d56ef035bc7d515308f489b6f4b6fcdad05c615 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |                         |                                          |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                    |                         |                                          |                  |                  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fee Worksheet (SB06)                               | fee-info.pdf            | 30121                                    | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |                         | 5227c90bdaf7099c844dde14d500834cb5662282 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |                         |                                          |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                    |                         |                                          |                  |                  |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                    |                         | 150111                                   |                  |                  |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                                    |                         |                                          |                  |                  |

|                                                                                                     |                        |             |               |
|-----------------------------------------------------------------------------------------------------|------------------------|-------------|---------------|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |             | 15007253      |
|                                                                                                     | Filing Date            |             | 2016-01-27    |
|                                                                                                     | First Named Inventor   | Ishay SIVAN |               |
|                                                                                                     | Art Unit               |             |               |
|                                                                                                     | Examiner Name          |             |               |
|                                                                                                     | Attorney Docket Number |             | SIVAN-001-US1 |

| U.S.PATENTS       |         |               |                        |            |                                                 | Remove                                                                 |
|-------------------|---------|---------------|------------------------|------------|-------------------------------------------------|------------------------------------------------------------------------|
| Examiner Initial* | Cite No | Patent Number | Kind Code <sup>1</sup> | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|                   | 1       |               |                        |            |                                                 |                                                                        |

If you wish to add additional U.S. Patent citation information please click the Add button. Add

| U.S.PATENT APPLICATION PUBLICATIONS |         |                    |                        |                  |                                                 | Remove                                                                 |
|-------------------------------------|---------|--------------------|------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------|
| Examiner Initial*                   | Cite No | Publication Number | Kind Code <sup>1</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|                                     | 1       | 20120249837        | A1                     | 2012-10-04       | Chen Lawrence Shao Hsien                        |                                                                        |
|                                     | 2       | 20070216787        | A1                     | 2007-09-20       | Lin Peng W et al                                |                                                                        |
|                                     | 3       | 20110292221        | A1                     | 2011-12-01       | Gu Ye et al                                     |                                                                        |
|                                     | 4       | 20090251557        | A1                     | 2009-10-08       | Kim Ki Tae et al                                |                                                                        |
|                                     | 5       | 20060017820        | A1                     | 2006-01-26       | Kim Su-Hyun                                     |                                                                        |

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

| FOREIGN PATENT DOCUMENTS |  |  |  |  |  | Remove |
|--------------------------|--|--|--|--|--|--------|
|--------------------------|--|--|--|--|--|--------|

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

|                        |               |            |
|------------------------|---------------|------------|
| Application Number     |               | 15007253   |
| Filing Date            |               | 2016-01-27 |
| First Named Inventor   | Ishay SIVAN   |            |
| Art Unit               |               |            |
| Examiner Name          |               |            |
| Attorney Docket Number | SIVAN-001-US1 |            |

| Examiner Initial* | Cite No | Foreign Document Number <sup>3</sup> | Country Code <sup>2</sup> i | Kind Code <sup>4</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear | T <sup>5</sup> |
|-------------------|---------|--------------------------------------|-----------------------------|------------------------|------------------|-------------------------------------------------|--------------------------------------------------------------------------|----------------|
|                   | 1       |                                      |                             |                        |                  |                                                 |                                                                          |                |

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**NON-PATENT LITERATURE DOCUMENTS**

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>5</sup> |
|--------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|                    | 1       | EPO, Supplementary European Search Report for EP 13849379.6, dated February 15, 2016                                                                                                                                                                            |                |

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**EXAMINER SIGNATURE**

|                    |  |                 |  |
|--------------------|--|-----------------|--|
| Examiner Signature |  | Date Considered |  |
|--------------------|--|-----------------|--|

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

|                        |               |
|------------------------|---------------|
| Application Number     | 15007253      |
| Filing Date            | 2016-01-27    |
| First Named Inventor   | Ishay SIVAN   |
| Art Unit               |               |
| Examiner Name          |               |
| Attorney Docket Number | SIVAN-001-US1 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |               |                     |            |
|------------|---------------|---------------------|------------|
| Signature  | /yb/          | Date (YYYY-MM-DD)   | 2016-03-14 |
| Name/Print | Yehuda BINDER | Registration Number | 73612      |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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|          |
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| Date     |
| 15.02.16 |

|                                      |                                                                            |
|--------------------------------------|----------------------------------------------------------------------------|
| Reference<br>61131EP                 | Application No./Patent No.<br>13849379.6 - 1903 / 2912602 PCT/IL2013050856 |
| Applicant/Proprietor<br>Sivan, Ishay |                                                                            |

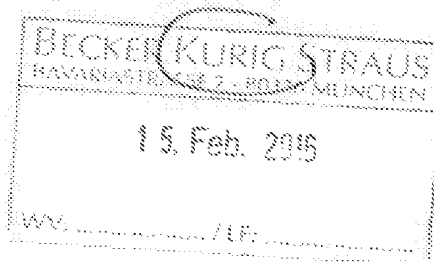
### Communication

The extended European search report is enclosed.

The extended European search report includes, pursuant to Rule 62 EPC, the supplementary European search report (Art. 153(7) EPC) and the European search opinion.

Copies of documents cited in the European search report are attached.

☒ 0 additional set(s) of copies of such documents is (are) enclosed as well.



### Refund of the search fee

If applicable under Article 9 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.

Should you wish to further prosecute this application in the examination phase, your attention is drawn to the provisions of Rule 70a EPC. An invitation to respond to the extended European search report will be issued shortly (R. 70(2) EPC).



**SUPPLEMENTARY  
EUROPEAN SEARCH REPORT**

Application Number  
**EP 13 84 9379**

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                   |                                                            |                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Citation of document with indication, where appropriate, of relevant passages                                                                                                     | Relevant to claim                                          | CLASSIFICATION OF THE APPLICATION (IPC)    |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US 2012/249837 A1 (CHEN LAWRENCE SHAO-HSIEN [US])<br>4 October 2012 (2012-10-04)                                                                                                  | 9,10,12                                                    | INV.<br>G06K9/46                           |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | * paragraph [0002] *<br>* paragraph [0016] *<br>* paragraph [0027] - paragraph [0040] *<br>* figures 1,4-5 *                                                                      | 1-8,11,<br>13-15                                           |                                            |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US 2007/216787 A1 (LIN PENG W [TW] ET AL)<br>20 September 2007 (2007-09-20)<br>* paragraph [0026] *                                                                               | 1-8,11,<br>13-15                                           |                                            |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US 2011/292221 A1 (GU YE [US] ET AL)<br>1 December 2011 (2011-12-01)<br>* paragraph [0030] *                                                                                      | 4                                                          |                                            |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US 2009/251557 A1 (KIM KI TAE [KR] ET AL)<br>8 October 2009 (2009-10-08)<br>* paragraph [0042] - paragraph [0044] *<br>* paragraph [0056] - paragraph [0057] *<br>* figures 4,5 * | 13                                                         |                                            |
| Y,D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US 2006/017820 A1 (KIM SU-HYUN [KR])<br>26 January 2006 (2006-01-26)<br>* paragraph [0034] - paragraph [0042] *<br>* paragraph [0050] *<br>* figures 1,3-5,6,7A-7D *              | 15                                                         | TECHNICAL FIELDS<br>SEARCHED (IPC)<br>H04N |
| The supplementary search report has been based on the last set of claims valid and available at the start of the search.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                   |                                                            |                                            |
| Place of search<br><b>The Hague</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                   | Date of completion of the search<br><b>5 February 2016</b> | Examiner<br><b>Didierlaurent, P</b>        |
| <p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                                                                                   |                                                            |                                            |

1-1  
EPO FORM 1523 (11.92) (P04204)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 84 9379

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-02-2016

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)                                              | Publication<br>date                                  |
|-------------------------------------------|---------------------|-------------------------------------------------------------------------|------------------------------------------------------|
| US 2012249837 A1                          | 04-10-2012          | NONE                                                                    |                                                      |
| US 2007216787 A1                          | 20-09-2007          | NONE                                                                    |                                                      |
| US 2011292221 A1                          | 01-12-2011          | NONE                                                                    |                                                      |
| US 2009251557 A1                          | 08-10-2009          | KR 20090107312 A<br>US 2009251557 A1                                    | 13-10-2009<br>08-10-2009                             |
| US 2006017820 A1                          | 26-01-2006          | CN 1725840 A<br>JP 2006042344 A<br>KR 20060008135 A<br>US 2006017820 A1 | 25-01-2006<br>09-02-2006<br>26-01-2006<br>26-01-2006 |

TITLE: REAL TIME ASSESSMENT OF PICTURE QUALITY

APPLICANT: Sivan, Ishay

IPC CLASSIFICATION: G06K9/46

EXAMINER: Didierlaurent, P

CONSULTED DATABASES: WPI, EPDOC

CLASSIFICATION SYMBOLS DEFINING EXTENT OF THE SEARCH:

IPC:

CPC: H04N5/23222, H04N5/23293, H04N5/325

FI/F-TERMS:

KEYWORDS OR OTHER ELEMENTS FEATURING THE INVENTION:

A digital image acquisition system comprising a processor for real time computation of multiple quality indicators characterizing quality of the current digital image; automatic image capturing of an image only when a first logical criterion predefined on said multiple quality indicators is satisfied; and when said first logical criterion is still not satisfied, based on at least one second logical criterion, display appropriate suggestion from a pre-stored table of suggestions to a user in order to satisfy said first logical criterion. One of said logical criteria is pre-defined over a time-dependent confidence level defined over at least one of said quality indicators.

The examination is being carried out on the following application documents

**Description, Pages**

1-30 as published

**Claims, Numbers**

1-15 filed with entry into the regional phase before the EPO

**Drawings, Sheets**

1/4-4/4 as published

Reference is made to the following documents; the numbering will be adhered to in the rest of the procedure.

- D1 US 2012/249837 A1 (CHEN LAWRENCE SHAO-HSIEN [US]) 4 October 2012 (2012-10-04)
- D2 US 2007/216787 A1 (LIN PENG W [TW] ET AL) 20 September 2007 (2007-09-20)
- D3 US 2011/292221 A1 (GU YE [US] ET AL) 1 December 2011 (2011-12-01)
- D4 US 2009/251557 A1 (KIM KI TAE [KR] ET AL) 8 October 2009 (2009-10-08)
- D5 US 2006/017820 A1 (KIM SU-HYUN [KR]) 26 January 2006 (2006-01-26)

1 The present application does not meet the requirements of Article 52(1) EPC because the subject-matter of independent claims 1 and 14 does not involve an inventive step within the meaning of Article 56 EPC.

1.1 Claim 1

1.1.1 Document D1 (the references in parentheses applying to this document, passages in ~~strike-out~~ are not disclosed in D1), which is considered to represent the most relevant state of the art, discloses

1. A digital image acquisition system (**digital camera, §0002, §0039**) comprising:

an image capture component for capturing in a buffer ("a preview-frame image may be obtained 500 and processed 502 to extract image features", §0039), a current digital image having pixels;

at least one digital processor programmed for real time computation of multiple quality indicators characterizing quality of the current digital image ("a preview-frame image may be obtained 500 and processed 502 to extract image features", §0039);

automatic image capturing ("a camera may be set to capture an image automatically when all of the acquisition-factor values fall with their respective acceptable range", §0039), and storing in user-accessible memory, of at least one image only after a first logical criterion predefined on said multiple quality indicators, is satisfied (in D1, first criterion is "when all of the acquisition-factor values fall with their respective acceptable range", §0039); and

a message provider operative, while said first logical criterion is still not satisfied (in D1, first criterion is not satisfied when "all of the acquisition-factor values" do not "fall with their respective acceptable range"), to select, based on at least one second logical criterion (for example in D1, said second criterion can be if the exposure value is good, Fig.5, §0038) pre-defined on at least one of said multiple quality indicators, ~~at least one appropriate suggestion from a pre-stored table of suggestions of how a user of the system may cause said first logical criterion to be satisfied and to present said appropriate suggestion to the user,~~ wherein at least one of said logical criteria are pre-defined over a time-dependent confidence level defined over at least one of said quality indicators (usually an exposure value depends on a shutter time, therefore the second logical criterion in D1 (exposure value) is therefore related to "a time-dependent confidence level").

- 1.1.2 The subject-matter of claim 1 therefore differs from this known system in that at least one appropriate suggestion from a pre-stored table of suggestions of how a user of the system may cause said first logical criterion to be satisfied and to present said appropriate suggestion to the user.
- 1.1.3 The problem to be solved by the present invention may therefore be regarded as helping a user adjusting a camera parameter.
- 1.1.4 The solution proposed in claim 1 of the present application cannot be considered to involve an inventive step (Articles 52(1) and 56 EPC) because these features have already been employed for the same purpose in a similar

system, see D2 (§0026: "The proposal message may include: a suggestion of increasing light sensitivity (ISO) and a suggestion of using a tripod; the proposal message is preferably presented on the LCD screen of the digital camera also"). It would be obvious to the person skilled in the art, namely when the same result is to be achieved, to apply these features with corresponding effect to a system according to D1, thereby arriving at a system according to claim 1. The subject-matter of claim 1 does not therefore involve an inventive step (Articles 52(1) and 56 EPC).

1.2 Independent computer program product claim 14

The reasoning applying to system claim 1 applies mutatis mutandis to independent computer program product claim 14.

2 The present application does not meet the requirements of Article 52(1) EPC because the subject-matter of independent method claim 9 is not new within the meaning of Article 54(1) and (2) EPC.

2.1 D1 discloses (while repeating the wording of the claim, the references in parentheses applying to this document):

9. A method for computing photo quality of a captured image in a device image acquisition system, said method comprising:

combining of:

multiple quality indicators computed for said captured image ("exposure, size, tilt, contrast, camera motion and blur", see claim 2 of D1); and

a confidence level C for at least one of said quality indicators (§0037: "the acceptability of an acquisition-factor value may be indicated on the overlaid preview-frame image textually. In an exemplary embodiment, the text strings "GOOD" and "NO GOOD" may be displayed in proximity to a factor label to indicate that the acquisition-factor value falls or does not fall within acceptable limits"),

where said confidence level C is based on a probability factor P (§0016 "an exposure metric may be determined by histogram analysis for detection of severe over-exposure and severe under-exposure") of said quality indicators calculated for said captured image, and

wherein the probability factor P calculated for the immediate previous frames coming from a lens/sensor module 200 continuous video frames (§0016 "For example, a Google G1 smart phone running the Android operating system produces native preview-frame images at a resolution of 480×320 pixels, and in some

embodiments of the present invention, a native preview-frame image may be down-sampled 200 to 240×160 pixels. The down-sampled image may be converted 202 to a grayscale image, and a exposure metric may be computed 204 from the grayscale image"),

and determining, based on said combining, a total quality indicator for said captured image (in D1, said total indicator is "when all of the acquisition-factor values fall with their respective acceptable range", §0039)).

- 3 Dependent claims 2-8, 10-13, 15 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the EPC in respect of novelty and/or inventive step.
- Claim 2, see D1 (§0029)
  - Claim 3, see D1 (§0028)
  - Claim 4, see D3 (3D photo technologies, §0030)
  - Claims 5 and 6, see D1 ("when all of the acquisition-factor values fall with their respective acceptable range", §0039)
  - Claim 7, see D1 (§0028)
  - Claims 8,11, see D2 (§0026)
  - Claim 10, see D1 ("a camera may be set to capture an image automatically when all of the acquisition-factor values fall with their respective acceptable range", §0039)
  - Claim 12, see D1 ("native preview-frame images", §0016) and D2 (§0026)
  - Claim 13, see D4 (Fig.5, §0056-57)
  - Claim 15, see D5 (§0037)
- 4 The application does not meet the requirements of Article 84 EPC, because claims 1,9 and 14 are not clear.
- 4.1 Claims 1 and 14
- The terms "first logical criterion", "second logical criterion", "time-dependent confidence level" used in claims 1 and 14 are vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear (Article 84 EPC).
- 4.2 Claim 9
- Claim 9 does not meet the requirements of Article 84 EPC in that the matter for which protection is sought is not defined. The claim attempts to define the subject-matter in terms of the result to be achieved : "determining, based on

said combining, a total quality indicator". Such a definition is only allowable under the conditions elaborated in the Guidelines F-IV, 4.10. In this instance, however, such a formulation is not allowable because it appears possible to define the subject-matter in more concrete terms, viz. in terms of how the effect is to be achieved.

- 5 Should the applicants nevertheless regard some particular matter as patentable, an independent claim should be filed taking account of Rule 43(1) EPC.
- 5.1 The applicants should also indicate in the letter of reply the difference of the subject-matter of the new claim vis-à-vis the state of the art and the significance thereof (i.e. what is the technical problem solved by the subject-matter of the new claim).
- 5.2 To meet the requirements of Rule 42(1)(b) EPC, the documents D1-D4 should be identified in the description and the relevant background art disclosed therein should be briefly discussed. The applicants should ensure that it is clear from the description which features of the subject-matter of a new independent claim would be known from the document D1.
- 5.3 An new independent claim should be in the two-part form in accordance with Rule 43(1) EPC, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 43(1)(a) EPC) and with the remaining features being included in the characterising part (Rule 43(1)(b) EPC). The amended new independent claim should therefore be redrafted accordingly. If, however, the applicant is of the opinion that the two-part form would be inappropriate, then reasons therefor should be provided in the letter of reply.
- 5.4 The features of the claims should be provided with reference signs placed in parentheses to increase the intelligibility of the claims (Rule 43(7) EPC). This applies to both the preamble and characterising portion (see the Guidelines, C-III, 4.19).
- 5.5 When filing amended claims the applicant should at the same time bring the description into conformity with the amended claims (Guidelines F-IV, 4.3). Care should be taken during revision, especially of the introductory portion and any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed (Article 123(2) EPC).

- 5.6 In the description of the application as originally filed, the mention "The scope of the present invention is not limited to structures and functions specifically described herein and is also intended to include devices which have the capacity to yield a structure, or perform a function, described herein, such that even though users of the device may not use the capacity, they are if they so desire able to modify the device to obtain the structure or function" at page 30, lines 4-8 should be deleted to comply with the Guidelines F-IV, 4.4.
- 5.7 In order to facilitate the examination of the conformity of the amended application with the requirements of Article 123(2) EPC, the applicants are requested to clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based.
- 5.8 Amendments should be made by filing replacement pages. Unnecessary recasting of the description should be avoided. The applicant should also take account of the requirements of Rule 50(1) EPC. According to Rule 50(1) in conjunction with Rule 49(8) EPC, amendments shall be typed or printed.

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 25197175                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay SIVAN                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 15-MAR-2016                             |
| <b>Filing Date:</b>                         | 27-JAN-2016                             |
| <b>Time Stamp:</b>                          | 12:06:10                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                        |    |
|------------------------|----|
| Submitted with Payment | no |
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### File Listing:

| Document Number | Document Description                                  | File Name | File Size(Bytes)/<br>Message Digest                      | Multi Part /.zip | Pages (if appl.) |
|-----------------|-------------------------------------------------------|-----------|----------------------------------------------------------|------------------|------------------|
| 1               | Information Disclosure Statement (IDS)<br>Form (SB08) | IDS1.pdf  | 1035103<br>6db069aabb9270527193a7b2a7f2485d36e0<br>ae25c | no               | 4                |

### Warnings:

### Information:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                             |                       |                                                    |         |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------|----------------------------------------------------|---------|----|
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Other Reference-Patent/App/Search documents | Supplementary-ESR.pdf | 242147<br>88fa967d87ba75a2371351a7462d357ab332f97c | no      | 10 |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                             |                       |                                                    |         |    |
| The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                             |                       |                                                    |         |    |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                             |                       |                                                    |         |    |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                             |                       |                                                    | 1277250 |    |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                             |                       |                                                    |         |    |

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| ABALINAN | ADJ #00000004 | Mailroom Dt: 01/27/2016    |        |          |
|          | Seq No: 6609  | Sales Acctg Dt: 01/27/2016 | 506726 | 15007253 |
|          | 03 FC : 3311  | 180.00 CR                  |        |          |



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| APPLICATION<br>NUMBER | FILING or<br>371(c) DATE | GRP ART<br>UNIT | FIL FEE REC'D | ATTY. DOCKET NO | TOT CLAIMS | IND CLAIMS |
|-----------------------|--------------------------|-----------------|---------------|-----------------|------------|------------|
| 15/007,253            | 01/27/2016               | 2661            | 435           | SIVAN-001-US1   | 20         | 3          |

**CONFIRMATION NO. 1015**  
**UPDATED FILING RECEIPT**

131926  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL



Date Mailed: 03/24/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**

Ishay SIVAN, Tel Aviv, ISRAEL;

**Applicant(s)**

SnapAid Ltd., Tel Aviv, ISRAEL;

**Power of Attorney:** The patent practitioners associated with Customer Number 131926

**Domestic Priority data as claimed by applicant**

This application is a CON of 14/437,105 04/20/2015  
which is a 371 of PCT/IL2013/050856 10/22/2013  
which claims benefit of 61/717,216 10/23/2012  
and claims benefit of 61/759,643 02/01/2013

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

**Permission to Access Application via Priority Document Exchange:** Yes

**Permission to Access Search Results:** No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

**If Required, Foreign Filing License Granted:** 02/11/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/007,253**

**Projected Publication Date:** 06/30/2016

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* MICRO ENTITY \*\***

**Title**

REAL TIME ASSESSMENT OF PICTURE QUALITY

**Preliminary Class**

348

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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**Title 37, Code of Federal Regulations, 5.11 & 5.15**

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# PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number  
15/007,253

## APPLICATION AS FILED - PART I

| (Column 1)                                        |                                                                                                                                                                                                                               | (Column 2)   | SMALL ENTITY |         | OR | OTHER THAN SMALL ENTITY |         |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|---------|----|-------------------------|---------|
| FOR                                               | NUMBER FILED                                                                                                                                                                                                                  | NUMBER EXTRA | RATE(\$)     | FEE(\$) |    | RATE(\$)                | FEE(\$) |
| BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))        | N/A                                                                                                                                                                                                                           | N/A          | N/A          |         |    | N/A                     | 70      |
| SEARCH FEE<br>(37 CFR 1.16(k), (l), or (m))       | N/A                                                                                                                                                                                                                           | N/A          | N/A          |         |    | N/A                     | 150     |
| EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))  | N/A                                                                                                                                                                                                                           | N/A          | N/A          |         |    | N/A                     | 180     |
| TOTAL CLAIMS<br>(37 CFR 1.16(j))                  | 20                                                                                                                                                                                                                            | minus 20 = * |              |         | OR | x 20 =                  | 0.00    |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))            | 3                                                                                                                                                                                                                             | minus 3 = *  |              |         |    | x 105 =                 | 0.00    |
| APPLICATION SIZE FEE<br>(37 CFR 1.16(s))          | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |              |              |         |    |                         | 0.00    |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |              |              |         |    |                         | 0.00    |
|                                                   |                                                                                                                                                                                                                               |              | TOTAL        |         |    | TOTAL                   | 400     |

\* If the difference in column 1 is less than zero, enter "0" in column 2.

## APPLICATION AS AMENDED - PART II

|             |                                                                 | (Column 1)                       |       | (Column 2)                         | (Column 3)    | SMALL ENTITY       |                    | OR | OTHER THAN SMALL ENTITY |                    |
|-------------|-----------------------------------------------------------------|----------------------------------|-------|------------------------------------|---------------|--------------------|--------------------|----|-------------------------|--------------------|
| AMENDMENT A |                                                                 | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE(\$)           | ADDITIONAL FEE(\$) |    | RATE(\$)                | ADDITIONAL FEE(\$) |
|             | Total<br>(37 CFR 1.16(i))                                       | *                                | Minus | **                                 | =             | x                  | =                  | OR | x                       | =                  |
|             | Independent<br>(37 CFR 1.16(h))                                 | *                                | Minus | ***                                | =             | x                  | =                  | OR | x                       | =                  |
|             | Application Size Fee (37 CFR 1.16(s))                           |                                  |       |                                    |               |                    |                    | OR |                         |                    |
|             | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                  |       |                                    |               |                    |                    | OR |                         |                    |
|             |                                                                 |                                  |       |                                    |               | TOTAL<br>ADD'L FEE |                    | OR | TOTAL<br>ADD'L FEE      |                    |

|             |                                                                 | (Column 1)                       |       | (Column 2)                         | (Column 3)    | SMALL ENTITY       |                    | OR | OTHER THAN SMALL ENTITY |                    |
|-------------|-----------------------------------------------------------------|----------------------------------|-------|------------------------------------|---------------|--------------------|--------------------|----|-------------------------|--------------------|
| AMENDMENT B |                                                                 | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE(\$)           | ADDITIONAL FEE(\$) |    | RATE(\$)                | ADDITIONAL FEE(\$) |
|             | Total<br>(37 CFR 1.16(i))                                       | *                                | Minus | **                                 | =             | x                  | =                  | OR | x                       | =                  |
|             | Independent<br>(37 CFR 1.16(h))                                 | *                                | Minus | ***                                | =             | x                  | =                  | OR | x                       | =                  |
|             | Application Size Fee (37 CFR 1.16(s))                           |                                  |       |                                    |               |                    |                    | OR |                         |                    |
|             | FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                  |       |                                    |               |                    |                    | OR |                         |                    |
|             |                                                                 |                                  |       |                                    |               | TOTAL<br>ADD'L FEE |                    | OR | TOTAL<br>ADD'L FEE      |                    |

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 15/007,253         | 01/27/2016            | Ishay SIVAN           | SIVAN-001-US1          |

**CONFIRMATION NO. 1015**

## PUBLICATION NOTICE



\*OC00000084073047\*

131926  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL

**Title:**REAL TIME ASSESSMENT OF PICTURE QUALITY

**Publication No.**US-2016-0191801-A1

**Publication Date:**06/30/2016

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at [www.uspto.gov](http://www.uspto.gov). The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at [www.uspto.gov](http://www.uspto.gov) using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 15/007,253      | 01/27/2016  | Ishay SIVAN          | SIVAN-001-US1       | 1015             |

131926 7590 11/22/2016  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL

|          |
|----------|
| EXAMINER |
|----------|

HANNETT, JAMES M

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2662

|           |               |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

11/22/2016

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                     |                                                  |
|------------------------------|--------------------------------------|-------------------------------------|--------------------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>15/007,253 | <b>Applicant(s)</b><br>SIVAN, ISHAY |                                                  |
|                              | <b>Examiner</b><br>JAMES HANNETT     | <b>Art Unit</b><br>2662             | <b>AIA (First Inventor to File) Status</b><br>No |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 1/27/2016.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims\*

- 5) ☒ Claim(s) 1-20 is/are pending in the application.  
5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-20 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 1/27/2016 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

#### Certified copies:

- a) ☐ All    b) ☐ Some\*\*    c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                          |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                              | 3) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)<br>Paper No(s)/Mail Date ____. | 4) <input type="checkbox"/> Other: ____.                                                |

The present application is being examined under the pre-AIA first to invent provisions.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 3/15/2016 and 1/27/2016 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**1:** Claim(s) 1-8, 11, 14, 15, 17, 18, and 20 are is/are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by US 2011/0075930 A1 Cerosaletti et al.

**2:** As for Claim 1, Cerosaletti et al depicts in Figures 1 and 2 and teaches in Paragraphs [0037, 0043, 0045, 0054, 0080, 0082 ] a method for computing photo quality of a captured image in a digital image acquisition system, comprising an image capture component (40) for capturing in a buffer (90), a current digital image having pixels, where said method comprising combining of: a plurality of quality indicators computed from at least one of: said captured image pixels (320), camera module 200 current photographic parameters (370) and inertial measurement hardware components readouts; and combining of at least one time-dependent confidence level  $C_i(t)$

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computed for at least one quality indicator, where said confidence level is computed via heuristically estimating probability (reasoning engine) of said quality indicator for said current image and its said parameters (Paragraphs [0082, 0087-0092]); and determining, based on said combining, a total quality indicator for said photo (390).

3: As for Claim 2, Cerosaletti et al teaches in Paragraph [0106] where one total quality indicator passed a predefined threshold, the captured image is stored in memory.

4: As for Claim 3, Cerosaletti et al teaches in Paragraph [0038 and 0106] wherein a stream of frames is saved as video and quality indicators are used to quantify quality of said video.

5: As for Claim 4, Cerosaletti et al teaches in Paragraph [0047] where at least one quality indicator is computed based on a hardware component (camera) including at least one of an accelerometer, gyro, GPS receiver.

6: As for Claim 5, Cerosaletti et al depicts in Figures 1 and 2 and teaches in Paragraphs [0037, 0043, 0045, 0054, 0080, 0082 ] wherein at least one of said indicators characterizing quality is computed based on analyzing said photo pixels (image data is analyzed).

7: As for Claim 6, Cerosaletti et al teaches in Paragraphs [0104 and 0111] wherein at least one of said indicators characterizing quality is computed based on comparing said pixels to previous frame data generated by said image capture component (40).

8: As for Claim 7, Cerosaletti et al depicts in Figures 1 and 2 and teaches in Paragraphs [0037, 0043, 0045, 0054, 0080, 0082 ] a method for computing photo photo

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quality of a captured image in a digital image acquisition system, comprising an image capture component (40) for capturing in a buffer (90), a current digital image having pixels, where said method comprising combining of: a plurality of quality indicators computed for said photo (Figure 2); and combining of at least one time-dependent confidence level  $C_i(t)$  computed for at least one quality indicator, where said confidence level is based on previous quality indicators made in close succession from stream of frames that came just before said current photo frame (reasoning engine), as done is video frames; and determining, based on said combining, a total quality indicator for said photo (390).

9: As for Claim 8, Cerosaletti et al teaches in Paragraph [0047] where at least one quality indicator is computed based on a hardware component including at least one of an accelerometer, gyro, GPS receiver.

10: As for Claim 11, Cerosaletti et al teaches in Paragraph [0038 and 0106] wherein a stream of frames is saved as video and quality indicators are used to quantify quality of said video.

11: As for Claim 14, Cerosaletti et al depicts in Figures 1 and 2 and teaches in Paragraphs [0037, 0043, 0045, 0054, 0080, 0082 ] a method for computing photo quality of a captured image in a digital image acquisition system comprising an image capture component (40) for capturing in a buffer (90), a current digital image having pixels, where said method comprising combining of: a plurality of quality indicators, and determining, based on said combining, a total quality indicator (390 for said photo,

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where at least one weight of one quality indicator is effected by at least one second quality indicator value.

12: As for Claim 15, Cerosaletti et al teaches in Paragraphs [0082-0092] wherein second quality indicator value is based on time-dependent confidence level  $C_i(t)$  computed from said probability of second quality indicator value, where probability is computed via use of said second quality indicator values from previous close succession image frames.

13: As for Claim 17, Cerosaletti et al teaches in Paragraph [0038 and 0106] wherein a stream of frames is saved as video and quality indicators are used to quantify quality of said video.

14: As for Claim 18, Cerosaletti et al teaches in Paragraph [0047] where at least one quality indicator is computed based on a hardware component including at least one of an accelerometer, gyro, GPS receiver.

15: As for Claim 20, Cerosaletti et al teaches in Paragraph [0106] where one total quality indicator passed a predefined threshold, the captured image is stored in memory.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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**16:** Claims 9, 10, 12, 13, and 16, 19 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US 2011/0075930 A1 Cerosaletti et al in view of Official Notice.

17: As for Claims 9, 10, and 19, Cerosaletti et al teaches the use of a camera. However, Cerosaletti et al does not teach the camera system can be in a flying drone.

Official Notice is taken that it was well known in the art at the time the invention was made to provide digital cameras in flying drones in order to take aerial photographs.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the camera system of Cerosaletti et al in a flying drone in order to take aerial photographs.

18: As for Claims 12, 13 and 16, Cerosaletti et al teaches in Paragraphs [0108-0110] when capturing an image the camera can give feedback to the user so that the photographer can dynamically modify the image capturing parameters in order to maximize the image quality. However, Cerosaletti et al does not teach that the exposure parameters can be changed.

Official Notice is taken that it was well known in the art at the time the invention was made to adjust exposure parameters of exposure time and white balance in order to improve image quality.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the camera user of Cerosaletti et al to change

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the exposure parameters of exposure time and white balance when dynamically modify the image capturing parameters in order to maximize the image quality.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hannett whose telephone number is 571-272-7309. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roberto Velez can be reached on 571-272-8597 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James M. Hannett/  
Primary Examiner  
Art Unit 2662

JMH  
November 21, 2016

|                                   |                                       |                                                            |             |
|-----------------------------------|---------------------------------------|------------------------------------------------------------|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>15/007,253 | Applicant(s)/Patent Under<br>Reexamination<br>SIVAN, ISHAY |             |
|                                   | Examiner<br>JAMES HANNETT             | Art Unit<br>2662                                           | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                 | CPC Classification | US Classification |
|---|---|--------------------------------------------------|-----------------|----------------------|--------------------|-------------------|
| * | A | US-2002/0172432 A1                               | 11-2002         | Pilu, Maurizio       | H04N1/40093        | 382/274           |
| * | B | US-7,136,537 B2                                  | 11-2006         | Pilu; Maurizio       | H04N1/40093        | 358/3.26          |
| * | C | US-7,130,463 B1                                  | 10-2006         | Spangler; Randall R. | G06K9/4642         | 382/168           |
| * | D | US-6,178,294 B1                                  | 01-2001         | Sakano; Hitoshi      | G02B21/0096        | 396/232           |
| * | E | US-6,091,911 A                                   | 07-2000         | Sakano; Hitoshi      | G02B21/0096        | 250/201.3         |
|   | F | US-                                              |                 |                      |                    |                   |
|   | G | US-                                              |                 |                      |                    |                   |
|   | H | US-                                              |                 |                      |                    |                   |
|   | I | US-                                              |                 |                      |                    |                   |
|   | J | US-                                              |                 |                      |                    |                   |
|   | K | US-                                              |                 |                      |                    |                   |
|   | L | US-                                              |                 |                      |                    |                   |
|   | M | US-                                              |                 |                      |                    |                   |

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| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | CPC Classification |
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|   | N |                                                  |                 |         |      |                    |
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|   | R |                                                  |                 |         |      |                    |
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|   | T |                                                  |                 |         |      |                    |

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|   | W |                                                                                           |
|   | X |                                                                                           |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( Not for submission under 37 CFR 1.99)

|                        |               |
|------------------------|---------------|
| Application Number     | 15007253      |
| Filing Date            | 2016-01-27    |
| First Named Inventor   | Ishay SIVAN   |
| Art Unit               |               |
| Examiner Name          |               |
| Attorney Docket Number | SIVAN-001-US1 |

## **U.S.PATENTS**

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|-------------------|---------|--------------------|------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------|
|                   | 1       | 20120249837        | A1                     | 2012-10-04       | Chen Lawrence Shao Hsien                        |                                                                        |
|                   | 2       | 20070216787        | A1                     | 2007-09-20       | Lin Peng W et al                                |                                                                        |
|                   | 3       | 20110292221        | A1                     | 2011-12-01       | Gu Ye et al                                     |                                                                        |
|                   | 4       | 20090251557        | A1                     | 2009-10-08       | Kim Ki Tae et al                                |                                                                        |
|                   | 5       | 20060017820        | A1                     | 2006-01-26       | Kim Su-Hyun                                     |                                                                        |

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|                        |               |            |
|------------------------|---------------|------------|
| Application Number     |               | 15007253   |
| Filing Date            |               | 2016-01-27 |
| First Named Inventor   | Ishay SIVAN   |            |
| Art Unit               |               |            |
| Examiner Name          |               |            |
| Attorney Docket Number | SIVAN-001-US1 |            |

| Examiner Initial* | Cite No | Foreign Document Number <sup>3</sup> | Country Code <sup>2</sup> | Kind Code <sup>4</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear | T <sup>5</sup> |
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|                    | 1       | EPO, Supplementary European Search Report for EP 13849379.6, dated February 15, 2016                                                                                                                                                                            |                |

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## **EXAMINER SIGNATURE**

|                    |                   |                 |            |
|--------------------|-------------------|-----------------|------------|
| Examiner Signature | /JAMES M HANNETT/ | Date Considered | 11/20/2016 |
|--------------------|-------------------|-----------------|------------|

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

|                        |               |
|------------------------|---------------|
| Application Number     | 15007253      |
| Filing Date            | 2016-01-27    |
| First Named Inventor   | Ishay SIVAN   |
| Art Unit               |               |
| Examiner Name          |               |
| Attorney Docket Number | SIVAN-001-US1 |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |               |                     |            |
|------------|---------------|---------------------|------------|
| Signature  | /yb/          | Date (YYYY-MM-DD)   | 2016-03-14 |
| Name/Print | Yehuda BINDER | Registration Number | 73612      |

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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|                                                                                                              |                                                |                                                                    |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------|
| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br><br>15007253 | <b>Applicant(s)/Patent Under Reexamination</b><br><br>SIVAN, ISHAY |
|                                                                                                              | <b>Examiner</b><br><br>JAMES HANNETT           | <b>Art Unit</b><br><br>2662                                        |

| CPC- SEARCHED                  |            |          |
|--------------------------------|------------|----------|
| Symbol                         | Date       | Examiner |
| H04N 5/23222, 5/23229, 5/23258 | 11/20/2016 | JMH      |

| CPC COMBINATION SETS - SEARCHED |      |          |
|---------------------------------|------|----------|
| Symbol                          | Date | Examiner |
|                                 |      |          |

| US CLASSIFICATION SEARCHED |          |      |          |
|----------------------------|----------|------|----------|
| Class                      | Subclass | Date | Examiner |
|                            |          |      |          |

| SEARCH NOTES         |            |          |
|----------------------|------------|----------|
| Search Notes         | Date       | Examiner |
| East Search          | 11/20/2016 | JMH      |
| Inventor Name Search | 11/20/2016 | JMH      |

| INTERFERENCE SEARCH     |                         |      |          |
|-------------------------|-------------------------|------|----------|
| US Class/<br>CPC Symbol | US Subclass / CPC Group | Date | Examiner |
|                         |                         |      |          |

|  |                                                   |
|--|---------------------------------------------------|
|  | /JAMES HANNETT/<br>Primary Examiner.Art Unit 2662 |
|--|---------------------------------------------------|

|                                                                                                                                       |                                            |                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| <p align="center"><b><i>Index of Claims</i></b></p>  | <b>Application/Control No.</b><br>15007253 | <b>Applicant(s)/Patent Under Reexamination</b><br>SIVAN, ISHAY |
|                                                                                                                                       | <b>Examiner</b><br>JAMES HANNETT           | <b>Art Unit</b><br>2662                                        |

|   |                 |   |                   |   |                     |   |                 |
|---|-----------------|---|-------------------|---|---------------------|---|-----------------|
| ✓ | <b>Rejected</b> | - | <b>Cancelled</b>  | N | <b>Non-Elected</b>  | A | <b>Appeal</b>   |
| = | <b>Allowed</b>  | ÷ | <b>Restricted</b> | I | <b>Interference</b> | O | <b>Objected</b> |

| <input type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> |          | <input type="checkbox"/> <b>CPA</b> |  | <input type="checkbox"/> <b>T.D.</b> |  | <input type="checkbox"/> <b>R.1.47</b> |  |  |  |
|-----------------------------------------------------------------------------------------------|----------|-------------------------------------|--|--------------------------------------|--|----------------------------------------|--|--|--|
| CLAIM                                                                                         |          | DATE                                |  |                                      |  |                                        |  |  |  |
| Final                                                                                         | Original | 11/20/2016                          |  |                                      |  |                                        |  |  |  |
|                                                                                               | 1        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 2        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 3        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 4        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 5        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 6        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 7        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 8        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 9        | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 10       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 11       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 12       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 13       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 14       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 15       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 16       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 17       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 18       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 19       | ✓                                   |  |                                      |  |                                        |  |  |  |
|                                                                                               | 20       | ✓                                   |  |                                      |  |                                        |  |  |  |

# **EAST Search History**

## **EAST Search History (Prior Art)**

| <b>Ref #</b> | <b>Hits</b> | <b>Search Query</b>                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DBs</b>                                               | <b>Default Operator</b> | <b>Plurals</b> | <b>Time Stamp</b> |
|--------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------|----------------|-------------------|
| S1           | 0           | ("20040174434"   "20060017820"   "20060056835"   "20070195174"   "20090263028"   "20090278958"   "20100026872"   "20100290673"   "20110096180"   "20110279700"   "20120086847"   "20120133816"   "20120182447"   "20130038771"   "20130050507"   "20130058561"   "20130063538"   "20130155474"   "20140050367"   "5125557"   "7362354"   "7688379"   "7920727"   "7982770"   "8040382"   "8131118"   "8244053"   "8285067").PN.").PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR                      | OFF            | 2015/10/23 08:51  |
| S2           | 73          | ("20040174434"   "20060017820"   "20060056835"   "20070195174"   "20090263028"   "20090278958"   "20100026872"   "20100290673"   "20110096180"   "20110279700"   "20120086847"   "20120133816"   "20120182447"   "20130038771"   "20130050507"   "20130058561"   "20130063538"   "20130155474"   "20140050367"   "5125557"   "7362354"   "7688379"   "7920727"   "7982770"   "8040382"   "8131118"   "8244053"   "8285067").PN.       | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR                      | OFF            | 2015/10/23 08:51  |
| S3           | 9           | S2 and buffer                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR                      | OFF            | 2015/10/23 08:52  |
| S4           | 5           | S3 and (real adj time or realtime or real-time)                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR                      | OFF            | 2015/10/23 08:52  |
| S5           | 10616       | image with capture with automatic\$4                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR                      | OFF            | 2015/10/23 08:55  |
| S6           | 5           | S4 and (real adj time or realtime or real-time)                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB; USPAT; USOCR; FPRS;                            | OR                      | OFF            | 2015/10/23 08:56  |

|     |      |                                                                     |                                                                            |    |     |                     |
|-----|------|---------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |      |                                                                     | EPO; JPO;<br>DERWENT;<br>IBM_TDB                                           |    |     |                     |
| S7  | 3933 | S5 and (real adj time or realtime or real-time)                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>08:56 |
| S8  | 1375 | S7 and buffer                                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>08:56 |
| S9  | 1025 | S8 and quality                                                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>08:56 |
| S10 | 20   | S8 and quality near4 indicator\$4                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>08:57 |
| S11 | 0    | ("2015/0288874").URPN.                                              | USPAT                                                                      | OR | OFF | 2015/10/23<br>08:57 |
| S12 | 2    | S4 and (real adj time or realtime or real-time) with quality        | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>08:58 |
| S13 | 775  | S8 and quality near4 image                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:00 |
| S14 | 7264 | image\$2 with (real adj time or realtime or real-time) with quality | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:00 |
| S15 | 292  | S14 and image with capture with automatic\$4                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:00 |

|     |       |                                                                             |                                                                            |    |     |                     |
|-----|-------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
| S16 | 20    | S15 and confidence adj level                                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:04 |
| S17 | 1     | S15 and confidence adj level with quality                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:05 |
| S18 | 799   | sivan .in.                                                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:44 |
| S19 | 84    | S18 and (real adj time or realtime or real-time)                            | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:44 |
| S20 | 1375  | S8 and buffer                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:44 |
| S21 | 21    | S19 and buffer                                                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:44 |
| S22 | 2     | S21 and image\$2 with (real adj time or realtime or real-time) with quality | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:44 |
| S23 | 99145 | (real adj time or realtime or real-time) .clm.                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:46 |
| S24 | 20412 | S23 and imag\$2 .clm.                                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;                        | OR | OFF | 2015/10/23<br>09:46 |

|     |       |                                                       |                                                                            |    |     |                     |
|-----|-------|-------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |       |                                                       | DERWENT;<br>IBM_TDB                                                        |    |     |                     |
| S25 | 1205  | S24 and quality .clm.                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:46 |
| S26 | 468   | S25 and quality near4 image .clm.                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:48 |
| S27 | 28    | S26 and buffer .clm.                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:48 |
| S28 | 2     | S27 and image with capture with<br>automatic\$4 .clm. | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:49 |
| S29 | 9     | S26 and suggest\$4 .clm.                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:51 |
| S30 | 6     | S29 and user .clm.                                    | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:51 |
| S31 | 33099 | confidence adj level                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:53 |
| S32 | 102   | confidence adj level with quality with<br>image       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:53 |
| S33 | 3104  | h04n5/23222.cpc.                                      | US-PGPUB;<br>USPAT;<br>USOCR;                                              | OR | OFF | 2015/10/23<br>09:54 |

|     |       |                                                                                   |                                                                            |    |     |                     |
|-----|-------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |       |                                                                                   | FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB                                  |    |     |                     |
| S34 | 4219  | h04n5/23229.cpc.                                                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:54 |
| S35 | 5045  | h04n5/23258.cpc.                                                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:54 |
| S36 | 11935 | S33 or S34 or S35                                                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:54 |
| S37 | 3     | S36 and confidence adj level with quality<br>with image                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:54 |
| S38 | 2483  | S36 and quality with image                                                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:56 |
| S39 | 50    | S38 and (suggest\$4 or recommend\$4)<br>with quality                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:57 |
| S40 | 1     | S38 and (suggest\$4 or recommend\$4)<br>with quality with table                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:57 |
| S41 | 86518 | (predefined or pre-defined or<br>predetermined or pre-determined) with<br>quality | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>09:59 |
| S42 | 11    | (predefined or pre-defined or                                                     | US-PGPUB;                                                                  | OR | OFF | 2015/10/23          |

|     |     |                                                                                                                   |                   |                                                               |    |     |            |
|-----|-----|-------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------|----|-----|------------|
|     |     | predetermined or pre-determined) with<br>quality with image with (suggestion\$4 or<br>recomend or recommendation) |                   | USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB |    |     | 10:00      |
| S43 | 630 | ("20010036307"                                                                                                    | "20020006163"     | US-PGPUB;                                                     | OR | OFF | 2015/10/23 |
|     |     | "20020006284"                                                                                                     | "20020054214"     | USPAT;                                                        |    |     | 10:01      |
|     |     | "20020150302"                                                                                                     | "20020154232"     | USOCR                                                         |    |     |            |
|     |     | "20020191861"                                                                                                     | "20030007687"     |                                                               |    |     |            |
|     |     | "20030052991"                                                                                                     | "20030058361"     |                                                               |    |     |            |
|     |     | "20030068100"                                                                                                     | "20030091225"     |                                                               |    |     |            |
|     |     | "20030103076"                                                                                                     | "20030112361"     |                                                               |    |     |            |
|     |     | "20030151672"                                                                                                     | "20030151674"     |                                                               |    |     |            |
|     |     | "20030152271"                                                                                                     | "20030152291"     |                                                               |    |     |            |
|     |     | "20030169818"                                                                                                     | "20030193699"     |                                                               |    |     |            |
|     |     | "20030219172"                                                                                                     | "20040047498"     |                                                               |    |     |            |
|     |     | "20040066981"                                                                                                     | "20040076335"     |                                                               |    |     |            |
|     |     | "20040081441"                                                                                                     | "20040090532"     |                                                               |    |     |            |
|     |     | "20040106958"                                                                                                     | "20040120598"     |                                                               |    |     |            |
|     |     | "20040120698"                                                                                                     | "20040130628"     |                                                               |    |     |            |
|     |     | "20040135898"                                                                                                     | "20040145659"     |                                                               |    |     |            |
|     |     | "20040169767"                                                                                                     | "20040170330"     |                                                               |    |     |            |
|     |     | "20040212699"                                                                                                     | "20040218057"     |                                                               |    |     |            |
|     |     | "20040218067"                                                                                                     | "20040247030"     |                                                               |    |     |            |
|     |     | "20040247179"                                                                                                     | "20050010108"     |                                                               |    |     |            |
|     |     | "20050019000"                                                                                                     | "20050031224"     |                                                               |    |     |            |
|     |     | "20050041121"                                                                                                     | "20050041123"     |                                                               |    |     |            |
|     |     | "20050047672"                                                                                                     | "20050052553"     |                                                               |    |     |            |
|     |     | "20050057687"                                                                                                     | "20050068446"     |                                                               |    |     |            |
|     |     | "20050068452"                                                                                                     | "20050078197"     |                                                               |    |     |            |
|     |     | "20050140801"                                                                                                     | "20050157181"     |                                                               |    |     |            |
|     |     | "20050168587"                                                                                                     | "20050201637"     |                                                               |    |     |            |
|     |     | "20050203430"                                                                                                     | "20050219391"     |                                                               |    |     |            |
|     |     | "20050231603"                                                                                                     | "20050231625"     |                                                               |    |     |            |
|     |     | "20050243178"                                                                                                     | "20050248660"     |                                                               |    |     |            |
|     |     | "20050259864"                                                                                                     | "20050270381"     |                                                               |    |     |            |
|     |     | "20050281477"                                                                                                     | "20060006309"     |                                                               |    |     |            |
|     |     | "20060017820"                                                                                                     | "20060017837"     |                                                               |    |     |            |
|     |     | "20060023099"                                                                                                     | "20060029284"     |                                                               |    |     |            |
|     |     | "20060038891"                                                                                                     | "20060039690"     |                                                               |    |     |            |
|     |     | "20060093212"                                                                                                     | "20060093238"     |                                                               |    |     |            |
|     |     | "20060098237"                                                                                                     | "20060098867"     |                                                               |    |     |            |
|     |     | "20060098890"                                                                                                     | "20060098891"     |                                                               |    |     |            |
|     |     | "20060119710"                                                                                                     | "20060120599"     |                                                               |    |     |            |
|     |     | "20060125928"                                                                                                     | "20060125938"     |                                                               |    |     |            |
|     |     | "20060133688"                                                                                                     | "20060140455"     |                                                               |    |     |            |
|     |     | "20060170786"                                                                                                     | "20060171464"     |                                                               |    |     |            |
|     |     | "20060187308"                                                                                                     | "20060204034"     |                                                               |    |     |            |
|     |     | "20060204054"                                                                                                     | "20060204110"     |                                                               |    |     |            |
|     |     | "20060257042"                                                                                                     | "20060279639"     |                                                               |    |     |            |
|     |     | "20060285754"                                                                                                     | "20070009169"     |                                                               |    |     |            |
|     |     | "20070025714").PN.                                                                                                | OR ("20070058073" |                                                               |    |     |            |
|     |     | "20070083114"                                                                                                     | "20070086675"     |                                                               |    |     |            |
|     |     | "20070097221"                                                                                                     | "20070110305"     |                                                               |    |     |            |
|     |     | "20070133893"                                                                                                     | "20070147820"     |                                                               |    |     |            |
|     |     | "20070171987"                                                                                                     | "20070177817"     |                                                               |    |     |            |
|     |     | "20070189748"                                                                                                     | "20070201724"     |                                                               |    |     |            |
|     |     | "20070234779"                                                                                                     | "20070263995"     |                                                               |    |     |            |
|     |     | "20070269108"                                                                                                     | "20070296833"     |                                                               |    |     |            |
|     |     | "20080012969"                                                                                                     | "20080019669"     |                                                               |    |     |            |
|     |     | "20080030586"                                                                                                     | "20080037827"     |                                                               |    |     |            |
|     |     | "20080037839"                                                                                                     | "20080037840"     |                                                               |    |     |            |
|     |     | "20080043121"                                                                                                     | "20080064438"     |                                                               |    |     |            |

|                |                        |           |
|----------------|------------------------|-----------|
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| "20080211943"  | "20080218611"          |           |
| "20080219581"  | "20080219585"          |           |
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| "20080240555"  | "20080292193"          |           |
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| "20090067826"  | "20090080713"          |           |
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| "20090167893"  | "20090174782"          |           |
| "20090179999"  | "20090185041"          |           |
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| "20090196466"  | "20090196510"          |           |
| "20090263022"  | "20090273685"          |           |
| "20090303342"  | "20090303343"          |           |
| "20100126831"  | "20100201826"          |           |
| "20100201827"  | "20100328472"          |           |
| "20110069207"  | "20110193989"          |           |
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| "4357382"      | "4448853"              | "4532190" |
| "4624897"      | "4824008"              | "4862277" |
| "5192964"      | "5251019"              | "5374956" |
| "5392088"      | "5428723"              | "5430480" |
| "5510215"      | "5599766"              | "5686383" |
| "5708863"      | "5717611"              | "5747199" |
| "5751836"      | "5756239"              | "5756240" |
| "5773810"      | "5790490"              | "5802220" |
| "5889277"      | "5889554"              | "5909242" |
| "5981112"      | "6016354"              | "6028960" |
| "6035072"      | "6041078"              | "6061462" |
| "6081606"      | "6114075")             | PN. OR    |
| ("6122017"     | "6124864"              | "6134339" |
| "6269175"      | "6297071"              | "6297846" |
| "6298198"      | "6326108"              | "6330029" |
| "6341179"      | "6360003"              | "6363116" |
| "6365304"      | "6374054"              | "6381279" |
| "6387577"      | "6396883"              | "6407777" |
| "6463173"      | "6470147"              | "6486915" |
| "6535244"      | "6555278"              | "6567536" |
| "6577821"      | "6599668"              | "6602656" |
| "6607873"      | "6618491"              | "6625396" |
| "6628898"      | "6643387"              | "6741960" |
| "6863368"      | "6892029"              | "6930718" |
| "6947609"      | "6961518"              | "7019331" |
| "7027087"      | "7042509"              | "7072525" |
| "7084037"      | "7160573"              | "7177538" |
| "7180238"      | "7195848"              | "7212230" |
| "7269292"      | "7292270"              | "7315324" |
| "7315630"      | "7315631"              | "7316630" |
| "7316631"      | "7317815"              | "7336821" |
| "7369712"      | "7403643"              | "7453493" |
| "7453510"      | "7460695"              | "7469071" |
| "7489341"      | "7548256"              | "7551755" |
| "7565030"      | "7593144"              | "7623153" |
| "7636486"      | "7639888"              | "7639889" |
| "7660478"      | "7676108"              | "7689107" |
| "7692696"      | "7697778"              | "7705884" |
| "7738015")     | PN. OR ("2004/0174434" |           |
| "2006/0017820" | "2006/0056835"         |           |
| "2007/0195174" | "2009/0263028"         |           |
| "2009/0278958" | "2010/0026872"         |           |

|     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                            |    |     |                     |
|-----|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |    | "2010/0290673"   "2011/0096180"  <br>"2011/0279700"   "2012/0086847"  <br>"2012/0133816"   "2012/0182447"  <br>"2013/0038771"   "2013/0050507"  <br>"2013/0058561"   "2013/0063538"  <br>"2013/0155474"   "2014/0050367"  <br>"5125557"   "7362354"   "7688379"  <br>"7920727"   "7982770"   "8040382"  <br>"8131118"   "8244053"  <br>"8285067").URPN.                                                                                                                                                                                                                                                                                                                                                                  |                                                                            |    |     |                     |
| S44 | 24 | S43 and (predefined or pre-defined or<br>predetermined or pre-determined) with<br>quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>10:02 |
| S45 | 20 | S44 and quality with image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>10:02 |
| S46 | 0  | S45 and confidence adj level with quality<br>with image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>10:02 |
| S47 | 1  | S45 and (suggest\$4 or recommend\$4)<br>with quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>10:04 |
| S48 | 52 | ("20040075743"   "20050226499"  <br>"20060061678"   "20060166738"  <br>"20060221223"   "20060290804"  <br>"20070019943"   "20070076960"  <br>"20070263092"   "20080043108"  <br>"20080278744"   "20080285860"  <br>"20090046900"   "20090179998"  <br>"20090193082"   "20090213213"  <br>"20100117837"   "20110029635"  <br>"20110075917"   "20110075930"  <br>"20110307821"   "20120013783"  <br>"20120022897"   "5164831"   "5694484"  <br>"5875265"   "6282317"   "6516154"  <br>"6671405"   "6778699"   "6801661"  <br>"6816847"   "6930718"   "7362354"  <br>"7924326"   "7979369"   "8081227"  <br>"8125557"   "8199208"   "8830341").PN.<br>OR ("2006/0017820"   "2011/0075930"  <br>"8330826"   "9154692").URPN. | US-PGPUB;<br>USPAT;<br>USOCR                                               | OR | OFF | 2015/10/23<br>10:06 |
| S49 | 34 | S48 and quality with image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;                        | OR | OFF | 2015/10/23<br>10:07 |

|     |       |                                                                                                         |                                                                            |    |     |                     |
|-----|-------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |       |                                                                                                         | DERWENT;<br>IBM_TDB                                                        |    |     |                     |
| S50 | 6     | S49 and (suggest\$4 or recommend\$4) with quality                                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2015/10/23<br>10:07 |
| S51 | 2     | ("20160191801").PN.                                                                                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2016/11/19<br>09:43 |
| S52 | 5     | (US-20110075930-\$ or US-20060017820-\$).did. or (US-8330826-\$ or US-9154692-\$ or US-8081227-\$).did. | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>09:47 |
| S53 | 0     | S52 and shake                                                                                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2016/11/19<br>09:47 |
| S54 | 2     | S52 and motion                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2016/11/19<br>09:48 |
| S55 | 1     | S52 and motion adj sensor                                                                               | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:05 |
| S56 | 0     | S52 and exposure same parameters                                                                        | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:07 |
| S57 | 0     | S52 and exposure same values                                                                            | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:07 |
| S58 | 0     | S52 and exposure same settings                                                                          | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:07 |
| S59 | 2     | S52 and exposure                                                                                        | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:07 |
| S60 | 0     | S59 and auto-focus                                                                                      | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:13 |
| S61 | 2     | S59 and focus                                                                                           | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:13 |
| S62 | 1     | S59 and retake                                                                                          | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:18 |
| S63 | 0     | S59 and update with exposure                                                                            | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:18 |
| S64 | 18    | quality with update with exposure                                                                       | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:19 |
| S65 | 682   | quality with automatic with exposure                                                                    | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:22 |
| S66 | 28557 | quality with automatic with exposure wit hiso with shutter with aperture                                | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2016/11/19<br>10:22 |

|     |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |    |     |                     |
|-----|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----|-----|---------------------|
| S67 | 30568 | quality with automatic with exposure wit<br>iso with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:22 |
| S68 | 0     | quality with automatic with exposure with<br>iso with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:23 |
| S69 | 10    | quality with automatic with exposure with<br>shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:23 |
| S70 | 0     | (retake or recapture) with automatic with<br>exposure with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:29 |
| S71 | 0     | (retake or recapture) with automatic with<br>exposure with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:29 |
| S72 | 0     | (retake or recapture) with exposure with<br>shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:29 |
| S73 | 5     | (retake or recapture) with exposure with<br>different                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:29 |
| S74 | 36    | (retake or recapture) same exposure<br>same different                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:31 |
| S75 | 5     | (retake or recapture) same exposure<br>same different same quality                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/19<br>10:31 |
| S76 | 5     | ("20060017820"   "20070216787"  <br>"20090251557"   "20110292221"  <br>"20120249837"   "20060017820"  <br>"20070216787"   "20090251557"  <br>"20110292221"   "20120249837").PN.                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/20<br>13:55 |
| S77 | 32    | ("20040174434"   "20060017820"  <br>"20060056835"   "20070195174"  <br>"20090263028"   "20090278958"  <br>"20100026872"   "20100290673"  <br>"20110075930"   "20110096180"  <br>"20110279700"   "20120086847"  <br>"20120133816"   "20120182447"  <br>"20130038771"   "20130050507"  <br>"20130058561"   "20130063538"  <br>"20130155474"   "20140050367"  <br>"7362354"   "7688379"   "7920727"  <br>"7982770"   "8040382"   "8081227"  <br>"8125557"   "8131118"   "8244053"  <br>"8285067"   "8330826"   "9154692").PN. | US-PGPUB;<br>USPAT           | OR | OFF | 2016/11/20<br>13:55 |
| S78 | 14    | ("20060061678"   "20060221223"  <br>"20070019943"   "20070076960"  <br>"20080043108"   "20090046900"  <br>"20120013783"   "7362354"   "7924326"  <br>"8081227"   "8125557"   "8199208"  <br>"8830341").PN. OR ("9154692").URPN.                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT;<br>USOCR | OR | OFF | 2016/11/20<br>14:08 |

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# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** ( Not for submission under 37 CFR 1.99)

Application Number

15007253 - GAU: 2662

Filing Date

First Named Inventor

Ishay SIVAN

Art Unit

Examiner Name

Attorney Docket Number

SIVAN-001-US1

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|-------------------|---------|---------------|------------------------|------------|-------------------------------------------------|--------------------------------------------------------------------------|
|                   | 1       | 8285067       |                        | 2012-10-09 | Steinberg , et al.                              |                                                                          |
|                   | 2       | 8244053       |                        | 2012-08-14 | Steinberg , et al.                              |                                                                          |
|                   | 3       | 7362354       |                        | 2008-04-22 | Lin; Qian                                       |                                                                          |
|                   | 4       | 7688379       |                        | 2010-03-30 | Forman , et al.                                 |                                                                          |
|                   | 5       | 8125557       |                        | 2012-02-08 | Chen , et al.                                   |                                                                          |
|                   | 6       | 7920727       |                        | 2011-05-04 | Weng , et al.                                   |                                                                          |
|                   | 7       | 8040382       |                        | 2011-10-18 | Kahn , et al.                                   |                                                                          |
|                   | 8       | 7982770       |                        | 2011-07-19 | Kahn , et al.                                   |                                                                          |

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| Application Number     | 15007253 - GAU: 2662 |  |
| Filing Date            |                      |  |
| First Named Inventor   | Ishay SIVAN          |  |
| Art Unit               |                      |  |
| Examiner Name          |                      |  |
| Attorney Docket Number | SIVAN-001-US1        |  |

|    |         |  |            |                                   |  |
|----|---------|--|------------|-----------------------------------|--|
| 9  | 8131118 |  | 2012-06-03 | Jing , et al.                     |  |
| 10 | 8330826 |  | 2012-11-12 | Cerosaletti; Cathleen D. ; et al. |  |
| 11 | 8081227 |  | 2011-20-12 | Kim , et al.                      |  |
| 12 | 9154692 |  | 2015-06-10 | Son , et al.                      |  |

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|                   | 1       | 20130155474        |                        | 2013-06-20       | Roach; John J. ; et al.                         |                                                                          |
|                   | 2       | 20090263028        |                        | 2009-10-22       | Kwon; Sung Jin                                  |                                                                          |
|                   | 3       | 20060017820        |                        | 2006-01-26       | Kim; Su-hyun                                    |                                                                          |
|                   | 4       | 20060056835        |                        | 2006-03-16       | Poon; Eunice ; et al.                           |                                                                          |
|                   | 5       | 20090278958        |                        | 2009-11-12       | Bregman-Amitai; Orna ; et al.                   |                                                                          |

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| Application Number     | 15007253 - GAU: 2662 |  |
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| First Named Inventor   | Ishay SIVAN          |  |
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|    |             |  |            |                         |  |
|----|-------------|--|------------|-------------------------|--|
| 6  | 20070195174 |  | 2007-08-23 | Oren; Halpern           |  |
| 7  | 20120133816 |  | 2012-04-22 | Imai; Francisco         |  |
| 8  | 20100290673 |  | 2010-11-18 | MIYASHITA; Naoyuki      |  |
| 9  | 20130058561 |  | 2014-09-30 | Cheng; Chia-Ming        |  |
| 10 | 20130038771 |  | 2013-02-14 | Brunner; Ralph ; et al. |  |
| 11 | 20140050367 |  | 2014-02-20 | CHEN; Francine ; et al. |  |
| 12 | 20130050507 |  | 2013-02-28 | Syed; Zia ; et al.      |  |
| 13 | 20120182447 |  | 2012-07-19 | Gabay; Chanan           |  |
| 14 | 20130063538 |  | 2013-03-14 | Hubner; Paul ; et al.   |  |
| 15 | 20120086847 |  | 2012-04-12 | Foster; Brett           |  |
| 16 | 20100026872 |  | 2010-02-04 | JIANG; JIN-LIN          |  |

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| First Named Inventor   | Ishay SIVAN          |
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|--|----|-------------|--|------------|-----------------------------------|--|
|  | 17 | 20040174434 |  | 2004-09-09 | Walker, Jay S. ; et al.           |  |
|  | 18 | 20110279700 |  | 2011-11-17 | Steinberg; Eran ; et al.          |  |
|  | 19 | 20110096180 |  | 2011-04-28 | McCloskey; Scott ; et al.         |  |
|  | 20 | 20110075930 |  | 2011-31-03 | Cerosaletti; Cathleen D. ; et al. |  |
|  | 21 | 20060017820 |  | 2006-26-01 | Kim; Su-hyun                      |  |

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|-------------------|---------|--------------------------------------|-----------------------------|------------------------|------------------|-------------------------------------------------|--------------------------------------------------------------------------|----------------|
|                   | 1       | 2008033200                           | JP                          |                        | 2008-02-14       | Nikon Corp                                      |                                                                          |                |
|                   | 2       | 2007208922                           | JP                          |                        | 2007-08-16       | Fujifilm Corp                                   |                                                                          |                |
|                   | 3       | 2006050494                           | JP                          |                        | 2006-02-16       | Casio Comput Co. Ltd.                           |                                                                          |                |
|                   | 4       | 2003069559                           | WO                          |                        | 2003-08-21       | Lin; Qian                                       |                                                                          |                |

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| Attorney Docket Number | SIVAN-001-US1 |                      |

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|---|------------|----|------------|----------------------------------------|
| 5 | 2011148212 | WO | 2011-12-01 | Sony Ericsson Mobile Communications AB |
| 6 | 2004030378 | WO | 2004-04-08 | Poulsen Anders                         |
| 7 | 2013044983 | WO | 2013-04-04 | KLAUS MICHAEL HOFFMAN                  |

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| Filing Date            |                      |  |  |
| First Named Inventor   | Ishay SIVAN          |  |  |
| Art Unit               |                      |  |  |
| Examiner Name          |                      |  |  |
| Attorney Docket Number | SIVAN-001-US1        |  |  |

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |               |                     |            |
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| Signature  | /yb/          | Date (YYYY-MM-DD)   | 2016-01-27 |
| Name/Print | Yehuda BINDER | Registration Number | 73612      |

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| In re Application of:        | ) | Confirmation No. 1015      |
|                              | ) |                            |
| Ishay SIVAN                  | ) | Art Unit: 2662             |
|                              | ) |                            |
| Appln. No.: 15/007,253       | ) | Examiner: Hannett, James M |
|                              | ) |                            |
| Filed: January 27, 2016      | ) | Washington, D.C.           |
|                              | ) |                            |
| For: REAL TIME ASSESSMENT OF | ) |                            |
| PICTURE QUALITY              | ) | January 2, 2017            |
|                              | ) |                            |

**AMENDMENT:**

Honorable Commissioner for Patents  
U.S. Patent and Trademark Office  
Randolph Building, Mail Stop Amendments  
401 Dulany Street  
Alexandria, VA 22314

Sir:

In response to the Office Action of November 22,  
2016:

**Amendments to the Claims** begin on page 2 of this  
paper,

**Remarks/Arguments** begin on page 8 of this paper.

**Amendments to the Claims.**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims:**

1-20 (Canceled).

21. (New) A method for real-time estimating of an image quality, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises an optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising:  
Obtaining a first value (QI1) responsive to the device motion from the motion or location sensor;  
estimating a first weight (c1) associated with the first ;  
obtaining a second value (QI2) associated with the digital camera;  
estimating a second weight (c2) associated with the second value;  
analyzing the captured image for detecting or recognizing one or more objects in, or one or more characteristics of, the image;  
obtaining a third value (QI3) associated with the analysis;  
estimating a third weight (c3) associated with the third value;  
calculating a total value according to, or based on, the first value (QI1) weighted according to first weight (c1), the second

value (QI2) weighted according to second weight (c2), the third value (QI3) weighted according to third weight (c3); comparing the total value to a threshold; determining whether the total value is higher than, or below than, the threshold; and acting in response to the determining.

22. (New) The method according to claim 21, further comprising grading the image quality according to, or based on, the total value, and wherein the total value is calculated as a weighted average value according to, or based on,  $c1*QI1+c2*QI2+c3*QI3$ , where  $c1>0$ ,  $c2>0$ , and  $c3>0$ .

23. (New) The method according to claim 21, wherein the first, second, or third weight is respectively associated with an estimated error in the first, second, or third values.

24. (New) The method according to claim 21, wherein the estimating of the first weight (c1) is responsive to the values of the second value (QI2) or the third value (QI3), wherein the estimating of the second weight (c2) is responsive to the values of the first value (QI1) or the third value (QI3), or wherein the estimating of the third weight (c3) is responsive to the values of the first value (QI1) or the second value (QI2).

25. (New) The method according to claim 21, wherein the first weight (c1) is estimated according to, or based on, a precision error, reading resolution, or drift in time, of the motion or location sensor, and wherein the motion or location sensor consists of, or comprises, an accelerometer, a gyroscope, a Global Positioning System (GPS), or a step counter.

26. (New) The method according to claim 21, wherein the third weight (c3) is estimated according to, or based on, the estimated error in the analyzing the captured image for detecting or recognizing objects in the image.

27. (New) The method according to claim 26, further comprising using an image processing algorithm for detecting or recognizing objects in the image, wherein the image processing algorithm provides an error estimation, and wherein the third weight (c3) is based on, is according to, or is a function of, the algorithm error estimation.

28. (New) The method according to claim 21, for use with a number N of expected objects in the image, wherein the estimating of the third weight (c3) is according to, or based on, the count of detected objects (M) in the image.

29. (New) The method according to claim 21, wherein the estimating of the third value (QI3) or the third weight (c3) is according to, or based on, results of a blur detecting algorithm, an estimated Peak Signal-to-Noise Ratio (PSNR) value of the image, or an estimated Signal-to-Noise Ratio (SNR) value of the image.

30. (New) The method according to claim 21, for use with a probability distribution function using a mean value ( $\mu$ ) and a standard deviation value ( $\sigma$ ), wherein the estimating of the first, second, or third weight (c1, c2, c3) is according to, or based on, the respective probability of the first, second, or third value (QI1, QI2, QI3), according to the probability distribution function.

31. (New) The method according to claim 30, for use with a plurality of former values of the respective QI, further comprising calculating the mean value ( $\mu$ ) and the standard deviation value ( $\sigma$ ) based on the plurality of former values.

32. (New) The method according to claim 21, wherein the device further comprises a memory coupled to the processor, and wherein the acting comprises capturing and storing the image in the memory.

33. (New) The method according to claim 21, wherein the action is taken further in response to detecting, by the motion or location sensor, that the device is in motion for at least a first time duration followed by the device being at rest for at least a second time duration.

34. (New) A method for real-time estimating of a quality of a video stream comprising multiple images, for use with a device that comprises in a single enclosure a video digital camera module or functionality that comprises an optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing multiple consecutive frames, each frame comprises an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising performing the method according to claim 21 for the images in each of the frames of the video stream, and calculating a video total value based on, or using, the total values of all of the images in the frames.

35. (New) The method according to claim 21, wherein:  
the device comprises multiple motion or location sensors for sensing the device motion selected from a group consisting of a gyroscope, accelerometer, Global Positioning System (GPS), 9 Degrees of Freedom (DOF) sensing component, and 10 Degrees of Freedom (DOF) sensing component, wherein the method comprising obtaining a corresponding first value (QI1i) from each of the multiple motion or location sensors responsive to the device motion from the respective motion or location sensor; and estimating or calculating the first value (QI1) based on the multiple first values (QI1i) from the multiple motion or location sensors,

or wherein:

the analyzing of the captured image comprises applying multiple algorithms selected from a group consisting of an aesthetic algorithm, an artificial neural network employing deep learning algorithm, a corner detection algorithm, a blur detecting algorithm, and Peak Signal-to-Noise Ratio (PSNR) calculation, and the method further comprising obtaining a respective third value (QI3i) associated with each of multiple algorithms, and calculating or estimating the third value (QI3) based on the multiple third values (QI3i) from the multiple algorithms.

36. (New) The method according to claim 21, wherein the acting comprises affecting the digital camera in response to the total value.

37. (New) The method according to claim 21, wherein the acting comprises providing a sound or a pre-recorded oral message to the user.

38. (New) The method according to claim 21, wherein the digital camera further comprises an auto-focus functionality, wherein the auto-focus functionality is coupled to the controlled by the processor, and wherein the method further comprising controlling the auto-focus functionality according to, or based on, the second value (QI2) or the total value.

39. (New) The method according to claim 21, further comprising discarding, or deleting from a memory, of the captured image in response to the total value being lower than the threshold.

40. (New) The method according to claim 21, wherein the first value (QI1), the first weight (c1), the second value (QI2), the second weight (c2), the third value (QI3), or the third weight (c3) is estimated or obtained using respective stored values.

# **REMARKS**

The examiner's action dated September 22, 2016, has been received and its contents carefully noted. In order to differentiate over the Cerosaletti reference, and in order to improve the claims shape and clarity, claims 1-20 were canceled and new claims 21-40 were added, incorporating additional limitations.

Support for the new claims follows:

21. A method (400) for real-time estimating of an image quality, for use with a device that comprises in a single enclosure a digital camera module or functionality (200) that comprises an optical lens (100) for focusing received light from a scene and an image sensor (101) coupled to the optical lens for capturing an image of the scene; a motion or location sensor (206, 205, 202, 203) (page 2, line 21-25, page 16 line 25-27, page 21 line 24-31) for sensing the device motion; and a processor (121, 122) coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising:

Obtaining (270, 220) a first value (QI1) (page 14 line 32 to page 15 line 34) responsive to the device motion from the motion or location sensor;

estimating a first weight (c1) (page 11 line 11-31) associated with the first value (page 12 line 1 to page 13 line 20, page 12 line 29-31);

obtaining (247, 245, 248, 243) a second value (QI2) (page 15 line 21-25, page 19 line 15 to page 20 line 2) associated with the digital camera (page 18 line 16);

estimating a second weight (c2) (page 11 line 28-34, page 18 line 23) associated with the second value;

analyzing (220,216, 220) the captured image for detecting or recognizing one or more objects in (page 11 line 28-34), or one or more characteristics of, the image (page 20 line 3 to page 21 line 2, page 22 line 15 to page 23 line 10);

obtaining a third value (QI3) (page 14 line 14-30, page 16 line 26 to page 17 line 20) associated with the analysis;

estimating a third weight (c3) associated with the third value (page 11 line 23-34);

calculating (401) a total value according to, or based on, the first value (QI1) weighted according to first weight (c1), the second value (QI2) weighted according to second weight (c2), the third value (QI3) weighted according to third weight (c3) (page 23 line 26 to page 25 line 4) ;

comparing the total value to a threshold (page 25 line 8-9, page 4 line 34);

determining (500) whether the total value is higher than, or below than, the threshold; and

acting (502, 501) in response to the determining.

22. The method according to claim 21, further comprising grading the image quality according to, or based on, the total value, and wherein the total value is calculated as a weighted average value according to, or based on,  $c1 \cdot QI1 + c2 \cdot QI2 + c3 \cdot QI3$ , where  $c1 > 0$ ,  $c2 > 0$ , and  $c3 > 0$  ) (page 23 line 26 to page 25 line 4).

23. The method according to claim 21, wherein the first, second, or third weight is respectively associated with an estimated error in the first, second, or third values (page 3 line 26-28).

24. The method according to claim 21, wherein the estimating of the first weight (c1) is responsive to the values of the second value (QI2) or the third value (QI3) (page 27 line 18-23, page 27 line 24-27), wherein the estimating of the second weight

(c2) is responsive to the values of the first value (QI1) or the third value (QI3) (page 27 line 14-17, page 26 line 16-18), or wherein the estimating of the third weight (c3) is responsive to the values of the first value (QI1) or the second value (QI2) (page 3 line 18-22, page 23 line 11-24, page 27 line 7-10) (page 13 line 10-17).

25. The method according to claim 21, wherein the first weight (c1) is estimated according to, or based on, a precision error (page 11 line 16), reading resolution (page 11 line 20), or drift in time (page 11 line 16-17), of the motion or location sensor, and wherein the motion or location sensor consists of, or comprises, an accelerometer (206), a gyroscope (205), a Global Positioning System (GPS) (202), or a step counter (203) (page 11 line 17-26).

26. The method according to claim 21, wherein the third weight (c3) is estimated according to, or based on, the estimated error in the analyzing the captured image for detecting or recognizing objects in the image (page 11 line 29-33).

27. The method according to claim 26, further comprising using an image processing algorithm for detecting or recognizing objects in the image, wherein the image processing algorithm provides an error estimation, and wherein the third weight (c3) is based on, is according to, or is a function of, the algorithm error estimation (page 14 line 7-9, page 16 line 19-20).

28. The method according to claim 21, for use with a number N of expected objects in the image, wherein the estimating of the third weight (c3) is according to, or based on, the count of detected objects (M) in the image (page 17 line 1 to 16, page 16 line 23-25).

29. The method according to claim 21, wherein the estimating of the third value (QI3) or the third weight (c3) is according to,

or based on, results of a blur detecting algorithm (244) (page 14 line 14-30, page 16 line 26-35), an estimated Peak Signal-to-Noise Ratio (PSNR) value of the image (page 14 line 25), or an estimated Signal-to-Noise Ratio (SNR) value of the image (page 14 line 24).

30. The method according to claim 21, for use with a probability distribution function using a mean value ( $\mu$ ) and a standard deviation value ( $\sigma$ ) (page 12 line 11-12), wherein the estimating of the first, second, or third weight ( $c_1$ ,  $c_2$ ,  $c_3$ ) is according to, or based on, the respective probability of the first, second, or third value ( $QI_1$ ,  $QI_2$ ,  $QI_3$ ), according to the probability distribution function (page 12 line 5-9, page 12 line 27-28).

31. The method according to claim 30, for use with a plurality of former values of the respective  $QI$ , further comprising calculating the mean value ( $\mu$ ) and the as the standard deviation value ( $\sigma$ ) based on the plurality of former values (page 12 line 23-24).

32. The method according to claim 21, wherein the device further comprises a memory (124, 152) coupled to the processor, and wherein the acting comprises capturing and storing (502) the image in the memory (page 28 line 23 to page 29 line 35).

33. The method according to claim 21, wherein the action is taken further in response to detecting, by the motion or location sensor, that the device is in motion for at least a first time duration followed by the device being at rest for at least a second time duration (page 26 line 23-29).

34. A method for real-time estimating (300) of a quality of a video stream (page 26 line 34 to page 27 line 5) comprising multiple images, for use with a device that comprises in a single enclosure a video digital camera module or functionality that comprises an optical lens for focusing received light from

a scene and an image sensor coupled to the optical lens for capturing multiple consecutive frames, each frame comprises an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising performing the method according to claim 21 for the images in each of the frames of the video stream, and calculating a video total value based on, or using, the total values of all of the images in the frames (page 5 line 22-27, page 6 line 4-5).

35. The method according to claim 21, wherein:

the device comprises multiple motion or location sensors for sensing the device motion selected from a group consisting of a gyroscope, accelerometer, Global Positioning System (GPS), 9 Degrees of Freedom (DOF) sensing component, and 10 Degrees of Freedom (DOF) sensing component, wherein the method comprising obtaining a corresponding first value ( $QI_{li}$ ) from each of the multiple motion or location sensors responsive to the device motion from the respective motion or location sensor; and estimating or calculating the first value ( $QI_1$ ) based on the multiple first values ( $QI_{li}$ ) from the multiple motion or location sensors,

or wherein:

the analyzing of the captured image comprises applying multiple algorithms selected from a group consisting of an aesthetic algorithm (240) (page 27 line 7), an artificial neural network employing deep learning algorithm (page 15 line 7), a corner detection algorithm (page 18 line 23-25), a blur detecting algorithm (244) (page 14 line 19-21), and Peak Signal-to-Noise Ratio (PSNR) calculation (page 14 line 25),, and the method further comprising obtaining a respective third value ( $QI_{3i}$ )

associated with each of multiple algorithms, and calculating or estimating the third value (QI3) based on the multiple third values (QI3i) from the multiple algorithms (page 13 line 10, page 15 line 33, page 17 line 5).

36. The method according to claim 21, wherein the acting comprises affecting the digital camera in response to the total value.

37. The method according to claim 21, wherein the acting comprises providing a sound or a pre-recorded oral message to the user.

38. The method according to claim 21, wherein the digital camera further comprises an auto-focus functionality, wherein the auto-focus functionality is coupled to the controlled by the processor, and wherein the method further comprising controlling the auto-focus functionality according to, or based on, the second value (QI2) or the total value.

39. The method according to claim 21, further comprising discarding, or deleting from a memory, of the captured image in response to the total value being lower than the threshold.

40. The method according to claim 21, wherein the first value (QI1), the first weight (c1), the second value (QI2), the second weight (c2), the third value (QI3), or the third weight (c3) is estimated or obtained using respective stored values.

The absence of a reply to a specific rejection, issue, or comment, does not signify agreement with that rejection, issue, or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims that have not been expressed.

Nothing in this reply should be understood as conceding any issue with regard to any claim, except as specifically stated in this reply, and the amendment of any claims does not necessarily signify concession of unpatentability to the claim before its amendment.

In view of the foregoing, it is requested that all of the rejections be reconsidered and withdrawn and that the claims be considered allowable.

If the above arguments should not now place the application in the condition for allowance, the examiner is invited to call undersigned counsel to resolve any remaining issues.

Respectfully submitted,

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## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 27946293                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay SIVAN                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 02-JAN-2017                             |
| <b>Filing Date:</b>                         | 27-JAN-2016                             |
| <b>Time Stamp:</b>                          | 04:08:53                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                        |    |
|------------------------|----|
| Submitted with Payment | no |
|------------------------|----|

### File Listing:

| Document Number | Document Description | File Name                       | File Size(Bytes)/<br>Message Digest      | Multi Part /.zip | Pages (if appl.) |
|-----------------|----------------------|---------------------------------|------------------------------------------|------------------|------------------|
| 1               |                      | Response-to-NFOA-New-claims.pdf | 273408                                   | yes              | 14               |
|                 |                      |                                 | 6447131b1dc57ecf4815e28598d4a5b48c81ec32 |                  |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Multipart Description/PDF files in .zip description   |        |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------|-----|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Document Description                                  | Start  | End |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Amendment/Req. Reconsideration-After Non-Final Reject | 1      | 1   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Claims                                                | 2      | 7   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Applicant Arguments/Remarks Made in an Amendment      | 8      | 14  |
| Warnings:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                       |        |     |
| Information:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                       |        |     |
| Total Files Size (in bytes):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                       | 273408 |     |
| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                                                       |        |     |

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|                                                                                   |                                                   |                                  |                                       |
|-----------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------|---------------------------------------|
| <b>PATENT APPLICATION FEE DETERMINATION RECORD</b><br>Substitute for Form PTO-875 | Application or Docket Number<br><b>15/007,253</b> | Filing Date<br><b>01/27/2016</b> | <input type="checkbox"/> To be Mailed |
|-----------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------|---------------------------------------|

ENTITY: ☐ LARGE ☐ SMALL ☒ MICRO**APPLICATION AS FILED – PART I**

(Column 1)

(Column 2)

| FOR                                                                        | NUMBER FILED                                                                                                                                                                                                                  | NUMBER EXTRA | RATE (\$) | FEE (\$) |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|----------|
| <input type="checkbox"/> BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))        | N/A                                                                                                                                                                                                                           | N/A          | N/A       |          |
| <input type="checkbox"/> SEARCH FEE<br>(37 CFR 1.16(k), (i), or (m))       | N/A                                                                                                                                                                                                                           | N/A          | N/A       |          |
| <input type="checkbox"/> EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))  | N/A                                                                                                                                                                                                                           | N/A          | N/A       |          |
| TOTAL CLAIMS<br>(37 CFR 1.16(i))                                           | minus 20 =                                                                                                                                                                                                                    | *            | X \$ =    |          |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))                                     | minus 3 =                                                                                                                                                                                                                     | *            | X \$ =    |          |
| <input type="checkbox"/> APPLICATION SIZE FEE<br>(37 CFR 1.16(s))          | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |              |           |          |
| <input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |              |           |          |
| * If the difference in column 1 is less than zero, enter "0" in column 2.  |                                                                                                                                                                                                                               |              | TOTAL     |          |

**APPLICATION AS AMENDED – PART II**

(Column 1)

(Column 2)

(Column 3)

| AMENDMENT | 01/02/2017                                                                               | CLAIMS REMAINING AFTER AMENDMENT | MINUS | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE (\$)       | ADDITIONAL FEE (\$) |
|-----------|------------------------------------------------------------------------------------------|----------------------------------|-------|------------------------------------|---------------|-----------------|---------------------|
|           | Total (37 CFR 1.16(i))                                                                   | * 20                             | Minus | ** 20                              | = 0           | X \$20 =        | 0                   |
|           | Independent (37 CFR 1.16(h))                                                             | * 2                              | Minus | *** 3                              | = 0           | X \$105 =       | 0                   |
|           | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |                                  |       |                                    |               |                 |                     |
|           | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                  |       |                                    |               |                 |                     |
|           |                                                                                          |                                  |       |                                    |               | TOTAL ADD'L FEE | 0                   |

(Column 1)

(Column 2)

(Column 3)

| AMENDMENT | CLAIMS REMAINING AFTER AMENDMENT                                                         | MINUS | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA | RATE (\$) | ADDITIONAL FEE (\$) |
|-----------|------------------------------------------------------------------------------------------|-------|------------------------------------|---------------|-----------|---------------------|
|           | Total (37 CFR 1.16(i))                                                                   | *     | Minus                              | **            | =         | X \$ =              |
|           | Independent (37 CFR 1.16(h))                                                             | *     | Minus                              | ***           | =         | X \$ =              |
|           | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |       |                                    |               |           |                     |
|           | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |       |                                    |               |           |                     |
|           |                                                                                          |       |                                    |               |           | TOTAL ADD'L FEE     |

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE  
DENISE T. LILES

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



# UNITED STATES PATENT AND TRADEMARK OFFICE

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## NOTICE OF ALLOWANCE AND FEE(S) DUE

131926 7590 02/15/2017  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL

EXAMINER

HANNETT, JAMES M

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 02/15/2017

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

15/007,253

01/27/2016

Ishay SIVAN

SIVAN-001-US1

1015

TITLE OF INVENTION: REAL TIME ASSESSMENT OF PICTURE QUALITY

| APPLN. TYPE    | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|---------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | MICRO         | \$240         | \$0                 | \$0                  | \$240            | 05/15/2017 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
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**or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

131926 7590 02/15/2017  
 May Patents Ltd. c/o Dorit Shem-Tov  
 P.O.B 7230  
 Ramat-Gan, 5217102  
 ISRAEL

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

|                    |
|--------------------|
| (Depositor's name) |
| (Signature)        |
| (Date)             |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 15/007,253      | 01/27/2016  | Ishay SIVAN          | SIVAN-001-US1       | 1015             |

TITLE OF INVENTION: REAL TIME ASSESSMENT OF PICTURE QUALITY

| APPLN. TYPE    | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|---------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | MICRO         | \$240         | \$0                 | \$0                  | \$240            | 05/15/2017 |

| EXAMINER         | ART UNIT | CLASS-SUBCLASS |
|------------------|----------|----------------|
| HANNETT, JAMES M | 2662     | 348-222100     |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_



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| APPLICATION NO.                     | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
|-------------------------------------|-------------|----------------------|-------------------------|------------------|
| 15/007,253                          | 01/27/2016  | Ishay SIVAN          | SIVAN-001-US1           | 1015             |
| 131926                              | 7590        | 02/15/2017           | EXAMINER                |                  |
| May Patents Ltd. c/o Dorit Shem-Tov |             |                      | HANNETT, JAMES M        |                  |
| P.O.B 7230                          |             |                      | ART UNIT                | PAPER NUMBER     |
| Ramat-Gan, 5217102                  |             |                      | 2662                    |                  |
| ISRAEL                              |             |                      | DATE MAILED: 02/15/2017 |                  |

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

### Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

|                               |                                      |                                     |                                                  |
|-------------------------------|--------------------------------------|-------------------------------------|--------------------------------------------------|
| <b>Notice of Allowability</b> | <b>Application No.</b><br>15/007,253 | <b>Applicant(s)</b><br>SIVAN, ISHAY |                                                  |
|                               | <b>Examiner</b><br>JAMES HANNETT     | <b>Art Unit</b><br>2662             | <b>AIA (First Inventor to File) Status</b><br>No |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 1/2/2017.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 21-40. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

- a) ☐ All    b) ☐ Some    \*c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                            |                                                                                      |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 5. <input type="checkbox"/> Examiner's Amendment/Comment                             |
| 2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 7. <input type="checkbox"/> Other _____.                                             |
| 4. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____.                     |                                                                                      |

/JAMES HANNETT/  
Primary Examiner, Art Unit 2662

The present application is being examined under the pre-AIA first to invent provisions.

## **DETAILED ACTION**

### ***Allowable Subject Matter***

Claims 21-40 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art teaches a method for real-time estimating of an image quality, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises an optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising: Obtaining a first value (Q11) responsive to the device motion from the motion or location sensor; estimating a first weight (c1) associated with the first ; obtaining a second value (Q12) associated with the digital camera. However, the prior art does not teach estimating a second weight (c2) associated with the second value; analyzing the captured image for detecting or recognizing one or more objects in, or one or more characteristics of, the image; obtaining a third value (Q13) associated with the analysis; estimating a third weight (c3) associated with the third value; calculating a total value according to, or based on, the first value (Q11) weighted according to first weight (c1), the second value (Q12) weighted according to second weight (c2), the third value (Q13) weighted according to third weight (c3); comparing the total value to a threshold;

Art Unit: 2662

determining whether the total value is higher than, or below than, the threshold; and acting in response to the determining. Therefore, the claims are allowed over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hannett whose telephone number is 571-272-7309. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roberto Velez can be reached on 571-272-8597 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James M. Hannett/

Application/Control Number: 15/007,253  
Art Unit: 2662

Page 4

Primary Examiner  
Art Unit 2662

JMH  
February 14, 2017

|                                                                                                                 |                                            |                                                                |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>15007253 | <b>Applicant(s)/Patent Under Reexamination</b><br>SIVAN, ISHAY |
|                                                                                                                 | <b>Examiner</b><br>JAMES HANNETT           | <b>Art Unit</b><br>2662                                        |

| CPC    |  |      |   |       |      |            |
|--------|--|------|---|-------|------|------------|
| Symbol |  |      |   |       | Type | Version    |
| H04N   |  | 5    | / | 23258 | F    | 2013-01-01 |
| H04N   |  | 5    | / | 23222 | I    | 2013-01-01 |
| H04N   |  | 5    | / | 23229 | I    | 2013-01-01 |
| G06T   |  | 7    | / | 0002  | I    | 2013-01-01 |
| G06T   |  | 2207 | / | 10016 | A    | 2013-01-01 |
| G06T   |  | 2207 | / | 10032 | A    | 2013-01-01 |
| G06T   |  | 7    | / | 97    | I    | 2017-01-01 |
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| CPC Combination Sets |      |     |         |         |
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| Symbol               | Type | Set | Ranking | Version |
|                      |      |     |         |         |
|                      |      |     |         |         |

|                                                   |            |                              |                   |
|---------------------------------------------------|------------|------------------------------|-------------------|
| NONE                                              |            | <b>Total Claims Allowed:</b> |                   |
|                                                   |            | 20                           |                   |
| (Assistant Examiner)                              | (Date)     |                              |                   |
| /JAMES HANNETT/<br>Primary Examiner.Art Unit 2662 | 02/07/2017 | O.G. Print Claim(s)          | O.G. Print Figure |
| (Primary Examiner)                                | (Date)     | 21                           | 1                 |



|                                                                                                                 |                                            |                                                                |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>15007253 | <b>Applicant(s)/Patent Under Reexamination</b><br>SIVAN, ISHAY |
|                                                                                                                 | <b>Examiner</b><br>JAMES HANNETT           | <b>Art Unit</b><br>2662                                        |

| <input checked="" type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> <input type="checkbox"/> <b>CPA</b> <input type="checkbox"/> <b>T.D.</b> <input type="checkbox"/> <b>R.1.47</b> |          |       |          |       |          |       |          |       |          |       |          |       |          |       |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|-------|----------|
| Final                                                                                                                                                                                                                    | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
|                                                                                                                                                                                                                          | 1        |       | 17       |       | 33       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 2        |       | 18       |       | 34       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 3        |       | 19       |       | 35       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 4        |       | 20       |       | 36       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 5        |       | 21       |       | 37       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 6        |       | 22       |       | 38       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 7        |       | 23       |       | 39       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 8        |       | 24       |       | 40       |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 9        |       | 25       |       |          |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 10       |       | 26       |       |          |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 11       |       | 27       |       |          |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 12       |       | 28       |       |          |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 13       |       | 29       |       |          |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 14       |       | 30       |       |          |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 15       |       | 31       |       |          |       |          |       |          |       |          |       |          |       |          |
|                                                                                                                                                                                                                          | 16       |       | 32       |       |          |       |          |       |          |       |          |       |          |       |          |

|                                                   |            |                                    |                        |
|---------------------------------------------------|------------|------------------------------------|------------------------|
| NONE                                              |            | <b>Total Claims Allowed:</b><br>20 |                        |
| (Assistant Examiner)                              | (Date)     |                                    |                        |
| /JAMES HANNETT/<br>Primary Examiner.Art Unit 2662 | 02/07/2017 | O.G. Print Claim(s)<br>21          | O.G. Print Figure<br>1 |
| (Primary Examiner)                                | (Date)     |                                    |                        |

|                                                                                                              |                                                |                                                                    |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------|
| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br><br>15007253 | <b>Applicant(s)/Patent Under Reexamination</b><br><br>SIVAN, ISHAY |
|                                                                                                              | <b>Examiner</b><br><br>JAMES HANNETT           | <b>Art Unit</b><br><br>2662                                        |

| CPC- SEARCHED                  |          |          |
|--------------------------------|----------|----------|
| Symbol                         | Date     | Examiner |
| H04N 5/23222, 5/23229, 5/23258 | 2/7/2017 | JMH      |

| CPC COMBINATION SETS - SEARCHED |      |          |
|---------------------------------|------|----------|
| Symbol                          | Date | Examiner |
|                                 |      |          |

| US CLASSIFICATION SEARCHED |          |      |          |
|----------------------------|----------|------|----------|
| Class                      | Subclass | Date | Examiner |
|                            |          |      |          |

| SEARCH NOTES         |          |          |
|----------------------|----------|----------|
| Search Notes         | Date     | Examiner |
| East Search          | 2/7/2017 | JMH      |
| Inventor Name Search | 2/7/2017 | JMH      |

| INTERFERENCE SEARCH     |                                                    |          |          |
|-------------------------|----------------------------------------------------|----------|----------|
| US Class/<br>CPC Symbol | US Subclass / CPC Group                            | Date     | Examiner |
|                         | PGPUB text search, see interference search report. | 2/7/2017 | JMH      |

|  |                                                   |
|--|---------------------------------------------------|
|  | /JAMES HANNETT/<br>Primary Examiner.Art Unit 2662 |
|--|---------------------------------------------------|

|                                                                                                                        |                                                |                                                                    |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------|
| <b><i>Index of Claims</i></b><br><br> | <b>Application/Control No.</b><br><br>15007253 | <b>Applicant(s)/Patent Under Reexamination</b><br><br>SIVAN, ISHAY |
|                                                                                                                        | <b>Examiner</b><br><br>JAMES HANNETT           | <b>Art Unit</b><br><br>2662                                        |

|   |                 |   |                   |   |                     |   |                 |
|---|-----------------|---|-------------------|---|---------------------|---|-----------------|
| ✓ | <b>Rejected</b> | - | <b>Cancelled</b>  | N | <b>Non-Elected</b>  | A | <b>Appeal</b>   |
| = | <b>Allowed</b>  | ÷ | <b>Restricted</b> | I | <b>Interference</b> | O | <b>Objected</b> |

| <input checked="" type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> |          |            |            | <input type="checkbox"/> <b>CPA</b> |  | <input type="checkbox"/> <b>T.D.</b> |  | <input type="checkbox"/> <b>R.1.47</b> |  |
|----------------------------------------------------------------------------------------------------------|----------|------------|------------|-------------------------------------|--|--------------------------------------|--|----------------------------------------|--|
| CLAIM                                                                                                    |          | DATE       |            |                                     |  |                                      |  |                                        |  |
| Final                                                                                                    | Original | 11/20/2016 | 02/07/2017 |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 1        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 2        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 3        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 4        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 5        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 6        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 7        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 8        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 9        | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 10       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 11       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 12       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 13       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 14       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 15       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 16       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 17       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 18       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 19       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 20       | ✓          | -          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 21       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 22       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 23       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 24       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 25       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 26       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 27       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 28       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 29       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 30       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 31       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 32       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 33       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 34       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 35       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 36       |            | =          |                                     |  |                                      |  |                                        |  |

|                                                                                                                                       |                                            |                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| <p align="center"><b><i>Index of Claims</i></b></p>  | <b>Application/Control No.</b><br>15007253 | <b>Applicant(s)/Patent Under Reexamination</b><br>SIVAN, ISHAY |
|                                                                                                                                       | <b>Examiner</b><br>JAMES HANNETT           | <b>Art Unit</b><br>2662                                        |

|   |                 |   |                   |   |                     |   |                 |
|---|-----------------|---|-------------------|---|---------------------|---|-----------------|
| ✓ | <b>Rejected</b> | - | <b>Cancelled</b>  | N | <b>Non-Elected</b>  | A | <b>Appeal</b>   |
| = | <b>Allowed</b>  | ÷ | <b>Restricted</b> | I | <b>Interference</b> | O | <b>Objected</b> |

| <input checked="" type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> |          |            |            | <input type="checkbox"/> <b>CPA</b> |  | <input type="checkbox"/> <b>T.D.</b> |  | <input type="checkbox"/> <b>R.1.47</b> |  |
|----------------------------------------------------------------------------------------------------------|----------|------------|------------|-------------------------------------|--|--------------------------------------|--|----------------------------------------|--|
| CLAIM                                                                                                    |          | DATE       |            |                                     |  |                                      |  |                                        |  |
| Final                                                                                                    | Original | 11/20/2016 | 02/07/2017 |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 37       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 38       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 39       |            | =          |                                     |  |                                      |  |                                        |  |
|                                                                                                          | 40       |            | =          |                                     |  |                                      |  |                                        |  |

EAST Search History

EAST Search History (Prior Art)

| Ref # | Hits  | Search Query                                                                                                                                                                                                                                                                                                                                                                                                                         | DBs                                                      | Default Operator | Plurals | Time Stamp       |
|-------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------|---------|------------------|
| L1    | 0     | ("20040174434"   "20060017820"   "20060056835"   "20070195174"   "20090263028"   "20090278958"   "20100026872"   "20100290673"   "20110096180"   "20110279700"   "20120086847"   "20120133816"   "20120182447"   "20130038771"   "20130050507"   "20130058561"   "20130063538"   "20130155474"   "20140050367"   "5125557"   "7362354"   "7688379"   "7920727"   "7982770"   "8040382"   "8131118"   "8244053"   "8285067").PN.).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR               | OFF     | 2017/02/07 08:59 |
| L2    | 73    | ("20040174434"   "20060017820"   "20060056835"   "20070195174"   "20090263028"   "20090278958"   "20100026872"   "20100290673"   "20110096180"   "20110279700"   "20120086847"   "20120133816"   "20120182447"   "20130038771"   "20130050507"   "20130058561"   "20130063538"   "20130155474"   "20140050367"   "5125557"   "7362354"   "7688379"   "7920727"   "7982770"   "8040382"   "8131118"   "8244053"   "8285067").PN.      | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR               | OFF     | 2017/02/07 08:59 |
| L3    | 9     | L2 and buffer                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR               | OFF     | 2017/02/07 08:59 |
| L4    | 5     | L3 and (real adj time or realtime or real-time)                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR               | OFF     | 2017/02/07 08:59 |
| L5    | 12861 | image with capture with automatic\$4                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR               | OFF     | 2017/02/07 08:59 |
| L6    | 5     | L4 and (real adj time or realtime or real-time)                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB; USPAT; USOCR; FPRS;                            | OR               | OFF     | 2017/02/07 08:59 |

|     |      |                                                                     |                                                                            |    |     |                     |
|-----|------|---------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |      |                                                                     | EPO; JPO;<br>DERWENT;<br>IBM_TDB                                           |    |     |                     |
| L7  | 4951 | L5 and (real adj time or realtime or real-time)                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L8  | 1612 | L7 and buffer                                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L9  | 1225 | L8 and quality                                                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L10 | 24   | L8 and quality near4 indicator\$4                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L11 | 0    | ("2015/0288874").URPN.                                              | USPAT                                                                      | OR | OFF | 2017/02/07<br>08:59 |
| L12 | 2    | L4 and (real adj time or realtime or real-time) with quality        | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L13 | 921  | L8 and quality near4 image                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L14 | 8312 | image\$2 with (real adj time or realtime or real-time) with quality | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L15 | 346  | L14 and image with capture with automatic\$4                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |

|     |        |                                                                             |                                                                            |    |     |                     |
|-----|--------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
| L16 | 22     | L15 and confidence adj level                                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L17 | 2      | L15 and confidence adj level with quality                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L18 | 945    | sivan .in.                                                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L19 | 100    | L18 and (real adj time or realtime or real-time)                            | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L20 | 1612   | L8 and buffer                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L21 | 23     | L19 and buffer                                                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L22 | 3      | L21 and image\$2 with (real adj time or realtime or real-time) with quality | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L23 | 113435 | (real adj time or realtime or real-time) .clm.                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L24 | 23691  | L23 and imag\$2 .clm.                                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;                        | OR | OFF | 2017/02/07<br>08:59 |

|     |       |                                                       |                                                                            |    |     |                     |
|-----|-------|-------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |       |                                                       | DERWENT;<br>IBM_TDB                                                        |    |     |                     |
| L25 | 1395  | L24 and quality .clm.                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L26 | 545   | L25 and quality near4 image .clm.                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L27 | 31    | L26 and buffer .clm.                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L28 | 3     | L27 and image with capture with<br>automatic\$4 .clm. | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L29 | 14    | L26 and suggest\$4 .clm.                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L30 | 10    | L29 and user .clm.                                    | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L31 | 38946 | confidence adj level                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L32 | 135   | confidence adj level with quality with<br>image       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L33 | 5277  | h04n5/23222.cpc.                                      | US-PGPUB;<br>USPAT;<br>USOCR;                                              | OR | OFF | 2017/02/07<br>08:59 |

|     |       |                                                                                   |                                                                            |    |     |                     |
|-----|-------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |       |                                                                                   | FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB                                  |    |     |                     |
| L34 | 7841  | h04n5/23229.cpc.                                                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L35 | 6870  | h04n5/23258.cpc.                                                                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L36 | 19023 | L33 or L34 or L35                                                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L37 | 9     | L36 and confidence adj level with quality<br>with image                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L38 | 3692  | L36 and quality with image                                                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L39 | 75    | L38 and (suggest\$4 or recommend\$4)<br>with quality                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L40 | 2     | L38 and (suggest\$4 or recommend\$4)<br>with quality with table                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L41 | 96492 | (predefined or pre-defined or<br>predetermined or pre-determined) with<br>quality | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L42 | 12    | (predefined or pre-defined or                                                     | US-PGPUB;                                                                  | OR | OFF | 2017/02/07          |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                               |    |     |                     |
|-----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|----|-----|---------------------|
|     |     | predetermined or pre-determined) with<br>quality with image with (suggestion\$4 or<br>recomend or recommendation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB |    |     | 08:59               |
| L47 | 786 | ("20010036307"   "20020006163"  <br>"20020006284"   "20020054214"  <br>"20020150302"   "20020154232"  <br>"20020191861"   "20030007687"  <br>"20030052991"   "20030058361"  <br>"20030068100"   "20030091225"  <br>"20030103076"   "20030112361"  <br>"20030151672"   "20030151674"  <br>"20030152271"   "20030152291"  <br>"20030169818"   "20030193699"  <br>"20030219172"   "20040047498"  <br>"20040066981"   "20040076335"  <br>"20040081441"   "20040090532"  <br>"20040106958"   "20040120598"  <br>"20040120698"   "20040130628"  <br>"20040135898"   "20040145659"  <br>"20040169767"   "20040170330"  <br>"20040212699"   "20040218057"  <br>"20040218067"   "20040247030"  <br>"20040247179"   "20050010108"  <br>"20050019000"   "20050031224"  <br>"20050041121"   "20050041123"  <br>"20050047672"   "20050052553"  <br>"20050057687"   "20050068446"  <br>"20050068452"   "20050078197"  <br>"20050140801"   "20050157181"  <br>"20050168587"   "20050201637"  <br>"20050203430"   "20050219391"  <br>"20050231603"   "20050231625"  <br>"20050243178"   "20050248660"  <br>"20050259864"   "20050270381"  <br>"20050281477"   "20060006309"  <br>"20060017820"   "20060017837"  <br>"20060023099"   "20060029284"  <br>"20060038891"   "20060039690"  <br>"20060093212"   "20060093238"  <br>"20060098237"   "20060098867"  <br>"20060098890"   "20060098891"  <br>"20060119710"   "20060120599"  <br>"20060125928"   "20060125938"  <br>"20060133688"   "20060140455"  <br>"20060170786"   "20060171464"  <br>"20060187308"   "20060204034"  <br>"20060204054"   "20060204110"  <br>"20060257042"   "20060279639"  <br>"20060285754"   "20070009169"  <br>"20070025714").PN. OR ("20070058073"<br>  "20070083114"   "20070086675"  <br>"20070097221"   "20070110305"  <br>"20070133893"   "20070147820"  <br>"20070171987"   "20070177817"  <br>"20070189748"   "20070201724"  <br>"20070234779"   "20070263995"  <br>"20070269108"   "20070296833"  <br>"20080012969"   "20080019669"  <br>"20080030586"   "20080037827"  <br>"20080037839"   "20080037840"  <br>"20080043121"   "20080064438" | US-PGPUB;<br>USPAT;<br>USOCR                                  | OR | OFF | 2017/02/07<br>08:59 |

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|     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                            |    |     |                     |
|-----|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
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| L48 | 31 | L47 and (predefined or pre-defined or predetermined or pre-determined) with quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L49 | 27 | L48 and quality with image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L50 | 1  | L49 and confidence adj level with quality with image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L51 | 3  | L49 and (suggest\$4 or recommend\$4) with quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L52 | 57 | ("20040075743"   "20050226499"  <br>"20060061678"   "20060166738"  <br>"20060221223"   "20060290804"  <br>"20070019943"   "20070076960"  <br>"20070263092"   "20080043108"  <br>"20080278744"   "20080285860"  <br>"20090046900"   "20090179998"  <br>"20090193082"   "20090213213"  <br>"20100117837"   "20110029635"  <br>"20110075917"   "20110075930"  <br>"20110307821"   "20120013783"  <br>"20120022897"   "5164831"   "5694484"  <br>  "5875265"   "6282317"   "6516154"  <br>"6671405"   "6778699"   "6801661"  <br>"6816847"   "6930718"   "7362354"  <br>"7924326"   "7979369"   "8081227"  <br>"8125557"   "8199208"   "8830341").PN.<br>OR ("2006/0017820"   "2011/0075930"  <br>"8330826"   "9154692").URPN. | US-PGPUB;<br>USPAT;<br>USOCR                                               | OR | OFF | 2017/02/07<br>08:59 |
| L53 | 38 | L52 and quality with image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;                        | OR | OFF | 2017/02/07<br>08:59 |

|     |       |                                                                                                         |                                                                            |    |     |                     |
|-----|-------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |       |                                                                                                         | DERWENT;<br>IBM_TDB                                                        |    |     |                     |
| L54 | 9     | L53 and (suggest\$4 or recommend\$4) with quality                                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L55 | 2     | ("20160191801").PN.                                                                                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L56 | 5     | (US-20110075930-\$ or US-20060017820-\$).did. or (US-8330826-\$ or US-9154692-\$ or US-8081227-\$).did. | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L57 | 0     | L56 and shake                                                                                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L58 | 2     | L56 and motion                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L59 | 1     | L56 and motion adj sensor                                                                               | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L60 | 0     | L56 and exposure same parameters                                                                        | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L61 | 0     | L56 and exposure same values                                                                            | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L62 | 0     | L56 and exposure same settings                                                                          | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L63 | 2     | L56 and exposure                                                                                        | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L64 | 0     | L63 and auto-focus                                                                                      | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L65 | 2     | L63 and focus                                                                                           | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L66 | 1     | L63 and retake                                                                                          | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L67 | 0     | L63 and update with exposure                                                                            | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L68 | 20    | quality with update with exposure                                                                       | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L69 | 692   | quality with automatic with exposure                                                                    | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L70 | 28750 | quality with automatic with exposure wit hiso with shutter with aperture                                | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |

|     |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                            |    |     |                     |
|-----|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
| L71 | 30831 | quality with automatic with exposure wit<br>iso with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L72 | 0     | quality with automatic with exposure<br>with iso with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L73 | 10    | quality with automatic with exposure<br>with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L74 | 0     | (retake or recapture) with automatic with<br>exposure with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L75 | 0     | (retake or recapture) with automatic with<br>exposure with shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L76 | 0     | (retake or recapture) with exposure with<br>shutter with aperture                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L77 | 5     | (retake or recapture) with exposure with<br>different                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L78 | 36    | (retake or recapture) same exposure<br>same different                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L79 | 5     | (retake or recapture) same exposure<br>same different same quality                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L80 | 5     | ("20060017820"   "20070216787"  <br>"20090251557"   "20110292221"  <br>"20120249837"   "20060017820"  <br>"20070216787"   "20090251557"  <br>"20110292221"   "20120249837").PN.                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L81 | 32    | ("20040174434"   "20060017820"  <br>"20060056835"   "20070195174"  <br>"20090263028"   "20090278958"  <br>"20100026872"   "20100290673"  <br>"20110075930"   "20110096180"  <br>"20110279700"   "20120086847"  <br>"20120133816"   "20120182447"  <br>"20130038771"   "20130050507"  <br>"20130058561"   "20130063538"  <br>"20130155474"   "20140050367"  <br>"7362354"   "7688379"   "7920727"  <br>"7982770"   "8040382"   "8081227"  <br>"8125557"   "8131118"   "8244053"  <br>"8285067"   "8330826"  <br>"9154692").PN. | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>08:59 |
| L82 | 15    | ("20060061678"   "20060221223"  <br>"20070019943"   "20070076960"  <br>"20080043108"   "20090046900"  <br>"20120013783"   "7362354"   "7924326"<br>  "8081227"   "8125557"   "8199208"  <br>"8830341").PN. OR ("9154692").URPN.                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>USOCR                                               | OR | OFF | 2017/02/07<br>08:59 |
| L83 | 65    | "9001255"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L84 | 18    | ("9001255").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>08:59 |
| L85 | 5     | ((("8655311") or ("8750514")).PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;                                                                  | OR | OFF | 2017/02/07          |

|     |       |                                             |                                                                            |    |     |                     |
|-----|-------|---------------------------------------------|----------------------------------------------------------------------------|----|-----|---------------------|
|     |       |                                             | USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB              |    |     | 08:59               |
| L87 | 31683 | weight with threshold                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2017/02/07<br>09:32 |
| L88 | 0     | 87 and quality with update with<br>exposure | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>09:33 |
| L89 | 9664  | 87 and quality                              | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>09:33 |
| L90 | 668   | 89 and motion adj sensor                    | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>09:33 |
| L91 | 366   | 90 and weight with motion                   | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>09:33 |
| L92 | 4     | 91 and second adj weight                    | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>09:34 |
| L93 | 3     | 92 and estimat\$4 same weight               | US-PGPUB;<br>USPAT                                                         | OR | OFF | 2017/02/07<br>09:34 |

EAST Search History (Interference)

<This search history is empty>

2/ 7/ 2017 9:35:01 AM  
C:\ Users\ jhannett\ Documents\ EAST\ Workspaces\ 15007253.wsp



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## BIB DATA SHEET

CONFIRMATION NO. 1015

| SERIAL NUMBER                                                                                                                                                                                                                                                                    | FILING or 371(c)<br>DATE                                                                                          | CLASS                             | GROUP ART UNIT                                                                                                                                                                                                                                                            | ATTORNEY DOCKET<br>NO.    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 15/007,253                                                                                                                                                                                                                                                                       | 01/27/2016                                                                                                        | 348                               | 2662                                                                                                                                                                                                                                                                      | SIVAN-001-US1             |
| <b>RULE</b>                                                                                                                                                                                                                                                                      |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>APPLICANTS</b><br>SnapAid Ltd., Tel Aviv, ISRAEL;                                                                                                                                                                                                                             |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>INVENTORS</b><br>Ishay SIVAN, Tel Aviv, ISRAEL;                                                                                                                                                                                                                               |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>** CONTINUING DATA *****</b><br>This application is a CON of 14/437,105 04/20/2015 PAT 9338348<br>which is a 371 of PCT/IL2013/050856 10/22/2013<br>which claims benefit of 61/717,216 10/23/2012<br>and claims benefit of 61/759,643 02/01/2013                              |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>** FOREIGN APPLICATIONS *****</b>                                                                                                                                                                                                                                             |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** MICRO ENTITY **</b><br>02/11/2016                                                                                                                                                                                        |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Verified and Acknowledged <u>/JAMES M HANNETT/</u><br>Examiner's Signature | <input type="checkbox"/> Met after Allowance<br>Initials                                                          | <b>STATE OR COUNTRY</b><br>ISRAEL | <b>SHEETS DRAWINGS</b><br>4                                                                                                                                                                                                                                               | <b>TOTAL CLAIMS</b><br>20 |
| <b>INDEPENDENT CLAIMS</b><br>3                                                                                                                                                                                                                                                   |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>ADDRESS</b><br>May Patents Ltd. c/o Dorit Shem-Tov<br>P.O.B 7230<br>Ramat-Gan, 5217102<br>ISRAEL                                                                                                                                                                              |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>TITLE</b><br>REAL TIME ASSESSMENT OF PICTURE QUALITY                                                                                                                                                                                                                          |                                                                                                                   |                                   |                                                                                                                                                                                                                                                                           |                           |
| <b>FILING FEE RECEIVED</b><br>435                                                                                                                                                                                                                                                | FEES: Authority has been given in Paper<br>No. _____ to charge/credit DEPOSIT ACCOUNT<br>No. _____ for following: |                                   | <input type="checkbox"/> All Fees<br><input type="checkbox"/> 1.16 Fees (Filing)<br><input type="checkbox"/> 1.17 Fees (Processing Ext. of time)<br><input type="checkbox"/> 1.18 Fees (Issue)<br><input type="checkbox"/> Other _____<br><input type="checkbox"/> Credit |                           |

# PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

May Patents Ltd.  
c/o Dorit Shem-Tov  
P.O.B. 7230  
Ramat-Gan 5217102,  
Israel

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

|                    |
|--------------------|
| (Depositor's name) |
| (Signature)        |
| (Date)             |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 15/007,253      | 01/27/2016  | Ishay SIVAN          | SIVAN-001-US1       | 1015             |

TITLE OF INVENTION:

| APPLN. TYPE    | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE   |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | Small        | \$480         | \$0                 | \$0                  | \$480            | 05/15/2017 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|----------|----------|----------------|
|----------|----------|----------------|

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 May Patents Ltd. c/o Dorit Shem-Tov

2 \_\_\_\_\_

3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

SNAP AID LTD.

TEL AVIV

ISRAEL 6935635

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

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- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 506726 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☒ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Yehuda Binder/

Date April 12, 2017

Typed or printed name Yehuda BINDER

Registration No. 73,612

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
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## Electronic Patent Application Fee Transmittal

|                                                      |                                         |                 |               |                             |
|------------------------------------------------------|-----------------------------------------|-----------------|---------------|-----------------------------|
| <b>Application Number:</b>                           | 15007253                                |                 |               |                             |
| <b>Filing Date:</b>                                  | 27-Jan-2016                             |                 |               |                             |
| <b>Title of Invention:</b>                           | REAL TIME ASSESSMENT OF PICTURE QUALITY |                 |               |                             |
| <b>First Named Inventor/Applicant Name:</b>          | Ishay SIVAN                             |                 |               |                             |
| <b>Filer:</b>                                        | Yehuda Binder                           |                 |               |                             |
| <b>Attorney Docket Number:</b>                       | SIVAN-001-US1                           |                 |               |                             |
| Filed as Small Entity                                |                                         |                 |               |                             |
| <b>Filing Fees for   Utility under 35 USC 111(a)</b> |                                         |                 |               |                             |
| <b>Description</b>                                   | <b>Fee Code</b>                         | <b>Quantity</b> | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                                 |                                         |                 |               |                             |
| <b>Pages:</b>                                        |                                         |                 |               |                             |
| <b>Claims:</b>                                       |                                         |                 |               |                             |
| <b>Miscellaneous-Filing:</b>                         |                                         |                 |               |                             |
| <b>Petition:</b>                                     |                                         |                 |               |                             |
| <b>Patent-Appeals-and-Interference:</b>              |                                         |                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>             |                                         |                 |               |                             |
| UTILITY APPL ISSUE FEE                               | 2501                                    | 1               | 480           | 480                         |

| Description        | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|--------------------|----------|----------|--------|----------------------|
| Extension-of-Time: |          |          |        |                      |
| Miscellaneous:     |          |          |        |                      |
| Total in USD (\$)  |          |          |        | 480                  |

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 28926633                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay SIVAN                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 14-APR-2017                             |
| <b>Filing Date:</b>                         | 27-JAN-2016                             |
| <b>Time Stamp:</b>                          | 07:03:24                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                                          |                             |
|------------------------------------------|-----------------------------|
| Submitted with Payment                   | yes                         |
| Payment Type                             | DA                          |
| Payment was successfully received in RAM | \$ 480                      |
| RAM confirmation Number                  | 041417INTEFSW00007117506726 |
| Deposit Account                          |                             |
| Authorized User                          |                             |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

| <b>File Listing:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |              |                                              |                  |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------|----------------------------------------------|------------------|------------------|
| Document Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Document Description        | File Name    | File Size(Bytes)/<br>Message Digest          | Multi Part /.zip | Pages (if appl.) |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Issue Fee Payment (PTO-85B) | ptol85b.pdf  | 75363                                        | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |              | a97c273a53eb9070a21645593ca09c9f655f<br>e785 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |              |                                              |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |              |                                              |                  |                  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fee Worksheet (SB06)        | fee-info.pdf | 30110                                        | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |              | 81a4f99666743be48b1bd9e39e05bb6cdb<br>19fc40 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |              |                                              |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |              |                                              |                  |                  |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             |              | 105473                                       |                  |                  |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p> |                             |              |                                              |                  |                  |

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

|                        |                      |
|------------------------|----------------------|
| Application Number     | 15007253 - GAU: 2662 |
| Filing Date            |                      |
| First Named Inventor   | Ishay SIVAN          |
| Art Unit               |                      |
| Examiner Name          |                      |
| Attorney Docket Number | SIVAN-001-US1        |

|    |             |                                  |                                   |
|----|-------------|----------------------------------|-----------------------------------|
| 17 | 20040174434 | 2004-09-09                       | Walker, Jay S. ; et al.           |
| 18 | 20110279700 | 2011-11-17                       | Steinberg; Eran ; et al.          |
| 19 | 20110096180 | 2011-04-28                       | McCloskey; Scott ; et al.         |
| 20 | 20110075930 | 03/2011<br><del>2011-31-03</del> | Cerosaletti, Cathleen D. ; et al. |
| 21 | 20060017820 | 01/2006<br><del>2006-26-01</del> | Kim; Su-hyun                      |

Change(s) applied  
to document,  
/P.H./  
2/24/2017

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**FOREIGN PATENT DOCUMENTS**

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| Examiner Initial* | Cite No | Foreign Document Number <sup>3</sup> | Country Code <sup>2</sup> | Kind Code <sup>4</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear | T <sup>5</sup> |
|-------------------|---------|--------------------------------------|---------------------------|------------------------|------------------|-------------------------------------------------|--------------------------------------------------------------------------|----------------|
|                   | 1       | 2008033200                           | JP                        |                        | 2008-02-14       | Nikon Corp                                      |                                                                          |                |
|                   | 2       | 2007208922                           | JP                        |                        | 2007-08-16       | Fujifilm Corp                                   |                                                                          |                |
|                   | 3       | 2006050494                           | JP                        |                        | 2006-02-16       | Casio Comput Co. Ltd.                           |                                                                          |                |
|                   | 4       | 2003069559                           | WO                        |                        | 2003-08-21       | Lin; Qian                                       |                                                                          |                |

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
( Not for submission under 37 CFR 1.99)

|                        |               |                      |
|------------------------|---------------|----------------------|
| Application Number     |               | 15007253 - GAU: 2662 |
| Filing Date            |               |                      |
| First Named Inventor   | Ishay SIVAN   |                      |
| Art Unit               |               |                      |
| Examiner Name          |               |                      |
| Attorney Docket Number | SIVAN-001-US1 |                      |

Change(s) applied  
to document,  
/P.H./  
2/24/2017

|    |             |  |                                  |                         |  |
|----|-------------|--|----------------------------------|-------------------------|--|
| 6  | 20070195174 |  | 2007-08-23                       | Oren; Halpern           |  |
| 7  | 20120133816 |  | <del>2012-04-22</del><br>05/2012 | Imai; Francisco         |  |
| 8  | 20100290673 |  | 2010-11-18                       | MIYASHITA; Naoyuki      |  |
| 9  | 20130058561 |  | <del>2014-09-30</del><br>03/2013 | Cheng; Chia-Ming        |  |
| 10 | 20130038771 |  | 2013-02-14                       | Brunner; Ralph ; et al. |  |
| 11 | 20140050367 |  | 2014-02-20                       | CHEN; Francine ; et al. |  |
| 12 | 20130050507 |  | 2013-02-28                       | Syed; Zia ; et al.      |  |
| 13 | 20120182447 |  | 2012-07-19                       | Gabay; Chanan           |  |
| 14 | 20130063538 |  | 2013-03-14                       | Hubner; Paul ; et al.   |  |
| 15 | 20120086847 |  | 2012-04-12                       | Foster; Brett           |  |
| 16 | 20100026872 |  | 2010-02-04                       | JIANG; JIN-LIN          |  |



# UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
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[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|------------|------------|---------------------|------------------|
| 15/007,253      | 05/23/2017 | 9661226    | SIVAN-001-US1       | 1015             |

131926 7590 05/03/2017  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230  
Ramat-Gan, 5217102  
ISRAEL

## ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

### **Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)** (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Ishay SIVAN, Tel Aviv, ISRAEL;  
SnapAid Ltd., Tel Aviv, ISRAEL;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit [SelectUSA.gov](http://SelectUSA.gov).

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 9,661,226

APPLICATION NO.: 15/007,253

ISSUE DATE : May 23, 2017

INVENTOR(S) : Ishay SIVAN

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 22, Line 16, Claim 1, instead of "Obtaining"; should be – obtaining –;

In Column 22, Line 18, Claim 1, "value" should be added after the second appearance of "first";

In Column 22, Line 32, Claim 1, "and" should be added after "(c2),";

In Column 23, Line 22, Claim 11, "as the" appears at the end of the line should be deleted;

In Column 24, Line 32, Claim 17, instead of "the user"; should be – a user –.

### MAILING ADDRESS OF SENDER (Please do not use customer number below):

BINDER Yehuda  
May Patents Ltd. c/o Dorit Shem-Tov  
P.O.B 7230

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

## Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTY.'S DOCKET: SIVAN-001-US1

|                              |   |                            |
|------------------------------|---|----------------------------|
| In re Application of:        | ) | Confirmation No. 1015      |
|                              | ) |                            |
| US Patent No. 9,661,226      | ) | Art Unit: 2662             |
|                              | ) |                            |
| Appln. No.: 15/007,253       | ) | Examiner: Hannett, James M |
|                              | ) |                            |
| Filed: January 27, 2016      | ) | Washington, D.C.           |
|                              | ) |                            |
| For: REAL TIME ASSESSMENT OF | ) |                            |
| PICTURE QUALITY              | ) | July 16, 2017              |
|                              | ) |                            |

**37 CFR 1.323 REQUEST FOR CERTIFICATE OF CORRECTION  
OF APPLICANT'S MISTAKE:**

Honorable Commissioner for Patents  
U.S. Patent and Trademark Office  
Randolph Building, Mail Stop Amendments  
401 Dulany Street  
Alexandria, VA 22314

Sir:

The following is a request for a certificate of correction in US Application No. 15/007,253, now US Patent No. 9,661,226.

A certificate of correction under 35 USC 255 is respectfully requested in the above identified patent in accordance with the first statutory requirement concerns the nature, i.e. a typographical nature, of the mistake for which a correction is sought.

The exact location where the errors appear in the patent are as follows:

In Column 22, Line 16, Claim 1, instead of "Obtaining"; should be - obtaining -;

In Column 22, Line 18, Claim 1, "value" should be added after the second appearance of "first";

In Column 22, Line 32, Claim 1, "and" should be added after "(c2),";

In Column 23, Line 22, Claim 11, "as the" appears at the end of the line should be deleted;

In Column 24, Line 32, Claim 17, instead of "the user"; should be - a user -.

Electronic Payment in the amount of US\$ 100 is being made by deposit account no. 506726 to cover the fee for providing a correction of applicant's mistake, as set forth in 37 CFR 1.20(a).

The requested correction is attached on Form PTO 1050.

Respectfully submitted,

By / Yehuda Binder /  
Yehuda Binder  
Registration No. 73,612

## Electronic Patent Application Fee Transmittal

|                                                       |                                         |                 |               |                             |
|-------------------------------------------------------|-----------------------------------------|-----------------|---------------|-----------------------------|
| <b>Application Number:</b>                            | 15007253                                |                 |               |                             |
| <b>Filing Date:</b>                                   | 27-Jan-2016                             |                 |               |                             |
| <b>Title of Invention:</b>                            | REAL TIME ASSESSMENT OF PICTURE QUALITY |                 |               |                             |
| <b>First Named Inventor/Applicant Name:</b>           | Ishay SIVAN                             |                 |               |                             |
| <b>Filer:</b>                                         | Yehuda Binder                           |                 |               |                             |
| <b>Attorney Docket Number:</b>                        | SIVAN-001-US1                           |                 |               |                             |
| Filed as Small Entity                                 |                                         |                 |               |                             |
| <b>Filing Fees for    Utility under 35 USC 111(a)</b> |                                         |                 |               |                             |
| <b>Description</b>                                    | <b>Fee Code</b>                         | <b>Quantity</b> | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                                  |                                         |                 |               |                             |
| <b>Pages:</b>                                         |                                         |                 |               |                             |
| <b>Claims:</b>                                        |                                         |                 |               |                             |
| <b>Miscellaneous-Filing:</b>                          |                                         |                 |               |                             |
| <b>Petition:</b>                                      |                                         |                 |               |                             |
| <b>Patent-Appeals-and-Interference:</b>               |                                         |                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>              |                                         |                 |               |                             |
| CERTIFICATE OF CORRECTION                             | 2811                                    | 1               | 100           | 100                         |

| Description        | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|--------------------|----------|----------|--------|----------------------|
| Extension-of-Time: |          |          |        |                      |
| Miscellaneous:     |          |          |        |                      |
| Total in USD (\$)  |          |          |        | 100                  |

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 29794170                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay SIVAN                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 16-JUL-2017                             |
| <b>Filing Date:</b>                         | 27-JAN-2016                             |
| <b>Time Stamp:</b>                          | 11:29:29                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                        |    |
|------------------------|----|
| Submitted with Payment | no |
|------------------------|----|

### File Listing:

| Document Number | Document Description                  | File Name  | File Size(Bytes)/<br>Message Digest     | Multi Part /.zip | Pages (if appl.) |
|-----------------|---------------------------------------|------------|-----------------------------------------|------------------|------------------|
| 1               | Request for Certificate of Correction | sb0044.pdf | 164506                                  | no               | 2                |
|                 |                                       |            | 3eeda85b1d71d93f37bd4c318ceca1c378d0ad6 |                  |                  |

### Warnings:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       |                               |                                          |    |   |
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| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |                               |                                          |    |   |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Request for Certificate of Correction | Certificate-of-correction.pdf | 136368                                   | no | 3 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       |                               | 08b1ace93e13ddd444abd5897bece0b5fd9a0f4e |    |   |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |                               |                                          |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |                               |                                          |    |   |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Fee Worksheet (SB06)                  | fee-info.pdf                  | 29844                                    | no | 2 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       |                               | 4967b07901399d60118b377d675e9730df66d3f2 |    |   |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |                               |                                          |    |   |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |                               |                                          |    |   |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |                               | 330718                                   |    |   |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p> |                                       |                               |                                          |    |   |

## Electronic Patent Application Fee Transmittal

|                                                    |                                         |                 |               |                             |
|----------------------------------------------------|-----------------------------------------|-----------------|---------------|-----------------------------|
| <b>Application Number:</b>                         | 15007253                                |                 |               |                             |
| <b>Filing Date:</b>                                | 27-Jan-2016                             |                 |               |                             |
| <b>Title of Invention:</b>                         | REAL TIME ASSESSMENT OF PICTURE QUALITY |                 |               |                             |
| <b>First Named Inventor/Applicant Name:</b>        | Ishay SIVAN                             |                 |               |                             |
| <b>Filer:</b>                                      | Yehuda Binder                           |                 |               |                             |
| <b>Attorney Docket Number:</b>                     | SIVAN-001-US1                           |                 |               |                             |
| Filed as Small Entity                              |                                         |                 |               |                             |
| <b>Filing Fees for Utility under 35 USC 111(a)</b> |                                         |                 |               |                             |
| <b>Description</b>                                 | <b>Fee Code</b>                         | <b>Quantity</b> | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                               |                                         |                 |               |                             |
| <b>Pages:</b>                                      |                                         |                 |               |                             |
| <b>Claims:</b>                                     |                                         |                 |               |                             |
| <b>Miscellaneous-Filing:</b>                       |                                         |                 |               |                             |
| <b>Petition:</b>                                   |                                         |                 |               |                             |
| <b>Patent-Appeals-and-Interference:</b>            |                                         |                 |               |                             |
| <b>Post-Allowance-and-Post-Issuance:</b>           |                                         |                 |               |                             |
| CERTIFICATE OF CORRECTION                          | 2811                                    | 1               | 100           | 100                         |

| Description        | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|--------------------|----------|----------|--------|----------------------|
| Extension-of-Time: |          |          |        |                      |
| Miscellaneous:     |          |          |        |                      |
| Total in USD (\$)  |          |          |        | 100                  |

## Electronic Acknowledgement Receipt

|                                             |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 29794579                                |
| <b>Application Number:</b>                  | 15007253                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 1015                                    |
| <b>Title of Invention:</b>                  | REAL TIME ASSESSMENT OF PICTURE QUALITY |
| <b>First Named Inventor/Applicant Name:</b> | Ishay SIVAN                             |
| <b>Customer Number:</b>                     | 131926                                  |
| <b>Filer:</b>                               | Yehuda Binder                           |
| <b>Filer Authorized By:</b>                 |                                         |
| <b>Attorney Docket Number:</b>              | SIVAN-001-US1                           |
| <b>Receipt Date:</b>                        | 16-JUL-2017                             |
| <b>Filing Date:</b>                         | 27-JAN-2016                             |
| <b>Time Stamp:</b>                          | 20:29:38                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                                          |                             |
|------------------------------------------|-----------------------------|
| Submitted with Payment                   | yes                         |
| Payment Type                             | DA                          |
| Payment was successfully received in RAM | \$ 100                      |
| RAM confirmation Number                  | 071717INTEFSW00007117601835 |
| Deposit Account                          |                             |
| Authorized User                          |                             |

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

|  |
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**File Listing:**

| Document Number | Document Description | File Name    | File Size(Bytes)/ Message Digest         | Multi Part /.zip | Pages (if appl.) |
|-----------------|----------------------|--------------|------------------------------------------|------------------|------------------|
| 1               | Fee Worksheet (SB06) | fee-info.pdf | 29844                                    | no               | 2                |
|                 |                      |              | f692f3103ffaba675a61a431b7f87ca214e13f22 |                  |                  |

**Warnings:**

**Information:**

|                              |       |
|------------------------------|-------|
| Total Files Size (in bytes): | 29844 |
|------------------------------|-------|

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 9,661,226 B2  
APPLICATION NO. : 15/007253  
DATED : May 23, 2017  
INVENTOR(S) : Ishay Sivan

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**In the Claims**

In Column 22, Line 16, Claim 1, instead of "Obtaining"; should be -- obtaining --;  
In Column 22, Line 18, Claim 1, "value" should be added after the second appearance of "first";  
In Column 22, Line 32, Claim 1, "and" should be added after "(c2),";  
In Column 23, Line 22, Claim 11, "as the" appears at the end of the line should be deleted;  
In Column 24, Line 32, Claim 17, instead of "the user"; should be -- a user --.

Signed and Sealed this  
Fifteenth Day of August, 2017



Joseph Matal  
*Performing the Functions and Duties of the  
Under Secretary of Commerce for Intellectual Property and  
Director of the United States Patent and Trademark Office*