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- (71) Applicant: **OMG PLC** [GB/GB]; 14 Minns Business Park, West Way, Oxford Oxfordshire OX2 0JB (GB).
- (72) Inventors: **DALLAS, James Andrew**; 239 Goldhawk Road, London Greater London W12 8ER (GB). **LEIGH, James Alexander**; 22 Hurst Street, London Greater London SE24 0EG (GB).

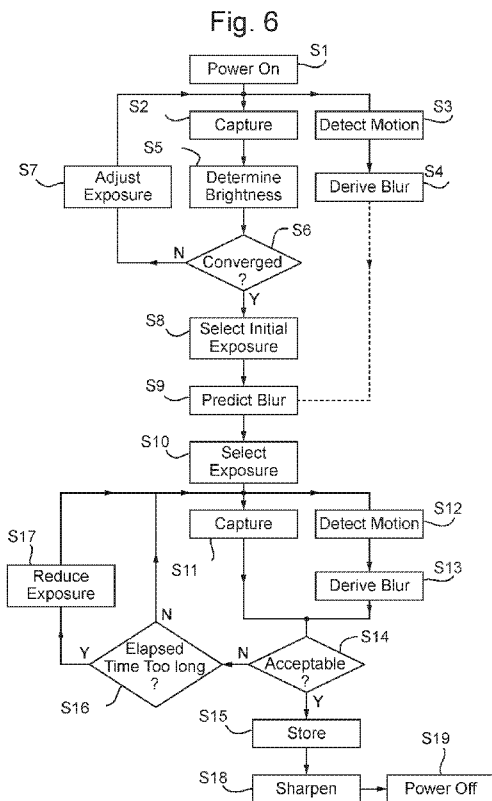
(74) Agent: **MERRYWEATHER, Colin Henry**; 14 South Square, Gray's Inn, London Greater London WC1R 5JJ (GB).

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[Continued on next page]

(54) Title: MINIMISATION OF BLUR IN STILL IMAGE CAPTURE



(57) Abstract: A camera unit that comprises an image sensor and a motion sensor performs an image capture operation in which still images are captured intermittently without triggering by a user. It is determined whether a captured image is of acceptable quality taking into account at least the degree of blurring indicated by the detected motion. If so, the captured image is stored, or else further images are captured until an image of acceptable quality is captured and stored.

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SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, KM, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments (Rule 48.2(h))*

**Published:**

— *with international search report (Art. 21(3))*

**(88) Date of publication of the international search report:**

10 March 2016

INTERNATIONAL SEARCH REPORT

International application No  
PCT/GB2015/052042

A. CLASSIFICATION OF SUBJECT MATTER  
INV. H04N5/232 H04N5/353  
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
H04N G06T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 2013/057713 A1 (KHAWAND CHARBEL [US]) 7 March 2013 (2013-03-07) paragraph [0057] - paragraph [0067] paragraph [0043] figures 1,2,6,7,8	1-7,11, 18,21,22 8,9, 12-17 10
X	US 2013/314511 A1 (CHEN DING-YUN [TW] ET AL) 28 November 2013 (2013-11-28)  paragraph [0029] - paragraph [0051] figure 3	1,3-7, 11,18, 21,22
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Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

13 January 2016

Date of mailing of the international search report

21/01/2016

Name and mailing address of the ISA/  
European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax: (+31-70) 340-3016

Authorized officer

Potin, Delphine

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB2015/052042

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:  
  
1-18, 21, 22
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/GB2015/052042

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 2 533 517 A1 (APPLE INC [US]) 12 December 2012 (2012-12-12) paragraph [0042] paragraph [0048] paragraph [0027] paragraph [0030] figure 11	8,9
A	----- EP 1 770 989 A2 (SEIKO EPSON CORP [JP]) 4 April 2007 (2007-04-04) paragraph [0053] - paragraph [0058] paragraph [0025]	7-9
A	----- US 2013/076921 A1 (OWEN CHRISTOPHER [SE] ET AL) 28 March 2013 (2013-03-28) paragraph [0054] - paragraph [0056]	11
Y	----- US 2013/044230 A1 (ZHOU JIANPING [US]) 21 February 2013 (2013-02-21) paragraph [0033] - paragraph [0046] figures 1-5	12-17
A	----- US 2006/170784 A1 (CLARKE IAN [CA] ET AL) 3 August 2006 (2006-08-03) paragraph [0041] - paragraph [0082] figures 1-8 -----	12-17

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/GB2015/052042

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11, 18, 21, 22

A method for deriving a blur measure from a weighted sum of the angular motion around each of the three axes wherein the weights in respect of each of the three orthogonal axes are scaled relative to each other by factors and are based on the pixel pitch.

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2. claims: 12-17

A method for deriving a blur measure for an image sensor which is rolling shuttered from the angular motion detected by a gyroscope sensor.

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3. claims: 19, 20

A method of controlling a camera unit to capture still images which is intermittently performed without being performed by a user.

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