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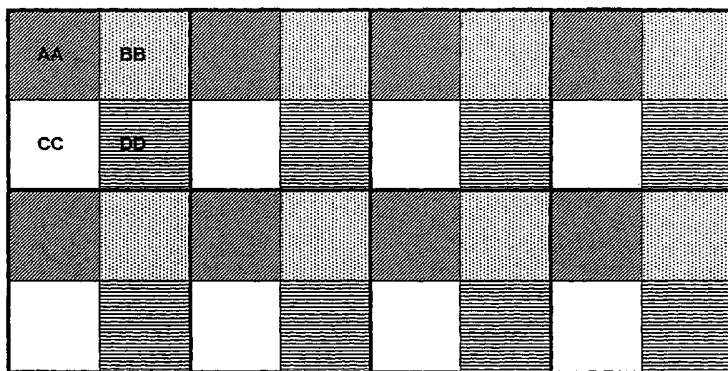
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- Published:
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22 June 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ROD AND CONE RESPONSE SENSOR



Legend

- = red
- = green
- = blue
- = non-color

(57) Abstract: An imager having color sensitivity in any lighting condition is provided by replacing at least one of the green color filtered pixels in a Bayer pattern array with a non-color filtered pixel and providing a different integration period for each color channel. When replacing a color filtered pixel with a non-color filtered pixel, the benefits of both color sensitivity and light sensitivity may be harnessed by providing the color filtered pixels with a longer integration period than the non-color filtered pixels. Color information may be interpolated by performing subtraction logic using non-color and color filter information from adjacent pixels in back-end processing. Integration times for each color channel can be adapted to minimize filter transmission and sensor absorption differences within each frame of data. Temporal displacement of colors of moving objects by having different integration periods may be corrected in back-end processing. Back-end processing may also correct motion blur.

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INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
H04N9/04

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

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 practical, search terms used)
EPO-Internal, PAJ, 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	US 2004/105021 A1 (HU XIAOPING) 3 June 2004 (2004-06-03)	1, 3-8, 10, 14, 15, 20, 21, 24
Y	paragraphs [0011], [0012], [0029], [0030], [0040]; figure 6 -----	9
X	US 4 334 239 A (HERBST ET AL) 8 June 1982 (1982-06-08) column 3, line 29 - line 52; figure 1 column 6, line 66 - column 7, line 14 -----	1-25
X	PATENT ABSTRACTS OF JAPAN vol. 006, no. 173 (E-129), 7 September 1982 (1982-09-07) -& JP 57 089385 A (NEC HOME ELECTRONICS LTD), 3 June 1982 (1982-06-03)	1, 6-8
A	abstract; figure 2 -----	22
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Further documents are listed in the continuation of box C. Patent family members are listed in 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 document 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 30 November 2005	Date of mailing of the international search report 03. 02. 2006
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Montanari, M
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INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 57 095785 A (HITACHI LTD) 14 June 1982 (1982-06-14) figure 2b -----	9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/025579

Box 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 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 fee, this Authority did not invite payment of any additional fee.
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.:
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.:

1-25

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-25

pixel array wherein a first group of pixels is color filtered and a second group of pixels is non-color filtered

2. claims: 26-48

imaging device wherein a first group of pixels has a first integration period and a second group of pixels has a second integration period

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/025579

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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