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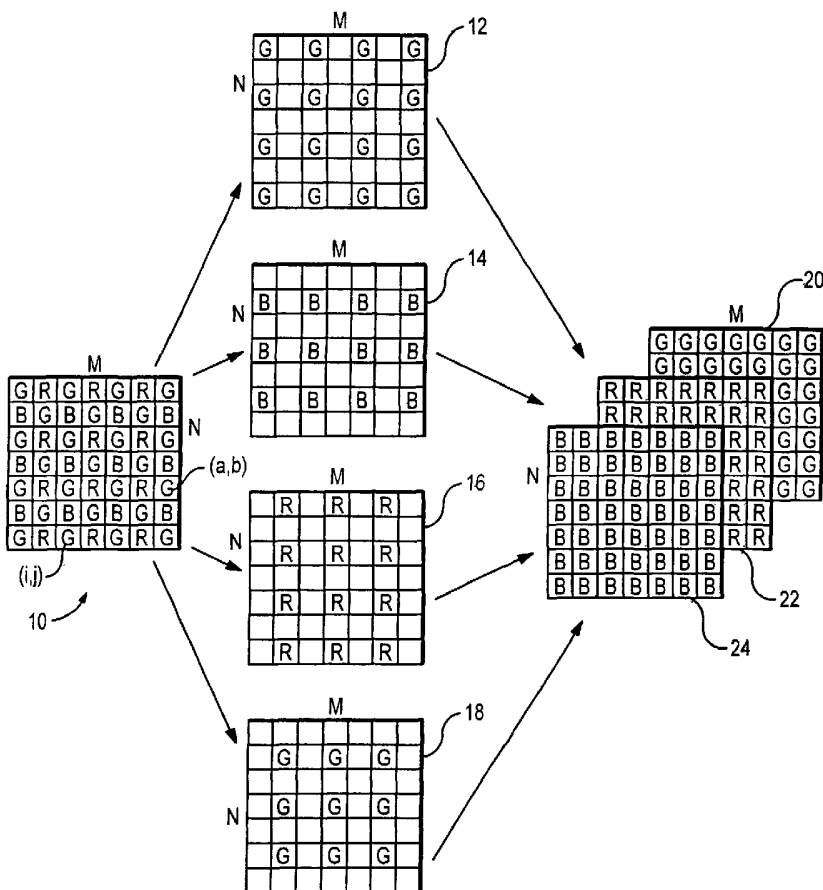
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(54) Title: BILATERAL FILTERING IN A DEMOSAICING PROCESS



(57) Abstract: Demosaicing convolution kernels ($k_{p,c}$) are incorporated into the framework of bilateral filtering in order to reduce artifacts at abrupt intensity transitions when a color mosaic pattern (10) is converted to an output image (20, 22 and 24). As a consequence of the bilateral filtering within a window that is selected without intensity considerations, intensity values of pixels $I(a,b)$ that are physically close are given greater weight than intensity values of more distant pixels and, simultaneously, intensity values that are quantitatively similar (i.e. photometrically similar) are given greater weight than intensity values that are quantitatively dissimilar. Using photometric similarity in a demosaicing operation reduces the effects of pixels on one side of an abrupt intensity transition in determining interpolated intensity values for pixels on the opposite side of the abrupt intensity transition.

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GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent
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INTERNATIONAL SEARCH REPORT

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PCT/US 02/08555

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06T5/00

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)

IPC 7 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 practical, search terms used)

INSPEC, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TOMASI C ET AL: "Bilateral filtering for gray and color images" SIXTH INTERNATIONAL CONFERENCE ON COMPUTER VISION (IEEE CAT. NO.98CH36271), PROCEEDINGS OF IEEE 6TH INTERNATIONAL CONFERENCE ON COMPUTER VISION, BOMBAY, INDIA, 4-7 JAN. 1998, pages 839-846, XP000926378 1998, New Delhi, India, Narosa Publishing House, India ISBN: 81-7319-221-9 cited in the application sections 1, 2, 2.1, 5 abstract --- -/--	1,5-9



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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- *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.
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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.
X	KIMMEL R: "Demosaiicing: image reconstruction from color CCD samples" IEEE TRANSACTIONS ON IMAGE PROCESSING, SEPT. 1999, IEEE, USA, vol. 8, no. 9, pages 1221-1228, XP002237072 ISSN: 1057-7149	1,5,6
A	sections I, IV figure 1 -----	2-4,7-10
A	TAUBMAN D: "Generalized wiener reconstruction of images from colour sensor data using a scale invariant prior" PROCEEDINGS OF 7TH IEEE INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, VANCOUVER, BC, CANADA, 10 - 13 September 2000, pages 801-804, XP010529589 cited in the application sections 1, 2, 4 -----	1-10