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[Continued on next page]

(54) Title: FEATURE BASED HIGH RESOLUTION MOTION ESTIMATION FROM LOW RESOLUTION IMAGES CAPTURED USING AN ARRAY SOURCE

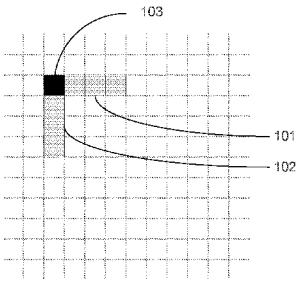

FIG. 1a

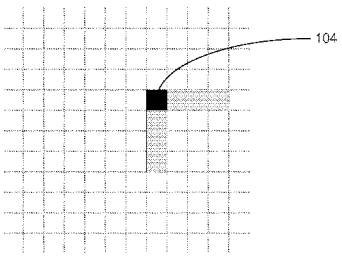

FIG. 1b

(57) Abstract: Systems and methods in accordance with embodiments of the invention enable feature based high resolution motion estimation from low resolution images captured using an array camera. One embodiment includes performing feature detection (122, 124) with respect to a sequence of low resolution images to identify (126) initial locations for a plurality of detected features in the sequence of low resolution images, where the at least one sequence of low resolution images is part of a set of sequences of low resolution images captured from different perspectives. The method also includes synthesizing (128) high resolution image portions, where the synthesized high resolution image portions contain the identified plurality of detected features from the sequence of low resolution images. The method further including performing feature detection (129) within the high resolution image portions to identify high precision locations for the detected features, and estimating camera motion using the high precision locations for said plurality of detected features.

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A. CLASSIFICATION OF SUBJECT MATTER
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USPC - 382/107
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(8) Classification(s): G06K 9/00, 9/62, 9/32 (2014.01)
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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)
MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); IP.com; IEEE; Google/Google Scholar; KEYWORDS: super resolution sub pixel color channel motion estimation

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/0052743 A1 (TECHMER, A) 26 February 2009; paragraphs [0027], [0089], [0111]-[0113], [0127], [0156]-[0157], [0166], [0170].	1-26
A	US 2002/0167537 A1 (TRAJKOVIC, M) 14 November 2002; the entire document.	1-26

☐ Further documents are listed in the continuation of Box C. ☐

* 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
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"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
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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