2000019 8-2
IPOS COPY

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H04N 1/00 — A2

(11) International Publication Number: WO 99/04550

(43) International Publication Date: 28 January 1999 (28.01.99)

(21) International Application Number: PCT/CA98/00690

(22) International Filing Date: 15 July 1998 (15.07.98)

(30) Priority Data:
08/892,577 16 July 1997 (16.07.97) US

(71) Applicant: KINETIC SCIENCES INC. [CA/CA]; 1584 Rand Avenue, Vancouver, British Columbia V6P 3G2 (CA).

(72) Inventors: IMMEGA, Guy, Broer; 4356 Jericho Circle, Vancouver, British Columbia V6R 1E9 (CA). VANDERKOOY, Geoffrey, Edward; 306 – 1387 West 71st Avenue, Vancouver, British Columbia V6P 3B4 (CA).

(74) Agent: WIGGS, Blake, R.; Oyen Wiggs Green & Mutala, 480–601 West Cordova Street, Vancouver, British Columbia V6B 1G1 (CA).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HR, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: LINEAR SENSOR IMAGING METHOD AND APPARATUS

(57) Abstract

A first linear sensor array (42) produces, at a first time of occurence, a first image of a segment of an object (12) as the object moves across the sensor at a variable speed. The image and its time of occurrence are accumulated in a buffer. As the object continues to move across the sensor, a successive plurality of the segment images seen by the first sensor are accumulated in the buffer, together with their respective times of occurrence. A second linear sensor array (44) spaced a distance from the first array produces, at a second time of occurrence, a second image of another segment of the moving object. The second image is compared with the accumulated first images to determine which of the accumulated first images is most similar to the second image. The object's speed S can then be estimated as an appropriately weighted function of $d/(t_j-t_m)$ [i.e. $S \propto d/(t_j-t_m)$], where t_j is the time of occurrence of a selected one of the second images and t_m is the time of occurrence of the first image most similar to the selected second image. By continually monitoring the object's speed in this fashion, one may select and transfer into an image buffer those image segments which together form the highest quality image of the object, independently of the object's speed of motion past the sensor and without the need for expensive, bulky stepper motors, mechanical motion encoders, or the like.

