

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 December 2008 (18.12.2008)

PCT

(10) International Publication Number
WO 2008/154589 A3

(51) International Patent Classification:

H04K 1/00 (2006.01)

(21) International Application Number:

PCT/US2008/066585

(22) International Filing Date: 11 June 2008 (11.06.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/943,207 11 June 2007 (11.06.2007) US

12/136,435 10 June 2008 (10.06.2008) US

12/136,475 10 June 2008 (10.06.2008) US

(71) Applicant (for all designated States except US): **LU-MIDIGM, INC.** [US/US]; 801 University Boulevard SE, Suite 302, Albuquerque, New Mexico 87106 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ROWE, Robert K.** [US/US]; 229 Ashley Lane, Corrales, New Mexico 87048 (US). **ENNIS, Matthew** [US/US]; 60 Lost Valley Loop, Cedar Crest, New Mexico 87008 (US). **CORCORAN, Stephen, P.** [US/US]; 100 Rivera Lane, Corrales, New Mexico 87048 (US).

(74) Agents: **SANDERS, Jason, A.** et al.; Townsend and Townsend and Crew LLP, 1200 Seventeenth Street, Suite 2700, Denver, CO 80202 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: CONTACTLESS MULTISPECTRAL BIOMETRIC CAPTURE

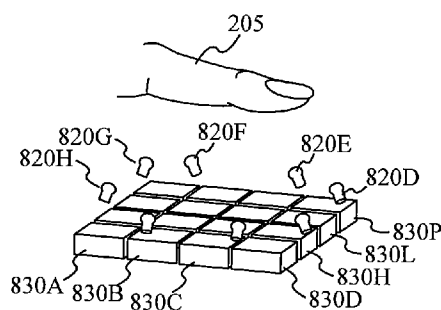


FIG. 9A

(57) Abstract: A number of biometric systems and methods are disclosed. A system according to one embodiment includes an illumination subsystem, an imaging subsystem, and an analyzer. The illumination subsystem is disposed to illuminate a target space. The imaging subsystem is configured to image the target space under distinct optical conditions. The analyzer is provided in communication with the illumination subsystem, the imaging subsystem, and the three-dimensional subsystem. The analyzer also has instructions to operate the subsystems to collect substantially simultaneously a plurality of images of the object disposed at the pre-determined spatial location under multispectral conditions.



Published:

— *with international search report*

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

12 February 2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/66585

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H04K 1/00 (2008.04)

USPC - USPC - 713/186

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)

USPC - 713/186

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 382/125, 115; 715/773; 705/1 and 705/75Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Dialog Classic (Chin. Pat. Abs. in Engl., Derwent World Pat. Index, Euro. Pat. Full Text, French Pats., Japanese Pat. Abstracts in Eng., U.S. Pats. Full Text/1976 to pres., WIPO/PCT Pats. Full Text), Google Scholar; Terms: biometric, dual processor, hand, multispectral, image, processor, second image, wafer, level

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0120553 A1 (STOBBE) 03 October 2003 (03.10.2003) entire document, especially Abstract, Fig. 1; and para [0003], [0007], [0011], [0020]-[0022], [0029], [0034], [0036] and [0059]	1-8, 10-26, 28, 30-39, 42
Y		9, 27, 29, 40-41
Y	US 6,749,115 B2 (GRESSEL et al.) 31 May 2001 (31.05.2001) entire document, especially Abstract, Fig. 4; and col 3, ln 8-12; and col 4, ln 12-17	9, 27, 41
Y	US 2007/0052827 A1 (HILTUNEN) 07 September 2005 (07.09.2005) entire document, especially Abstract	29, 40
A	US 7,397,943 B2 (MERBACH et al.)	1-42

☐ 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

"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

14 October 2008 (14.10.2008)

Date of mailing of the international search report

30 OCT 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774