### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



## - 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800

(10) International Publication Number WO 2011/049814 A3

# (43) International Publication Date 28 April 2011 (28.04.2011)

(51) International Patent Classification: *A61B 1/01* (2006.01)

(21) International Application Number:

PCT/US2010/052696

(22) International Filing Date:

14 October 2010 (14.10.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/582,588 20 October 2009 (20.10,2009)

US

- (71) Applicant (for all designated States except US): MAG-NETECS, INC. [US/US]; 10524 S. La Cienega Boulevard, Inglewood, CA 90304 (US).
- (72) Inventors: SHACHAR, Yehoshua; 2417 22nd Street, Santa Monica, CA 90405 (US). MARX, Bruce; 1233 Avila Drive, Ojai, CA 93023 (US). JOHNSON, David; 8450 Delongpre Avenue, #6, West Hollywood, CA 90069 (US). FARKAS, Leslie; 254 N. Arnaz Street, Ojai, CA 93023 (US). KIM, Steven; 7 Bond Street #3B, New York, NY 10012 (US).
- (74) Agent: KING, John, R.; Knobe, Martens, Olson & Bear LLP, 2040 Main Street, 14th Floor, Irvine, CA 92614 (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, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### **Declarations under Rule 4.17:**

 as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

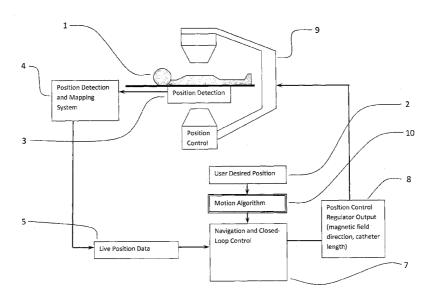
#### Published:

— with international search report (Art. 21(3))

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

27 March 2014

(54) Title: METHOD FOR ACQUIRING HIGH DENSITY MAPPING DATA WITH A CATHETER GUIDANCE SYSTEM



(57) **Abstract**: The present invention is directed to a method of rotating a catheter while it is manually guided in order to increase the volume of space it passes through during a geometric mapping procedure as to provide a higher and more uniform location data point cloud density in a volumetric mapping system.





## INTERNATIONAL SEARCH REPORT

International application No. PCT/US2010/052696

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61B 1/01 (2010.01) USPC - 600/424 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) - A61B 1/00, 01; 5/05; 8/00 (2010.01) USPC - 600/407, 424, 427, 433, 434			
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) PatBase, Google Patent			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where ap	ppropriate, of the relevant passages	Relevant to claim No.
х	US 2008/0249395 A1 (SHACHAR et al) 09 October 20	08 (09.10.2008) entire document	1-4
Α	US 2008/0027313 A1 (SHACHAR) 31 January 2008 (3	31.01.2008) entire document	1-4
Α	US 2007/0016006 A1 (SHACHAR) 18 January 2007 (	18.01.2007) entire document	1-4
Α	US 2009/0248014 A1 (SHACHAR et al) 01 October 20	09 (01.10.2009) entire document	1-4
Α	US 2006/0116633 A1 (SHACHAR) 01 June 2006 (01.0	06.2006) entire document	1-4
`A	US 2007/0066880 A1 (LEE et al) 22 March 2007 (22.03.2007) entire document		1-4
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  "I" 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			
"E" earlier application or patent but published on or after the international filing date		"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive	
cited to	ent which may throw doubts on priority claim(s) or which is establish the publication date of another citation or other reason (as specified)	document of particular relevance, the	
"O" document referring to an oral disclosure, use, exhibition or other means		considered to involve an inventive s combined with one or more other such d being obvious to a person skilled in the	ocuments, such combination
"P" document published prior to the international filing date but later than the priority date claimed			
Date of the actual completion of the international search Date		Date of mailing of the international search	h report
30 November 2010		08 DEC 2010	
	nailing address of the ISA/US	Authorized officer:	
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450		Blaine R. Copenheaver PCT Helpdesk: 571-272-4300	
Facsimile No	571-273-3201	PCT OSP: 571-272-4300	

Form PCT/ISA/210 (second sheet) (July 2009)