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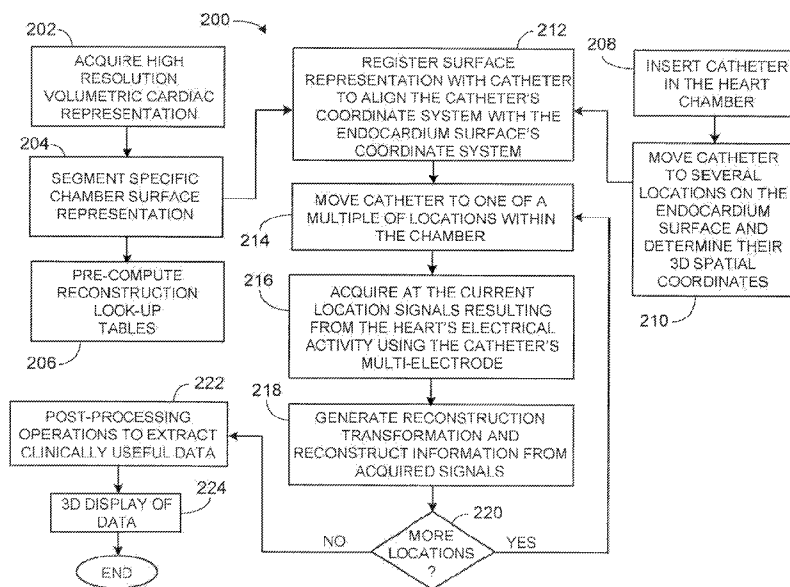
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(54) Title: NON-CONTACT CARDIAC MAPPING, INCLUDING MOVING CATHETER AND MULTI-BEAT INTEGRATION



(57) Abstract: A non-contact cardiac mapping method is disclosed that includes: (i) inserting a catheter into a heart cavity having an endocardium surface, the catheter including multiple, spatially distributed electrodes; (ii) measuring signals at the catheter electrodes in response to electrical activity in the heart cavity with the catheter spaced from the endocardium surface; and (iii) determining physiological information at multiple locations of the endocardium surface based on the measured signals and positions of the electrodes with respect to the endocardium surface. Related systems and computer programs are also disclosed.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/70854

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **A61B 5/04(2006.01)**

USPC: **600/509**

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)

U.S. : 600/509, 512

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)

EAST database: mapping catheter, potential, location, processor, cardiac, geometry

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,892,091 B1 (Ben Haim et al.) 10 may 2005 (10.05.2005) , column 1 lines 51-52, 59-63, column 2 lines 103, col 3 lines 3-21, col 4 lines 27-31, col 5 lines 24-51, col 6 lines 10-17, 22-28, 36-40, col 7 line 50-67, col 8 lines 1-4, 10-21, 48-53, 58-59, col 9 lines 10-19, 28-42, col 11 lines 34-36, col 12 lines 49-53, 63-65, col 13 lines 10-14, 31-36, col 14 lines 14-24, 35-33	1, 4-6, 16, 17, 20-33, 35, 43,44, 52, 53, 132, 133, 135-138, 141-145, 148-152, 157-159, 161-163, 165-167, 178-185 ----- 2, 3, 18, 19, 34, 42, 50, 51, 59-61, 67-88, 94-100, 104-106, 118-122, 124, 125, 131 ,134, 139, 140, 146, 147, 153, 156, 160, 164, 168-177

Further documents are listed in the continuation of Box C.

See patent family annex.

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"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
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"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	"&" document member of the same patent family

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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.
Y	US 2005/0288599 A1 (MacAdams et al.) 29 Dec 2005 (29.12.2005) paragraphs 13, 27, and 49	18, 19, 42, 50, 51, 59, 70, 71, 97, 100, 118, 119, 122, 131, 134, 164, 168-177
Y	US 6,893,588 B1 (Rudy et al) 4 Jan 2005 (05.01.2005)	60, 61, 67-88, 94-100, 104-106, 118-122, 124, 125, 131
Y	US 5,297,549 (Beatty et al.) 29 Mar 1994 (29.03.1994) column 5 lines 6-30, 55-60	18, 19, 42, 50, 51, 59, 70, 71, 97, 118, 119, 131, 139, 140, 168
Y	US 5,921,982 (Lesh et al.) 13 July 199 (13.07.1999) col 2 lines 12-24, col 3 lines 40-49	34, 86, 160