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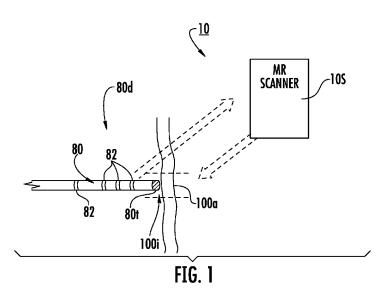
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(54) Title: MRI-GUIDED INTERVENTIONAL SYSTEMS THAT CAN TRACK AND GENERATE DYNAMIC VISUALIZATIONS OF FLEXIBLE INTRABODY DEVICES IN NEAR REAL TIME



(57) Abstract: MRI guided cardiac interventional systems are configured to generate dynamic (interactive) visualizations of patient anatomy and medical devices during an MRI-guided procedure and may also include at least one user selectable 3-D volumetric (tissue characterization) map of target anatomy, e.g., a defined portion of the heart.





International application No. **PCT/US2010/037734**

A. CLASSIFICATION OF SUBJECT MATTER

A61B 5/055(2006.01)i, A61B 5/042(2006.01)i, A61B 5/02(2006.01)i

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)

A61B 5/055; A61B 5/05

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal) & Keywords: MRI,real time,3-D,catheter

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2005-0054910 A1 (MARLEINE TREMBLAY et al.) 10 March 2005 See abstract, claims 1,9-10,14,22,27,35-38, figure 3	1,44,52,59 2-43,45-51,53-58 ,60-74
A	US 2009-0118610 A1 (KARMARKAR PARAG V. et al.) 07 May 2009 See abstract, claims 1,17-18 and figure 1	1–74
А	US 2002-0058868 A1 (TSUTOMU HOSHINO et al.) 16 May 2002 See abstract, claim 1 and figure 1	1-74

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See patent family annex.

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		FC1/0	JS2010/037734
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005-0054910 A1	10.03.2005	US 2005-054910 A1	10.03.2005
JS 2009-0118610 A1	07.05.2009	None	
JS 2002-0058868 A1	16.05.2002	JP 2002-058658 A US 2006-0058633 A1 US 2006-058633 A1 US 6961608 B2	26.02.2002 16.03.2006 16.03.2006 01.11.2005