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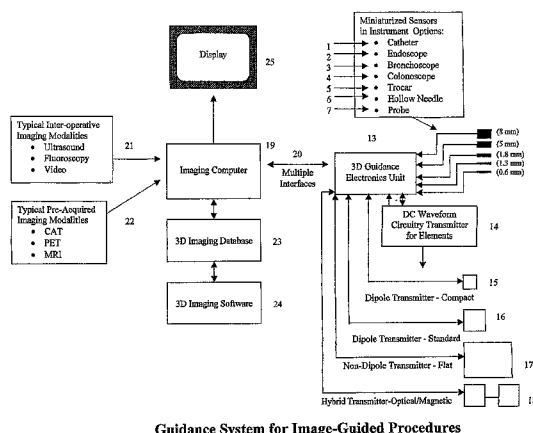
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DC MAGNETIC-BASED POSITION AND ORIENTATION MONITORING SYSTEM FOR TRACKING MEDICAL INSTRUMENTS



Guidance System for Image-Guided Procedures

(57) Abstract: Miniaturized, five and six degrees-of-freedom magnetic sensors (1-7), responsive to pulsed DC magnetic fields waveforms generated by multiple transmitter options (15-18), provide an improved and cost-effective means of guiding medical instruments to targets inside the human body. The end result is achieved by integrating DC tracking, 3D reconstructions of pre-acquired patient scans and imaging software into a system enabling a physician to internally guide an instrument with real-time 3D vision for diagnostic and interventional purposes. The integration allows physicians to navigate within the human body by following 3D sensor tip locations superimposed on anatomical images reconstructed into 3D volumetric computer models. Sensor data can also be integrated with real-time imaging modalities, such as endoscopes, for intrabody navigation of instruments with instantaneous feedback through critical anatomy to locate and remove tissue. To meet stringent medical requirements, the system generates and senses pulsed DC magnetic fields embodied in an assemblage of miniaturized, disposable and reusable sensors functional with both dipole and co-planar transmitters.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/38961

A. CLASSIFICATION OF SUBJECT MATTER IPC: A61B 5/05 (2006.01) 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) U.S. : 600/424 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)																				
C. DOCUMENTS CONSIDERED TO BE RELEVANT																				
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																		
Y	US 6,517,491 B1 (Thiele et al) 11 February 2003 (11.02.2003), column 1, 2, figure 2, 3.	1-44																		
Y	US 5,453,686 A (Anderson) 26 September 1995 (29.09.1995), column 3-5.	1-44																		
Y	US 2003/0120150 A1 (Govari) 26 June 2003 (26.06.2003), paragraph 2-6, 28, 123.	4-6, 14-16																		
Y	US 6,535,756 B1 (Simon et al.) 18 March 2003 (18.03.2003), abstract	7																		
Y	US 2003/0016006 A1 (Khalfin) 23 January 2003 (23.01.2003), paragraph 3.	9																		
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.																				
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