



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
27.02.2008 Bulletin 2008/09

(43) Date of publication A2:
08.11.2006 Bulletin 2006/45

(21) Application number: **06252207.3**

(22) Date of filing: **25.04.2006**

(51) Int Cl.:
G01S 15/89 ^(2006.01) **G01S 7/52** ^(2006.01)
G06T 17/00 ^(2006.01) **A61B 8/12** ^(2006.01)
A61B 5/06 ^(2006.01) **A61M 25/00** ^(2006.01)
A61B 8/06 ^(2006.01) **A61B 19/00** ^(2006.01)
A61N 7/00 ^(2006.01) **A61B 17/00** ^(2006.01)
A61B 5/0488 ^(2006.01) **A61B 5/042** ^(2006.01)
A61M 25/00 ^(2006.01) **A61B 8/06** ^(2006.01)
A61B 19/00 ^(2006.01) **A61N 7/00** ^(2006.01)
A61B 17/00 ^(2006.01) **A61B 5/0488** ^(2006.01)
A61B 5/042 ^(2006.01)

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **26.04.2005 US 114847**

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(54) **Registration of ultrasound data with pre-acquired image**

(57) A system and method for imaging a target in a patient's body uses a pre-acquired image (100) of the target and a catheter (28) having a position sensor (32) and an ultrasonic imaging sensor (40). The catheter is placed in the patient's body and positional information of a portion of the catheter in the patient's body is determined using the position sensor. The catheter is used to

generate an ultrasonic image of the target using the ultrasonic imaging sensor. An image processor is used for determining positional information for any pixel of the ultrasonic image of the target and registering the pre-acquired image with the ultrasonic image; and a display is used for displaying the registered pre-acquired image (100) and ultrasonic image (102).

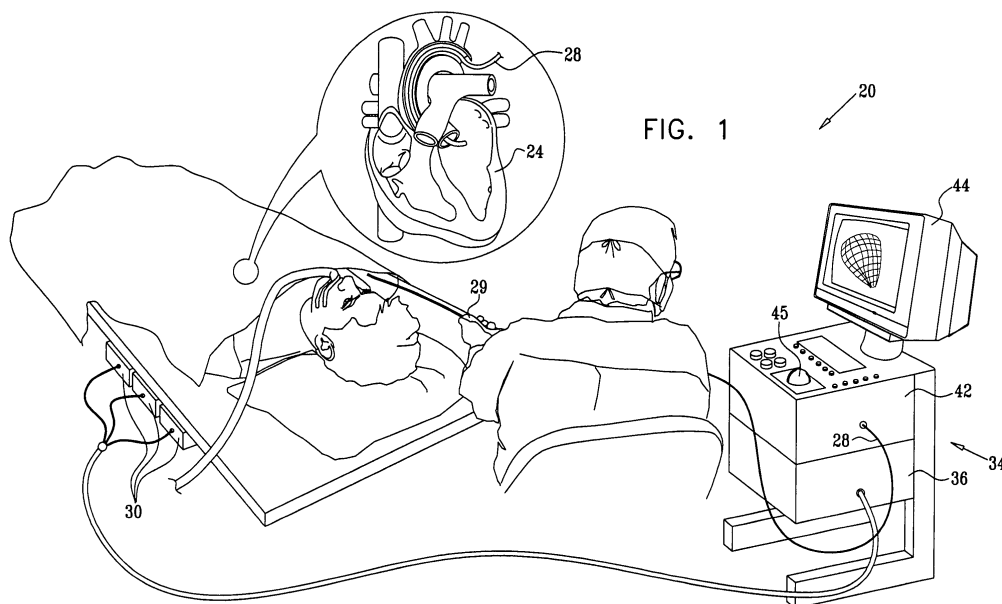
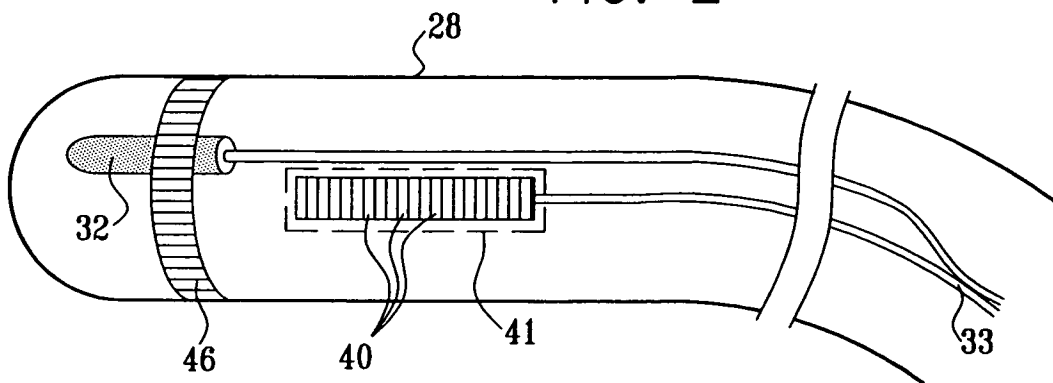


FIG. 2





European Patent
Office

PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 63 of the European Patent Convention EP 06 25 2207 shall be considered, for the purposes of subsequent proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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X	US 2002/049375 A1 (STROMMER GERA M [IL] ET AL) 25 April 2002 (2002-04-25) * the whole document *	1-3	A61B8/12 A61B5/06
X	WO 2004/093683 A (PHILIPS INTELLECTUAL PROPERTY [DE]; KONINKL PHILIPS ELECTRONICS NV [NL] 4 November 2004 (2004-11-04) * the whole document *	1-3	ADD. A61M25/00 A61B8/06 A61B19/00 A61N7/00 A61B17/00
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X	US 2005/033149 A1 (STROMMER GERA [IL] ET AL) 10 February 2005 (2005-02-10) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			G01S G06T A61B
INCOMPLETE SEARCH The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search Munich		Date of completion of the search 14 December 2007	Examiner Anscombe, Marcel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.02 (P04E07)

EPO FORM 1503 03.82 (P04C10) 6



Claim(s) searched completely:
1-11

Claim(s) not searched:
12-16

Reason for the limitation of the search (non-patentable invention(s)):

The subject-matter of claims 12-16 includes the feature of "placing a catheter in the patient's body" which comprises the subject-matter of insertion through a blood vessel (paragraph [0080]) of a living human. This subject-matter is a physical activity which by its nature constitutes a method step for surgery and therefore the subject-matter of claims 12-16 is excluded from patentability under Art. 53(c) EPC and paragraphs 4-6 of the Guidelines C-IV,4.8.1.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 25 2207

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

14-12-2007

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专利名称(译)	用预先获取的图像登记超声数据		
公开(公告)号	EP1720038A3	公开(公告)日	2008-02-27
申请号	EP2006252207	申请日	2006-04-25
[标]申请(专利权)人(译)	韦伯斯特生物官能公司		
申请(专利权)人(译)	生物传感韦伯斯特, INC.		
当前申请(专利权)人(译)	生物传感韦伯斯特, INC.		
[标]发明人	ALTMANN ANDRES CLAUDIO GOVARI ASSAF		
发明人	ALTMANN, ANDRES CLAUDIO GOVARI, ASSAF		
IPC分类号	G01S15/89 G01S7/52 G06T17/00 A61B8/12 A61B5/06 A61M25/00 A61B8/06 A61B19/00 A61N7/00 A61B17/00 A61B5/0488 A61B5/042		
CPC分类号	A61B5/042 A61B5/06 A61B5/062 A61B5/065 A61B6/503 A61B6/541 A61B8/06 A61B8/0883 A61B8/12 A61B8/4483 A61B8/4488 A61B8/466 A61B8/483 A61B2017/00243 A61B2034/2051 A61B2090/364 A61B2090/3784 G01S15/8993 G06K9/32 G06K2009/366 G06K2209/051 G06T5/50 G06T7/38 G06T2207/10068 G06T2207/10072 G06T2207/10116 G06T2207/10132 G06T2207/30048 G06T2207/ /30101		
代理机构(译)	MERCER, CHRISTOPHER PAUL		
优先权	11/114847 2005-04-26 US		
其他公开文献	EP1720038A2 EP1720038B1		
外部链接	Espacenet		

摘要(译)

用于对患者体内的目标成像的系统和方法使用目标的预先获取的图像 (100) 和具有位置传感器 (32) 和超声成像传感器 (40) 的导管 (28) 。将导管放置在患者体内, 并使用位置传感器确定患者体内导管的一部分的位置信息。导管用于使用超声成像传感器产生目标的超声图像。图像处理器用于确定目标的超声图像的任何像素的位置信息, 并将预先获取的图像与超声图像配准;显示器用于显示登记的预先获取的图像 (100) 和超声图像 (102) 。

