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(54) System and method for superimposing a representation of the tip of a catheter on an image acquired by a moving imager

(57) Method for displaying a representation of the tip of a medical device located within a body region of interest of the body of a patient, on an image of the body region of interest, the image being acquired by an image detector of a moving imager, the method including the procedures of acquiring a medical positioning system (MPS) sensor image of an MPS sensor, determining a set of intrinsic and extrinsic parameters, determining two-dimensional optical coordinates of the tip of the medical device, superimposing the representation of the tip of the medical device, on the image of the body region of interest, and displaying the representation of the tip of the medical device superimposed on the image of the body region of interest, the MPS sensor image of the MPS sensor being acquired by the image detector, at a physical zoom setting of the image detector respective of the image, and at a selected image detector region of interest setting of the image detector, the MPS sensor being associated with an MPS, the MPS sensor responding to an electromagnetic field generated by an electromagnetic field generator, firmly coupled with a moving portion of the moving imager, the set of intrinsic and extrinsic parameters being determined according to sensor image coordinates of the MPS sensor image, in a two-dimensional optical coordinate system respective of the image detector, and according to non-real-time MPS coordinates of the MPS sensor, in an MPS coordinate system respective of the MPS, the two-dimensional optical coordinates of the tip of the medical device being determined according to the physical zoom setting, according to the set of intrinsic and extrinsic parameters, according to the selected image detector region of interest setting, and according to real-time MPS coordinates of an MPS sensor located at the tip of the medical device, the representation of the tip of the medical device, being superimposed on the image of the body region of interest, according to the two-dimensional optical coordinates.

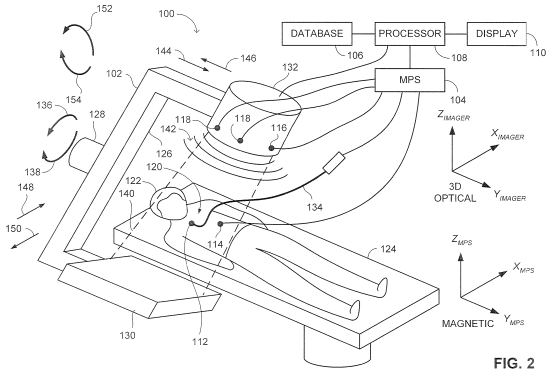

FIG. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 08 10 0161

DOCUMENTS CONSIDERED TO BE RELEVANT

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X	US 2006/058647 A1 (STROMMER GERA [IL] ET AL) 16 March 2006 (2006-03-16) * the whole document * -----	1-58	INV. G06T5/50 G06T7/00 A61B5/00
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A	GORGES S ET AL: "Model of a Vascular C-Arm for 3D Augmented Fluoroscopy in Interventional Radiology", MEDICAL IMAGE COMPUTING AND COMPUTER-ASSISTED INTERVENTION - MIC CAI 2005 LECTURE NOTES IN COMPUTER SCIENCE;;LNCS, SPRINGER, BERLIN, DE, vol. 3750, 1 January 2005 (2005-01-01), pages 214-222, XP019021757, ISBN: 978-3-540-29326-2 * the whole document * -----	1-58	

TECHNICAL FIELDS SEARCHED (IPC)
G06T
A61B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Berlin	31 May 2013	Bouchaâla, Nicolas

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 10 0161

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31-05-2013

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	用于将导管尖端的表示叠加在由运动成像器获取的图像上的系统和方法		
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申请(专利权)人(译)	MEDIGUIDE LTD.		
当前申请(专利权)人(译)	MEDIGUIDE LTD.		
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IPC分类号	G06T5/50 G06T7/00 A61B5/00		
CPC分类号	A61B5/06 A61B5/062 A61B6/12 A61B6/4441 A61B34/20 A61B2017/00694 A61B2034/2051 A61B2034/256 A61B2090/376 A61B2090/3764 G06K9/32 G06K2209/057 G06T7/30 G06T7/80 G06T2207/30101		
代理机构(译)	KRAMER - HARSH - 施密特陈		
优先权	60/879672 2007-01-10 US		
其他公开文献	EP1944733B1 EP1944733A2		
外部链接	Espacenet		

摘要(译)

用于在感兴趣的身体区域的图像上显示位于患者身体的感兴趣的身体区域内的医疗装置的尖端的表示的方法，该图像由运动成像器的图像检测器获取，方法包括获取MPS传感器的医学定位系统（MPS）传感器图像，确定一组内在和外在参数，确定医疗器械尖端的二维光学坐标，叠加尖端的表示的过程。医疗设备，在感兴趣的身体区域的图像上，并且显示叠加在感兴趣的身体区域的图像上的医疗设备的尖端的表示，MPS传感器的MPS传感器图像由图像检测器获取，在图像检测器的各个图像的物理变焦设置下，并且在图像检测器的所选择的图像检测器感兴趣区域设置中，MPS传感器是关联的摊晒利用MPS，MPS传感器响应由电磁场发生器产生的电磁场，与运动成像器的运动部分牢固地耦合，该组内在和外在参数根据MPS传感器图像的传感器图像坐标确定，在相应的图像检测器的二维光学坐标系中，并根据MPS传感器的非实时MPS坐标，在MPS的MPS坐标系中，该尖端的二维光学坐标。根据物理变焦设置，根据所选择的图像检测器感兴趣区域设置，并根据位于尖端的MPS传感器的实时MPS坐标，根据内部和外部参数的集合确定医疗设备。医疗器械，医疗器械尖端的表示，叠加在感兴趣的身体区域的图像上，根据双迪mensional光学坐标。

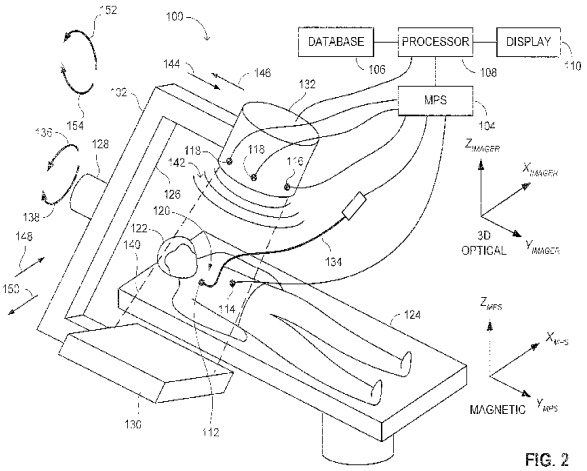

FIG. 2