



(11) **EP 1 738 690 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**04.04.2007 Bulletin 2007/14**

(51) Int Cl.:  
**A61B 8/14 (2006.01)**

(43) Date of publication A2:  
**03.01.2007 Bulletin 2007/01**

(21) Application number: **06013178.6**

(22) Date of filing: **27.06.2006**

(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**

(72) Inventor: **Hyun, Dong Gyu**  
**Discusser & Medison Bldg**  
**Seoul 135-280 (KP)**

(74) Representative: **Lorenz, Werner**  
**Lorenz & Kollegen**  
**Patent- und Rechtsanwaltskanzlei**  
**Alte Ulmer Strasse 2**  
**89522 Heidenheim (DE)**

(30) Priority: **28.06.2005 KR 20050056002**

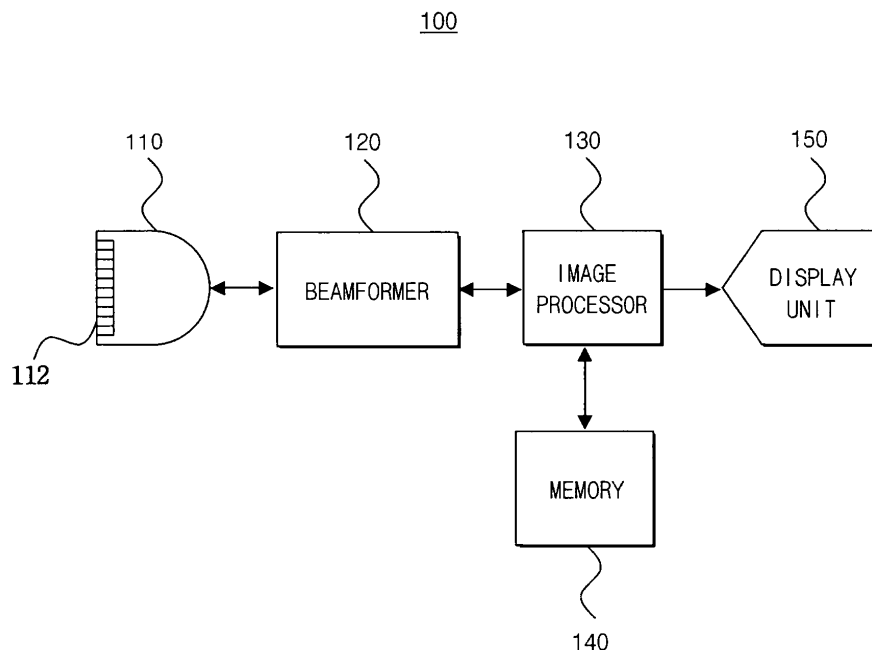
(71) Applicant: **MEDISON CO., LTD.**  
**Kangwon-do 250-870 (KR)**

(54) **Apparatus and method for forming a 3D ultrasound image**

(57) The present invention relates to a method of forming an ultrasound image in an ultrasound diagnostic system, including: a) forming a plurality of 2-dimensional ultrasound images based on ultrasound echo signals reflected from a predetermined portion of a target object;

b) setting a region of interest (ROI) on each 2-dimensional image; c) extracting images within the ROIs of the 2-dimensional ultrasound images; and d) sequentially superposing the extracted images to form a 3-dimensional ultrasound image.

**FIG. 1**



**EP 1 738 690 A3**



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
P,X	EP 1 600 891 A (ALOKA CO LTD [JP]) 30 November 2005 (2005-11-30) * abstract * * paragraphs [0015], [0038], [0039], [0045], [0046] *	1-3,5-7, 9,10	INV. A61B8/14
X Y	US 6 511 426 B1 (HOSSACK JOHN A [US] ET AL) 28 January 2003 (2003-01-28) * abstract * * column 2, line 30 - column 3, line 7 * * column 4, line 24 - line 28 * * column 10, line 22 - column 14, line 64 * * column 30, line 51 - column 34, line 35; figures 1-3 *	1-3,5-7, 9,10 4,8	
X	TEISTLER M ET AL: "Visualization of echocardiographic data using virtual scenes" COMPUTERS IN CARDIOLOGY, 1999 HANNOVER, GERMANY 26-29 SEPT. 1999, PISCATAWAY, NJ, USA, IEEE, US, 26 September 1999 (1999-09-26), pages 399-402, XP010367055 ISBN: 0-7803-5614-4 * paragraphs [02.1], [02.3], [0003] *	1-10	TECHNICAL FIELDS SEARCHED (IPC) G01S A61B
X	EP 0 881 506 A2 (ADVANCED TECH LAB [US]) 2 December 1998 (1998-12-02) * abstract * * column 2, line 40 - column 3, line 4 * * column 5, line 5 - column 6, line 1; figures 1-3 *	1-3,5-7, 9,10	
Y	US 6 558 325 B1 (PANG LINYONG [US] ET AL) 6 May 2003 (2003-05-06) * the whole document *	4,8	
----- -/--			
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 February 2007	Examiner JUAREZ COLERA, M
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	



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	EP 0 806 682 A2 (YOKOGAWA MEDICAL SYST [JP]) 12 November 1997 (1997-11-12) * the whole document *	4,8	
Y	EP 0 487 339 A1 (ADVANCED TECH LAB [US]) 27 May 1992 (1992-05-27) * the whole document *	4,8	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 February 2007	Examiner JUAREZ COLERA, M
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	

4  
EPO FORM 1503 03.82 (P04C01)

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

EP 06 01 3178

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.

22-02-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1600891	A	30-11-2005	CN 1759812 A	19-04-2006
			JP 2005334317 A	08-12-2005
			US 2005267366 A1	01-12-2005
-----				
US 6511426	B1	28-01-2003	NONE	
-----				
EP 0881506	A2	02-12-1998	AU 6810098 A	03-12-1998
			CA 2235998 A1	29-11-1998
			JP 11047132 A	23-02-1999
			NO 982446 A	30-11-1998
			US 5916168 A	29-06-1999
-----				
US 6558325	B1	06-05-2003	NONE	
-----				
EP 0806682	A2	12-11-1997	CN 1168262 A	24-12-1997
			JP 3361692 B2	07-01-2003
			JP 9299364 A	25-11-1997
			US 5840034 A	24-11-1998
-----				
EP 0487339	A1	27-05-1992	AT 162701 T	15-02-1998
			AT 213605 T	15-03-2002
			DE 69128827 D1	05-03-1998
			DE 69128827 T2	14-05-1998
			DE 69132941 D1	04-04-2002
			DE 69132941 T2	21-11-2002
			JP 3370690 B2	27-01-2003
			JP 4332544 A	19-11-1992
			US 5353354 A	04-10-1994
-----				

专利名称(译)	用于形成3D超声图像的设备和方法		
公开(公告)号	<a href="#">EP1738690A3</a>	公开(公告)日	2007-04-04
申请号	EP2006013178	申请日	2006-06-27
申请(专利权)人(译)	MEDISON CO. , LTD.		
当前申请(专利权)人(译)	MEDISON CO. , LTD.		
[标]发明人	HYUN DONG GYU DISCUSSEER & MEDISON BLDG		
发明人	HYUN, DONG GYU DISCUSSEER & MEDISON BLDG		
IPC分类号	A61B8/14		
CPC分类号	G01S15/8993 A61B8/14 A61B8/483		
代理机构(译)	LORENZ , WERNER		
优先权	1020050056002 2005-06-28 KR		
其他公开文献	EP1738690A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

本发明涉及一种在超声诊断系统中形成超声图像的方法，包括：a) 基于从目标对象的预定部分反射的超声回波信号形成多个二维超声图像；b) 在每个二维图像上设置感兴趣区域 ( ROI )；c) 在二维超声图像的ROI内提取图像；d) 依次叠加提取的图像以形成三维超声图像。

FIG. 1

