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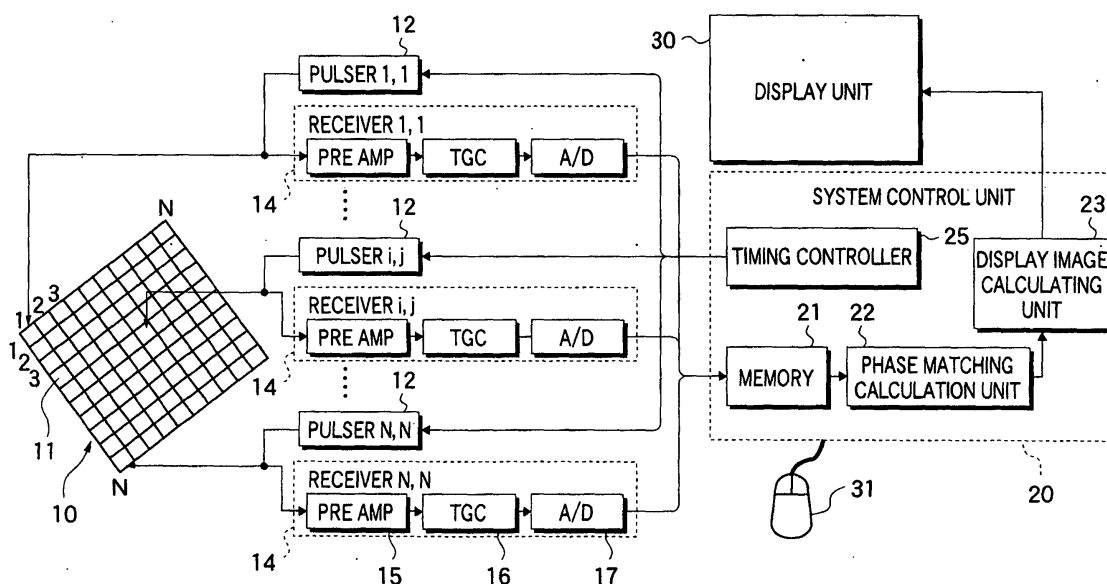
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(54) **Ultrasonic imaging method and ultrasonic imaging apparatus**

(57) Since a number of ultrasonic beams which are transmitted within unit time is increased, an ultrasonic imaging method is capable of obtaining image information in a high frame rate or improving resolution of the image information. In an ultrasonic imaging method of transmitting an ultrasonic beam toward a measurement target located within an object, receiving an ultrasonic echo and processing detection signals to obtain image

information, there are provided with the steps of: (a) executing a pre-imaging operation and setting a region with respect to the measurement target on the basis of an image obtained by the pre-imaging operation; and (b) transmitting an ultrasonic beam in such a manner that the region set in step (a) is scanned and receiving an ultrasonic echo so as to execute an ultrasonic imaging operation.

FIG.1





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EUROPEAN SEARCH REPORT

Application Number
EP 02 00 3913

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 01, 29 January 1999 (1999-01-29) -& JP 10 277030 A (ALOKA CO LTD), 20 October 1998 (1998-10-20) * abstract; figures 1,5-7 * * paragraphs [0008], [0041] - [0047] * -----	1-10	G01S15/89 G01S7/52
X	EP 0 707 219 A (ADVANCED TECH LAB) 17 April 1996 (1996-04-17) * abstract; figures 1a-1c * * column 1, lines 3-58 * * column 2, line 17 - column 3, line 40 * -----	1-10	
X	US 4 817 619 A (ITO YUKIO ET AL) 4 April 1989 (1989-04-04) * abstract; figures 1-14 * * column 1, lines 36-68 * * column 4, line 17 - column 9, line 42 * -----	1-10	
X	PATENT ABSTRACTS OF JAPAN vol. 018, no. 301 (C-1210), 9 June 1994 (1994-06-09) -& JP 06 063040 A (FUJI ELECTRIC CO LTD), 8 March 1994 (1994-03-08) * abstract; figures 1,2,4 * * paragraphs [0006] - [0014] * -----	1-3,5,7, 9	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G01S A61B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 21 July 2004	Examiner Reuss, T
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 00 3913

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
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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 10277030	A	20-10-1998	NONE	

EP 0707219	A	17-04-1996	US 5471989 A	05-12-1995
			AT 189311 T	15-02-2000
			DE 69514747 D1	02-03-2000
			DE 69514747 T2	17-08-2000
			EP 0707219 A2	17-04-1996
			JP 8229047 A	10-09-1996

US 4817619	A	04-04-1989	JP 1859040 C	27-07-1994
			JP 62090144 A	24-04-1987
			JP 5077424 B	26-10-1993

JP 06063040	A	08-03-1994	NONE	

专利名称(译)	超声成像方法和超声成像设备		
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外部链接	Espacenet		

摘要(译)

由于增加了在单位时间内发送的多个超声波束，超声波成像方法能够以高帧速率获得图像信息或者提高图像信息的分辨率。在向位于物体内的测量目标发射超声波束，接收超声波回波并处理检测信号以获得图像信息的超声波成像方法中，提供了以下步骤：(a) 执行预成像操作和基于通过预成像操作获得的图像设置相对于测量目标的区域；(b) 以如下方式发送超声波束：扫描步骤(a)中设定的区域并接收超声波回波，以便执行超声波成像操作。

FIG.1

