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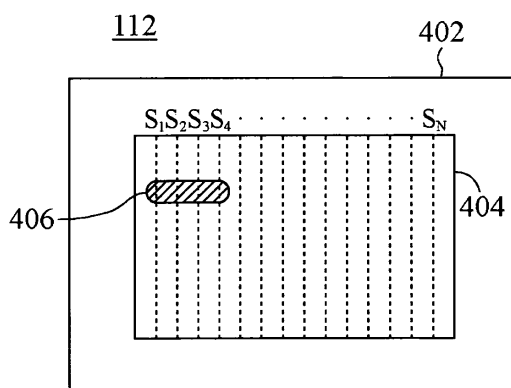
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(54) **Ultrasound imaging apparatus having a function of selecting transmit focal points and method thereof**

(57) The present invention relates to an ultrasound imaging apparatus having a function of selecting transmit focal points and method thereof, in which an operator may select at least one transmit focal point, allowing for transmit-focusing ultrasound signals upon the selected focal point to create an ultrasound image of a target object. The ultrasound imaging apparatus includes an ultrasound transducer array, a pulse generator, a controller, a database, an input device, an analog-to-digital converter (ADC), a beam former, a signal processor, and a display device. The method for ultrasound imaging comprises the steps of: a) transmitting to a target object ultrasound signals in accordance with a predetermined initial time-delay profile; b) receiving and processing the reflected ultrasound signals from the target object to create an ultrasound image of the target object; c) displaying the created ultrasound image to allow an operator to select at least one region of interest within the displayed ultrasound image; d) in response to the operator's selection, detecting coordinates of the selected region of interest; e) determining at least one transmit focal point corresponding to the detected coordinates of the selected region of interest; f) determining at least one new time-

delay profile based on each of the transmit focal points; and g) transmitting the ultrasound signals in accordance with the new time-delay profile to the target object; h) receiving and processing the reflected ultrasound signals off the target object to create an updated ultrasound image of the target object.

**Fig. 4**



|               |                                                                                                 |         |            |
|---------------|-------------------------------------------------------------------------------------------------|---------|------------|
| 专利名称(译)       | 具有选择发射焦点功能的超声成像设备及其方法                                                                           |         |            |
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| 代理机构(译)       | SCHMID , WOLFGANG                                                                               |         |            |
| 优先权           | 10/901201 2004-07-29 US                                                                         |         |            |
| 其他公开文献        | EP1621897A1<br>EP1621897B1                                                                      |         |            |
| 外部链接          | <a href="#">Espacenet</a>                                                                       |         |            |

#### 摘要(译)

具有选择发射焦点功能的超声成像设备及其方法技术领域本发明涉及一种具有选择发射焦点功能的超声成像设备及其方法，其中操作者可以选择至少一个发射焦点，允许在所选择的焦点上发射聚焦超声信号以产生超声波目标对象的图像。超声成像设备包括超声换能器阵列，脉冲发生器，控制器，数据库，输入设备，模数转换器（ADC），波束形成器，信号处理器和显示设备。用于超声成像的方法包括以下步骤：a）根据预定的初始时间延迟分布向目标对象发送超声信号；b）接收并处理来自目标对象的反射超声信号，以产生目标对象的超声图像；c）显示所创建的超声图像以允许操作者在所显示的超声图像内选择至少一个感兴趣区域；d）响应操作者的选择，检测所选感兴趣区域的坐标；e）确定与所检测的所选感兴趣区域的坐标相对应的至少一个发射焦点；f）基于每个发射焦点确定至少一个新的时间延迟分布；g）根据新的时间延迟分布将超声信号发送到目标对象；h）从目标对象接收和处理反射的超声信号，以创建目标对象的更新的超声图像。

**Fig. 4**

