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(54) **Ultrasound diagnostic system for automatically detecting a boundary of a target object and method of using the same**

(57) A method and a system of automatically detecting a boundary of a target object by using an ultrasound diagnostic image. In accordance with the present invention, the boundary of the target object can be detected automatically and precisely. The ultrasound diagnostic method and system form an edge detection boundary candidate model by detecting an edge of the ultrasound diagnostic image, forming a simplification boundary candidate model by performing a simplification operation to the edge detection boundary candidate model, forming a sessionization boundary candidate model by performing a sessionization operation to the simplification bound-

ary candidate model, and detecting the boundary of the target object of the ultrasound diagnostic image based on the edge detection boundary candidate model, the simplification boundary candidate model and the sessionization boundary candidate model. In accordance with the present invention, the boundary of the target object is automatically detected by using the ultrasound diagnostic image to reduce any inconvenience to the user and solve the problem in which the measured result may vary with each user, which was caused by a conventional method of manually detecting the boundary.

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EUROPEAN SEARCH REPORT

Application Number  
EP 05 02 4758

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CARPENTER D T ET AL: "A methodology for automated quantitative microstructural analysis of transmission electron micrographs", JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 84, no. 11, 1 December 1998 (1998-12-01), pages 5843-5854, XP012045318, ISSN: 0021-8979, DOI: DOI:10.1063/1.368898	1,20	INV. G06T7/00 A61B8/00
A	* figure 4 * * page 5847, left-hand column, paragraph 1 - paragraph 2 *	2-19,21	
X	US 2004/197015 A1 (FAN LIEXIANG [US] ET AL) 7 October 2004 (2004-10-07)	1,20	
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A	GOODCHILD J S ET AL: "Edge detection in petrographic images using the rotating polarizer stage", COMPUTERS & GEOSCIENCES, vol. 24, no. 8, 1998, pages 745-751, XP002628974, * abstract *	1-21	
			TECHNICAL FIELDS SEARCHED (IPC)
			G06T
The present search report has been drawn up for all claims			
Place of search Berlin		Date of completion of the search 21 March 2011	Examiner dos Santos, Luís
CATEGORY OF CITED DOCUMENTS		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	
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			

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

EP 05 02 4758

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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EPO FORM P0459

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

专利名称(译)	用于自动检测目标对象边界的超声诊断系统及其使用方法		
公开(公告)号	<a href="#">EP1681654A3</a>	公开(公告)日	2011-05-11
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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	LEE KI JONG KIM HYE JUNG		
发明人	LEE, KI JONG KIM, HYE JUNG		
IPC分类号	G06T7/00 A61B8/00		
CPC分类号	A61B8/08 A61B8/0883 G06T5/20 G06T7/12 G06T2207/10132 G06T2207/30048 A62C13/64 A62C13/76 F16K17/40 F16K27/0209		
代理机构(译)	LORENZ , MARKUS		
优先权	1020050002958 2005-01-12 KR		
其他公开文献	EP1681654A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

一种通过使用超声诊断图像自动检测目标对象的边界的方法和系统。根据本发明，可以自动且精确地检测目标对象的边界。超声诊断方法和系统通过检测超声诊断图像的边缘形成边缘检测边界候选模型，通过对边缘检测边界候选模型执行简化操作形成简化边界候选模型，通过执行形成会话边界候选模型对简化边界候选模型的会话化操作，并基于边缘检测边界候选模型，简化边界候选模型和会话边界候选模型来检测超声诊断图像的目标对象的边界。根据本发明，通过使用超声诊断图像自动检测目标对象的边界，以减少对用户的任何不便，并解决测量结果可能随每个用户而变化的问题，这是由传统的手动检测边界的方法。

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim	CLASSIFICATION OF THE DOCUMENT (IPC)
X	<p>Category: Citation of document with indication, where appropriate, of relevant passages.</p> <p>CARPENTER D T ET AL: "A methodology for automated quantitative microstructural analysis of transmission electron micrographs" JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS, NEW YORK, US, vol. 84, no. 11, 1 December 1998 (1998-12-01), pages 5843-5854, XP012045318, ISSN: 0021-8979, DOI: DOI:10.1063/1.368899 * figure 4 * page 5847, left-hand column, paragraph 1 * paragraph 2 *</p>	1-20	INV. G06T7/00 A61B8/00
A	<p>US 2004/197015 A1 (FAN LIXIANG [US] ET AL) 7 October 2004 (2004-10-07) * figures 1,2 *</p>	2-19,21	
X	<p>US 2004/197015 A1 (FAN LIXIANG [US] ET AL) 7 October 2004 (2004-10-07) * figures 1,2 *</p>	1-20	
A	<p>6000CHILD J S ET AL: "Edge detection in petrographic images using the rotating Kalman stage" COMPUTERS &amp; GEOSCIENCES, vol. 24, no. 8, 1998, pages 745-751, XP00229974, abstract *</p>	2-19,21	
A	<p>6000CHILD J S ET AL: "Edge detection in petrographic images using the rotating Kalman stage" COMPUTERS &amp; GEOSCIENCES, vol. 24, no. 8, 1998, pages 745-751, XP00229974, abstract *</p>	1-21	TECHNICAL FIELDS SEARCHED G06T

The present search report has been drawn up for all claims

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