



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-5, 7, 8, 10, 11, 29-31, 36-40

Method and apparatus for high frequency (at least 20 MHz),
high frame rate (at least 15 frames/second) ultrasonic
imaging for improving ultrasonic imaging of small animals.

2. claims: 12-28, 32-35

Constructional details of a transducer head, concerning the
membrane isolating the transducer from the subject related
to the problem of coupling the ultrasonic energy to the
subject.



European Patent
Office

**SUPPLEMENTARY
PARTIAL EUROPEAN SEARCH REPORT**

Application Number

which under Rule 45 of the European Patent Convention EP 03 77 6327
shall be considered, for the purposes of subsequent
proceedings, as the European search report

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	US 2002/050169 A1 (RITTER TIMOTHY ADAM ET AL) 2 May 2002 (2002-05-02)	1-5,7,8, 10-12, 22, 29-31, 36-40	A61B8/00 G01S7/521 G01S15/89 G10K11/35
Y	<p>* abstract; figures 1,4,5 *</p> <p>* paragraphs '0004! - '0008! *</p> <p>* paragraph '0017! *</p> <p>* paragraphs '0029! - '0034! *</p> <p>* paragraphs '0037! - '0049! *</p> <p>* paragraphs '0054!, '0055! *</p> <p>* paragraphs '0059! - '0062! *</p> <p>-----</p> <p>-/--</p>	13-21, 23-28, 32-35	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			G01S G10K
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			
INCOMPLETE SEARCH			
<p>The Search Division considers that the present application, or some or all of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for the following claims:</p> <p>Claims searched completely :</p> <p>Claims searched incompletely :</p> <p>Claims not searched :</p> <p>Reason for the limitation of the search:</p> <p>see sheet C</p>			
Place of search		Date of completion of the search	Examiner
Munich		3 March 2005	Reuss, T
CATEGORY OF CITED DOCUMENTS			
<p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p> <p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.02 (P04C20)



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	TURNBULL D H ET AL: "In vivo ultrasound biomicroscopy in developmental biology" TRENDS IN BIOTECHNOLOGY, ELSEVIER PUBLICATIONS, CAMBRIDGE, GB, vol. 20, no. 8, 1 August 2002 (2002-08-01), pages S29-S33, XP004371933 ISSN: 0167-7799 * abstract; figures 1,2a * * page 29, left-hand column - page 30, right-hand column, paragraph 2 *	1-5,7,8, 10,11, 29-31, 36-40	
Y	BERSON M ET AL: "HIGH FREQUENCY (20 MHZ) ULTRASONIC DEVICES: ADVANTAGES AND APPLICATIONS" EUROPEAN JOURNAL OF ULTRASOUND, ELSEVIER, vol. 10, 1999, pages 53-63, XP001204133 ISSN: 0929-8266 * abstract; figures 1,2,5 * * page 53, left-hand column - page 58, left-hand column * * page 62, left-hand column *	13-21, 23-28, 32-35	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	ERICKSON S ET AL INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "A hand-held, high frequency ultrasound scanner" 2001 IEEE ULTRASONICS SYMPOSIUM PROCEEDINGS. ATLANTA, GA, OCT. 7 - 10, 2001, IEEE ULTRASONICS SYMPOSIUM PROCEEDINGS, NEW YORK, NY : IEEE, US, vol. VOL. 2 OF 2, 7 October 2001 (2001-10-07), pages 1465-1468, XP010584787 ISBN: 0-7803-7177-1 * the whole document *	12-28, 32-35	



Claim(s) not searched:
6,9

Reason for the limitation of the search (non-patentable invention(s)):

Claim 6 relates to a method using an ultrasound image to guide a needle. According to the description p.31, lines 11-16, the needle is inserted into a subject. This constitutes a surgical step.

The subject matter of claim 9 relates to imaging of a neoplastic condition. In order to verify that a neoplastic condition is imaged, the neoplastic condition has to be established by diagnosis. This constitutes a diagnostic method step. Hence, the subject matter of claims 6 and 9 is excluded from patentability, Article 52(4) EPC. Accordingly, no search has been carried out for claims 6 and 9, Rule 45 EPC.

专利名称(译)	高频高帧率超声成像系统		
公开(公告)号	EP1465531A4	公开(公告)日	2005-05-04
申请号	EP2003776327	申请日	2003-10-10
[标]申请(专利权)人(译)	视声公司		
申请(专利权)人(译)	VISUALSONICS INC.		
当前申请(专利权)人(译)	VISUALSONICS INC.		
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IPC分类号	G01S7/52 G01S7/521 G01S15/89 A61B8/00 G10K11/35		
CPC分类号	A61B8/4461 A61B8/0841 A61B8/0866 A61B8/14 A61B8/4245 A61B8/4254 A61B8/4281 A61B8/4483 A61B8/461 A61B8/467 A61B8/5207 A61B8/54 G01S7/52034 G01S7/52079 G01S7/52085 G01S15/894 G01S15/8956		
优先权	60/417164 2002-10-10 US 60/470234 2003-05-14 US 60/468958 2003-05-09 US 60/468956 2003-05-09 US		
其他公开文献	EP1465531A2 EP1465531B1		
外部链接	Espacenet		

摘要(译)

一种用于产生超声图像的系统包括：扫描头，具有能够以至少20兆赫兹（ MHz ）的频率产生超声能量的换能器;以及处理器，用于接收超声能量并用于以帧速率生成超声图像。每秒至少15帧（ fps ）。

DOCUMENTS CONSIDERED TO BE RELEVANT			
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X	US 2002/050169 A1 (RITTER TIMOTHY ADAM ET AL) 2 May 2002 (2002-05-02)	1-5, 7, 8, 10-12, 22, 29-31, 36-40, 13-21, 23-28, 32-35	A61B8/00 G01S7/521 G01S15/89 G10K11/35
Y	* abstract: figures 1,4,5 * * paragraphs '0004! - '0008! * * paragraph '0017! * * paragraphs '0029! - '0034! * * paragraphs '0037! - '0049! * * paragraphs '0054! - '0055! * * paragraphs '0059! - '0062! * ----- -/-		
The supplementary search report has been based on the last set of claims valid INCOMPLETE SEARCH The Search Division considers that the present application, or some or all of its claims, does/does not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for the following claim(s): Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search Munich		Date of completion of the search 3 March 2005	Examiner Reuss, T
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : document of the same category A : prior art document B : non-written document C : intermediate document D : document cited in the application E : document cited for other reasons F : document of the same patent family, corresponding document			
TECHNICAL FIELDS SEARCHED (InCL7) G01S G10K			