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(54) Title: SYSTEM AND METHOD FOR GENERATING A 2D IMAGE FROM A TOMOSYNTHESIS DATA SET

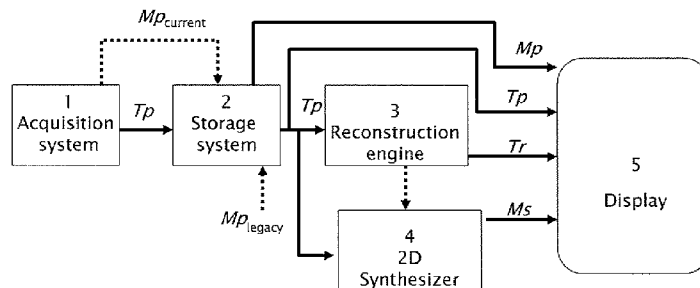
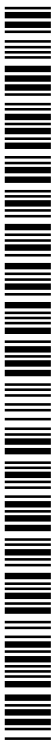


Figure 1

(57) Abstract: A 2D mammogram image is synthesized from at least one of tomosynthesis projection images and/or the tomosynthesis reconstructed image data. In a simplest form, the mammogram may be synthesized by selecting one of the tomosynthesis projection images for display as a synthesized mammogram. Other methods of synthesizing a mammogram include re-projecting and filtering projection data and/or reconstructed data. The synthesized mammogram is advantageously displayed together with at least a portion of the reconstructed data to aid in review of the reconstructed data. The present invention thus provides a familiar image which may be used to facilitate review of a tomosynthesis data set.



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/065288

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06T15/00 G06T11/00 A61B6/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, BIOSIS, COMPENDEX, INSPEC, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/098855 A1 (DEFREITAS K; FARBIZIO T; GKANATSIOS N A; NIKLASON L; REN B; RUTH C; SH) 11 May 2006 (2006-05-11) cited in the application paragraph [0008] - paragraph [0010] paragraphs [0030], [0032], [0037], [0038]	1-10
X	US 2008/130979 A1 (REN BAORUI [US] ET AL) 5 June 2008 (2008-06-05) cited in the application paragraphs [0004], [0017], [0020]; figure 4 ----- -/--	11-15

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 22 January 2014	Date of mailing of the international search report 29/01/2014
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Bouchaïla, Nicolas
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/065288

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MIKKO LILJA: "Fast and accurate voxel projection technique in free-form cone-beam geometry with application to algebraic reconstruction", APPLIED SCIENCES ON BIOMEDICAL AND COMMUNICATION TECHNOLOGIES, 2008. ISABEL '08. FIRST INTERNATIONAL SYMPOSIUM ON, IEEE, PISCATAWAY, NJ, USA, 25 October 2008 (2008-10-25), pages 1-5, XP031374772, ISBN: 978-1-4244-2647-8 the whole document -----	11-15

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/065288

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10

Besides a tomosynthesis 3D reconstruction, synthesizing a 2D mammogram using directly one or a plurality of the x-ray projection images on which the 3D reconstruction is based (i.e. without use of the 3D reconstruction itself)

2. claims: 11-15

Besides a tomosynthesis 3D reconstruction, synthesizing a 2D mammogram using the reconstructed 3D image

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006098855 A1	11-05-2006	EP 1792569 A2	06-06-2007
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		US 2012195484 A1	02-08-2012
		WO 2006055830 A2	26-05-2006
