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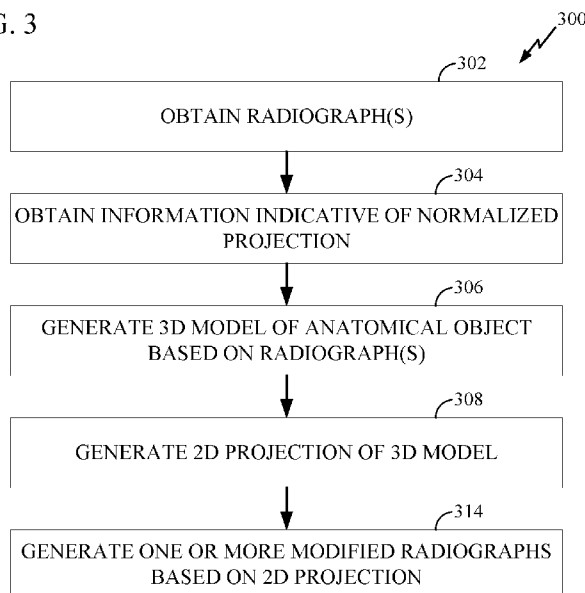
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(54) Title: SYSTEM AND METHOD OF RADIOGRAPH CORRECTION AND VISUALIZATION

FIG. 3



(57) Abstract: Systems and methods of radiograph correction and visualization are disclosed. Certain embodiments provide a method for generating a 3D model of at least part of one anatomical object based on one or more radiographs. The method further includes positioning the 3D model based on information indicative of a normalized projection comprising information indicative of a desired position and orientation of the at least part of one anatomical object with respect to the projection plane. The method further includes generating a 2D projection of the 3D model onto the projection plane. The method further includes generating one or more modified radiographs of the at least part of one anatomical object based on the 2D projection.

SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2018/042073

A. CLASSIFICATION OF SUBJECT MATTER

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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)

A61B 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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00/64367 A1 (SURGICAL NAVIGATION TECH [US]) 2 November 2000 (2000-11-02) abstract page 22, line 16 - page 23, line 14 page 26, line 15 - page 27, line 10 page 29, line 29 - line 32 -----	1-9,17, 18,20-22
Y	WO 2011/098895 A2 (UNI POMPEU FABRA [ES]; CETIR CENTRE MEDIC SA [ES]; HUMBERT LUDOVIC [ES] 18 August 2011 (2011-08-18) cited in the application abstract page 8, line 27 - page 11, line 39 -----	1-9,17, 18,20-22

☐ 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

"E" earlier application or patent but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search

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Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/042073

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.:

2-9, 17, 18, 20(completely); 1, 21, 22(partially)

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: 2-9, 17, 18, 20(completely); 1, 21, 22(partially)

Computer implemented method of generating a computer-based radiographic representation of an anatomical object in which a 3D model is generated from one or more 2D radiographs and said model is used to generate a 2D projection, and particularly to details about the fitting of the 3D model and the generation of the 2D projection.

2. claims: 10-16, 19(completely); 1, 21, 22(partially)

Computer implemented method of generating a computer-based radiographic representation of an anatomical object in which a 3D model is generated from one or more 2D radiographs and said model is used to generate a 2D projection, and particularly to details about how to use the fitted 3D model to perform anatomical measurements and/or generate visualisations of an implant.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2018/042073

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0064367	A1	02-11-2000	AT 280541 T 15-11-2004
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