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(54) Title: SYSTEM AND METHOD FOR FOUR DIMENSIONAL ANGIOGRAPHY AND FLUOROSCOPY

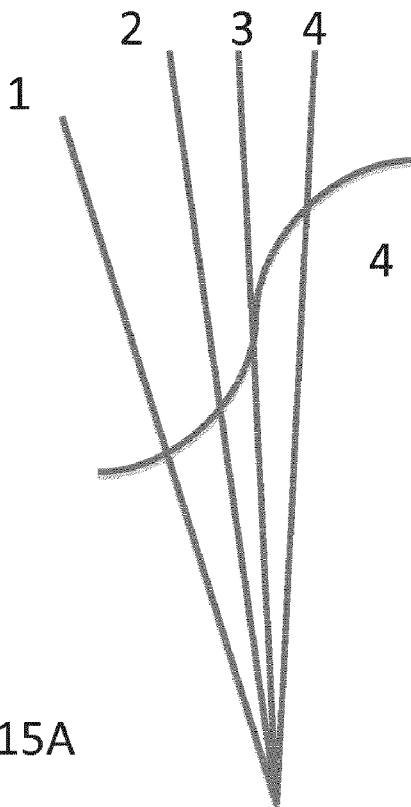


Figure 15A

(57) Abstract: A method for generating time-resolved 3D medical images of a subject by imparting temporal information from a time-series of 2D medical images into 3D images of the subject. Generally speaking, this is achieved by acquiring image data using a medical imaging system, generating a time-series of 2D images of a ROI from at least a portion of the acquired image data, reconstructing a 3D image substantially without temporal resolution from the acquired image data, and selectively combining the time series of 2D images with the 3D image. Selective combination typically involves registering frames of the time-series of 2D images with the 3D image, projecting pixel values from the 2D image frames "into" the 3D image, and weighting the 3D image with the projected pixel values for each frame of the time-series of 2D images.





GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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**A. CLASSIFICATION OF SUBJECT MATTER***A61B 5/00(2006.01)i, G06T 1/00(2006.01)i, G06F 19/00(2011.01)i*

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 5/00, G06T 1/00, G06F 19/00, G06K 9/62, A61B 6/00, G09G 5/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; keywords: 3D image, 2D image, time, register, subtract

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2011-0038517 A1 (CHARLES A. MISTRETTA et al.) 17 February 2011 See abstract, paragraphs [0028]-[0060], claims 1-36 and figures 1-12.	1-33
A	US 2010-0053209 A1 (JOHN CHRISTOPHER RAUCH et al.) 04 March 2010 See abstract, paragraphs [0016]-[0021], [0027], claim 1 and figures 1-2, 9-11.	1-33
A	US 2008-0051648 A1 (JASJIT S. SURI et al.) 28 February 2008 See abstract, paragraphs [0043]-[0048], claims 1, 30 and figures 1, 3.	1-33
A	US 7545901 B2 (CHARLES A. MISTRETTA) 09 June 2009 See abstract, column 10, line 20-column 11, line 63 and figure 12.	1-33
A	US 7020314 B1 (JASJIT S. SURI et al.) 28 March 2006 See abstract and claims 1-2.	1-33
A	US 2008-0300478 A1 (JOEL FREDERICK ZUHARS et al.) 04 December 2008 See abstract, paragraph [0051] and figure 4.	1-33

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

\* Special categories of cited documents:

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"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

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2012/042491**

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