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- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM,

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

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[Continued on next page]

(54) **Title:** SYSTEM AND METHOD OF PERFORMING MAGNETIC RESONANCE SPECTROSCOPIC IMAGING

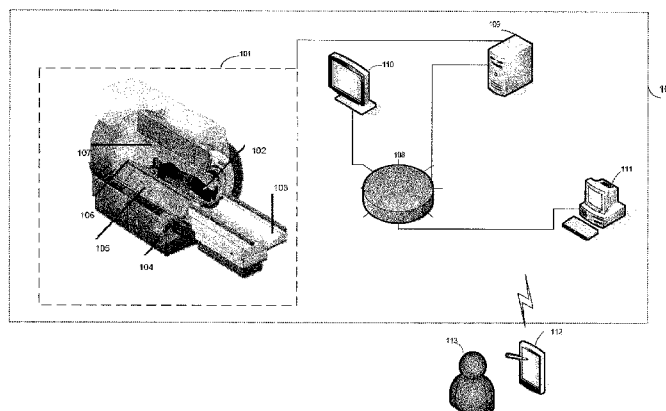


FIG. 1

(57) **Abstract:** A method of performing spatially localized magnetic resonance spectroscopy includes receiving a magnetic resonance image of an object; identifying a plurality C of compartments that generate magnetic resonance spectroscopy signals in the object including at least one compartment of interest; segmenting in at least one spatial dimension the magnetic resonance image of the object into the C compartments; acquiring magnetic resonance spectroscopy signals from the compartments by applying a plurality of M' phase encodings applied in the at least one spatial dimension, wherein $M' \geq C$; calculating a spatially localized magnetic resonance chemical shift spectrum from the at least one compartment of interest; and rendering a spatially localized magnetic resonance spectrum that is substantially equal to a spatial average of magnetic resonance chemical shift spectra from the at least one compartment of interest. A magnetic resonance spectroscopy and imaging system is configured to perform the above method.





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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/030176**A. CLASSIFICATION OF SUBJECT MATTER***A61B 5/055(2006.01)i, G01R 33/483(2006.01)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 5/055; A61B 5/05; G01V 3/0/0

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) & Keywords: SLAM, CSI, MRS, localization

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2011-0066025 A1 (BAHN MARK M.) 17 March 2011 See paragraph [0131], claim 1, and figure 10.	1-24
A	US 2007-0249928 A1 (DANIEL JAMES BLEZEK et al.) 25 October 2007 See abstract, and claim 9.	1-24
A	US 05903149 A (GONEN; ODED et al.) 11 May 1999 See claim 5, and figure 5.	1-24

 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 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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011-0066025 A1	17.03.2011	WO 2009-070695 A1	04.06.2009
US 2007-0249928 A1	25.10.2007	None	
US 05903149 A	11.05.1999	None	