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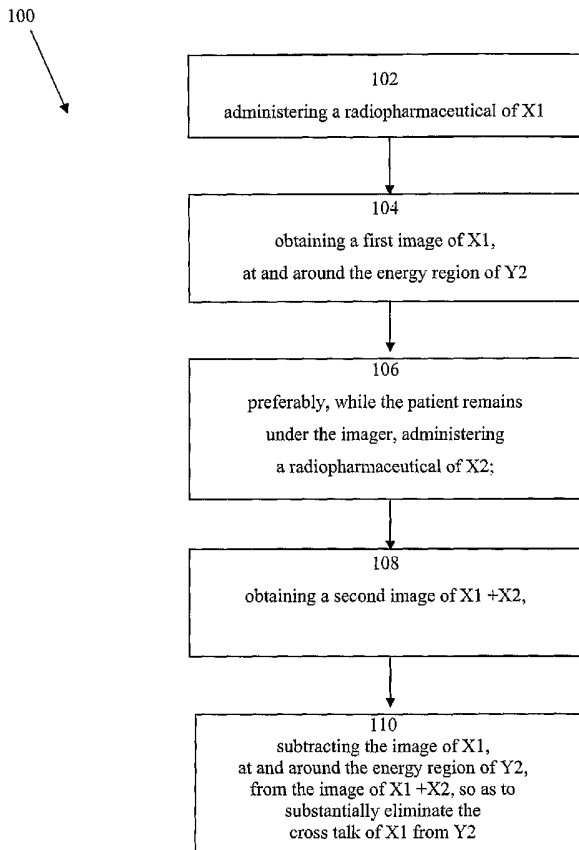
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- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
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 Filed on 13 January 2005 (13.01.2005)
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[Continued on next page]

(54) Title: MULTI-DIMENSIONAL IMAGE RECONSTRUCTION AND ANALYSIS FOR EXPERT-SYSTEM DIAGNOSIS



(57) Abstract: The present invention relates to the capabilities of a highly sensitive radioactive-emission camera, a result of a meticulous search for the many different effects that combine synergistically to increase sensitivity and spatial, spectral, and time resolutions. The new camera opens a new realm in SPECT-type imaging, making it viable for dynamic studies, the use of radiopharmaceutical cocktails, molecular imaging, dosimetry and other studies requiring the high sensitivity and resolutions. In particular, the new camera opens the door to SPECT expert system, examples for which are provided. The expert system relates to defining disease signatures for automatic diagnosis, preferably, based on a multi-parameter vector, preferably, based on kinetic radiopharmaceutical values. Additionally or alternatively, based on simultaneous administration of multiple isotopes

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<p>A. CLASSIFICATION OF SUBJECT MATTER IPC: G01T 1/166(2006.01)</p> <p>USPC: 250/370.08,363.04 According to International Patent Classification (IPC) or to both national classification and IPC</p>																				
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) U.S. : 250/370.08, 363.04, 363.1, 370.09; 600/436; 378/4</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)</p>																				
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 2003/0208117 A1 (SHWARTZ et al.) 06 NOVEMBER 2003 (06.11.03), see figures 1-2 and corresponding description.</td> <td>1-17</td> </tr> <tr> <td>X,P</td> <td>US 6,943,355 B2 (SHWARTZ et al.) 13 SEPTEMBER 2005 (13.09.05), see figures 1-2 and corresponding description.</td> <td>1-17</td> </tr> <tr> <td>X</td> <td>US 6,420,711 B2 (TUMER) 16 JULY 2002 (16.07.02), see entire document.</td> <td>1-17</td> </tr> <tr> <td>Y</td> <td>US 6,628,984 B2 (WEINBERG) 30 SEPTEMBER 2003 (30.09.03), see entire document.</td> <td>1-17</td> </tr> <tr> <td>Y</td> <td>US 6,135,955 A1 (MADDEN et al.) 24 OCTOBER 2000 (24.10.00), see entire document.</td> <td>1-17</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 2003/0208117 A1 (SHWARTZ et al.) 06 NOVEMBER 2003 (06.11.03), see figures 1-2 and corresponding description.	1-17	X,P	US 6,943,355 B2 (SHWARTZ et al.) 13 SEPTEMBER 2005 (13.09.05), see figures 1-2 and corresponding description.	1-17	X	US 6,420,711 B2 (TUMER) 16 JULY 2002 (16.07.02), see entire document.	1-17	Y	US 6,628,984 B2 (WEINBERG) 30 SEPTEMBER 2003 (30.09.03), see entire document.	1-17	Y	US 6,135,955 A1 (MADDEN et al.) 24 OCTOBER 2000 (24.10.00), see entire document.	1-17
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<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"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 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									
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<p>Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201</p>		<p>Authorized officer David Porta <i>David Porta</i> Telephone No. 571-272-2444</p>																		