DYNAMIC MULTI-SPECTRAL IMAGING SYSTEM

A multispectral X-ray imaging system (100) uses a wideband source (112) and filtration assembly (150) to select for M sets of spectral data. Spectral characteristics may be dynamically adjusted in synchrony with scan excursions where an X-ray source (112), detector array (114), or body (116) may be moved relative to one another in acquiring T sets of measurement data. The system may be used in projection imaging and/or CT imaging. Processed image data, such as a CT reconstructed image, may be decomposed on basis functions for analytical processing of multispectral image data to facilitate computer-assisted diagnostics. The system (100) may perform this diagnostic function in medical applications and/or security applications.
Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 19 May 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
### INTERNATIONAL SEARCH REPORT

**A. CLASSIFICATION OF SUBJECT MATTER**

<table>
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<tr>
<th>IPC(7)</th>
<th>A61B 6/03</th>
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<td>US CL</td>
<td>378/5, 16, 22, 901</td>
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</table>

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)

U.S. : 378/4, 5, 8, 15, 16, 19, 22, 901

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)
Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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</table>

Further documents are listed in the continuation of Box C.

See patent family annex.

Date of the actual completion of the international search

03 February 2005 (03.02.2005)

Date of mailing of the international search report

07 MAR 2005

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. (703) 305-3230

Authorized officer

David V Bruce

Telephone No. 703-308-0956

Form PCT/ISA/210 (second sheet) (January 2004)
Continuation of B. FIELDS SEARCHED Item 3:
USPTO EAST/BRS
search terms: x-ray, decompose, multi-spectral, diagnose, basis function, collimator, scan, line integral, limited angle, computed tomography, tomosynthesis, time, temporal, move, rotate, source, detector, constituents, components, image, longitudinal axis