Title: BLOOD PRESSURE MEASUREMENT BY IMPLANTABLE DEVICE

Abstract: An implantable cardiac device is configured and programmed to collect blood pressure waveforms from one or more implantable pressure sensors. Techniques are described for extracting features and reducing noise in the pressure waveforms by averaging waveforms which are aligned with a detected cardiac cycle. Noise can also be reduced by gating and calibration functions performed in accordance with other sensor data.
(88) Date of publication of the international search report:
3 August 2006

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
INV. A61N1/365

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)
A61N

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 practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<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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<td>X</td>
<td>US 2004/078060 A1 (DING JIANG ET AL) 22 April 2004 (2004-04-22) paragraphs [0017], [0022], [0025], [0035], [0039], [0041], [0064]; claim 6; figures 6,4A,4D</td>
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</table>

Further documents are listed in the continuation of Box C.

* 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 document but published on or after the international filing date

"L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"C" 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

"S" document member of the same patent family

Date of the actual completion of the international search: 6 February 2006

Date of mailing of the international search report: 14.06.2006

Name and mailing address of the ISA:
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel: (+31-70) 340-2000, Tx: 31 851 scope nl
Fax: (+31-70) 340-3016

Authorized officer: Edward, V
INTERNATIONAL SEARCH REPORT

Box 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 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 fee, this Authority did not invite payment of any additional fee.

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.:

   1 (part)-3,18

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest.

[ ] No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1(part)-3, 18
   An implantable system for compensating the effects of patient posture on intravascular blood pressure waveforms.

2. claims: 1(part), 4, 5, 19
   An implantable system for compensating the effects of body temperature on intravascular blood pressure waveforms.

3. claims: 1(part), 6, 7
   An implantable system for collecting a pressure waveform along with a corresponding exertion level signal.

4. claims: 1(part), 9
   An implantable system with an intravascular flow sensor.

5. claims: 8, 10-17
   An implantable system for averaging blood pressure waveforms aligned with corresponding EGM signals.

6. claim: 20
   An implantable system for aligning intravascular blood pressure waveforms with corresponding phonocardiogram signals.
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