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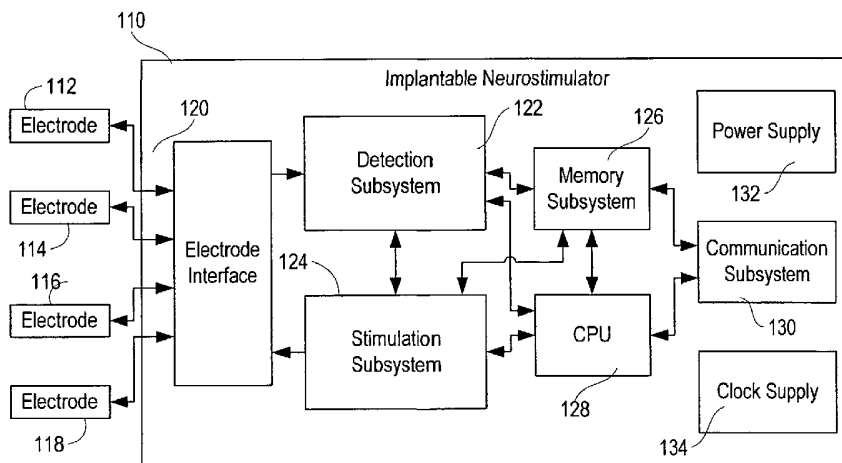
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6 November 2003

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.

(54) Title: PATIENT-SPECIFIC PARAMETER SELECTION FOR NEUROLOGICAL EVENT DETECTION



(57) Abstract: An epileptiform activity patient-specific template creation system permits a user to efficiently develop an optimized set of patient-specific parameters for epileptiform activity detection algorithms. The epileptiform activity patient template creation system is primarily directed for use with an implantable neurostimulator (110) system having EEG storage capability, in conjunction with a computer software program operating within a computer workstation (212) having a processor, disk storage and input/output facilities for storing, processing and displaying patient EEG signals. The implantable neurostimulator is operative to store records of EEG data when neurological events are detected, when it receives external commands to record, or at preset or arbitrary times. The computer workstation operates on stored and uploaded records of EEG data to derive the patient-specific templates via a single local minimum variant of a multidimensional greedy line search process and a feature overlay process.

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INTERNATIONAL SEARCH REPORT

International Application No  
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A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61B5/0476 A61N1/36

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)  
IPC 7 A61B A61N G06F

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

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 230 049 B1 (FISCHELL ROBERT E ET AL) 8 May 2001 (2001-05-08) column 3, line 27 -column 8, line 18; figures 1-3	24-32
P, X	US 6 353 754 B1 (FISCHELL DAVID R ET AL) 5 March 2002 (2002-03-05) the whole document	24-32
X	US 6 128 538 A (UPTON ADRIAN R M ET AL) 3 October 2000 (2000-10-03) cited in the application column 11, line 16 -column 14, line 58 column 23, line 22-54	24-27, 30-32
A	figures 1-4, 10-13	28, 29
	-/--	

Further documents are listed in the continuation of box C.  Patent family members are listed in 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 document 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 another 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

Date of the actual completion of the international search <b>16 May 2003</b>	Date of mailing of the international search report <b>27/05/2003</b>
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer <b>Fischer, O</b>
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INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 02/32735

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 6 018 682 A (RISE MARK T) 25 January 2000 (2000-01-25) column 4, line 25 -column 8, line 61; figures 1-4 -----	24-27, 30-32 28,29
X A	US 4 566 464 A (PICCONE VINCENT A ET AL) 28 January 1986 (1986-01-28) column 3, line 5 -column 6, line 46; figure 3 -----	24-27, 30-32 28,29
A	QU H ET AL: "A PATIENT-SPECIFIC ALGORITHM FOR THE DETECTION OF SEIZURE ONSET IN LONG-TERM EEG MONITORING: POSSIBLE USE AS A WARNING DEVICE" IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, IEEE INC. NEW YORK, US, vol. 44, no. 2, 1 February 1997 (1997-02-01), pages 115-122, XP000658735 ISSN: 0018-9294 the whole document -----	24-32

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 02/32735

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.: 1-23, 33-61  
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:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

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.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-23, 33-61

In view of the large number of independent method claims (claims 1, 33, 41, 56, 58) and also the wording of the claims presently on file (i.e. relating effectively to the same subject-matter), it is difficult, if not impossible, to determine the matter for which protection is sought: hence, the present application fails to comply with the clarity and conciseness requirements of Article 6 PCT (see also Rule 6.1(a) PCT) to such an extent that a meaningful search is impossible. Consequently, the search has been carried out for those parts of the application which do appear to be clear (and concise), namely system claims 24-32.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 02/32735

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6230049	B1	08-05-2001	NONE
US 6353754	B1	05-03-2002	NONE
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US 4566464	A	28-01-1986	NONE