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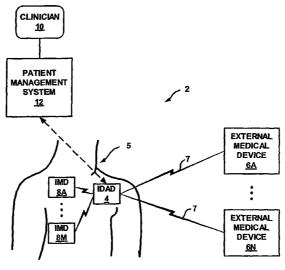
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10 June 2004

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: AGGREGATION OF DATA FROM EXTERNAL DATA SOURCES WITHIN AN IMPLANTABLE MEDICAL DE-VICE



(57) Abstract: An implantable device is described that collects and aggregates data from non-implanted medical devices external from a body of a patient. The device may also collect and aggregate data from medical devices implanted within the body. The implantable device includes a wireless transceiver to acquire physiological data from the external medical devices, and a storage medium to store the physiological data. A processor retrieves the physiological data and communicates the physiological data to a remote patient management system. The device may collect the physiologic data from the various external data sources, possibly over an extended period of time, and stores the data for subsequent upload to a common patient management system. In addition, the implantable device may collect physiological data from other medical devices implanted within the patient. In this manner, the device provides a central point for collection and aggregation of physiological data relating to the patient.



A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61B5/00 G08C17/00 A61N1/372

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 G08C 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, PAJ

ategory °	Citation of document, with indication, where appropriate, of th	e relevant passages	Relevant to claim No.
(	US 6 450 172 B1 (GREENINGER DA AL) 17 September 2002 (2002-09 column 4, line 66 -column 34, figures 1,10	1-5,7-13	
X	US 2001/049544 A1 (LEE MICHAEL 6 December 2001 (2001-12-06) paragraph '0011! - paragraph figure 1	1-5,7-13	
X	US 2001/031998 A1 (LEE MICHAEL 18 October 2001 (2001-10-18) paragraph '0015! - paragraph figures 1,4		1-5,7-13
<u> </u>	ther documents are listed in the continuation of box C.	χ Patent family member	s are listed in annex.
Special ce  'A' docum consi  'E' earlier filing  'L' docum which citatic  'O' docum other  'P' docum	ategories of cited documents:  ent defining the general state of the art which is not dered to be of particular relevance document but published on or after the international	"T" later document published a or priority date and not in cited to understand the prinvention  "X" document of particular relecannot be considered not involve an inventive step of the considered to it document of particular relecannot be considered to it document is combined with	offer the international filing date conflict with the application but inciple or theory underlying the evance; the claimed invention well or cannot be considered to when the document is taken alone evance; the claimed invention motive an inventive step when the thone or more other such docubeing obvious to a person skilled
Special care and a consistent of the care and	ategories of cited documents:  ent defining the general state of the art which is not dered to be of particular relevance document but published on or after the international date ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another on or other special reason (as specified) the internation or or or or an oral disclosure, use, exhibition or means sent published prior to the international filing date but	<ul> <li>"T" later document published a or priority date and not in cited to understand the prinvention</li> <li>"X" document of particular relecannot be considered not involve an inventive step."</li> <li>"Y" document of particular relecannot be considered to indocument is combined with ments, such combination in the art.</li> </ul>	ofter the international filing date conflict with the application but inciple or theory underlying the evance; the claimed invention rel or cannot be considered to when the document is taken alone evance; the claimed invention movive an inventive step when the thone or more other such docubeing obvious to a person skilled
Special or consider of the consider of the country	ategories of cited documents:  ent defining the general state of the art which is not dered to be of particular relevance document but published on or after the international date ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another on or other special reason (as specified) ent referring to an oral disclosure, use, exhibition or means ent published prior to the international filing date but than the priority date claimed	<ul> <li>"T" later document published a or priority date and not in cited to understand the prinvention</li> <li>"X" document of particular relecannot be considered not involve an inventive step of the cannot be considered to it document of particular relecannot be considered to it document is combined with ments, such combination in the art.</li> <li>"&amp;" document member of the second control of the second control</li></ul>	ofter the international filing date conflict with the application but inciple or theory underlying the evance; the claimed invention rel or cannot be considered to when the document is taken alone evance; the claimed invention movive an inventive step when the thone or more other such docubeing obvious to a person skilled

Internation Application No
PCT/US 03/34819

Continuation   DOCUMENTS CONSIDERED TO BE RELEVANT	C (Continue	MIAN DOCUMENTS CONCIDENTS TO DE ST. TUNNE	PC1/US 03	77 34019
US 2001/031997 A1 (LEE MICHAEL THOMAS) 18 October 2001 (2001-10-18) paragraph '0016! - paragraph '0063!; figure 2  A US 6 470 215 B1 (NAGELSCHMIDT AXEL ET AL) 22 October 2002 (2002-10-22) the whole document				
18 October 2001 (2001-10-18)     paragraph '0016! - paragraph '0063!;     figure 2  US 6 470 215 B1 (NAGELSCHMIDT AXEL ET AL) 22 October 2002 (2002-10-22)     the whole document		or document, with indication, where appropriate, of the relevant passages		Relevant to claim No.
22 October 2002 (2002-10-22) the whole document	X	18 October 2001 (2001-10-18)   paragraph '0016! - paragraph '0063!:		1-5,7-13
	A	US 6 470 215 B1 (NAGELSCHMIDT AXEL ET AL) 22 October 2002 (2002-10-22)		1-5,7-13

International application No. PCT/US 03/34819

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. X Claims Nos.: 6 because they relate to subject matter not required to be searched by this Authority, namely:  see FURTHER INFORMATION sheet PCT/ISA/210
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 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:  .
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.1

Claim 7 was searched only so far as it refers to claims 1-5 (Rule 39.1(iv) PCT).

Continuation of Box I.1

Claims Nos.: 6

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy

Internat Application No PCT/US 03/34819

Patent document		Publication		Data at face!		
cited in search report		date		Patent family member(s)		Publication date
US 6450172	B1	17-09-2002	US	6247474	B1	19-06-2001
			US		Α	04-07-2000
			CN	1307495	T	08-08-2001
			EP	1075312		14-02-2001
			WO	9955419	A1 	04-11-1999
US 2001049544	<b>A</b> 1	06-12-2001	WO	0180948	A1	01-11-2001
US 2001031998	A1	18-10-2001	<b></b> ЕР	1244382		02 10 2002
00 2001031990	U.I	10 10-2001	WO	0147597		02-10-2002 05-07-2001
			US	2001037220		01-11-2001
			US	2001037220		08-11-2001
US 2001031997	A1	18-10-2001	CA	2401777	A1	28-06-2001
			WO	0145793	A1	28-06-2001
			US	2001037220	A1	01-11-2001
			US		A1	08-11-2001
			US	2002193846		19-12-2002
			EP	1244994		02-10-2002
			WO	0148676	A1	05-07-2001
US 6470215	B1	22-10-2002	DE	19930241	A1	28-12-2000
			EΡ	1062981	Δ2	27-12-2000