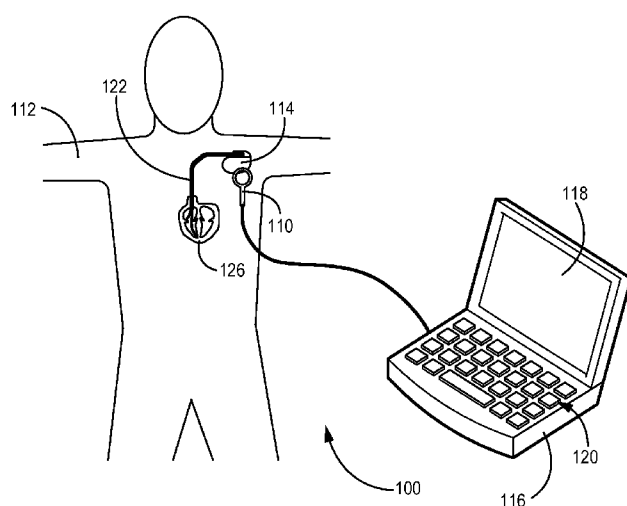




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- (71) **Applicant:** CARDIAC PACEMAKERS, INC. [US/US];
4100 Hamline Avenue North, St. Paul, Minnesota 55112 (US).
- (72) **Inventors:** SEEBERGER, Michael Sheehan; 135 Croixview Drive S, Afton, Minnesota 55001 (US). VAN-
DERLINDE, Scott R.; 16905 28th Avenue North, Ply-
mouth, Minnesota 55447 (US). STAHL, Wyatt Keith;
2448 Sunset Court, Little Canada, Minnesota 55117 (US).
WANG, Imelda; 7325 Oaklawn Avenue, Edina, Min-
nesota 55435 (US). THOMAS, Scott H.; 13184 Heritage
Way, Apple Valley, Minnesota 55124 (US).
- (74) **Agent:** DEFFNER, Mark E.; Pauly, Devries Smith &
Deffner, L.L.C., 121 South 8th Street, Suite 900, Min-
neapolis, Minnesota 55402 (US).
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DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
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[Continued on next page]

(54) **Title:** IMPLANTABLE MEDICAL DEVICES AND METHODS INCLUDING POST-PROCEDURAL SYSTEM DIA-
GNOSTICS**FIG. 1**

(57) **Abstract:** Aspects herein include an implantable medical device, such as an implantable cardiac rhythm management device. The implantable medical device can include a housing, control circuitry disposed within the housing, and telemetry circuitry in electrical communication with the control circuitry. The control circuitry can be configured to execute a post-procedural system check procedure after the expiration of a preselected first time period. The first time period can be greater than or equal to 0.5 hours and less than or equal to 48 hours. In various aspects, the post-procedural system check procedure can include measuring diagnostic properties for one or more electrodes of an electrical stimulation lead attached to the implantable medical device. The first time period can begin to elapse after detection of a triggering event or a command by a system operator.

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:

24 March 2016

Published:

- *with international search report (Art. 21(3))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2015/040732

Box No. 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.: 18-20
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery and/or therapy
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 No. 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 fees, this Authority did not invite payment of additional fees.
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.:
1-3, 6-11, 14, 16

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/040732

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61N1/37 A61N1/372
ADD.

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 practicable, search terms used)

EP0-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 2008/262561 A1 (CATTO GIOVANNI [FR]) 23 October 2008 (2008-10-23) figures 1, 3 paragraph [0001] - paragraph [0012] paragraph [0025] - paragraph [0043] -----	1,2, 6-10,14, 16
X	WO 01/14003 A1 (CARDIAC PACEMAKERS INC [US]) 1 March 2001 (2001-03-01) figures 1, 3 page 1, line 11 - line 21 page 4, line 3 - page 8, line 12 -----	1-3,6, 10,11
X	WO 03/002198 A2 (MEDTRONIC INC [US]) 9 January 2003 (2003-01-09) figures 1-3 page 5, line 14 - page 8, line 15 page 11, line 20 - page 13, line 29 -----	1-3,6, 8-10,14



Further documents are listed in the continuation of Box C.



See patent family 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 application or patent 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

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Date of mailing of the international search report

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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Ließmann, Frank

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2015/040732

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008262561 A1	23-10-2008	AT 463280 T EP 1982746 A1 US 2008262561 A1 US 2014316481 A1	15-04-2010 22-10-2008 23-10-2008 23-10-2014
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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3, 6-11, 14, 16

An implantable cardiac rhythm management device wherein connection of the electrical stimulation lead to the implantable cardiac rhythm management device or exiting of the implantable cardiac rhythm management device out of a storage mode is a triggering event for a post-procedural system check procedure.

2. claim: 4

An implantable cardiac rhythm management device wherein detecting an MRI time varying magnetic field is a triggering event for a post-procedural system check procedure.

3. claim: 5

An implantable cardiac rhythm management device wherein initiation of a magnet pacing mode is a triggering event for a post-procedural system check procedure.

4. claims: 12, 13, 17

An implantable cardiac rhythm management device wherein the control circuitry is configured to accept input from a system operator specifying a desired time for the post-procedural system check.

5. claim: 15

An implantable cardiac rhythm management device wherein the control circuitry of the external medical device is configured to display information through the display device informing an external medical device operator that a post-procedural system check is in process, if execution of an attempted post- procedural system check procedure has not terminated.
