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- (81) **Designated States** (*unless otherwise indicated, for every
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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
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SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM,
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UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
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— of inventorship (Rule 4.17(iv))

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

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- (54) **Title:** PHASED ARRAY ENERGY AIMING AND TRACKING FOR ABLATION TREATMENT

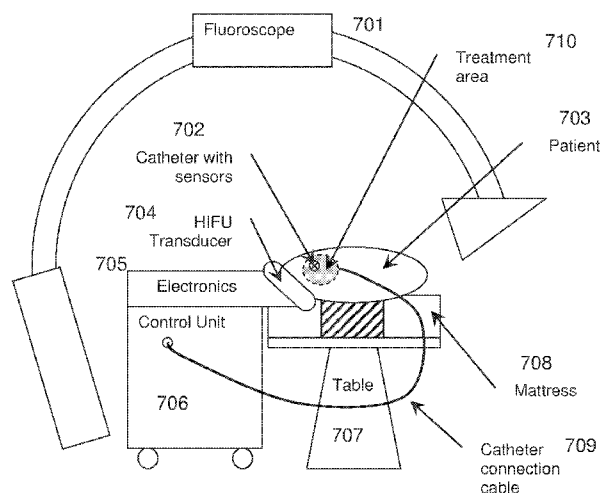


FIG. 7

(57) **Abstract:** A method for transmitting an energy beam from a group of elements of an external phased array energy projector for a medical ablation treatment. The method comprises transmitting first energy pulses from a subset of elements of the group, measuring signal parameters of first energy signals from reception of first energy pulses by energy sensors, and calculating for the group energy transmission parameters. The method further comprises transmitting second energy pulses by other elements, measuring signal parameters of second energy signals based on a reception the pulses by energy sensors, and calculating for the group a second set of energy transmission parameters. The method further comprises calculating transmission instructions for transmitting a phased array energy beam from the group by combining first and second energy transmission parameters. The method transmits an energy beam based on the transmission instructions.

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/061457

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61N7/02 A61B19/00
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 A61B

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)

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	EP 0 558 029 A2 (TOSHIBA KK [JP]) 1 September 1993 (1993-09-01) column 6, line 20 - column 9, line 23; figures 1-2 column 10, line 50 - column 12, line 6; figures 3-4 column 17, line 45 - column 19, line 46; figures 8-9 claim 10	13-20
X	WO 97/29699 A1 (BIOSENSE INC [US]; BEN HAIM SHLOMO [IL]) 21 August 1997 (1997-08-21) page 12, line 24 - page 16, line 10; figures 1-2 page 17, lines 5-21 page 20, line 29 - page 23, line 24; figures 4A-B ----- -/-	13-20



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

27 June 2014

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04/07/2014

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2013/061457

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 960 109 A (LELE PADMAKAR P [US]) 2 October 1990 (1990-10-02) column 4, line 1 - line 61; figures 1-2 column 6, line 49 - column 8, line 7; figures 2A-B -----	13,14, 16-19

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2013/061457

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0558029	A2	01-09-1993	DE 69332531 D1 16-01-2003
			DE 69332531 T2 24-07-2003
			DE 69333866 D1 13-10-2005
			DE 69333866 T2 06-07-2006
			EP 0558029 A2 01-09-1993
			EP 1110508 A2 27-06-2001
			JP 3325300 B2 17-09-2002
			JP H05300910 A 16-11-1993
			US 5485839 A 23-01-1996
WO 9729699	A1	21-08-1997	AU 1616697 A 02-09-1997
			AU 1616797 A 02-09-1997
			WO 9729699 A1 21-08-1997
			WO 9729700 A1 21-08-1997
US 4960109	A	02-10-1990	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2013/061457

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.: 1-12, 21, 22
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 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:

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.:

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 1-12, 21, 22

Method claims 1-12, 21 and 22 define a method for treatment of the human or animal body by therapy and surgery practised on the human or animal body, because "[...] a method for transmitting a phased array energy beam [...] to a body of a target patient, comprising [...] calculating transmission instructions for transmitting a phased array energy beam toward an intrabody target area [...] and] controlling said phased array energy projector to transmit said phased array beam [...] based on said transmission instructions [...]" (claim 1) and "[...] inserting at least one energy sensor into at least one treatment region of said patient [...]" (claim 21) is seen as a surgical and therapeutical step performed on a patient. Therefore no search has been performed for the subject-matter of this claim and the corresponding dependent claims (see Article 17 (2) PCT and Rule 39.1.(iv) PCT) and no written opinion is required for the subject-matter of these method claims (see Rule 43bis.1 and Rule 67.1 (iv) PCT).