

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 June 2008 (12.06.2008)

PCT

(10) International Publication Number
WO 2008/068717 A3

(51) International Patent Classification:

A61B 18/14 (2006.01) A61N 7/00 (2006.01)
A61B 18/18 (2006.01) A61K 51/10 (2006.01)

(21) International Application Number:

PCT/IB2007/054924

(22) International Filing Date:

5 December 2007 (05.12.2007)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

06125697.0 8 December 2006 (08.12.2006) EP

(71) Applicant (for all designated States except DE, US):
KONINKLIJKE PHILIPS ELECTRONICS N.V.
[NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven
(NL).

(71) Applicant (for DE only): **PHILIPS INTELLECTUAL
PROPERTY & STANDARDS GMBH** [DE/DE];
Lübeckertordamm 5, 20099 Hamburg (DE).

(72) Inventors; and

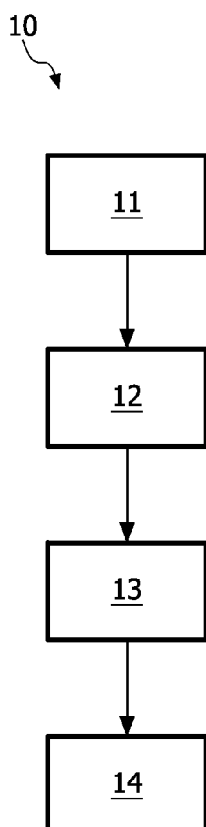
(75) Inventors/Applicants (for US only): **GEORGI, Jens, C.**
[DE/DE]; c/o High Tech Campus Building 44, NL-5656
AE Eindhoven (NL). **SCHWEIZER, Bernd** [DE/DE]; c/o
High Tech Campus Building 44, NL-5656 AE Eindhoven
(NL).

(74) Agents: **SCHOUTEN, Marcus, M.** et al.; c/o High Tech
Campus Building 44, NL-5656 AE Eindhoven (NL).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG,
ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL,
IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK,
LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW,
MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL,

[Continued on next page]

(54) Title: A SYSTEM, METHOD, COMPUTER-READABLE MEDIUM, AND USE FOR PLANNING COMBINED THERAPY



(57) Abstract: A system and method for planning a necrosis-inducing therapy and subsequent administration of a necrosis-targeting agent are described. The system takes into account the effect of necrosis-induction therapy as a basis for the biodistribution estimate of the necrosis-targeting agent. This interaction between the different calculation steps is essential for an accurate planning result. A computer-readable medium and use are also provided.

WO 2008/068717 A3



PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA,
ZM, ZW.

PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL,

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
6 November 2008

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2007/054924

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B18/14 A61B18/18 A61N7/00 A61K51/10

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 A61N A61K

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/040220 A1 (ZVULONI RONI [IL] ET AL) 4 April 2002 (2002-04-04) paragraph [0226] - paragraph [0253]	1-20
A	US 6 241 725 B1 (COSMAN ERIC R [US]) 5 June 2001 (2001-06-05) column 5, line 13 - line 53	1-20
A	HONG WAN ET AL: "Thermal Dose Optimization for Ultrasound Tissue Ablation" IEEE TRANSACTIONS ON ULTRASONICS, FERROELECTRICS AND FREQUENCY CONTROL, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 46, no. 4, 1 July 1999 (1999-07-01), pages 913-928, XP011090092 ISSN: 0885-3010 abstract	1-20
	----- -/--	

☒ 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 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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

28 August 2008

Date of mailing of the international search report

04/09/2008

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

Petter, Erwin

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2007/054924

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LAITINEN J O ET AL: "THE EFFECT OF THREE DIMENSIONAL ACTIVITY DISTRIBUTION ON THE DOSE PLANNING OF RADIOIMMUNOTHERAPY FOR PATIENTS WITH ADVANCED INTRAPERITONEAL PSEUDOMYXOMA" CANCER, AMERICAN CANCER SOCIETY, PHILADELPHIA, PA, US, vol. 80, no. 12, SUPPL, 15 December 1997 (1997-12-15), pages 2545-2552, XP001189085 ISSN: 0008-543X the whole document	1-20
A	ERDI ALEV K ET AL: "Use of the fast Hartley transform for three-dimensional dose calculation in radionuclide therapy" MEDICAL PHYSICS, AIP, MELVILLE, NY, US, vol. 25, no. 11, 1 November 1998 (1998-11-01), pages 2226-2233, XP012010360 ISSN: 0094-2405 the whole document	1-20
A	SGOUROS G ET AL: "THREE-DIMENSIONAL DOSIMETRY FOR RADIOIMMUNOTHERAPY TREATMENT PLANNING" JOURNAL OF NUCLEAR MEDICINE, SOCIETY OF NUCLEAR MEDICINE, RESTON, VA, US, vol. 34, no. 9, 1 September 1993 (1993-09-01), pages 1595-1601, XP001073461 ISSN: 0161-5505 the whole document	1-20
A	KINUYA S ET AL: "OPTIMIZATION OF RADIOIMMUNOTHERAPY INTERACTIONS WITH HYPERTHERMIA" INTERNATIONAL JOURNAL OF HYPERTHERMIA, BASINGSTOKE, GB, vol. 20, no. 2, 1 March 2004 (2004-03-01), pages 190-200, XP008055238 ISSN: 0265-6736 the whole document	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2007/054924

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002040220 A1	04-04-2002	AU 8004001 A	13-02-2002
		EP 1463437 A2	06-10-2004
		WO 0209571 A2	07-02-2002
		US 2005143723 A1	30-06-2005
		US 2007239150 A1	11-10-2007
		US 2006009751 A1	12-01-2006
US 6241725 B1	05-06-2001	NONE	