

<b>PATENT ASSIGNMENT COVER SHEET</b>
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 Stylesheet Version v1.2

EPAS ID: PAT5774238

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MARCUS HENNIX	09/09/2019
HAKAN NORDSTROM	10/17/2019
MARKUS ERIKSSON	09/12/2019
JONAS ADLER	10/13/2019
DAVID JAFFRAY	07/03/2014
GREGORY BOOTSMA	07/03/2014
FRANS VERHAEGEN	06/20/2014
BJORN NUTTI	09/23/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ELEKTA AB (PUBL)
<b>Street Address:</b>	P.O. BOX 7593
<b>City:</b>	STOCKHOLM
<b>State/Country:</b>	SWEDEN
<b>Name:</b>	UNIVERSITY HEALTH NETWORK
<b>Street Address:</b>	101 COLLEGE STREET
<b>Internal Address:</b>	SUITE 150
<b>City:</b>	TORONTO
<b>State/Country:</b>	CANADA
<b>Postal Code:</b>	M5G 1L7
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15106081
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(202)408-4400
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	202-408-4000
<b>Email:</b>	regional-desk@finnegan.com
<b>Correspondent Name:</b>	FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
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<b>PATENT</b>	

<b>Address Line 4:</b>	WASHINGTON, D.C. 20001
<b>ATTORNEY DOCKET NUMBER:</b>	12475.0086-00000
<b>NAME OF SUBMITTER:</b>	ANDREA A. PINKNEY
<b>SIGNATURE:</b>	/Andrea A. Pinkney/
<b>DATE SIGNED:</b>	10/17/2019
<b>Total Attachments: 9</b> source=0086Assignment#page1.tif source=0086Assignment#page2.tif source=0086Assignment#page3.tif source=0086Assignment#page4.tif source=0086Assignment#page5.tif source=0086Assignment#page6.tif source=0086Assignment#page7.tif source=0086Assignment#page8.tif source=0086Assignment#page9.tif	

## ASSIGNMENT

WHEREAS We, the below named inventors, (hereinafter referred to as Assignors), of a claimed invention in an application for United States Letters Patent entitled:

### TARGET-SPECIFIC DOSE AND SCATTER ESTIMATION IN CT IMAGES

filed herewith or as disclosed and claimed in United States Application No. 15/106,081, filed June 17, 2016 (Confirmation No. 2967), which claims priority to PCT International Application No. PCT/EP2014/078394, filed on December 18, 2014, and United Kingdom Patent Application No. 1322452.2, filed on December 18, 2013, and;

WHEREAS, Assignee One, **Elekta AB (publ)**, a corporation of Sweden whose post office address is PO Box 7593, Stockholm, Sweden,

and

WHEREAS, Assignee Two, **University Health Network**, a corporation of Canada whose post office address is 101 College Street Suite 150, Toronto, Ontario M5G 1L7, Canada,

(collectively referred to as Assignees), are desirous of jointly securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

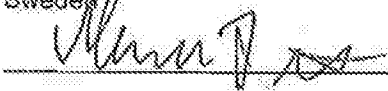
NOW THEREFORE, be it known that, for good and valuable consideration the receipt of which from Assignees is hereby acknowledged, We, as Assignors, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto Assignees, their respective lawful successors and assigns, our entire right, title, and interest in and to this invention, and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof, and all rights to claim priority in any foreign country on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application in any foreign country, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and We hereby authorize and request the Director of the United States Patent and Trademark Office and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignees, their respective successors and assigns, in accordance with the terms of this Assignment;

AND, WE HEREBY covenant that We have the full right to convey the interest assigned by this Assignment, and We have not executed and will not execute any agreement in conflict with this Assignment;

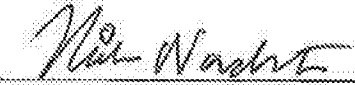
AND, WE HEREBY further covenant and agree that We will, without further consideration, communicate with Assignees, their respective successors and assigns, any facts known to us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignees, their respective successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid Assignees, their respective successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignees, their respective successors and assigns.

AND, We HEREBY authorize and request the attorneys empowered in the Power of Attorney in this application, to insert the filing date and application number of the above-referenced application(s) when known.


IN TESTIMONY WHEREOF, I have hereunto set my hands.

Name: **Marcus HENNIX**  
Address: 4d Ekedalsvagen, Huddinge 141 45,  
Sweden  
Signature:   
Date: 2019-09-09

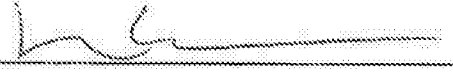
WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Hakan NORDSTROM**  
Address: 10 Revirvagen, Sollentuna, 192 73  
Sweden  
Signature:   
Date: 2019-10-17

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Markus Eriksson**  
Address: 8 Gamla Vagen, Gustavsberg, 134 31  
Sweden  
Signature:   
Date: 2019-09-12

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Jonas ADLER**  
Address: 64a Kungshamra, Solna, 170 70 Sweden  
Signature:   
Date: 2019-10-13

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **David Jaffray**  
Address: 204 Edenbridge Drive, Etobicoke,  
Ontario, M9A 3G8 Canada  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Gregory BOOTSMA**  
Address: 376 Melita Avenue, Toronto, Ontario,  
M6G 2A3 Canada  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Frank VERHAEGEN**  
Address: 27 Sieberg, Riemst, B3770 Belgium  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Bjorn NUTTI**  
Address: 9a Himlabacken, Solna, 170 78 Sweden  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

## ASSIGNMENT

WHEREAS We, the below named inventors, (hereinafter referred to as Assignors), of a claimed invention in an application for United States Letters Patent entitled:

### TARGET-SPECIFIC DOSE AND SCATTER ESTIMATION IN CT IMAGES

filed herewith or as disclosed and claimed in United States Application No. 15/106,081, filed June 17, 2016 (Confirmation No. 2067), which claims priority to PCT International Application No. PCT/EP2014/078394, filed on December 18, 2014, and United Kingdom Patent Application No. 1322452.2, filed on December 18, 2013, and;

WHEREAS, Assignee One, **Elekta AB (publ)**, a corporation of Sweden whose post office address is **PO Box 7593, Stockholm, Sweden**,

and

WHEREAS, Assignee Two, **University Health Network**, a corporation of Canada whose post office address is **101 College Street Suite 150, Toronto, Ontario M5G 1L7, Canada**,

(collectively referred to as Assignees), are desirous of jointly securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

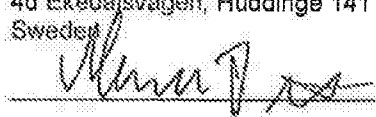
NOW THEREFORE, be it known that, for good and valuable consideration the receipt of which from Assignees is hereby acknowledged, We, as Assignors, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto Assignees, their respective lawful successors and assigns, our entire right, title, and interest in and to this invention, and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof, and all rights to claim priority in any foreign country on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application in any foreign country, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and We hereby authorize and request the Director of the United States Patent and Trademark Office and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignees, their respective successors and assigns, in accordance with the terms of this Assignment;

AND, WE HEREBY covenant that We have the full right to convey the interest assigned by this Assignment, and We have not executed and will not execute any agreement in conflict with this Assignment;

AND, WE HEREBY further covenant and agree that We will, without further consideration, communicate with Assignees, their respective successors and assigns, any facts known to us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignees, their respective successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid Assignees, their respective successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignees, their respective successors and assigns.

AND, We HEREBY authorize and request the attorneys empowered in the Power of Attorney in this application, to insert the filing date and application number of the above-referenced application(s) when known.

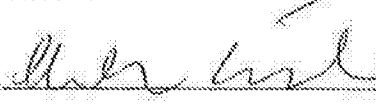
IN TESTIMONY WHEREOF, I have hereunto set my hands.

Name: **Marcus HENNIX**  
Address: 4d Ekedalsvagen, Huddinge 141 45,  
Sweden  
Signature:   
Date: 2019-09-09

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Hakan NORDSTROM**  
Address: 10 Revirvagen, Sollentuna, 192 73  
Sweden  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
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Date: \_\_\_\_\_

Name: **Markus Eriksson**  
Address: 8 Gamla Vagen, Gustavsberg, 134 31  
Sweden  
Signature:   
Date: 2019-09-12

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(Printed)  
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Address: 64a Kungshamra, Soina, 170 70 Sweden  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **David Jaffray**  
Address: 204 Edenbridge Drive, Etobicoke,  
Ontario, M9A 3G8 Canada  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
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Name: **Gregory BOOTSMA**  
Address: 376 Melita Avenue, Toronto, Ontario,  
M6G 2A3 Canada  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

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Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Frank VERHAEGEN**  
Address: 27 Sieberg, Riemst, B3770 Belgium  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Name: **Bjorn NUTTI**  
Address: 9a Himlabacken, Solna 170 78 Sweden  
Signature: *Bjorn Nutti*  
Date: *2019-09-23*

WITNESSED BY,  
Name: \_\_\_\_\_  
(Printed)  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_





## Technology Development & Commercialization

### ASSIGNMENT

For good and valuable consideration, receipt of which is hereby acknowledged, we, the undersigned, whose names and complete addresses are listed below:

LAST NAME, First Name	Home Address
JAFFRAY, David	204 Edenbridge Drive, Etobicoke, Ontario, M9A 3G8
BOOTSMA, Gregory	376 Melita Avenue, Toronto, Ontario, M6G 2A3
VERHAEGEN, Frans	27 Sieberg, Riemst, B3770, Belgium

confirm that we have sold, assigned and transferred, and do hereby sell, assign and transfer to UNIVERSITY HEALTH NETWORK (Assignee), whose full post office address is 190 Elizabeth Street, R. Fraser Elliott Building – Room 15-417, Toronto, Ontario, M5G 2C4 Canada, and to the Assignee's successors, assigns or other legal representatives, our right to apply for and obtain Letters Patent in the United Kingdom, and any other country for an invention entitled Target-Specific Dose and Scatter Estimation in CT Images, as fully set forth and described in each application for Letters Patent as listed below:

**UK Patent Application No. 1322452.2 filed December 18, 2013;**

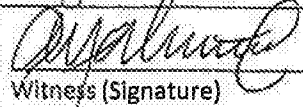
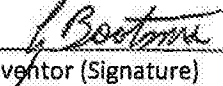

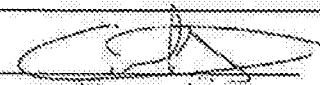

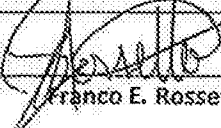

together with our entire right, title, property, benefit and interest for Canada, the United States of America and all other countries, in and to each aforementioned application, and any foreign applications corresponding thereto and any Letters Patent which may issue for the invention from such applications, including all divisions, continuations, continuations-in-part, re-examinations, reissues and extensions, and any rights of priority resulting from the filing of the above-identified applications under international conventions, treaties or otherwise, the same to be held and enjoyed as fully and exclusively as they would have been by us had this sale, assignment and transfer not been made.

We hereby covenant and agree to do all such things and to execute without further consideration such further assurances, applications and other instruments as may reasonably be required by the Assignee to obtain Letters Patent in Canada, the United States of America and all other countries, for the invention and vest the same in the Assignee.

Each of us makes this assignment in respect of his or her interest in the invention and aforementioned applications independently of any assignment of any other inventor or assignor.

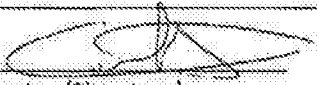
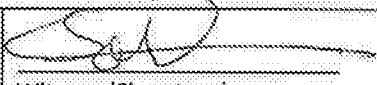
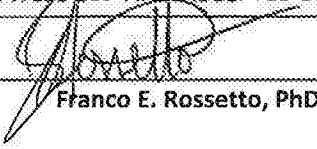
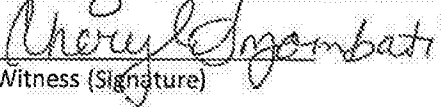
This Assignment of Patent Rights is effective as of **December 18, 2013**

*This assignment can be executed in counterparts.*

EXECUTED at Toronto, Ontario, Canada, this <u>3<sup>rd</sup></u> day of <u>July</u> , <u>2014</u> .	
 Inventor (Signature)	 Witness (Signature)
Name: <u>David Jaffray</u>	Name: <u>Angel Alivio</u>
EXECUTED at Toronto, Ontario, Canada, this <u>3<sup>rd</sup></u> day of <u>July</u> , <u>2014</u> .	
 Inventor (Signature)	 Witness (Signature)
Name: <u>Gregory Bootsma</u>	Name: <u>Angel Alivio</u>
EXECUTED at Maastricht, this 20 <sup>th</sup> day of June, 2014.	
 Inventor (Signature)	 Witness (Signature)
Name: <u>Frans Verhaegen</u>	Name: <u>Sonia Petalivo</u>
EXECUTED at Toronto, Ontario, Canada, this ___ day of _____.	
_____ Inventor (Signature)	_____ Witness (Signature)
Name: _____	Name: _____
ACKNOWLEDGED AND ACCEPTED at Toronto, this <u>19<sup>th</sup></u> day of <u>July</u> , <u>2014</u> , for University Health Network	
By:  <u>Franco E. Rossetto, PhD, JD</u>	 Witness (Signature)
Title: <u>Deputy Director and Legal Counsel, Technology Development &amp; Commercialization</u>	Name: <u>CHERYL SZOMBATI</u>

UHN # 2013-131-01

*This assignment can be executed in counterparts.*

EXECUTED at Toronto, Ontario, Canada, this ___ day of _____.	
Inventor (Signature) Name: <b>David Jaffray</b>	Witness (Signature) Name: _____
EXECUTED at Toronto, Ontario, Canada, this ___ day of _____.	
Inventor (Signature) Name: <b>Gregory Bootsma</b>	Witness (Signature) Name: _____
EXECUTED at Maastricht, this 20 <sup>th</sup> day of June, 2014.	
 Inventor (Signature) Name: <b>Frans Verhaegen</b>	 Witness (Signature) Name: <b>SONIA POTALIVO</b>
EXECUTED at Toronto, Ontario, Canada, this ___ day of _____.	
Inventor (Signature) Name: _____	Witness (Signature) Name: _____
ACKNOWLEDGED AND ACCEPTED at Toronto, this <u>17<sup>th</sup></u> day of <u>July</u> 20 <u>14</u> , for University Health Network	
By:  Franco E. Rossetto, PhD, JD Title: Deputy Director and Legal Counsel, Technology Development & Commercialization	 Witness (Signature) Name: <b>CHERYL SZOMBATI</b>