

# PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

| SUBMISSION TYPE:   | NEW ASSIGNMENT        |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
|--|-----------------------|---------------|-----------------------|----------------------|--------------|-----------------------------|------------|------------------------|------------|----------------|---------------|--------------|-------|
| NATURE OF CONVEYANCE:  | ASSIGNMENT            |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <b>CONVEYING PARTY DATA</b>  |                       |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">Name</th> <th style="width: 30%;">Execution Date</th> </tr> </thead> <tbody> <tr> <td>Ernst Conny Wikstrom</td> <td>07/20/2009</td> </tr> <tr> <td>Hans Georg Joakim Sundstrom</td> <td>07/10/2009</td> </tr> <tr> <td>Tord Ake Borje Nordahl</td> <td>07/10/2009</td> </tr> </tbody> </table>                           |                       | Name          | Execution Date        | Ernst Conny Wikstrom | 07/20/2009   | Hans Georg Joakim Sundstrom | 07/10/2009 | Tord Ake Borje Nordahl | 07/10/2009 |                |               |              |       |
| Name   | Execution Date        |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| Ernst Conny Wikstrom   | 07/20/2009            |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| Hans Georg Joakim Sundstrom  | 07/10/2009            |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| Tord Ake Borje Nordahl   | 07/10/2009            |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <b>RECEIVING PARTY DATA</b>  |                       |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Name:</td> <td>MKS Instruments, Inc.</td> </tr> <tr> <td>Street Address:</td> <td>2 Tech Drive</td> </tr> <tr> <td>Internal Address:</td> <td>Suite 201</td> </tr> <tr> <td>City:</td> <td>Andover</td> </tr> <tr> <td>State/Country:</td> <td>MASSACHUSETTS</td> </tr> <tr> <td>Postal Code:</td> <td>01810</td> </tr> </table> |                       | Name:         | MKS Instruments, Inc. | Street Address:      | 2 Tech Drive | Internal Address:           | Suite 201  | City:                  | Andover    | State/Country: | MASSACHUSETTS | Postal Code: | 01810 |
| Name:  | MKS Instruments, Inc. |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| Street Address:  | 2 Tech Drive          |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| Internal Address:  | Suite 201             |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| City:  | Andover               |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| State/Country:   | MASSACHUSETTS         |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| Postal Code:   | 01810                 |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| PROPERTY NUMBERS Total: 1  |                       |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Property Type</th> <th style="width: 70%;">Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>12466098</td> </tr> </tbody> </table>  |                       | Property Type | Number                | Application Number:  | 12466098     |                             |            |                        |            |                |               |              |       |
| Property Type  | Number                |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| Application Number:  | 12466098              |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <b>CORRESPONDENCE DATA</b>   |                       |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <p>Fax Number: (617)526-9899</p> <p><i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: 617-526-9600</p> <p>Email: sallen@proskauer.com</p> <p>Correspondent Name: Proskauer Rose LLP</p> <p>Address Line 1: One International Place</p> <p>Address Line 4: Boston, MASSACHUSETTS 02110</p>   |                       |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| ATTORNEY DOCKET NUMBER:  | ASX-152               |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| NAME OF SUBMITTER:   | Erik Saarmaa          |               |                       |                      |              |                             |            |                        |            |                |               |              |       |
| <p>Total Attachments: 5</p> <p>source=ASX-152 executed assignment#page1.tif</p>  |                       |               |                       |                      |              |                             |            |                        |            |                |               |              |       |

CH \$40.00 12466098

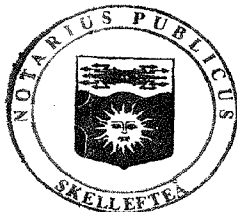
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**PATENT**  
**REEL: 023076 FRAME: 0324**

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# ADVOKATERNA VON AHN

Umeå den 20 juli 2009



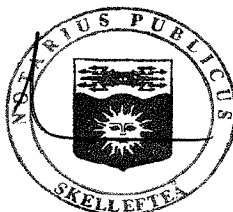
To whom it may concern

## Certificate

I the undersigned Erik von Ahn, notary public in Skellefteå, Sweden, hereby certify that Conny Vikström, 560323-8519 this day in my presence has signed the enclosed documents.

Umeå 2009-07-20

  
Erik von Ahn



*Notarius Publicus  
i Skellefteå*

*Advokater*

Anne-Sophie von Ahn · Erik von Ahn

## ADVOKATERNA VON AHN AB

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903 31 UMEÅ

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*Telefax*  
090-14 50 94

**PATENT**  
**REEL: 023076 FRAME: 0326**

ASSIGNMENT

WHEREAS, We, Ernst Conny Wikström, Hans Georg Joakim Sundström, and Tord Åke Börje Nordahl have invented one or more inventions described in an application (or provisional application) for Letters Patent of the United States entitled:

METHODS AND APPARATUS FOR AUTOMATED PREDICTIVE  
DESIGN SPACE ESTIMATION

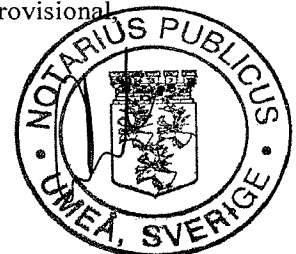
and identified by

- ☒ Attorney Docket No. ASX-152;
- ☒ Application No. 12/466,098 filed in the United States Patent Office on May 14, 2009 and

WHEREAS, MKS Instruments, Inc. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at 2 Tech Drive, Suite 201, Andover, Massachusetts 01810 desires to acquire an interest therein, in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, our entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the invention(s) described in said application, together with our entire right, title and interest in and to said application and such Letters Patent as may issue thereon or claim priority under United States law or international convention, including but not limited to non-provisionals, continuations, divisionals, reissues, reexaminations, extensions, and substitutions of said application or such Letters Patent, and any right, title and interest we may have in provisional applications to which said application claims priority; said invention(s), applications and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all of our rights arising under or pursuant to any and all United States laws and international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent, including but not limited to any cause(s) of action and damages accruing prior to this assignment. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said invention(s), carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all Letters Patent to ASSIGNEE in its own name as assignee of our entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention(s) to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including the execution of non-provisional



Joint Assignment  
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U.S. Application No. 12/466,098  
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substitution, continuation, divisional, reissue, reexamination, or corresponding foreign or international patent applications;


AND, we hereby further agree to provide statements or testimony in any interference or other proceeding in which said invention(s) or any application or patent directed thereto may be involved;

AND, we hereby authorize ASSIGNEE or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on the date of our execution of this assignment;

AND, we hereby authorize and request the Director of the United States Patent and Trademark Office to issue such Letters Patent as shall be granted upon said application, or applications based thereon, to said ASSIGNEE, its successors, assigns, or legal representatives.

**IN TESTIMONY WHEREOF**, we have hereunto set our hands-and affixed our seals on the date(s) set forth below.

Inventor:

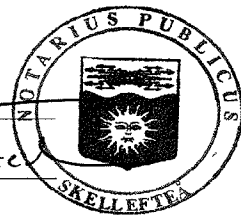
  
Ernst Conny Wikström

State/Commonwealth of )  
County of ) ss

On this 20 day of July, 2009, before me, the undersigned notary public, personally appeared Ernst Conny Wikström, proved to me through satisfactory evidence of identification, which were driver license, to be the person whose name is signed on the preceding or attached document in my presence.

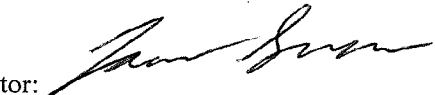
  
Notary Public

My Commission Expires: unlimited



Erik von Ahn  
advokat

Joint Assignment  
Attorney Docket No. ASX-152  
U.S. Application No. 12/466,098  
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Inventor:   
Hans Georg Joakim Sundström

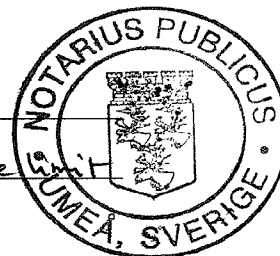
State/Commonwealth of )  
County of ) ss

On this 10<sup>th</sup> day of July, 2009, before me, the undersigned notary public,  
personally appeared Hans Georg Joakim Sundström, proved to me through satisfactory evidence of  
identification, which were driver license, to be the person whose name is signed  
on the preceding or attached document in my presence.



Notary Public

My Commission Expires: No time limit



Joint Assignment  
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Inventor: *Tord Åke Nordahl*  
Tord Åke Börje Nordahl

State/Commonwealth of )  
County of ) ss

On this 10<sup>th</sup> day of July, 2009, before me, the undersigned notary public,  
personally appeared Tord Åke Börje Nordahl, proved to me through satisfactory evidence of  
identification, which were driver license, to be the person whose name is signed  
on the preceding or attached document in my presence.

*[Signature]*  
Notary Public

My Commission Expires: No time limit

