

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Paul A. JOHNSON</td> <td>12/13/2011</td> </tr> <tr> <td>James A. TEN CATE</td> <td>12/12/2011</td> </tr> <tr> <td>Pierre-Yves LE BAS</td> <td>12/09/2011</td> </tr> <tr> <td>Carene S. LARMAT</td> <td>12/13/2011</td> </tr> </tbody> </table>		Name	Execution Date	Paul A. JOHNSON	12/13/2011	James A. TEN CATE	12/12/2011	Pierre-Yves LE BAS	12/09/2011	Carene S. LARMAT	12/13/2011
Name	Execution Date										
Paul A. JOHNSON	12/13/2011										
James A. TEN CATE	12/12/2011										
Pierre-Yves LE BAS	12/09/2011										
Carene S. LARMAT	12/13/2011										
RECEIVING PARTY DATA											
Name:	LOS ALAMOS NATIONAL SECURITY LLC										
Street Address:	Mail Stop A187, P.O. Box 1663										
Internal Address:	Attn: Bruce H. Cottrell, Group Leader LC-IP										
City:	Los Alamos										
State/Country:	NEW MEXICO										
Postal Code:	87544										
PROPERTY NUMBERS Total: 1											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13292948</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13292948						
Property Type	Number										
Application Number:	13292948										
CORRESPONDENCE DATA											
Fax Number:	(703)770-7901										
Phone:	703-770-7900										
Email:	allison.douglas@pillsburylaw.com										
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>											
Correspondent Name:	Robert C.F. Perez										
Address Line 1:	1650 Tysons Boulevard, Suite 1400										
Address Line 4:	McLean, VIRGINIA 22102										
ATTORNEY DOCKET NUMBER:	091230-0397046										
NAME OF SUBMITTER:	Robert C.F. Perez										

CH \$40.00 13292948

Total Attachments: 4

source=T-8742_LANL_Assignment#page1.tif

source=T-8742_LANL_Assignment#page2.tif

source=T-8742_LANL_Assignment#page3.tif

source=T-8742_LANL_Assignment#page4.tif

Attorney Docket No. 091230-0397046
Client Reference: T-8742

ASSIGNMENT

WHEREAS, I / We,

Paul A. JOHNSON, of 04 CR 113 South, Santa Fe, NM 87506, United States of America,
James A. TEN CATE, of 542 Todd Loop S, Los Alamos, NM 87544, United States of America,
Pierre-Yves LE BAS, of 625 La Bajada, Los Alamos, NM 87544, United States of America,
Carène S. LARMAT, of 1051 11th Street, Los Alamos, NM 87544, United States of America,

have invented new and useful improvements in

SYSTEM AND METHOD FOR GENERATING MICRO-SEISMIC EVENTS AND CHARACTERIZING PROPERTIES OF A MEDIUM WITH NON-LINEAR ACOUSTIC INTERACTIONS

set forth in an application for Letters Patent of the United States bearing Serial No. 13/292,948 and filed on November 9, 2011 (the hereinafter named assignee being authorized to insert said Serial Number and filing date when ascertained); and

WHEREAS, LOS ALAMOS NATIONAL SECURITY LLC, a private limited liability company, formed by the University of California, Bechtel, BWX Technologies and Washington Group International, and having regular and established place of business at Los Alamos, New Mexico, is desirous of acquiring the entire right, title and interest in and to said invention, and in and to the Letters Patent to be granted and issued therefor:

NOW, THEREFORE, for a valuable consideration, the receipt of which is hereby acknowledged, I / We, **Paul A. JOHNSON** hereby sell, assign, transfer and set over unto said LOS ALAMOS NATIONAL SECURITY LLC, and their successors and assigns, a 100% undivided right, title and interest in and to said invention, the said application and all divisions, continuations, reexaminations, and reissues thereof, and in and to all Letters Patent to be granted and issued therefore and all reexamination certificates, reissues and extensions thereof, not only for, to and in the United States of America, but for, to and in all other countries. The aforesaid assignment includes the right in and to all income, royalties, damages and payments now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale and assignment had not been made;

and I / We hereby authorize and request the Commissioner for Patents to issue said Letters Patent in accordance with this Assignment;

and I / We hereby covenant that we have full right to convey the entire interest herein assigned, and we have not executed, and will not execute, any agreement in conflict herewith and that the rights assigned herein are not otherwise encumbered by any grant, license or right;

and I / We hereby further covenant and agree that we will communicate to said Assignees, its successors, legal representatives and assigns, any facts known to us respecting said inventions and discoveries; and furthermore, upon request, without additional compensation but at no expense to me / us, testify in any interference or legal proceedings involving said inventions, and sign any applications for reissue, division, continuation, continuation-in-part, renewal, substitute or extension thereof.

In witness whereof, I / We have signed my / our name(s) on the date set forth below.

Inventor *Paul Johnson* Date 12/13/2011
Paul A. JOHNSON
Witness *Sylvain Hupert* Date 12/13/2011
Witness name SYLVAIN HUPERT

PATENT

ASSIGNMENT

WHEREAS, I / We,

1483, 35th street
#7CB

Paul A. JOHNSON, of 04 CR 113 South, Santa Fe, NM 87506, United States of America,
James A. TEN CATE, of 542 Todd Loop S, Los Alamos, NM 87544, United States of America,
Pierre-Yves LE BAS, of 625 La Bajada, Los Alamos, NM 87544, United States of America,
Carène S. LARMAT, of 1051 11th Street, Los Alamos, NM 87544, United States of America,

have invented new and useful improvements in

SYSTEM AND METHOD FOR GENERATING MICRO-SEISMIC EVENTS AND CHARACTERIZING PROPERTIES OF A MEDIUM WITH NON-LINEAR ACOUSTIC INTERACTIONS

set forth in an application for Letters Patent of the United States bearing Serial No. 13/292,948 and filed on November 9, 2011 (the hereinafter named assignee being authorized to insert said Serial Number and filing date when ascertained); and

WHEREAS, LOS ALAMOS NATIONAL SECURITY LLC, a private limited liability company, formed by the University of California, Bechtel, BWX Technologies and Washington Group International, and having regular and established place of business at Los Alamos, New Mexico, is desirous of acquiring the entire right, title and interest in and to said invention, and in and to the Letters Patent to be granted and issued therefor:

NOW, THEREFORE, for a valuable consideration, the receipt of which is hereby acknowledged, I / We, **James A. TEN CATE** hereby sell, assign, transfer and set over unto said LOS ALAMOS NATIONAL SECURITY LLC, and their successors and assigns, a 100% undivided right, title and interest in and to said invention, the said application and all divisions, continuations, reexaminations, and reissues thereof, and in and to all Letters Patent to be granted and issued therefore and all reexamination certificates, reissues and extensions thereof, not only for, to and in the United States of America, but for, to and in all other countries. The aforesaid assignment includes the right in and to all income, royalties, damages and payments now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale and assignment had not been made;

and I / We hereby authorize and request the Commissioner for Patents to issue said Letters Patent in accordance with this Assignment;

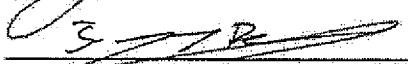
and I / We hereby covenant that we have full right to convey the entire interest herein assigned, and we have not executed, and will not execute, any agreement in conflict herewith and that the rights assigned herein are not otherwise encumbered by any grant, license or right;

and I / We hereby further covenant and agree that we will communicate to said Assignees, its successors, legal representatives and assigns, any facts known to us respecting said inventions and discoveries; and furthermore, upon request, without additional compensation but at no expense to me / us, testify in any interference or legal proceedings involving said inventions, and sign any applications for reissue, division, continuation, continuation-in-part, renewal, substitute or extension thereof.

In witness whereof, I / We have signed my / our name(s) on the date set forth below.

Inventor 
James A. TEN CATE

Date 12/12/2011

Witness 

Date 12/12/2011

Witness name Pierre-Yves LE BAS

ASSIGNMENT

WHEREAS, I / We,

1483, 35th Street
3729
Paul A. JOHNSON, of 04 CR 113 South, Santa Fe, NM 87506, United States of America,
James A. TEN CATE, of 542 Todd Loop S, Los Alamos, NM 87544, United States of America,
Pierre-Yves LE BAS, of ~~625 La Bajada~~, Los Alamos, NM 87544, United States of America,
Carène S. LARMAT, of 1051 11th Street, Los Alamos, NM 87544, United States of America,

have invented new and useful improvements in

SYSTEM AND METHOD FOR GENERATING MICRO-SEISMIC EVENTS AND CHARACTERIZING PROPERTIES OF A MEDIUM WITH NON-LINEAR ACOUSTIC INTERACTIONS

set forth in an application for Letters Patent of the United States bearing Serial No. 13/292,948 and filed on November 9, 2011 (the hereinafter named assignee being authorized to insert said Serial Number and filing date when ascertained); and

WHEREAS, LOS ALAMOS NATIONAL SECURITY LLC, a private limited liability company, formed by the University of California, Bechtel, BWX Technologies and Washington Group International, and having regular and established place of business at Los Alamos, New Mexico, is desirous of acquiring the entire right, title and interest in and to said invention, and in and to the Letters Patent to be granted and issued therefor:

NOW, THEREFORE, for a valuable consideration, the receipt of which is hereby acknowledged, I / We, **Pierre-Yves LE BAS** hereby sell, assign, transfer and set over unto said LOS ALAMOS NATIONAL SECURITY LLC, and their successors and assigns, a 100% undivided right, title and interest in and to said invention, the said application and all divisions, continuations, reexaminations, and reissues thereof, and in and to all Letters Patent to be granted and issued therefore and all reexamination certificates, reissues and extensions thereof, not only for, to and in the United States of America, but for, to and in all other countries. The aforesaid assignment includes the right in and to all income, royalties, damages and payments now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale and assignment had not been made;

and I / We hereby authorize and request the Commissioner for Patents to issue said Letters Patent in accordance with this Assignment;

and I / We hereby covenant that we have full right to convey the entire interest herein assigned, and we have not executed, and will not execute, any agreement in conflict herewith and that the rights assigned herein are not otherwise encumbered by any grant, license or right;

and I / We hereby further covenant and agree that we will communicate to said Assignees, its successors, legal representatives and assigns, any facts known to us respecting said inventions and discoveries; and furthermore, upon request, without additional compensation but at no expense to me / us, testify in any interference or legal proceedings involving said inventions, and sign any applications for reissue, division, continuation, continuation-in-part, renewal, substitute or extension thereof.

In witness whereof, I / We have signed my / our name(s) on the date set forth below.

Inventor *PYLB* Date 12/9/2011
Pierre-Yves LE BAS
Witness *JAC* Date 12/12/2011
Witness name JAMES A. TEN CATE

ASSIGNMENT

WHEREAS, I / We,

Paul A. JOHNSON, of 04 CR 113 South, Santa Fe, NM 87506, United States of America,
James A. TEN CATE, of 542 Todd Loop S, Los Alamos, NM 87544, United States of America,
Pierre-Yves LE BAS, of 625 La Bajada, Los Alamos, NM 87544, United States of America,
Carène S. LARMAT, of 1051 11th Street, Los Alamos, NM 87544, United States of America,

1483,35 of sheet
PT CB

have invented new and useful improvements in

SYSTEM AND METHOD FOR GENERATING MICRO-SEISMIC EVENTS AND CHARACTERIZING PROPERTIES OF A MEDIUM WITH NON-LINEAR ACOUSTIC INTERACTIONS

set forth in an application for Letters Patent of the United States bearing Serial No. 13/292,948 and filed on November 9, 2011 (the hereinafter named assignee being authorized to insert said Serial Number and filing date when ascertained); and

WHEREAS, LOS ALAMOS NATIONAL SECURITY LLC, a private limited liability company, formed by the University of California, Bechtel, BWX Technologies and Washington Group International, and having regular and established place of business at Los Alamos, New Mexico, is desirous of acquiring the entire right, title and interest in and to said invention, and in and to the Letters Patent to be granted and issued therefor:

NOW, THEREFORE, for a valuable consideration, the receipt of which is hereby acknowledged, I / We, **Carène S. LARMAT** hereby sell, assign, transfer and set over unto said LOS ALAMOS NATIONAL SECURITY LLC, and their successors and assigns, a 100% undivided right, title and interest in and to said invention, the said application and all divisions, continuations, reexaminations, and reissues thereof, and in and to all Letters Patent to be granted and issued therefore and all reexamination certificates, reissues and extensions thereof, not only for, to and in the United States of America, but for, to and in all other countries. The aforesaid assignment includes the right in and to all income, royalties, damages and payments now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale and assignment had not been made;

and I / We hereby authorize and request the Commissioner for Patents to issue said Letters Patent in accordance with this Assignment;

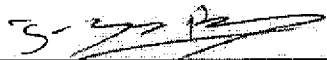
and I / We hereby covenant that we have full right to convey the entire interest herein assigned, and we have not executed, and will not execute, any agreement in conflict herewith and that the rights assigned herein are not otherwise encumbered by any grant, license or right;

and I / We hereby further covenant and agree that we will communicate to said Assignees, its successors, legal representatives and assigns, any facts known to us respecting said inventions and discoveries; and furthermore, upon request, without additional compensation but at no expense to me / us, testify in any interference or legal proceedings involving said inventions, and sign any applications for reissue, division, continuation, continuation-in-part, renewal, substitute or extension thereof.

In witness whereof, I / We have signed my / our name(s) on the date set forth below.

Inventor 
Carène S. LARMAT

Date 12/13/2011

Witness 

Date 12/13/2011

Witness name Pierre-Yves LE BAS

PATENT