

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>Gerardo ESCOBAR</td><td>12/18/2012</td></tr><tr><td>Sami PETTERSSON</td><td>12/18/2012</td></tr><tr><td>Leonardo-Augusto SERPA</td><td>12/18/2012</td></tr><tr><td>Ngai-Man HO</td><td>12/18/2012</td></tr><tr><td>Antonio COCCIA</td><td>12/18/2012</td></tr><tr><td>Alexandre OUDALOV</td><td>12/18/2012</td></tr><tr><td>Adrian TIMBUS</td><td>12/18/2012</td></tr></tbody></table>		Name	Execution Date	Gerardo ESCOBAR	12/18/2012	Sami PETTERSSON	12/18/2012	Leonardo-Augusto SERPA	12/18/2012	Ngai-Man HO	12/18/2012	Antonio COCCIA	12/18/2012	Alexandre OUDALOV	12/18/2012	Adrian TIMBUS	12/18/2012
Name	Execution Date																
Gerardo ESCOBAR	12/18/2012																
Sami PETTERSSON	12/18/2012																
Leonardo-Augusto SERPA	12/18/2012																
Ngai-Man HO	12/18/2012																
Antonio COCCIA	12/18/2012																
Alexandre OUDALOV	12/18/2012																
Adrian TIMBUS	12/18/2012																
RECEIVING PARTY DATA																	
<table border="1"><tr><td>Name:</td><td>ABB RESEARCH LTD</td></tr><tr><td>Street Address:</td><td>Affolternstrasse 44</td></tr><tr><td>City:</td><td>Zurich</td></tr><tr><td>State/Country:</td><td>SWITZERLAND</td></tr><tr><td>Postal Code:</td><td>CH-8050</td></tr></table>		Name:	ABB RESEARCH LTD	Street Address:	Affolternstrasse 44	City:	Zurich	State/Country:	SWITZERLAND	Postal Code:	CH-8050						
Name:	ABB RESEARCH LTD																
Street Address:	Affolternstrasse 44																
City:	Zurich																
State/Country:	SWITZERLAND																
Postal Code:	CH-8050																
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>13668797</td></tr></tbody></table>		Property Type	Number	Application Number:	13668797												
Property Type	Number																
Application Number:	13668797																
CORRESPONDENCE DATA																	
Fax Number: 7038362021 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>																	
Phone: 7038366620																	
Email: mich.sok@bipc.com																	
Correspondent Name: Buchanan Ingersoll & Rooney, PC																	
Address Line 1: 1737 King Street																	
Address Line 2: Suite 500																	
Address Line 4: Alexandria, VIRGINIA 22314																	
ATTORNEY DOCKET NUMBER:	1034456-000257																

OP \$40.00 13668797

502257894

PATENT
REEL: 029946 FRAME: 0620

NAME OF SUBMITTER:	Patrick C. Keane
	This document serves as an Oath/Declaration (37 CFR 1.63).
<p>Total Attachments: 12</p> <p>source=Combined Declaration and Assignment#page1.tif source=Combined Declaration and Assignment#page2.tif source=Combined Declaration and Assignment#page3.tif source=Combined Declaration and Assignment#page4.tif source=Combined Declaration and Assignment#page5.tif source=Combined Declaration and Assignment#page6.tif source=Combined Declaration and Assignment#page7.tif source=Combined Declaration and Assignment#page8.tif source=Combined Declaration and Assignment#page9.tif source=Combined Declaration and Assignment#page10.tif source=Combined Declaration and Assignment#page11.tif source=Combined Declaration and Assignment#page12.tif</p>	

COMBINED DECLARATION AND ASSIGNMENT (JOINT)

As one of the below named inventors, I hereby declare that this Combined Declaration and Assignment is directed to:

- (1) ☒ U.S. application number 13/668,797 filed on 5 November 2012, entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID; or
- (2) ☐ the attached application entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID.

DECLARATION

As one of the below named inventors, I further declare that:

The above-identified application was made or authorized to be made by me.

I believe that I am an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

ASSIGNMENT

THIS ASSIGNMENT, by the undersigned inventors (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements set forth in an application for Letters Patent of the United States, which is a nonprovisional application;

WHEREAS, ABB Research Ltd, a corporation duly organized under and pursuant to the laws of Switzerland and having a principal place of business at Affolternstrasse 44, 8050 Zürich, Switzerland (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all

applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said inventions, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

18th of Dec. 2012
Date

Gerardo ESCOBAR
Name


Signature

Date

Sami PETTERSSON
Name

Signature

Date

Leonardo-Augusto SERPA
Name

Signature

Date

Ngai-Man HO
Name

Signature

Date

Antonio COCCIA
Name

Signature

Attorney Docket No. 1034456-000257
Application No. Unassigned

_____ Date	Alexandre OUDALOV _____ Name	_____ Signature
_____ Date	Adrian TIMBUS _____ Name	_____ Signature

COMBINED DECLARATION AND ASSIGNMENT (JOINT)

As one of the below named Inventors, I hereby declare that this Combined Declaration and Assignment is directed to:

- (1) ☒ U.S. application number 13/668,797 filed on 5 November 2012, entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID; or
- (2) ☐ the attached application entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID.

DECLARATION

As one of the below named inventors, I further declare that:

The above-identified application was made or authorized to be made by me.

I believe that I am an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

ASSIGNMENT

THIS ASSIGNMENT, by the undersigned inventors (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements set forth in an application for Letters Patent of the United States, which is a nonprovisional application;

WHEREAS, ABB Research Ltd, a corporation duly organized under and pursuant to the laws of Switzerland and having a principal place of business at Affolternstrasse 44, 8050 Zürich, Switzerland (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all

applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said inventions, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

<u>18th of Dec 2012</u> Date	<u>Gerardo ESCOBAR</u> Name	<u>[Signature]</u> Signature
<u>18th of Dec 2012</u> Date	<u>Sami PETTERSSON</u> Name	<u>[Signature]</u> Signature
<u> </u> Date	<u>Leonardo-Augusto SERPA</u> Name	<u> </u> Signature
<u>18th of Dec 2012</u> Date	<u>Ngai-Man HO</u> Name	<u>[Signature]</u> Signature
<u> </u> Date	<u>Antonio COCCIA</u> Name	<u> </u> Signature

18th of Dec. 2012
Date

Alexandre OUDALOV
Name


Signature

18th of Dec. 2012
Date

Adrian TIMBUS
Name


Signature

COMBINED DECLARATION AND ASSIGNMENT (JOINT)

As one of the below named inventors, I hereby declare that this Combined Declaration and Assignment is directed to:

- (1) ☒ U.S. application number 13/668,797 filed on 5 November 2012, entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID; or
- (2) ☐ the attached application entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID.

DECLARATION

As one of the below named inventors, I further declare that:

The above-identified application was made or authorized to be made by me.

I believe that I am an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

ASSIGNMENT

THIS ASSIGNMENT, by the undersigned inventors (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements set forth in an application for Letters Patent of the United States, which is a nonprovisional application;

WHEREAS, ABB Research Ltd, a corporation duly organized under and pursuant to the laws of Switzerland and having a principal place of business at Affolternstrasse 44, 8050 Zürich, Switzerland (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all

applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said inventions, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

_____	Gerardo ESCOBAR	_____
Date	Name	Signature
_____	Sami PETTERSSON	_____
Date	Name	Signature
18th of Dec. 2012	Leonardo-Augusto SERPA	_____
Date	Name	Signature
_____	Ngai-Man HO	_____
Date	Name	Signature
_____	Antonio COCCIA	_____
Date	Name	Signature

Attorney Docket No. 1034456-000257
Application No. Unassigned

_____ Date	Alexandre OUDALOV _____ Name	_____ Signature
_____ Date	Adrian TIMBUS _____ Name	_____ Signature

COMBINED DECLARATION AND ASSIGNMENT (JOINT)

As one of the below named inventors, I hereby declare that this Combined Declaration and Assignment is directed to:

- (1) ☒ U.S. application number 13/668,797 filed on 5 November 2012, entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID; or
- (2) ☐ the attached application entitled METHOD AND APPARATUS FOR DETECTING ISLANDING CONDITIONS OF A DISTRIBUTED GRID.

DECLARATION

As one of the below named inventors, I further declare that:

The above-identified application was made or authorized to be made by me.

I believe that I am an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

ASSIGNMENT

THIS ASSIGNMENT, by the undersigned inventors (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements set forth in an application for Letters Patent of the United States, which is a nonprovisional application;

WHEREAS, ABB Research Ltd, a corporation duly organized under and pursuant to the laws of Switzerland and having a principal place of business at Affolternstrasse 44, 8050 Zürich, Switzerland (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.


NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all

applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said inventions, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

_____	Gerardo ESCOBAR	_____
Date	Name	Signature
_____	Sami PETTERSSON	_____
Date	Name	Signature
_____	Leonardo-Augusto SERPA	_____
Date	Name	Signature
_____	Ngai-Man HO	_____
Date	Name	Signature
18th of Dec. 2012	Antonio COCCIA	
Date	Name	Signature

_____ Date	Alexandre OUDALOV _____ Name	_____ Signature
_____ Date	Adrian TIMBUS _____ Name	_____ Signature