504671482 12/05/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4718204

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DONGHUN KANG	12/16/2014
KRITESHWAR K. KOHLI	12/16/2014
OH-JUNG KWON	12/17/2014
ANITA MADAN	12/16/2014
CONAL E. MURRAY	12/16/2014

RECEIVING PARTY DATA

Name:	INTERNATIONAL BUSINESS MACHINES CORPORATION
Street Address:	NEW ORCHARD ROAD
City:	ARMONK
State/Country:	NEW YORK
Postal Code:	10504

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15831810

CORRESPONDENCE DATA

Fax Number: (845)892-6363

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.

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Email: fdciplaw@us.ibm.com

Correspondent Name: IBM CORP. - FISHKILL DRAFTING CENTER

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Address Line 2: M/S P386, BLDG. 008-2

Address Line 4: POUGHKEEPSIE, NEW YORK 12601

ATTORNEY DOCKET NUMBER: FIS920140164US02	
NAME OF SUBMITTER:	KATHY M. DEROBERTIS
SIGNATURE:	/Kathy M. DeRobertis/
DATE SIGNED:	12/05/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).

PATENT 504671482 REEL: 044299 FRAME: 0425

Total Attachments: 8 source=FIS920140164US1_FiledAssignDec#page1.tif source=FIS920140164US1_FiledAssignDec#page2.tif source=FIS920140164US1_FiledAssignDec#page3.tif source=FIS920140164US1_FiledAssignDec#page4.tif source=FIS920140164US1_FiledAssignDec#page5.tif source=FIS920140164US1_FiledAssignDec#page6.tif source=FIS920140164US1_FiledAssignDec#page7.tif source=FIS920140164US1_FiledAssignDec#page8.tif

PATENT REEL: 044299 FRAME: 0426

IBM DOCKET NUMBER: F18920140164US1

DECLARATION (37 C.F.R. 1.63) FOR UTILITY PATENT APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76) AND ASSIGNMENT

Title of Invention: CAPACITANCE MONITORING USING X-RAY DIFFRACTION

As a below named and undersigned inventor, I hereby declare that:
This declaration is directed to the attached application, or (if following box is checked):
[] United States application or PCT international application number
The above-identified application was made or authorized to be made by me.
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
I have reviewed and understand the contents of the application, including the claims,
I am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR Section 1.56.
Whereas, I ("ASSIGNOR") have made certain inventions, improvements, and discovering the male and

Whereas, International Business Machines Corporation (herein referred to as the "ASSIGNEE"), a corporation of New York having a place of business at Armonk, New York, desires to acquire, and I desire to grant to the ASSIGNEE, my entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto:

to as the "Invention") disclosed in the above-identified patent application and further identified by the

IBM Docket Number provided above in the header of this document;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, I hereby sell or have sold, assign or have assigned, and otherwise transfer or have transferred to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefore in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, I hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worldwide right, title, and interest in and to the same to be held and enjoyed by the ASSIGNEE, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by me had this Assignment not been made; and I agree to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the Invention and all related patents and applications, in the ASSIGNEE, its successors, legal representatives, and assigns, whenever requested by the ASSIGNEE, its successors, legal representatives, or assigns.

Page 1 of 2

IBM DOCKET NUMBER: FIS920140164US1

I acknowledge my prior and ongoing obligations to sell, assign, and transfer my rights under this Assignment to the ASSIGNEE and am unaware of any reason why I may not have the full and unencumbered right to sell, assign, and transfer my rights hereby sold, assigned, and transferred, and have not executed, and will not execute, any document or instrument in conflict herewith. I also hereby grant the ASSIGNEE, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent Application Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

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.

(1)	Legal Name of Inventor: Donghun Kung		
	Signature:	_ Date:	12/16/14
(2)	Legal Name of Inventor; Kriteshwar K. Kohli		
	Signature:	_Date:	
(3)	Legal Name of Inventor: Oh-jung Kwon		
	Signature:	_Date:	***************************************
(4)	Legal Name of Inventor: Anita Madan		
	Signature:	Date:	
(5)	Legal Name of Inventor: Consl E. Murray		
	Signature:	Dates	

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Whereas, I ("ASSIGNOR") have made certain inventions, improvements, and discoveries (herein referred to as the "Invention") disclosed in the above-identified patent application and further identified by the IBM Docket Number provided above in the header of this document:

Whereas, International Business Machines Corporation (herein referred to as the "ASSIGNEE"), a corporation of New York having a place of business at Armonk, New York, desires to acquire, and I desire to grant to the ASSIGNEE, my entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged. Uhereby sell or have sold, assign or have assigned, and otherwise transfer or have transferred to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefore in the United States and in all foreign countries and jurisdictions, including all divisions. continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, I hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worklwide right, title, and interest in and to the same to be held and enjoyed by the ASSIGNEE, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by me had this Assignment not been made; and I agree to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the Invention and all related patents and applications, in the ASSIGNEE, its successors, legal representatives, and assigns, whenever requested by the ASSIGNEE, its successors, legal representatives, or assigns.

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(1) Legal Name of Inventor: Doughun Kang	
Signature:	Date;
(2) Legal Name of Inventor: Kriteshwar K. Kohli	
Signature: 4.4.	Dute: \\\ \frac{12}{16} \frac{14}{14}
(3) Legal Name of Inventor: Oh-jung Kwon	
Signature:	Date:
(4) Legal Name of Inventor: Anita Madan	
Signature:	Date:
(5) Legal Name of Inventor: Conal E. Murray	
Signaturer	Date:

Page 2 of 2

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(1) Legal Name of Inventor: Donghun Kang	
Signature:	Date:
(2) Legal Name of Inventor: Kriteshwar K, Kohli	
Signature;	Date:
(3) Legal Name of Inventor: Oh-jung Kwon Signature:	Date: 12-/17/14
(4) Legal Name of Inventor: Anita Madan	
Signature:	Date:
(5) Legal Name of Inventor; Conal E. Murray	
Signature:	Date:

Page 2 of 2

IBM DÖCKET NUMBER: F18920140164USI

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As a beliefy mainted and undereligited inventor, Pregeby declare that:

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The above-likentified application was made or amborized to be made by me-

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

I have reviewed and understand the contents of the application, including the chains:

I am aware of the daty to disclose to the United States Patent and Trademark Office all information. Encoun to me to be material to patentability as defined in 37 CPR Section 1.50.

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Page First 2

IBM DOCKET NUMBER: F18920140164US1

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(1) Legal Name of Inventor: Donglinn Kang	
Signatore:	Date
(2) Legal Name of Inventor: Kriteshwar K, Rohli	
Signature:	Date:
(3) Legal Name of Inventor: Oh-jung Koon	
Signature:	Date:
(4) Legal Name of Inventor: Anita Madan	
Signature: Arista Madan	Date: 12/16/2014
(5) Legal Name of Inventor, Conal E. Murray	
Signature: CC 5-5	Date: 12/16/14

Page 3 of 2

RECORDED: 12/05/2017

PATENT REEL: 044299 FRAME: 0434