505387415 03/21/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT5434208

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MICHAEL BENDER	11/17/2014
WAYNE M. DELIA	11/17/2014
GAUTAM MAJUMDAR	11/18/2014

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16360686

CORRESPONDENCE DATA

Fax Number: (281)886-7716

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.

Phone: 2818867107

Email: uspto@garglaw.com IBM END IPLAW (GLF) **Correspondent Name:**

Address Line 1: C/O GARG LAW FIRM, PLLC

Address Line 2: 10701 CORPORATE DR., SUITE 230

Address Line 4: RICHMOND, TEXAS 77407

ATTORNEY DOCKET NUMBER: END920140191US02	
NAME OF SUBMITTER: TINA GARCIA	
SIGNATURE: /Tina Garcia/	
DATE SIGNED:	03/21/2019
This document serves as an Oath/Declaration (37 CFR 1.63).	

Total Attachments: 6

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PATENT REEL: 048663 FRAME: 0510 505387415

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PATENT REEL: 048663 FRAME: 0511

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

CORRELATING TEST RESULTS VARIATIONS WITH BUSINESS REQUIREMENTS

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

As a below named inventor, I hereby declare that:

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, the undersigned inventor(s) has/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, a corporation of New York having a place of business at Armonk, New York (herein referred to as "IBM"), desires to acquire, and each undersigned inventor desires to grant to IBM, the 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, each undersigned inventor ("ASSIGNOR") hereby sells or has sold, assigns or has assigned, and otherwise transfers or has transferred to IBM (the "ASSIGNEE"), its successors, legal representatives, and assigns, the 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 therefor 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, each undersigned inventor hereby authorizes and requests 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 IBM, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by IBM, 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 the undersigned had this Assignment not been made; and each undersigned inventor agrees 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 IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

Page 1 of 2

IBM DOCKET NUMBER: END920140191USI

Each undersigned inventor acknowledges their prior and ongoing obligations to sell, assign, and transfer the rights under this Assignment to IBM and is unaware of any reason why they may not have the full and unencumbered right to sell, assign, and transfer the rights hereby sold, assigned, and transferred, and has not executed, and will not execute, any document or instrument in conflict herewith. Each undersigned inventor also hereby grants IBM, 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: MICHAEL BENDER		
	Signature: Muchaf Bali	Date: 11/17/14	
(2)	Legal Name of Inventor: WAYNE M. DELIA		
	Signature:	Date:	
(3)	Legal Name of Inventor: GAUTAM MAJUMDAR		
	Signature:	Dato	

IBM DOCKET NUMBER: END920140191US1

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

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As a below named 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 numberfiled on
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

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known to me to be material to patentability as defined in 37 CFR Section 1.56.

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Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned inventor ("ASSIGNOR") hereby sells or has sold, assigns or has assigned, and otherwise transfers or has transferred to IBM (the "ASSIGNEE"), its successors, legal representatives, and assigns, the 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 therefor 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, each undersigned inventor hereby authorizes and requests 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 IBM, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by IBM, 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 the undersigned had this Assignment not been made; and each undersigned inventor agrees 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 IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

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IBM DOCKET NUMBER: END920140191151

Each undersigned inventor acknowledges their prior and ongoing obligations to sell, assign, and transfer the rights under this Assignment to IBM and is unaware of any reason why they may not have the full and unencombered right to sell, assign, and transfer the rights hereby sold, assigned, and transferred, and has asserted, and will not execute, any decision in instrument in conflict herewith. Each undersigned inventor also beneby grants IBM, its successors, legal representatives, and assigns, the right to insent in this Assignment any hather identification (including, but not limited to, puters Application Number). which may be necessary or describble for recordation of this Assignment. This Assignment is governed by the substantive laws of the Sinte 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.

	Logal Name of Inventor: MICHAEL BENDER		
	Signature	\$180	
(2)	Logal Name of laventor: WAYNE M. DELIA Signature: 1/2/12/1/2	Sam: /////2019	
(3)	Legal Name of Inventor: GAUTAN MAJUMDAR		
	Signamisa.	Thirties	

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PATENT REEL: 048663 FRAME: 0515

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

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[] United States application or PCT international application numberfiled on	

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Page 1 of 2

IBM DOCKET NUMBER: END920140191US1

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(1) Legal Name of Inventor: MICHAEL BENDER	
Signature:	Date:
(2) Legal Name of Inventor: WAYNE M. DELIA	
Signature:	Date:
(3) Legal Name of Inventor: GAUTAM MAJUMDAR	
Signature: Charles	Date: 11/18/2014

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RECORDED: 03/21/2019