PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2787661

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------------|----------------|
| JONATHAN D. BRADBURY | 03/21/2014 |
| FADI Y. BUSABA | 03/21/2014 |
| MARK S. FARRELL | 03/21/2014 |
| CHARLES W. GAINEY JR. | 03/19/2014 |
| DAN F. GREINER | 03/20/2014 |
| LISA CRANTON HELLER | 03/21/2014 |
| JEFFREY P. KUBALA | 03/21/2014 |
| DAMIAN L. OSISEK | 03/24/2014 |
| DONALD W. SCHMIDT | 03/21/2014 |
| TIMOTHY J. SLEGEL | 03/21/2014 |

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: | 14226911 |

CORRESPONDENCE DATA

Fax Number: (860)286-0115

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via

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ATTORNEY DOCKET NUMBER: POU920140071US1

502741065 PATENT REEL: 032538 FRAME: 0055

| NAME OF SUBMITTER: | ERIC J. BARON |
|---------------------------|--|
| SIGNATURE: | /Eric J. Baron/ |
| DATE SIGNED: | 03/27/2014 |
| | This document serves as an Oath/Declaration (37 CFR 1.63). |
| Total Attachments: 11 | |
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PATENT REEL: 032538 FRAME: 0056

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:

THREAD CONTEXT RESTORATION IN A MULTITHREADING

COMPUTER SYSTEM

| 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 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 I desire to grant to IBM, 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, I ("ASSIGNOR") hereby sell or have sold, assign or have assigned, and otherwise transfer or have transferred to IBM (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 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, 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 IBM, its successors, legal representatives, and assigns, my 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 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 IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

I acknowledge my prior and ongoing obligations to sell, assign, and transfer my rights under this Assignment to IBM 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 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: Jonathan D. Bradbury | |
|--|-------------------|
| Signature: John M. D. Brudbey | Date: 3/21/2014 |
| (2) Legal Name of Inventor: Fadi Y. Busaba | |
| Signature: | Date: |
| (3) Legal Name of Inventor: Mark S. Farrell | |
| Signature: Marke S. Farsell | Date: 3/2//2014 |
| (4) Legal Name of Inventor: Charles W. Gainey, Jr. | |
| Signature: DECEASED INVENTOR – PLEASE SEE SUE | STITUTE STATEMENT |

[IF MORE INVENTORS, ADDITIONAL SIGNATURE PAGE(S) FOLLOWS]

ATTACHED HEREWITH

| (5) Legal Name of Inventor: Dan F. Greiner | |
|---|-------------------|
| Signature: | Date: |
| (6) Legal Name of Inventor: Lisa Cranton Heller | |
| Signature: Lesa Cearfa, Helle | Date: $3/21/0014$ |
| (7) Legal Name of Inventor: Jeffrey P. Kubala | |
| Signature: Jeffry P Kulvale | Date: 3/2/// |
| (8) Legal Name of Inventor: Damian L. Osisek | |
| Signature: | Date: |
| (9) Legal Name of Inventor: Donald W. Schmidt | |
| Signature: Y mild a Schmidt | Date: 3/21/19 |
| (10) Legal Name of Inventor: Timothy J. Slegel | |
| Signature: 7 mg . eccer | |

Page 3 of 3

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:

THREAD CONTEXT RESTORATION IN A MULTITHREADING COMPUTER SYSTEM

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

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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 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 I desire to grant to IBM, 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, I ("ASSIGNOR") hereby sell or have sold, assign or have assigned, and otherwise transfer or have transferred to IBM (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 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, 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 IBM, its successors, legal representatives, and assigns, my 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 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 IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

I acknowledge my prior and ongoing obligations to sell, assign, and transfer my rights under this Assignment to IBM 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 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: Jonathan D. Bradbury | |
|---|-------------------------|
| Signature: | Date: |
| (2) Legal Name of Inventor: Fadi Y. Busaba | |
| Signature: | Date: |
| (3) Legal Name of Inventor: Mark S. Farrell | |
| Signature: | Date: |
| (4) Legal Name of Inventor: Charles W. Gainey, Jr. | |
| Signature: <u>DECEASED INVENTOR – PLEASE S</u> <u>ATTACHED HEREWITH</u> | EE SUBSTITUTE STATEMENT |

[IF MORE INVENTORS, ADDITIONAL SIGNATURE PAGE(S) FOLLOWS]

Page 2 of 3

| (5) Legal Name of Inventor: Dan F. Greiner | |
|---|--------------------|
| Signature: Recue | Date: 20 March 201 |
| (6) Legal Name of Inventor: Lisa Cranton Heller | |
| Signature: | Date: |
| (7) Legal Name of Inventor: Jeffrey P. Kubala | |
| Signature: | Date: |
| (8) Legal Name of Inventor: Damian L. Osisek | |
| Signature: | Date; |
| (9) Legal Name of Inventor: Donald W. Schmidt | |
| Signature: | Date: |
| (10) Legal Name of Inventor: Timothy J. Slegel | |
| Signature | Dato |

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 and undersigned inventor, I hereby declare that: | |
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| his declaration is directed to the attached application, or (if following box is checked): | |
| United States application or PCT international application numberled on | |
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| believe that I am the original inventor or an original joint inventor of a claimed invention in the pplication. | |
| have reviewed and understand the contents of the application, including the claims. | |
| am aware of the duty to disclose to the United States Patent and Trademark Office all information nown 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, I ("ASSIGNOR") hereby sell or have sold, assign or have assigned, and otherwise transfer or have transferred to IBM (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 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, I hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign point authorities to issue any foreign patent, granted for the Invention, to IBM, its successors, legal representatives, and assigns, my 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 me had this Assignment not been made; and Lagree 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 3

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| (1) | Legal Name of Inventor: | Jonathan D. Bradbury | | | |
|-----|---|--|-------|--|--|
| | Signature: | | Date: | | |
| (2) | Legal Name of Inventor: | Fadi Y. Busaba | | | |
| | | NOTIFICATION AND ASSESSMENT OF THE PROPERTY OF | Date: | | |
| | Legal Name of Inventor: | Mark S. Farrell | | | |
| | Signature: | | Date: | | |
| (4) | Legal Name of Inventor; | Charles W. Gainey, Jr. | | | |
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| Signature: | Date: |
| (7) Legal Name of Inventor: Jeffrey P. Kubala | |
| Signature; | Date: |
| (8) Legal Name of Inventor: Damian L. Osisek | |
| Signature: Damen Column | Date: 3/24/2014 |
| (9) Legal Name of Inventor: Donald W. Schmidt | |
| Signature: | Date: |
| (10) Legal Name of Inventor: Timothy J. Slegel | |
| Signature: | Date: |

Page 3 of 3

Doc code: Oath

Document Description: Oath or declaration filed

PTO/AIA/02 (07-13)

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SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)

| Title of Invention | THREAD CONTEXT RESTORATION IN A MULTITHREADING COMPUTER SYSTEM | | | | | | | |
|---|--|----------------------|-------------|------|--|---------|--|--|
| This statement is directed to: | | | | | | | | |
| The attached application, | | | | | | | | |
| OR | | | | | | | | |
| United States application or PCT international application numberfiled on | | | | | | | | |
| | ME of inventor to whom this sul | | | | | | | |
| | Name (first and middle (if any)) and F | amily Name or Surnar | ne) | | | | | |
| | W. Gainey, Jr. | | | | | | | |
| Residence (| except for a deceased or legally incapa | acitated inventor): | | | | | | |
| City | | State | Cou | ntn/ | | | | |
| State Country Mailing Address (except for a deceased or legally incapacitated inventor): | | | | | | | | |
| City | | State | | Zip | | Country | | |
| I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application. | | | | | | | | |
| The above-identified application was made or authorized to be made by me. | | | | | | | | |
| I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. | | | | | | | | |
| Relationship to the inventor to whom this substitute statement applies: | | | | | | | | |
| Legal Representative (for deceased or legally incapacitated inventor only), | | | | | | | | |
| Assignee, | | | | | | | | |
| Person to whom the inventor is under an obligation to assign, | | | | | | | | |
| Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or | | | | | | | | |
| Jo | Joint Inventor. | | | | | | | |
| | | | | | | | | |

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case, Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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SUBSTITUTE STATEMENT

| Circumstances permitting execution of this | substitute statement: | | | | | | | |
|--|-------------------------------------|------------------------------------|------------|--|--|--|--|--|
| Inventor is deceased, | | | | | | | | |
| Inventor is under legal incapacity, | Inventor is under legal incapacity, | | | | | | | |
| Inventor cannot be found or reached after diligent effort, or | | | | | | | | |
| Inventor has refused to execute the oath or declaration under 37 CFR 1.63. | | | | | | | | |
| If there are joint inventors, please check the appropriate box below: | | | | | | | | |
| An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive entity has been or is currently submitted. | | | | | | | | |
| OR | | | | | | | | |
| An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) has not been submitted. Thus, a Substitute Statement Supplemental Sheet (PTO/AIA/11 or equivalent) naming the entire inventive entity and providing inventor information is attached. See 37 CFR 1.64(b). | | | | | | | | |
| | WARNING: | ···· | | | | | | |
| Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. | | | | | | | | |
| PERSON EXECUTING THIS SUBSTITUTE STATEMENT: | | | | | | | | |
| Name: Pryor Garnett, Re | | March 19, 2014 Date (Optional): | | | | | | |
| Signature: PAL A Grand | | | | | | | | |
| APPLICANT NAME AND TITLE OF PERSO | | | | | | | | |
| If the applicant is a juristic entity, list the appli | | ner: | | | | | | |
| Applicant Name: | ss Machines Corporation | | | | | | | |
| Title of Person Executing This Substitute Statement: Pryor Garne | tt. Senior Counsel | | | | | | | |
| The signer, whose title is supplied above, is authorized to act on behalf of the applicant. | | | | | | | | |
| Residence of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent): | | | | | | | | |
| _{city} Portland | State OR | Country US | | | | | | |
| Mailing Address of the signer (unless pro | ovided in an application data sh | eet, PTO/AIA/14 or e | quivalent) | | | | | |
| 1385 NW Amberglen Parkway | | | | | | | | |
| _{city} Hillsboro | State OR | _{Zip} 97006 | Country US | | | | | |
| Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be found or reached after diligent effort, or has refused to execute the oath or declaration under 37 CFR 1.63. | | | | | | | | |

[Page 2 of 2]

REEL: 032538 FRAME: 0067