PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2966989

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

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------------|----------------|
| YING XIE | 01/08/2014 |
| XUAN TANG | 01/08/2014 |
| DAVID A. PARENTI | 01/08/2014 |
| JAMES ODIS PENDERGRAFT | 07/16/2014 |

RECEIVING PARTY DATA

| Name: | EMC CORPORATION |
|-----------------|------------------|
| Street Address: | 176 SOUTH STREET |
| City: | HOPKINTON |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 01748 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14135029 |

CORRESPONDENCE DATA

Fax Number: (508)366-4688

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: 508-616-2900

Email: Docket@BainwoodHuang.com

Correspondent Name: BAINWOOD, HUANG & ASSOCIATES, LLC

Address Line 1: 2 CONNECTOR ROAD

Address Line 4: WESTBOROUGH, MASSACHUSETTS 01581

| ATTORNEY DOCKET NUMBER: | 1003-281 |
|-------------------------|-----------------------------|
| NAME OF SUBMITTER: | M. ARI BEHAR |
| SIGNATURE: | /Michael Ari Behar #58,203/ |
| DATE SIGNED: | 08/04/2014 |

Total Attachments: 12

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PATENT 502920391 REEL: 033457 FRAME: 0236

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| source=1003-281 - Executed Assignment Inv 3 - David A. PARENTI#page1.tif |
| source=1003-281 - Executed Assignment Inv 3 - David A. PARENTI#page2.tif |
| source=1003-281 - Executed Assignment Inv 3 - David A. PARENTI#page3.tif |
| source=1003-281 - Executed Assignment Inv 4 - James Odis PENDERGRAFT#page1.tif |
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PATENT REEL: 033457 FRAME: 0237

EMC Docket No.: EMC-13-0543

ASSIGNMENT

WHEREAS, I, Ying Xie, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

CIM-BASED DATA STORAGE MANAGEMENT SYSTEM HAVING A RESTFUL FRONT-END

which is further identified by Attorney Docket Number 1003-281;

WHEREAS, EMC Corporation (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 176 South Street, Hopkinton, MA, 01748 desires to acquire an interest therein in accordance with agreements duly entered into with me;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention. application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made: I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

EMC Docket No.: EMC-13-0543

applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

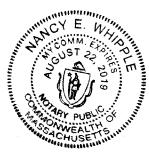
AND, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

AND I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses (14/135,029 filed on December 19, 2013) the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT Attorney Docket No.: 1003-281 EMC Docket No.: EMC-13-0543

| Date: 1/8/2014 | 5nin |
|--|---|
| | Inventor's Signature |
| Legal name of inventor: | Ying Xie |
| Residence: | 43 Old Mill Road |
| | Harvard, MA 01451 |
| | United States of America |
| Citizenship: | US |
| Mailing Address: | Same as above |
| | |
| STATE/COMMONWEALTH OF Mass | achuse Hs |
| COUNTY OF Mid | dlesex |
| identification [] employee identification (EMC Badge Identification to | card; [] driver's license; [\(\sum \) (other) be the person whose name is subscribed to ged that he/she executed the same as his/her |
| | |
| | Mariey & Whipple Notary Public |
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| | Print Name: |
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| | My Commission expires <u>08</u> 1 <u>22</u> 1 <u>201</u> 9 |
| | |



EMC Docket No.: EMC-13-0543

ASSIGNMENT

WHEREAS, I, <u>Xuan Tang</u>, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

CIM-BASED DATA STORAGE MANAGEMENT SYSTEM HAVING A RESTFUL FRONT-END

which is further identified by Attorney Docket Number 1003-281;

WHEREAS, EMC Corporation (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 176 South Street, Hopkinton, MA, 01748 desires to acquire an interest therein in accordance with agreements duly entered into with me;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

PATENT ASSIGNMENT

Attorney Docket No.: 1003-281 EMC Docket No.: EMC-13-0543

applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

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IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT Attorney Docket No.: 1003-281 EMC Docket No.: EMC-13-0543

| Date: 1/8/2014 | 282 |
|---|---|
| | Inventor's Signature |
| Legal name of inventor: | Xuan Tang |
| Residence: | 6 Prestwick Drive |
| | Hopkinton, MA 01748 |
| | United States of America |
| Citizenship: | CN |
| Mailing Address: | Same as above |
| | |
| STATE/COMMONWEALTH OF Mass | achusi Hs |
| 277.00 | TO SEA |
| me the above-named Xuan Tang known to identification [] employee identification to | card; [] driver's license; [\sum_] (other) be the person whose name is subscribed to ged that he/she executed the same as his/her |
| | Morry & Whippele Notary Public |
| | Notary Public |
| | Print Name: |
| | Manch E. Whioole |
| | Mancy E. Whipple My Commission expires 08 1 2019 |
| AND COMMINION OF THE PROPERTY | E. WHO DES |

EMC Docket No.: EMC-13-0543

ASSIGNMENT

WHEREAS, I, <u>David A. Parenti</u>, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

CIM-BASED DATA STORAGE MANAGEMENT SYSTEM HAVING A RESTFUL FRONT-END

which is further identified by Attorney Docket Number 1003-281;

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NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

PATENT ASSIGNMENT Attorney Docket No.: 1003-281 EMC Docket No.: EMC-13-0543

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IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT Attorney Docket No.: 1003-281 EMC Docket No.: EMC-13-0543

| Date: 1/8/14 | 12112 |
|--|---|
| | Inventor's Signature |
| Legal name of inventor: | David A. Parenti |
| Residence: | 12 Valley Brook Road |
| | Westborough, MA 01581 |
| | United States of America |
| Citizenship: | US |
| Mailing Address: | Same as above |
| | |
| STATE/COMMONWEALTH OF Massa COUNTY OF Min | |
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| | Mancy E. Whipple |
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EMC Docket No.: EMC-13-0543

ASSIGNMENT

WHEREAS, I, <u>James Odis Pendergraft</u>, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

CIM-BASED DATA STORAGE MANAGEMENT SYSTEM HAVING A RESTFUL FRONT-END

which is further identified by Attorney Docket Number 1003-281;

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NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in ail countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

EMC Docket No.: EMC-13-0543

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IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal as set forth below:

PATENT ASSIGNMENT Attorney Docket No.: 1003-281 EMC Docket No.: EMC-13-0543

| Date: 7/16/14 | Jan Den St |
|-------------------------------|---|
| • | Inventor's Signature |
| Legal name of inventor: | James Odis Pendergraft |
| Residence: | 5512 Blue Sage Drive |
| | Raleigh, NC 27606 |
| | United States of America |
| Citizenship: | US |
| Mailing Address: | Same as above |
| me the above-named James Odis | North Carolina Ovange , 20_14, then personally appeared before Pendergraft known to me through satisfactory oyee identification card; driver's license; |
| (other) | to be the person whose name is ment and acknowledged that he/she executed the |
| | for the purposes therein contained. |
| | Oudrey d. Craig Notary Public |
| | • |
| | Print Name: Audrey L. Craig My Commission expires 8/17/2018 |