

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT5262046

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
KUMARI BIJAYALAXMI NANDA	10/30/2018
ALEXANDER S. MATHEWS	10/29/2018
SOUMYADEEP SEN	10/30/2018
MICHAL MARKO	10/30/2018
RECEIVING PARTY DATA	
Name:	EMC IP HOLDING COMPANY LLC
Street Address:	176 SOUTH STREET
City:	HOPKINTON
State/Country:	MASSACHUSETTS
Postal Code:	01748
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16176482
CORRESPONDENCE DATA	
Fax Number:	(508)366-4688
<i>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.</i>	
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:	1003-648
NAME OF SUBMITTER:	DAVID E. HUANG, ESQ.
SIGNATURE:	/David E. Huang, Reg. No. 39,229/
DATE SIGNED:	12/03/2018
Total Attachments: 12	
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ASSIGNMENT

WHEREAS, I, Kumari Bijayalaxmi Nanda, 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

EFFICIENT SPACE ACCOUNTING MECHANISMS FOR TRACKING UNSHARED PAGES BETWEEN A SNAPSHOT VOLUME AND ITS PARENT VOLUME

which is further identified by Attorney Docket Number 1003-648;

WHEREAS, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the state of Delaware and having a usual place of business at 176 South Street, Hopkinton, MA, 01748, USA, 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;

AND, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other

lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation 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

(16/176,482 , filed 10/31/2018)

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 10/30/2018

Bijayalaxmi
Inventor's Signature

Legal name of inventor: Kumari Bijayalaxmi Nanda
Residence: 159 Westgate Dr
Edison, NJ 08820
United States of America
Mailing Address: Same as Above
Citizenship: IN

I Walker Forneta (name) whose residential address is
21 MAGNUM CT, BERKELEY HILLS, NJ 07922

was personally present and did see Kumari Bijayalaxmi Nanda (name of person signing the assignment) who is personally known to me, execute the above assignment.

WLF (signature of first witness)

Signed at WARREN, NJ (location of witness signature)

on this day 10/30 of 20 18. (date of signature)

I Jerald Gross (name) whose residential address is

6 Traci Lane Edison, NJ 08817

was personally present and did see Kumari Bijayalaxmi Nanda (name of person signing the assignment) who is personally known to me, execute the above assignment.

Jerald G. Gross (signature of second witness)

Signed at Warren, NJ (location of witness signature)

on this day 10/30 of 20 18. (date of signature)

ASSIGNMENT

WHEREAS, I, Alexander S. Mathews, 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

EFFICIENT SPACE ACCOUNTING MECHANISMS FOR TRACKING UNSHARED PAGES BETWEEN A SNAPSHOT VOLUME AND ITS PARENT VOLUME

which is further identified by Attorney Docket Number 1003-648;

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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;

AND, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other

lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation 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

(16/176,482 , filed 10/31/2018)

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 10/29/2018

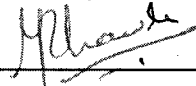


Inventor's Signature

Legal name of inventor: Alexander S. Mathews
Residence: 4 Prince Edward Road
Morganville, NJ 07751-1311
United States of America
Mailing Address: Same as Above
Citizenship: US

I ROHIT CHAWLA (name) whose residential address is
6 MICHAEL LN. SCOTCH PLAINS, NJ-07076

was personally present and did see Alexander S. Mathews (name of person signing the assignment) who is personally known to me, execute the above assignment.



(signature of first witness)

Signed at WARREN, NJ (location of witness signature)

on this day 29/Oct/2018 of 2018. (date of signature)

I Dixit Patel (name) whose residential address is
217 Morning Glory Dr. Monroe, NJ-08831

was personally present and did see Alexander S. Mathews (name of person signing the assignment) who is personally known to me, execute the above assignment.



(signature of second witness)

Signed at Warren, NJ (location of witness signature)

on this day 10/29/18 of 2018. (date of signature)

ASSIGNMENT

WHEREAS, I, Soumyadeep Sen, 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

EFFICIENT SPACE ACCOUNTING MECHANISMS FOR TRACKING UNSHARED PAGES BETWEEN A SNAPSHOT VOLUME AND ITS PARENT VOLUME

which is further identified by Attorney Docket Number 1003-648;

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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;

AND, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other

lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation 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

(16/176,482 , filed 10/31/2018)

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 10/30/2018




Inventor's Signature

Legal name of inventor: Soumyadeep Sen
Residence: 48D Cedar Lane
Highland Park, NJ 08904
United States of America
Mailing Address: Same as Above
Citizenship: IN

I AHSAN RASHID (name) whose residential address is
1207 YOSKO DR, EDISON NJ 08817,

was personally present and did see Soumyadeep Sen (name of person signing the assignment) who is personally known to me, execute the above assignment.



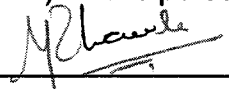
(signature of first witness)

Signed at WARREN NJ (location of witness signature)

on this day 10/30 of 2018. (date of signature)

I ROHIT CHAWLA (name) whose residential address is
6 MICHAEL LN, SCOTCH PLAINS, NJ-07076,

was personally present and did see Soumyadeep Sen (name of person signing the assignment) who is personally known to me, execute the above assignment.



(signature of second witness)

Signed at WARREN, NJ (location of witness signature)

on this day 10/30 of 2018. (date of signature)

ASSIGNMENT

WHEREAS, I, Michal Marko, 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

EFFICIENT SPACE ACCOUNTING MECHANISMS FOR TRACKING UNSHARED PAGES BETWEEN A SNAPSHOT VOLUME AND ITS PARENT VOLUME

which is further identified by Attorney Docket Number 1003-648;

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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;

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AND I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses

(10/176,482 , filed 10/31/2018)

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 10/30/18



Inventor's Signature

Legal name of inventor: Michal Marko
Residence: 30 Montrose Avenue
Fanwood, NJ 07023
United States of America
Mailing Address: Same as Above
Citizenship: US

I AHSAN RASHID (name) whose residential address is
1207 YOSKO DR. EDISON NJ 08817,

was personally present and did see Michal Marko (name of person signing the assignment) who is personally known to me, execute the above assignment.



(signature of first witness)

Signed at WARREN, NJ (location of witness signature)

on this day 10/30 of 2018. (date of signature)

I ROHIT CHAWLA (name) whose residential address is
6 MICHAEL LN. SCOTCH PLAINS, NJ 07076,

was personally present and did see Michal Marko (name of person signing the assignment) who is personally known to me, execute the above assignment.



(signature of second witness)

Signed at WARREN, NJ (location of witness signature)

on this day 10/30 of 2018. (date of signature)