504531973 09/05/2017

EPAS ID: PAT4578679

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

SUBMISSION TYPE: NEW ASSIGNMENT NATURE OF CONVEYANCE: ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ROBERT P. FOLEY	08/28/2017
PETER PUHOV	08/22/2017
ASHOK TAMILARASAN	08/22/2017

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:	15661679

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

BAINWOOD, HUANG & ASSOCIATES, LLC **Correspondent Name:**

Address Line 1: 2 CONNECTOR ROAD

Address Line 4: WESTBOROUGH, MASSACHUSETTS 01581

ATTORNEY DOCKET NUMBER:	1003-556
NAME OF SUBMITTER:	RICHARD E. GAMACHE, ESQ.
SIGNATURE:	/Richard E. Gamache/
DATE SIGNED:	09/05/2017

Total Attachments: 9

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PATENT REEL: 043483 FRAME: 0652 504531973

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PATENT REEL: 043483 FRAME: 0653

PATENT ASSIGNMENT Attorney Docket No.: 1003-556

Client Docket No.: EMC-17-0166

ASSIGNMENT

WHEREAS, I, Robert P. Foley, 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

MAPPED RAID RESTRIPE FOR IMPROVED DRIVE UTILIZATION

which is further identified by Attorney Docket Number 1003-556;

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

-1-

PATENT ASSIGNMENT Attorney Docket No.: 1003-556 Client Docket No.: EMC-17-0166

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

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

PATENT ASSIGNMENT
Attorney Docket No.: 1003-556
Client Docket No.: EMC-17-0166

Date: 8/28/17	Inventor's Signature	
Legal name of inventor:	Robert P. Foley	
Residence:	705C Ridgefield Circle Clinton, MA 01510 United States of America	
Mailing Address: Citizenship:	Same as Above US	
	(name) whose residential address is	
was personally present and did see Robert P. Foley (name of person signing the assignment) who is personally known to me, execute the above assignment.		
Troce	(signature of first witness)	
Signed at $\frac{228 \text{ South 5t. Hbpk/nton mA}}{\text{of 2017.}}$ (date of signature)		
on this day <u>A4945+28</u>	of 20 <u>/7</u> . (date of signature)	
1 SHWYU LEE 99 SKYLINE DR.	(name) whose residential address is ACTOW, MA 01720	
was personally present and did see Robert P. Foley (name of person signing the assignment) who is personally known to me, execute the above assignment.		
Shufr Ll	(signature of second witness)	
Signed at 228 South St. Hepkinten MA (location of witness signature)		
on this day 14995+ 28	of 20 <u>/ 7</u> . (date of signature)	

PATENT ASSIGNMENT Attorney Docket No.: 1003-556

Client Docket No.: EMC-17-0166

<u>ASSIGNMENT</u>

WHEREAS, I, <u>Peter Puhov</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

MAPPED RAID RESTRIPE FOR IMPROVED DRIVE UTILIZATION

which is further identified by Attorney Docket Number 1003-556;

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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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-1-

PATENT ASSIGNMENT Attorney Docket No.: 1003-556

Client Docket No.: EMC-17-0166

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

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

PATENT ASSIGNMENT Attorney Docket No.: 1003-556 Client Docket No.: EMC-17-0166

Date: 08/22/2017	
	Inventor's Signature
Legal name of inventor:	Peter Puhov
Residence:	521 Grafton Street Shrewsbury, MA 01545 United States of America
Mailing Address: Citizenship:	Same as Above US
Marc Cassano 2 Robinson Rd., Ma	(name) whose residential address is endon, MA 01756,
was personally present and did see I assignment) who is personally know	Peter Puhov (name of person signing the n to me, execute the above assignment.
	(signature of first witness)
Signed at 228 South St. Hopk	of 2017. (date of signature)
on this day 8/22	of 20 <u>17</u> . (date of signature)
	(name) whose residential address is
12 WINIFRED AVE, WO	RCESTER MA 0160Z
was personally present and did see <u>F</u>	Peter Puhov (name of person signing the name to me, execute the above assignment.
Int la	(signature of second witness)
Signed at ZZ8 South St. Ho	pkin hm np (location of witness signature)
on this day 8 22	of 20) 7 (date of signature)

PATENT ASSIGNMENT Attorney Docket No.: 1003-556

Client Docket No.: EMC-17-0166

ASSIGNMENT

WHEREAS, I, <u>Ashok Tamilarasan</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

MAPPED RAID RESTRIPE FOR IMPROVED DRIVE UTILIZATION

which is further identified by Attorney Docket Number 1003-556;

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

-1-

PATENT ASSIGNMENT

Attorney Docket No.: <u>1003-556</u> Client Docket No.: EMC-17-0166

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

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

PATENT ASSIGNMENT Attorney Docket No.: 1003-556 Client Docket No.: EMC-17-0166

Date: 08 22 17	Inventor's Signature	
Legal name of inventor:	Ashok Tamilarasan	
Residence:	9 Sandpiper Drive Shrewsbury , MA 01545 United States of America	
Mailing Address: Citizenship:	Same as Above IN	
Marc Cassano 2 Robinson Rd., M	(name) whose residential address is	
was personally present and did see <u>Ashok Tamilarasan</u> (name of person signing the assignment) who is personally known to me, execute the above assignment.		
Mare Cassano	(signature of first witness)	
Signed at 228 South St. Hackinton (location of witness signature)		
on this day $8/22$	of 20 <u>/7</u> . (date of signature)	
	(name) whose residential address is	
12 WINIFRED WE WORD	ETTER MA 01602	
	Ashok Tamilarasan (name of person signing the n to me, execute the above assignment.	
Minon	(signature of second witness)	
•	Linton, MP (location of witness signature)	
on this day 8 22	of 20 /). (date of signature)	