

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
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EPAS ID: PAT4704326

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	WILLIAM C. DAVENPORT	11/20/2017
	YINGCHAO ZHOU	11/23/2017
<b>RECEIVING PARTY DATA</b>		
<b>Name:</b>	EMC IP HOLDING COMPANY LLC	
<b>Street Address:</b>	176 SOUTH STREET	
<b>City:</b>	HOPKINTON	
<b>State/Country:</b>	MASSACHUSETTS	
<b>Postal Code:</b>	01748	
<b>PROPERTY NUMBERS Total: 1</b>		
	<b>Property Type</b>	<b>Number</b>
	Application Number:	15085289
<b>CORRESPONDENCE DATA</b>		
<b>Fax Number:</b>	(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>		
<b>Phone:</b>	508-616-2900	
<b>Email:</b>	Docket@BainwoodHuang.com	
<b>Correspondent Name:</b>	BAINWOOD, HUANG & ASSOCIATES, LLC	
<b>Address Line 1:</b>	2 CONNECTOR ROAD	
<b>Address Line 4:</b>	WESTBOROUGH, MASSACHUSETTS 01581	
<b>ATTORNEY DOCKET NUMBER:</b>	1003-412	
<b>NAME OF SUBMITTER:</b>	JAMES F. THOMPSON, ESQ.	
<b>SIGNATURE:</b>	/James F. Thompson/	
<b>DATE SIGNED:</b>	11/27/2017	
<b>Total Attachments: 6</b>		
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source=1003-412-Executed-Assignment-Inv3#page2.tif		
source=1003-412-Executed-Assignment-Inv3#page3.tif		
source=1003-412-Executed-Assignment-Inv5#page1.tif		
source=1003-412-Executed-Assignment-Inv5#page2.tif		



**ASSIGNMENT**

**WHEREAS**, I, William C. Davenport, 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

**DATA STORAGE SYSTEM EMPLOYING SPACE RECLAIM APPROXIMATION**

which is further identified by Attorney Docket Number 1003-412;

**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

( 15/085,289 , filed 3/30/2016 )

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: 11/20/2017

William C. Davenport  
Inventor's Signature

Legal name of inventor: William C. Davenport  
Residence: 3852 Alameda Pl.  
San Diego, CA 92103  
United States of America  
Mailing Address: Same as Above  
Citizenship: US

I, SAMUEL C. HOWARTH (name) whose residential address is  
3435 CHANDLER WAY SAN DIEGO CA,

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

Samuel C. Howarth (signature of first witness)

Signed at SAN DIEGO (location of witness signature)

on this day 11-20-17 of 2017. (date of signature)

Samuel C. Howarth

I, KELLY F. NELSON (name) whose residential address is  
925 LINVIEW AVE ESCOBEDO CA 92026,

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

Kelly F. Nelson (signature of second witness)

Signed at SAN DIEGO (location of witness signature)

on this day 11/20/17 of 2017. (date of signature)

**ASSIGNMENT**

**WHEREAS**, I, Yingchao Zhou, 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

**DATA STORAGE SYSTEM EMPLOYING SPACE RECLAIM APPROXIMATION**

which is further identified by Attorney Docket Number 1003-412;

**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

( 15/085,289 , filed 3/30/2016 )

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.: 1003-412  
Client Docket No.: EMC-14-0026-US

Date: 11/23/2017

Yingchao Zhou  
Inventor's Signature

Legal name of inventor:

Yingchao Zhou

Residence:

4-401, Building 5, An Ding Men Wai  
(Sheng Gu Jia Yuan), Chaoyang District  
Beijing, 100029  
China (People's Republic)

Mailing Address:

Same as Above

Citizenship:

CN

I Edmond Liu (name) whose residential address is

401, build 6, XinRuiJia Yuan, Haidian District, Beijing City

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

Edmond Liu (signature of first witness)

Signed at Tsinghua Science Park (location of witness signature)

on this day 11/23 of 20 17 (date of signature)

I Lester Zhang (name) whose residential address is

201, build 121 Longfor Yuan, Shunyi District, Beijing City

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

Lester Zhang (signature of second witness)

Signed at Tsinghua Science Park (location of witness signature)

on this day 11/23 of 20 17 (date of signature)