

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Marten van Dijk</td> <td>03/18/2013</td> </tr> <tr> <td>Nikolaos Triandopoulos</td> <td>02/12/2013</td> </tr> <tr> <td>Ari Juels</td> <td>02/12/2013</td> </tr> <tr> <td>Ronald Rivest</td> <td>04/04/2013</td> </tr> </tbody> </table>		Name	Execution Date	Marten van Dijk	03/18/2013	Nikolaos Triandopoulos	02/12/2013	Ari Juels	02/12/2013	Ronald Rivest	04/04/2013
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Marten van Dijk	03/18/2013										
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RECEIVING PARTY DATA											
<table border="1"> <tr> <td>Name:</td> <td>EMC Corporation</td> </tr> <tr> <td>Street Address:</td> <td>176 South Street</td> </tr> <tr> <td>City:</td> <td>Hopkinton</td> </tr> <tr> <td>State/Country:</td> <td>MASSACHUSETTS</td> </tr> <tr> <td>Postal Code:</td> <td>01748</td> </tr> </table>		Name:	EMC Corporation	Street Address:	176 South Street	City:	Hopkinton	State/Country:	MASSACHUSETTS	Postal Code:	01748
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PROPERTY NUMBERS Total: 1											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13728271</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13728271						
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CORRESPONDENCE DATA											
<p>Fax Number: 2032556570 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: 203 255 6560 Email: car@rml-law.com</p> <p>Correspondent Name: Ryan, Mason & Lewis, LLP Address Line 1: 1300 Post Road Address Line 2: Suite 205 Address Line 4: Fairfield, CONNECTICUT 06824</p>											
ATTORNEY DOCKET NUMBER:	EMC-12-580										
NAME OF SUBMITTER:	Michael J. Cooper										
Signature:	/Michael J. Cooper/										

OP \$40.00 13728271

PATENT

Date:

05/01/2013

Total Attachments: 6

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RECORDATION FORM COVER SHEET PATENTS ONLY

U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office

(Rev.6-93)

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Marten van Dijk, Nikolaos Triandopoulos,
Ari Juels, Ronald Rivest

Additional name(s) of conveying party(ies)
attached?

☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other

Execution Date: March 18, 2013, February 12, 2013,
April 4, 2013

2. Name and address of receiving party(ies)

Name: EMC Corporation

Internal Address:

Street Address: 176 South Street

City: Hopkinton State: MA ZIP: 01748

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s) 13/728,271 Filed December 27, 2012 B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Kevin M. Mason

Internal Address: Ryan, Mason & Lewis, LLP

Street Address: 1300 Post Road, Suite 205

City: Fairfield State: CT ZIP: 06824

6. Total number of applications and patents involved: 1

7. Total Fee (37 CFR 3.41)..... \$ 40.00

☐ Enclosed

☒ Authorized to be charged to deposit account

8. Deposit account number 50-0762

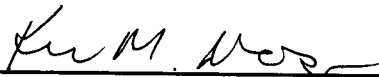
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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Kevin M. Mason

Reg. No. 36,597



Signature

May 1, 2013

Date

Total number of pages including cover sheet, attachments, and document: 6

Do not detach this portion

Mail documents to be recorded with required cover sheet information to:

Commissioner of Patents and Trademarks

Box Assignments

Washington, DC 20231

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EMC-12-580

PATENT
REEL: 030324 FRAME: 0432

ASSIGNMENT

WHEREAS, we, Marten van Dijk, Nikolaos Triandopoulos, Ari Juels, and Ronald Rivest 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 **FORWARD SECURE PSEUDORANDOM NUMBER GENERATION RESILIENT TO FORWARD CLOCK ATTACKS**, the specification of which:

- ☐ is being executed on even date herewith and is about to be filed in the United States Patent Office;
- ☒ was filed on December 27, 2012 as U.S. Application No. 13/728,271;
- ☐ was patented under U.S. Patent No. _____ on _____.

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, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

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, we 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 us had this assignment and sale not been made; we 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. We 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, we hereby further agree for ourselves and our 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,

PATENT/Joint Assignment
Attorney Docket No.: EMC-12-580

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, we 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.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals as set forth below:

Date:

3/18/2013



Inventor's Signature

Print full name of first inventor:

Marten van Dijk

Residence:

Somerville, Massachusetts

Citizenship:

Netherlands

Mailing Address:

19 Trull Street #2

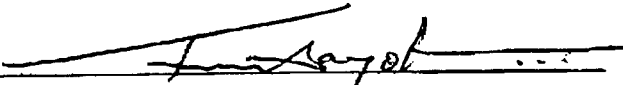
Somerville, Massachusetts 02145

STATE/Commonwealth of
COUNTY OF

Massachusetts
MIDDLESEX

On this 18th day of MARCH, 2013, then personally appeared before me the above-named Marten Erik van Dijk known to me through satisfactory evidence of identification ☐ employee identification card; ☒ driver's license; ☐ (other)

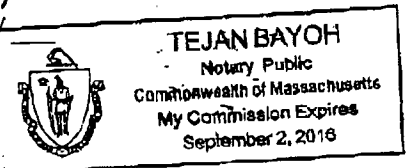
_____ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.


Notary Public

Print Name:

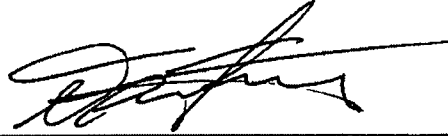
TEJAN BAYOH

My Commission expires ___/___/___



Date:

2/12/13



Inventor's Signature

Print full name of second inventor:

Nikolaos Triandopoulos

Residence:

Arlington, Massachusetts

Citizenship:

Greece

Mailing Address:

73 Bartlett Avenue

Arlington, Massachusetts 02476

STATE/Commonwealth of
COUNTY OF

MA

Middlesex

On this 12 day of February, 2013, then personally appeared before me the above-named Nikolaos Triandopoulos known to me through satisfactory evidence of identification ☐ employee identification card; ☒ driver's license; ☐ (other) _____ to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.



Notary Public

Print Name: Kim Pham

My Commission expires 2/22/2019



KIM-CUC PHAM
Notary Public
Commonwealth of Massachusetts
My Commission Exp. Feb. 22, 2019

Date:

4 Apr. 2013

Ari Juels
Inventor's Signature

Print full name of third inventor:

Ari Juels

Residence:

Brookline, Massachusetts

Citizenship:

United States of America

Mailing Address:

55 Station Street, Apt. 3B

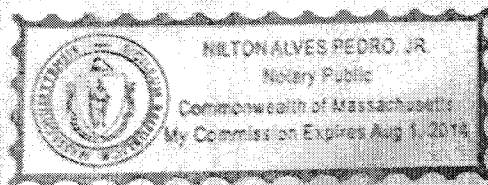
Brookline, Massachusetts 02445

STATE/COMMONWEALTH OF
COUNTY OF

Massachusetts
Middlesex

On this 4th day of April, 2013, then personally appeared before me the
above-named Ari Juels known to me through satisfactory evidence of identification ☐
employee identification card; ☒ driver's license; ☐ (other)

_____ to be the person whose name is subscribed to the
foregoing Assignment and acknowledged that he/she executed the same as his/her free act and
deed for the purposes therein contained.



Milton A. Pedro Jr.
Notary Public

Print Name:

Milton A. Pedro Jr.

My Commission expires

8/1/14

Date: 1/24/13

Ronald L. Rivest
Inventor's Signature

Print full name of fourth inventor: Ronald Rivest
Residence: Arlington, Massachusetts
Citizenship: United States of America
Mailing Address: 41 Academy Street
Arlington, Massachusetts 02476

STATE/Commonwealth of Massachusetts
COUNTY OF Middlesex

On this 24 day of January, 2013, then personally appeared before me the above-named Ronald Rivest known to me through satisfactory evidence of identification [] employee identification card; [☒] driver's license; [] (other) Ronald L. Rivest to be the person whose name is subscribed to the foregoing Assignment and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Holly Jones
Notary Public

Print Name: Holly Jones
My Commission expires 3/9/2018

