PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ARI JUELS	05/10/2013
NIKOLAOS TRIANDOPOULOS	04/16/2013
MARTEN VAN DIJK	06/09/2014
JOHN BRAINARD	04/16/2013
RONALD RIVEST	04/29/2013
KEVIN BOWERS	04/17/2013

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:	13837259

CORRESPONDENCE DATA

Fax Number: (203)255-6570

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: 2032556560 Email: car@rml-law.com KEVIN M. MASON **Correspondent Name:**

Address Line 1: 1175 POST ROAD EAST Address Line 2: RYAN, MASON & LEWIS, LLP

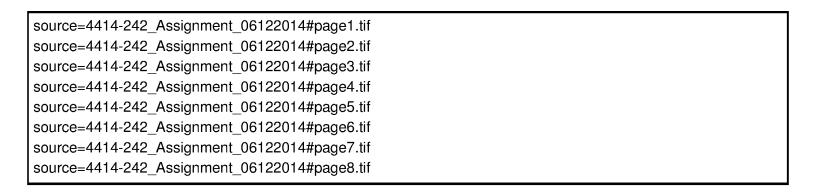
Address Line 4: WESTPORT, CONNECTICUT 06880

ATTORNEY DOCKET NUMBER: EMC-12-1069 KEVIN M. MASON NAME OF SUBMITTER: **SIGNATURE:** /Kevin M. Mason/ **DATE SIGNED:** 06/12/2014

Total Attachments: 8

REEL: 033087 FRAME: 0366 502848615

PATENT



PATENT REEL: 033087 FRAME: 0367 FORM PTO-1595 (Rev.6-93)

EMC-12-1069

RECORDATION FORM COVER SHEET PATENTS ONLY

U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof. 1. Name of conveying party(ies): 2. Name and address of receiving party(ies) Ari Juels, Nikolaos Triandopoulos, Marten van Dijk, John Brainard, Ronald Rivest. **Name: EMC Corporation Kevin Bowers** Additional name(s) of conveying party(ies) **Internal Address:** attached? Yes X No **Street Address: 176 South Street** 3. Nature of conveyance: City: Hopkinton State: MA ZIP: 01748 X Assignment _ Merger _ Security Agreement Change of Name Additional name(s) & address(es) attached? Yes X No Other **Execution Date: May 10, 2013, April 16, 2013,** June 9, 2014, April 16, 2013, April 29, 2013, **April 17, 2013** 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) 13/837,259 Filed March 15, 2013 B. Patent No.(s) Additional numbers attached? _ Yes X No 5. Name and address of party to whom 6. Total number of applications and patents correspondence concerning document should be involved: mailed: 7. Total Fee (37 CFR 3.41)..... \$ 40.00 Name: Kevin M. Mason Enclosed Internal Address: Ryan, Mason & Lewis, LLP Authorized to be charged to deposit account **Street Address: 1175 Post Road East** City: Westport State: CT ZIP: 06880 8. Deposit account number 50-0762 DO NOT USE THIS SPACE 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 /Kevin M. Mason/ June 12, 2014 Reg. No. 36,597 Signature Date Total number of pages including cover sheet, attachments, and document: 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 Public burden reporting for this sample cover sheet is estimated to average about 30 minutes per document to be recorded, including time for reviewing the document and gathering the data needed, and completing and reviewing the sample cover sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Office of Information Systems, PK2-1000C, Washington, DC, 20231, and to the Office of Management and Budget, Paperwork Reduction Project (0651-0011), Washington, DC 20503.

> PATENT REEL: 033087 FRAME: 0368

ASSIGNMENT

WHEREAS, we, Ari Juels, Nikolaos Triandopoulos, Marten van Dijk, John Brainard, Ronald Rivest, and Kevin Bowers, 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 CONFIGURABLE ONE-TIME AUTHENTICATION TOKENS WITH IMPROVED RESILIENCE TO ATTACKS, the specification of which:

[]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
[X]	was filed on March 15, 2013 as U.S. Application No. 13/837,259;
[]	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

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the execution of applications for patents at foreign evaluates, and the execution of substitution, russed, divisional or continuation applications and preliminary of other substitutions and the giving of destinous in any interference of other proceeding in which said invention of 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 scalls as set forth below:

Date: 10 Hay 2013	AV M
	Inventor's Signature
Print full name of first inventor:	Ari Juels
Residence:	Brookline, Massachusetts
Citizenship:	United States of America
Mailing Address:	55 Station Street, Apr 3B
	Brookline, Massachusetts 02445
STATE/COMMONWEALTH OF	Massifishs Millish
employee identification card: [左] driv to be the person whose name is subscri	20/3, then personally appeared before me the arough satisfactory evidence of identification [], er's license; [] (other) ibed to the foregoing Assignment and acknowledged that we act and deed for the purposes therein contained.
	A-AL-SUN
NILTON ALVES PEDRO JR	Notary Public
Notary Public Common wealth of Massachusetts	Print Name: N//c/1 ///22
My Commission Expires Aug 1, 2014	My Commission expires $\frac{\partial}{\partial x} \left(\frac{1}{2} \right) \left(\frac{1}{2} \right) = \frac{1}{2} \left(\frac{1}{2} \right) $

Date: 4/16/13	Tark
7	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	waggessex
above-named Nikolaos Triandopoulo identification [V] employee identification to be the	, 2013, then personally appeared before me the sknown to me through satisfactory evidence of cation card; [_] driver's license; [_] (other) person whose name is subscribed to the foregoing ne/she executed the same as his/her free act and deed for the
	Notary Public
	Print Name Sec Colec
	My Commission expires 4 05/0019
•	KRISTEN CAIZZI Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires April 25, 2019

Date Date	Marten van Dijk
On this 9th day of June, 20 14 known to be the individual who executed the of the same.	_, before me personally came Marten van Dijk, to me are foregoing instrument, and acknowledged execution
Witness 1: $\frac{6/09/2014}{\text{Date}}$	SyED KAMRAN HAIDER Name Signature
Witness 2:	MASAB AHMAD Name
06/09/2014 Date	MaleSignature

Date: 4/16/13	John J. Ron	
	Inventor's Signature	
Print full name of fourth inventor:	John Brainard	
Residence:	Sudbury, Massachusetts	
Citizenship:	United States of America	
Mailing Address:	16 Aaron Road	
	Sudbury, Massachusetts 01776	
STATE/COMMONWEALTH OF COUNTY OF	massachsetts	
On this		
•	Notary Public	
	Print Name:	
	My Commission expires 4 /25/2019	
	KRISTEN CAIZZI Notary Public COMMONWEALTH OF MASSACHUSETTS	
	My Commission Expires April 25, 2019	

Date: 4/24/13	Rould I. Rivet
	Inventor's Signature
Print full name of fifth inventor:	Ronald Rivest
Residence:	Arlington, Massachusetts
Citizenship:	United States of America
Mailing Address:	41 Academy Street
	Arlington, Massachusetts 02476
	hiddlesex
above-named Ronald Rivest known to nemployee identification card; [] drive to be the person whose name is subscrib	, 20_13 then personally appeared before me the me through satisfactory evidence of identification [] er's license; [] (other) bed to the foregoing Assignment and acknowledged that eact and deed for the purposes therein contained.
	Holly Jones
	Print Name: 1019 50005 My Commission expires 3/9/2018
	HOLLY JONES Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires March 9, 2018

Date: 4/17/2013	Thum O Bours
-	Inventor's Signature
Print full name of sixth inventor:	Kevin Bowers
Residence:	Melrose, Massachusetts
Citizenship:	United States of America
Mailing Address:	249 Tremont Street
	Melrose, Massachusetts 02176
STATE/COMMONWEALTH OF	The state of the s
COUNTY OF	xocalla.
above-named Kevin Bowers known to me threemployee identification card; [] driver's lic	the foregoing Assignment and acknowledged that
	KRISTEN CAIZZI Notary Public COMMONWEALTH OF MASSACHUSETTS My Commission Expires April 25, 2019