

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4515320

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	BJORN MARKUS JAKOBSSON	04/04/2016
<b>RECEIVING PARTY DATA</b>		
<b>Name:</b>	CRYPTO RESEARCH, LLC	
<b>Street Address:</b>	118 RAMONA ROAD	
<b>City:</b>	PORTOLA VALLEY	
<b>State/Country:</b>	CALIFORNIA	
<b>Postal Code:</b>	94028	
<b>PROPERTY NUMBERS Total: 1</b>		
	<b>Property Type</b>	<b>Number</b>
	Application Number:	15656549
<b>CORRESPONDENCE DATA</b>		
<b>Fax Number:</b>	(631)393-6271	
<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>	631-393-6270	
<b>Email:</b>	nyoffice@rml-law.com	
<b>Correspondent Name:</b>	JOSEPH B. RYAN	
<b>Address Line 1:</b>	48 SOUTH SERVICE ROAD, SUITE 100	
<b>Address Line 2:</b>	RYAN, MASON & LEWIS, LLP	
<b>Address Line 4:</b>	MELVILLE, NEW YORK 11747	
<b>ATTORNEY DOCKET NUMBER:</b>	1595-2 CON6	
<b>NAME OF SUBMITTER:</b>	JOSEPH B. RYAN	
<b>SIGNATURE:</b>	/joseph b. ryan/	
<b>DATE SIGNED:</b>	07/21/2017	
<b>Total Attachments: 6</b>		
source=1595-2 CON6_SUPPASM#page1.tif		
source=1595-2 CON6_SUPPASM#page2.tif		
source=1595-2 CON6_SUPPASM#page3.tif		
source=1595-2 CON6_SUPPASM#page4.tif		
source=1595-2 CON6_SUPPASM#page5.tif		



## **SUPPLEMENTAL ASSIGNMENT AGREEMENT**

WHEREAS, the undersigned, Bjorn Markus Jakobsson, (hereinafter, "Assignor") executed an Assignment of Patent Portfolio (hereinafter, "Assignment") on November 28, 2015, to Crypto Research, LLC (hereinafter, "Crypto Research"), a limited liability company organized under the laws of the state of California and having a principal place of business at 118 Ramona Road, Portola Valley, California 94028.

WHEREAS, under the Assignment the Assignor sold, assigned and transferred the entire right, title and interest, for the United States of America and its Territories and Commonwealth and Possessions, and for all other countries throughout the world, in and to all inventions and improvements disclosed in the intellectual property identified in the Schedule attached thereto, including the identified U.S. and foreign patents and patent applications entitled "Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications" and claiming priority to U.S. Provisional Patent Application Serial No. 60/284,001, and any additional patents that have issued or may issue or patent applications that have been filed or may be filed claiming priority to any of the patents or patent applications identified in the Schedule, as well as the rights for all patents, divisions, reissues, re-examination certificates, continuing applications and extensions thereof, together with the right of priority of any earlier corresponding patent application filed by the undersigned in the United States or elsewhere (hereinafter, "Patent Portfolio").

WHEREAS, a true copy of the Assignment including the Schedule is attached hereto as Exhibit 1.


WHEREAS, the undersigned confirms the Assignment and reaffirms the validity, enforceability and continued effectiveness thereof.

WHEREAS, this Supplemental Assignment Agreement serves to clarify and otherwise supplement, but not supersede, the Assignment so as to make clear the Assignor's intent to sell, assign and transfer the right to sue for any and all past infringement of the Patent Portfolio, or any part thereof, that occurred prior to execution of the Assignment on November 28, 2015, in the United States of America, its Territories and Commonwealth and Possessions, or in any other countries throughout the world, to Crypto Research and to Crypto Research's successors, assigns and legal representatives or nominees as it may designate (collectively, hereinafter, "Assignee").

THEREFORE, for value received and hereby acknowledged, the undersigned hereby sells, assigns and transfers to Assignee, the right to sue for any and all past infringement of the Patent Portfolio, or any part thereof, that occurred prior to execution of the Assignment on November 28, 2015, in the United States of America, its Territories and Commonwealth and Possessions, or in any other countries throughout the world, including the right to collect and receive any damages, royalties, settlements or other payments for such past infringement, to the extent, if any, that the Assignment did not previously convey same to Assignee.

Date:

April 4, 2016



Assignor's Signature

Print full name of Assignor:

Bjorn Markus Jakobsson

Residence:

Portola Valley, California

Citizenship:

United States of America

Mailing Address:

118 Ramona Road

Portola Valley, California 94028

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF  
COUNTY OF

California  
San Mateo

Jorge Galvez, Notary Public

On this 4<sup>th</sup> day of April, 20 16, before me appeared Bjorn Markus Jakobsson who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Jorge Galvez  
Notary Public

Print Name: Jorge Galvez

My Commission expires 9/1/19

# EXHIBIT 1

## **ASSIGNMENT OF PATENT PORTFOLIO**

For value received, the undersigned sell(s), assign(s) and transfer(s) to:

**Crypto Research, LLC**

a limited liability company organized under the laws of the state of: **California**

and having a place of business at: **118 Wyndham Dr.  
Portola Valley, California 94028**

and to Assignee's successors, assigns and legal representatives or nominees as it may designate (collectively, hereinafter, "Assignee"), the entire right, title and interest, for the United States of America and its Territories and Commonwealth and Possessions, and for all other countries throughout the world, in and to all inventions and improvements disclosed in the intellectual property identified in the Schedule attached hereto, including the identified U.S. and foreign patents and patent applications entitled "Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications" and claiming priority to U.S. Provisional Patent Application Serial No. 60/284,001, and any additional patents that have issued or may issue or patent applications that have been filed or may be filed claiming priority to any of the patents or patent applications identified in the attached schedule, as well as the rights for all patents, divisions, reissues, re-examination certificates, continuing applications and extensions thereof, together with the right of priority of any earlier corresponding patent application filed by the undersigned in the United States or elsewhere.

The undersigned covenant(s) that the rights and property conveyed by this Assignment are free and clear of any encumbrance, and that the undersigned have (has) full right to convey the rights and property as expressed herein.

The undersigned authorize(s) and request(s) that any and all patents to be issued on the aforesaid patent applications be issued to Assignee.

The undersigned agree(s), when requested, without further charge to Assignee but at its expense, to communicate to Assignee or its representatives all facts known to the undersigned regarding the aforesaid inventions and improvements, testify in any legal proceeding, sign all papers, make all rightful oaths or declarations, execute all divisional, continuing, re-examination and reissue applications and generally perform all acts, which may be necessary, desirable or convenient, to aid Assignee in securing, maintaining and enforcing patents for the aforesaid inventions and improvements in the aforesaid countries, and for vesting title thereto in Assignee.

Date:

November 28, 2015



Inventor's Signature

Print full name of inventor:

Bjorn Markus Jakobsson

Residence:

Portola Valley, California

Citizenship:

United States of America

Mailing Address:

118 Wyndham Dr.,  
Portola Valley, California 94028

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF  
COUNTY OF

California  
San Mateo

Jorge Galvez, Notary Public

On this 28 day of November, 2015, before me appeared Bjorn M. Jakobsson who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



  
Notary Public

Print Name: Jorge Galvez

My Commission expires 9/01/2018

**Schedule  
Intellectual Property**

Title	Publication Information	Priority Date
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	CA 2 444 405 (A1) Oct. 24, 2002	4/16/2001
	CA 2 444 405 (C) Dec. 11, 2012	
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	EP 1 389 376 (A1) Feb. 18, 2004	4/16/2001
	EP 1 389 376 (A4) Nov. 15, 2006	
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	JP 2004-537062 (A) Dec. 9, 2004	4/16/2001
	JP 4112373 (B2) April 18, 2008	
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	US 2003/0009666 (A1) Jan. 9, 2003	4/16/2001
	US 7,404,080 (B2) July 22, 2008	
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	US 2009/0172418 (A1) July 2, 2009	4/16/2001
	US 8,086,866 (B2) Dec. 27, 2011	
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	US 2012/0303969 (A1) Nov. 22, 2011	4/16/2001
	US 8,516,262 (B2) Aug. 20, 2013	
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	US 2013/0311787 (A1) Nov. 21, 2013	4/16/2001
	US 8,990,576 (B2) March 24, 2015	
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	US Application No. 14/622,104	4/16/2001
Methods and Apparatus for Efficient Computation of One-Way Chains in Cryptographic Applications	WO 02/084944 (A1) Oct. 24, 2002	4/16/2001

**PATENT**

**RECORDED: 07/21/2017**

**REEL: 043066 FRAME: 0189**