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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
RICHARD JOHN HUGHES	09/30/2016
JANE ELIZABETH NORDHOLT	09/30/2016
CHARLES GLEN PETERSON	10/17/2016
KUSH T. TYAGI	10/14/2016
CHRISTOPHER C. WIPF	10/14/2016
RAYMOND THORSON NEWELL	10/17/2016
KEVIN P. MCCABE	08/11/2016
NICHOLAS DALLMANN	11/16/2016

RECEIVING PARTY DATA

Name:	LOS ALAMOS NATIONAL SECURITY, LLC
Street Address:	105 CENTRAL PARK SQUARE
City:	LOS ALAMOS
State/Country:	NEW MEXICO
Postal Code:	87544

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16799116

CORRESPONDENCE DATA

Fax Number: (603)433-6372

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Email: vborry@pierceatwood.com **Correspondent Name:** CHRISTOPHER A. BAXTER Address Line 1: 100 SUMMER STREET

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ATTORNEY DOCKET NUMBER: LAN-012US03 CHRISTOPHER A. BAXTER NAME OF SUBMITTER: /Christopher A. Baxter/ SIGNATURE:

PAIENI **REEL: 054178 FRAME: 0001** 506322987

Total Attachments: 10

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PATENT REEL: 054178 FRAME: 0002

ASSIGNMENT

WHEREAS, the undersigned, to wit:

Richard John HUGHES residing at 1193 San Ildefonso, Los Alamos, New Mexico 87544:

Jane Elizabeth NORDHOLT residing at 1193 San Ildefonso, Los Alamos, New Mexico 87544;

Charles Glen PETERSON residing at 1670 Solana, Los Alamos, New Mexico 87544; Kush T. TYAGI at P.O. Box 1663, MS A187, Los Alamos National Laboratory, Los Alamos, New Mexico 87545;

Christopher C. WIPF at P.O. Box 1663, Los Alamos National Laboratory, Los Alamos, New Mexico 87545;

Raymond Thorson NEWELL residing at 1944 Thomas Avenue, Santa Fe, New Mexico 87505:

Kevin P. MCCABE at P.O. Box 1663, MS A187, Los Alamos National Laboratory, Los Alamos, New Mexico 87545;

Nicholas DALLMANN at P.O. Box 1663, MS A187, Los Alamos National Laboratory, Los Alamos, New Mexico 87545

(hereinafter collectively ASSIGNORS), have made a certain new and useful invention as set forth in an application for United States Letters Patent, entitled:

"STREAMING AUTHENTICATION AND MULTI-LEVEL SECURITY FOR COMMUNICATIONS NETWORKS USING QUANTUM CRYPTOGRAPHY"

(a)	which is	being filed herewith	in the United	l States	Patent and Trademark Office;	
(b)	x which wa	ns filed as U.S. Pater	nt Application	ı No.	15/026024	
	on	March 30, 201	6 ;	4	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•

AND WHEREAS, Los Alamos National Security, LLC (hereinafter ASSIGNEE), a corporation organized and existing under the laws of the State of Delaware, and having its principal place of business at 105 Central Park Square, Los Alamos, New Mexico 87544, is desirous of acquiring the entire right, title, and interest in and to said invention and any and all patents that may be obtained therefor, and in and to said application and any and all patents that may issue therefrom;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, ASSIGNORS do hereby sell, assign, transfer, and set over unto said ASSIGNEE, its successors, assigns, and legal representatives, all right, title, and interest in and to said invention throughout the world, and any and all patents of the United States and foreign countries that may be obtained therefor, including the right to sue for past infringement and obtain past damages, and in and to said application, including any and all non-provisionals, continuations, continuations-in-part, divisionals, reissues, re-examinations, substitutions, and extensions thereof, and any and all patents of the United States and foreign countries that may issue therefrom, such right, title, and interest including the right to file

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applications and obtain patents, utility models, industrial models, and designs for said invention in the name of said ASSIGNEE, its successors, assigns, and legal representatives, throughout the world, including all rights of priority, all rights to publish cautionary notices reserving ownership of said invention, and all rights to register said invention in appropriate registries;

ASSIGNORS also do hereby covenant that they have the full right to convey the entire right, title, and interest herein assigned, and that they have not and will not execute any agreement in conflict herewith;

ASSIGNORS also do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all Letters Patent of the United States on said invention or resulting from said application, including any continuations, continuations-in-part, divisions, reissues, re-examinations, substitutions, and extensions thereof, to said ASSIGNEE, its successors, assigns, and legal representatives as the ASSIGNEE of the entire right, title, and interest herein assigned;

ASSIGNORS also do hereby agree to, at any time, upon request, without further or additional consideration but at the expense of said ASSIGNEE, its successors, assigns, or legal representatives, execute and deliver any and all papers, make all rightful oaths, and do all lawful acts that may be necessary or desirable to perfect the entire right, title, and interest in said application, including any and all continuations, continuations-in-part, divisionals, reissues, re-examinations, substitutions, and extensions thereof, and any and all patents of the United States and foreign countries that may issue therefrom said ASSIGNEE, its successors, assigns, and legal representatives, and generally do everything possible to vest the entire right, title, and interest herein assigned in said ASSIGNEE, its successors, assigns, and legal representatives;

ASSIGNORS also do hereby grant the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document:

WILMER CUTLER PICKERING HALE AND DORR LLP

All practitioners at Customer Number 23483.

This ASSIGNMENT is effective as of March 30, 2016

Date Date

Richard John Hughes

Witness:

30 Sept. 2016

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30 Syft 2016

Jane Elizabeth Nordholt

Witness:

Date

10-11-16	
Date	Charles Glen Peterson
Witness:	Mushlin L. Hinz
	- Michila 7: Cara

10/14/16	KIV	
Date	 Kush T. Tyagi	*************
Witness:		
Date	 3	

October 14, 2016	Christoly C. Wife
Date	Christopher C. Wipf
Witness:	
Date	

Det 173 2016	Mars
Date	Raymond Therson Newell

Witness:	
10-17-16	C. Deltes
Date	

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Mecabe

11/16/2016 Date

Nicholas Dallmann

Witness:

11/16/2016

Date

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