PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
OFER NAAMAN	11/03/2014
ZACHARY KYLE KEANE	11/03/2014
DAVID GEORGE FERGUSON	11/03/2014
JOEL D. STRAND	11/03/2014

RECEIVING PARTY DATA

Name:	NORTHROP GRUMMAN SYSTEMS CORPORATION
Street Address:	2980 FAIRVIEW PARK DRIVE
City:	FALLS CHURCH
State/Country:	VIRGINIA
Postal Code:	22042-4511

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14532638

CORRESPONDENCE DATA

Fax Number: (216)621-4072

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: 216-621-2234
Email: rkline@tarolli.com

Correspondent Name: TAROLLI, SUNDHEIM, COVELL & TUMMINO LLP

Address Line 1: 1300 EAST NINTH STREET

Address Line 2: SUITE 1700

Address Line 4: CLEVELAND, OHIO 44114

ATTORNEY DOCKET NUMBER:	NG(ES)023610 US PRI
NAME OF SUBMITTER:	CHRISTOPHER P. HARRIS
SIGNATURE:	/Christopher P Harris/
DATE SIGNED:	11/04/2014

Total Attachments: 3

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ASSIGNMENT

WHEREAS, I, Ofer Naaman, together with Zachary K. Keane, David G. Ferguson and Joel D. Strand, hereinafter referred to as Assignor have jointly invented certain new and useful improvements in MIXED COUPLING BETWEEN A QUBIT AND RESONATOR, described in an application for United States Letters Patent, executed by me on the date as stated below;

WHEREAS, Northrop Grumman Systems Corporation, a Delaware corporation, having its principal place of business at 2980 Fairview Park Drive, Falls Church, VA 22042-4511, United States of America, hereinafter referred to as Assignee, is desirous of acquiring the entire right, title and interest in, to and under said improvements and said application:

NOW, THEREFORE, in consideration of Assignor's obligations to Northrop Grumman Systems Corporation, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged. Assignor has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, Assignor's entire right, title and interest in, to and under said improvements, and said application and all divisions, renewals, continuations, and continuations-in-part thereof, and all United States Letters patent that may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent that may hereafter be filed for said improvements in any country or countries foreign to the United States, including the full right to claim for any such application the priority benefits of the International Convention for the Protection of Industrial Property and other priority-conferring treaties, and all Letters Patent that may be granted for said improvements in any country or countries foreign to the United States and all extensions, divisions, continuations, continuations-in-part, renewals and reissues thereof; and Assignor hereby authorizes and requests the Commissioner of Patents and Trademarks of the United States, and any official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said improvements to said Assignee, its successors, legal representatives and assigns, in accordance with the terms of this instrument;

Assignor hereby acknowledges that at the time of making the improvements herein identified, Assignor was under an obligation to assign to Assignee, Assignor's entire right, title and interest in, to and under said improvements;

Assignor hereby covenants that Assignor has full right to convey the interest herein assigned, and that Assignor has not executed, and will not execute, any agreement in conflict herewith and that Assignee, Northrop Grumman Systems Corporation, its successors, assigns and other legal representatives shall have the right to hold and enjoy for its and their own use and benefit, to the end of the term or terms for which such Letters Patent shall or may be granted, reissued or extended as fully and completely as the same right could have been held and enjoyed by Assignor had this Assignment not been made.

Assignor hereby further covenants and agrees to communicate to Assignee, its successors, legal representatives and assigns, any and all facts known to Assignor respecting said improvements; to promptly provide Assignee with all documents relating to said improvements, said invention, and said Letters Patent as may be known or accessible to Assignor; to testify as to the same in any interference or litigation or other legal proceedings related thereto; to sign all lawful papers, execute all extensions, continuations, continuations-in-part, divisional and reissue applications; and to make all rightful oaths or declarations and generally do everything possible to aid Assignee, its successors, legal representatives and assigns in obtaining and enforcing all the rights herein conveyed for said improvements in all countries without further compensation, but at the expense of Assignee, its successors, legal representatives and assigns.

and assigns.	,
IN WITNESS WHEREOF, the undersigned has executed where we will be a second of the referenced patent application of the control	and delivered this instrument this 3 th day of in on the 3 day of april 2014.
C	FER NAAMAN
STATE OF MARYLAND)	
COUNTY OF arismash	
On MOV 3 2014 before me, MOVY Stark of proved to me on the basis of satisfactory evidence to be the person acknowledged to me that he/she/they executed the same in his/her/their and the instrument to be the person(s), or the entity upon behalf of which the same in his/her/their and the instrument to be the person(s).	authorized capacity(ies), and that by his/her/their signature(s)
I certify under PENALTY OF PERJURY under the laws of the State of M	Maryland that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.	
Mary V Signature	(SEAL)
MARY J. STANLEY	

MARY J. STANLEY
NOTARY PUBLIC
CARROLL COUNTY
MARY LAND
MY COMMISSION EXPIRES AUGUST 9, 2018

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IN WITNESS WHEREOF, the undersigned has executed a November, 2014, and has executed the referenced patent application	nd delivered this instrument this $\frac{7}{2}$ day of
	CHARY KYLE KEANE
STATE OF MARYLAND)	
COUNTY OF arma ariendel	
On 10v3, 7v14 before me. 10v4 O Charles Keane, proved to me on the basis of satisfactory evidence to be the person acknowledged to me that he/she/they executed the same in his/her/their au on the instrument to be the person(s), or the entity upon behalf of which the	nd(s) whose name(s) is/are subscribed to this instrument and athorized capacity(ies), and that by his/her/their signature(s)
I certify under PENALTY OF PERJURY under the laws of the State of Ma	ryland that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.	
Notary Signature MARY J. STANLEY NOTARY PUBLIC CARROLL COUNTY MARYLAND	(SEAL)
MY COMMISSION EXPIRES AUGUST 9, 2018	
	j.
IN WITNESS WHEREOF, the undersigned has executed a	nd delivered this instrument this day of
November . 2014, and has executed the referenced patent application	conthe 3rd day of November 2014.
To the second	AVID GEORGE FEROUSON
STATE OF MARYLAND)	
COUNTY OF armeasing	
On NOV 3, 2014 before me, Young Stand Ferguson, proved to me on the basis of satisfactory evidence to be the pand acknowledged to me that he/she/they executed the same in his/his signature(s) on the instrument to be the person(s), or the entity upon behalf	ersan(s) whose name(s) is/are subscribed to this instrument er/their authorized capacity(ies), and that by his/her/their
I certify under PENALTY OF PERJURY under the laws of the State of M	aryland that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.	
MARY J. STANLEY NOTARY PUBLIC CARROLL COUNTY MARYLAND MY COMMISSION EXPIRES AUGUST 9, 2018	(SEAL)

PATENT REEL: 034101 FRAME: 0353

IN WITNESS WHEREOF, the undersigned has executed and Market 1, 2014, and has executed the referenced patent application on John JOEL	delivered, this instrument this
Moreon less, 2014, and has executed the referenced patent application on	they 3 day of //acember , 2014.
16F1	D. STRAND
STATE OF MARYLAND)	
COUNTY OF are are are are	
On Nov 3rd 7014 before me. May 3. Shoul Ey proved to me on the basis of satisfactory evidence to be the person(s) on the instrument to be the person(s), or the entity upon behalf of which the person the instrument to be the person(s).	nose name(s) is/are subscribed to this instrument and rized capacity(ies), and that by his/her/their signature(s)
I certify under PENALTY OF PERJURY under the laws of the State of Maryla	and that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.	
MARY J. STANLEY NOTARY PUBLIC CARROLL COUNTY MARY LAND MY COMMISSION EXPIRES AUGUST 9, 2018	(SEAL)

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RECORDED: 11/04/2014