# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

c Version v1.1 EPAS ID: PAT4994055

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

## **CONVEYING PARTY DATA**

Name	Execution Date
MARTIN BROKNER CHRISTIANSEN	04/29/2018
STANLEY KATSUYOSHI WAKAMIYA	04/27/2018
ELIE K. TRACK	03/01/2018
STEVEN VAN SCIVER	06/06/2018
KELSEY MCCUSKER	06/06/2018

### **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:	15951913

## **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: lpringle@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

Total Attackments . O	
DATE SIGNED:	06/06/2018
SIGNATURE:	/Christopher P Harris/
NAME OF SUBMITTER:	CHRISTOPHER P. HARRIS
ATTORNEY DOCKET NUMBER:	NG(ES)027023 US PRI

Total Attachments: 3

PATENT REEL: 046003 FRAME: 0977

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PATENT REEL: 046003 FRAME: 0978

#### ASSIGNMENT

WHEREAS, I, Martin Brokner Christiansen, together with Stanley Katsuyoshi Wakamiya, Elie K. Track, Steven Van Sciver and Kelsey McCusker, hereinafter referred to as Assignor have jointly invented certain new and useful improvements in FORCED FLOW COOLING TEMPERATURE CONTROL METHOD, SYSTEM, AND APPARATUS, for which application for Letters Patent of the United States has been filed on 12 April 2018 under Serial No. 15/951913; and, 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.		an real files
IN WITNESS WHEREOF, the undersi	gned has executed and deliverenced patent application on the	ered this instrument this day of, 2018.
•		11 1/1/12
	Martin Brok	ner Christiansen
A notary public or other officer completing this to which this certificate is attached, and not the tru		
7/1//		
STATE OF Maryland		
COUNTY OF GREAT NOSS		
on 421/4018 before me, and	+ Tratley	, personally appeared Martin Brokner
Christiansen, proved to me on the basis of satisfact	tory evidence to be the person(s)	
and acknowledged to me that he/she/they execu	·	· ·
		* * * * * * * * * * * * * * * * * * * *
signature(s) on the instrument to be the person(s), or	or the entity upon benear of which	the person(s) acted, executed the instrument.
	- IADA	Mad I
I certify under PENALTY OF PERJURY under the	a laws of the State of // Cooc	pland that the foregoing paragraph is true
and correct.	(	<i>)</i>
	JANET KEATLEY	xxxxxx
WITNESS my hand and official seal.	NOTARY PUBLIC	<b>,</b>
	BALTIMORE COUNTY	
	0.4 A POLO EL A 6 1990	

Page 1 of 3

Notary's Signature

(SEAL)

REEL: 046003 FRAME: 0979

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 27 90 day April , 2018, and has executed the referenced patent application on the 27th day of April , 2018.	of
Stanley Katsuyoshi Wakamiya	
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the documen to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.	ıt
STATE OF Aryland) SOUNTY OF MALL ) SS	
On 121/2018 before me, Catsuyosh Wakamiya, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that his/her/their signature(s) on the instrument to be the person(s), or the entity upon behalf of which the person(s) acted, executed instrument.	this by the
I certify under PENALTY OF PERJURY under the laws of the State of Many that the foregoing paragraph is and correct.	true
WITNESS my hand and official seal.	
JANET KEATLEY NOTARY PUBLIC NOTARY PUBLIC BALTIMORE COUNTY MARYLAND MY COMMISSION EXPIRES MAY 17, 2021  (SEAL)	
IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this	of
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.	ıt
STATE OF Connecticut	
COUNTY OF TRAIN FIELD	
On Mach 13 before me, 1663 when the person(s) whose name(s) is/are subscribed to this instrument acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature on the instrument to be the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.	and
I certify under PENALTY OF PERJURY under the laws of the State of	true
WITNESS my hand and official seal.	
Leura Wheele	
Notary's Signature  Teresa Wheeler  Notary Public ID #173539 - Connecticut  My Commission Expires  92/28/2020	
Page 2 of 3	

PATENT REEL: 046003 FRAME: 0980

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrum	ent this day of, 2018.
Seven Van Sciver	
A notary public or other officer completing this certificate verifies only the identity of the individual to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.	al who signed the document
STATE OF Maryand COUNTY OF Dalvemore	
On 6/4/30/3 before me, Alexander Janes Jan	hat by his/her/their signature(s) ne instrument.
I certify under PENALTY OF PERJURY under the laws of the State of Maryland that and correct.	the foregoing paragraph is true
WITNESS my hand and official seal.	
JANET KEATLEY NOTARY PUBLIC BALTIMORE COUNTY MARYLAND MY COMMISSION EXPIRES MAY 17, 2021	(SEAL)
IN WITNESS WHEREOF, the undersigned has executed and delivered this instrum	ent this 64 day of
A notary public or other officer completing this certificate verifies only the identity of the individual to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.	al who signed the document
STATE OF Maryland	
COUNTY OF <u>Baldimore</u>	
On	ies), and that by his/her/their
	the foregoing paragraph is true
and correct.	
WITNESS my hand and official seal.	
JANET KEATLEY Notary's Signature  Notary's Signature  NOTARY PUBLIC BALTIMORE COUNTY NARYLAND NACOUNTS STATE AND 17 2024	(SEAL)
MY COMMISSION EXPRES NAY 17, 2021	

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PATENT REEL: 046003 FRAME: 0981

**RECORDED: 06/06/2018**