505653144 09/04/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5699950

SUBMISSION TYPE:		NEW ASSIGNMENT						
NATURE OF CONVEYA	NCE:	ASSIGNMENT	ASSIGNMENT					
CONVEYING PARTY D	ΑΤΑ							
		Name	Execution Date					
PATRICK B. SHEA			08/14/2019					
ROBERT M. YOUNG			08/08/2019					
KEITH H. CHUNG			08/06/2019					
ANDRIS EZRIS			08/29/2019					
SHAN WATHUTHANTI	HRI		08/06/2019					
RECEIVING PARTY DA								
Name:		IROP GRUMMAN SYSTEMS CORPORATI	ON					
Street Address:	_	AIRVIEW PARK DRIVE						
City:		CHURCH						
State/Country:								
Postal Code:	22042-4	4511						
PROPERTY NUMBERS	s Lotal: 1							
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Property Type		Number 16544212						
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ASSIGNMENT

WHEREAS, We, Patrick B. Shea, Robert M. Young, Keith H. Chung, Andris Ezis and Ishan Wathuthanthri, hereinafter referred to as Assignor have jointly invented certain new and useful improvements in METHOD TO INTEGRATE DC & RF PHASE CHANGE SWITCHES INTO HIGH-SPEED SIGE BICMOS, 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 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.

Δ.	IN	WITNESS	WHEREOF,	the	undersigned	has	executed	and	delivered	this	instrument	thi:	4th day of
an	an	A., 2019), and has exec	uted	the referenced	pate	nt applicati	on on	the 4 day	of (mon	Sh-	<u>()</u> , 2019.
1	0								shen B &		<u> </u>		
								Patri	ick B. Shè	a			

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 Maryland COUNTY OF Are Anistal on august 14 2019 Mary J Stanlag

On <u>UI GULL</u>, before me, <u>MULL</u> **Start**, personally appeared **Patrick B**. **Shea**, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to this 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 to be 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 MD that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Mary J. Stanley (Notary's Signature Notary Public TE OF MARYLAND

My Commission Expires 08-09-2022

(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered the referenced patent application on the Stary	this instrument this <u>8</u> day of of <u>CRU gust</u> , 2019. Ig
A notary public or other officer completing this certificate verifies only the identity of to which this certificate is attached, and not the truthfulness, accuracy, or validity of that d	
state of Malyland county of anne arundel	
) On <u>Cluquet 8</u> before me, <u>Mary A</u> <u>Stanlay</u> Robert M. Young , proved to me on the basis of satisfactory evidence to be the subscribed to this instrument and acknowledged to me that he/she/they executed the capacity(ies), and that by his/her/their signature(s) on the instrument to be the person(s), the person(s) acted, executed the instrument.	e same in his/her/their authorized
I certify under PENALTY OF PERJURY under the laws of the State of ${ m MD}$ that the for	egoing paragraph is true
and correct. WITNESS my hand and official seal.	
Mary C. Stanky J., STANLEY Notary's Signature Notary Public STATE OF MARYLAND My Commission Expires 08-09-2022	(SEAL)
IN WITNESS WHEREOF, the undersigned has executed and delivered the referenced patent application on the order day of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the order day of the referenced patent application of the order day	A. ching
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STATE OF MARYLAND)ss COUNTY OF ANNE ARUNDEL	
On the person of	thorized capacity(ies), and that by
I certify under PENALTY OF PERJURY under the laws of the State of MD that the fore	egoing paragraph is true
and correct. WITNESS my hand and official seal.	
Mary Starley Notat's Signstrant J. STANLEY	(SEAL)
Notary Public	

My Commission Expires 08-09-2022

- IN WITNESS WHEDEOF the understand has accounted and delivered this inst-	and Athene
IN WITNESS WHEREOF, the undersigned has executed and delivered this instru- guate, 2019, and has executed the referenced patent application on the Hay of <u>August</u>	ument this the day of
Andris Ezis	
A notary public or other officer completing this certificate verifies only the identity of the individe to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.	
stateormand	
STATE OF Maryband COUNTY OF Anne Artindel	
)	
on august 29,2019 before me. Mary of Stanley, Andris Ezis, proved to me on the basis of satisfactory evidence to be the person(s) whose name this instrument and acknowledged to me that he/she/they executed the same in his/her/their auth that by his/her/their signature(s) on the instrument to be the person(s), or the entity upon behalf acted, executed the instrument.	orized capacity(ies), and
I certify under PENALTY OF PERJURY under the laws of the State of ${ m MD}$ that the foregoing part	ragraph is true
and correct. WITNESS my hand and official seal.	
man and Strange	
Mary Stunday MARY J. STANLEY Notary's Signature	(SEAL)
Notary Public	(JEAL)
STATE OF MARYLAND	
My Commission Expires 08-08-2022	
IN WITNESS WHEREOF, the undersigned has executed and delivered this instru- , 2019, and has executed the referenced patent application on theday of	ument this day of, 2019.
Ishan Wathuthanthri	
A notary public or other officer completing this certificate verifies only the identity of the individent to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.	dual who signed the document
STATE OF)	
) ss COUNTY OF	
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On	orized capacity(ies), and
I certify under PENALTY OF PERJURY under the laws of the State of that the foregoing particular	ragraph is true
and correct. WITNESS my hand and official seal.	

Notary's Signature

(SEAL)

IN	WITNESS	WHEREOF,	the	undersigned	has	executed	and	delivered	this	instrument	this	day of
	, 2019	9, and has exec	uted	the referenced	pater	nt applicati	on on	the day	y of			, 2019.

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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) ss COUNTY OF) personally appeared On before me, Andris Ezis, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to this 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 to be 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 that the foregoing paragraph is true and correct. WITNESS my hand and official seal. (SEAL) Notary's Signature IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this other of the second of the second patent application on the day of Auctuation, 20 2019. Ishan Wathuthanthri 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 Maryland COUNTY OF Avere Aundel 6,2019 ____before me,__ On Quart before me, Mary Q. Standay, personally appeared ishan Wathuthanthri, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to this 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 to be 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 M Dhat the foregoing paragraph is true and correct. WITNESS my hand and official seal. (SEAL) MARY J. STANLEY Notary Public STATE OF MARYLAND

RECORDED: 09/04/2019

My Commission Expires 08-08-2022