

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5336213

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	MICHAEL E. COOLEY	01/15/2019
	BRET J. YON	01/15/2019
	DAVID SALL	01/15/2019
	ROBERT J. MARCH	01/15/2019
	SCOTT A. WILSON	01/15/2019
	JOHN HODGE	01/15/2019
	ALYSSA HARRIS	01/15/2019
	NICHOLAS FASANELLA	01/15/2019
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:	16206221	
CORRESPONDENCE DATA		
Fax Number:		
<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>		
Email:	ac@usiplaw.com	
Correspondent Name:	EDELL SHAPRIO & FINNAN LLC	
Address Line 1:	9801 WASHINGTONIAN BLVD.	
Address Line 2:	SUITE 750	
Address Line 4:	GAITHERSBURG, MARYLAND 20878	
ATTORNEY DOCKET NUMBER:	0880.0011C	
NAME OF SUBMITTER:	GEOFF D. TROTTER	
SIGNATURE:	/Geoff D. Trotter/	

DATE SIGNED:	01/22/2019
Total Attachments: 5 source=Assignment_Executed_0880_0011C#page1.tif source=Assignment_Executed_0880_0011C#page2.tif source=Assignment_Executed_0880_0011C#page3.tif source=Assignment_Executed_0880_0011C#page4.tif source=Assignment_Executed_0880_0011C#page5.tif	

ASSIGNMENT

WHEREAS, We, Michael E. Cooley, Bret J. Yon, David Sall, Robert J. March, Scott A. Wilson, John Hodge, Alyssa Harris and Nicholas Fasanella, hereinafter referred to as Assignor have jointly invented certain new and useful improvements in **WIDEBAND REFLECTARRAY USING ELECTRICALLY RE-FOCUSABLE PHASED ARRAY FEED**, 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.

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15 day of January, 2019, and has executed the referenced patent application on the 15 day of January, 2019
Michael E. Cooley
Michael E. Cooley

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

) ss

COUNTY OF

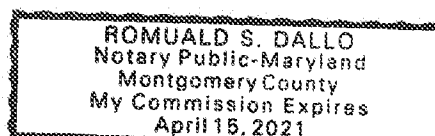
Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally appeared Michael E. Cooley, 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.

Romuald Dallo
Notary's Signature



PATENT

REEL: 048090 FRAME: 0771

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15 day of January, 2019, and has executed the referenced patent application on the 15 day of January, 2019.
Bret J. Yon
Bret J. Yon

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.

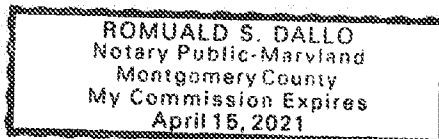
STATE OF Maryland) ss
COUNTY OF Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally appeared Bret J. Yon, 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 Maryland that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Romuald Dallo
Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15 day of January, 2019, and has executed the referenced patent application on the 15 day of January, 2019.
David Sall
David Sall

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.

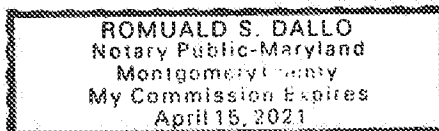
STATE OF Maryland) ss
COUNTY OF Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally appeared David Sall, 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 Maryland that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Romuald Dallo
Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15 day of January, 2018, and has executed the referenced patent application on the 15 day of January, 2018. 9
Robert J. March
Robert J. March

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

) ss

COUNTY OF

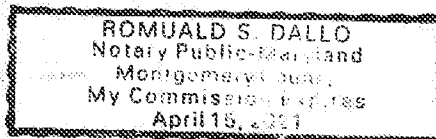
Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally appeared Robert J. March, 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.

Romuald Dallo
Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15 day of January, 2018, and has executed the referenced patent application on the 15 day of January, 2018. 9
Scott A. Wilson
Scott A. Wilson

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

) ss

COUNTY OF

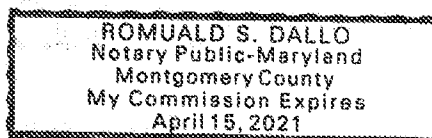
Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally appeared Scott A. Wilson, 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.

Romuald Dallo
Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15 day of January, 2018, and has executed the referenced patent application on the 15 day of January, 2018. 9
John Hodge
John Hodge

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.

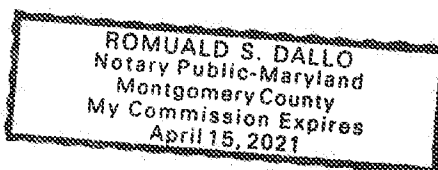
STATE OF Maryland) ss
COUNTY OF Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally appeared John Hodge, 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.

Romuald Dallo
Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15 day of January, 2018, and has executed the referenced patent application on the 15 day of January, 2018. 9
Alyssa Harris
Alyssa Harris

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.

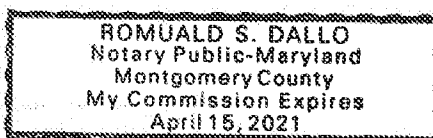
STATE OF Maryland) ss
COUNTY OF Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally appeared Alyssa Harris, 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.

Romuald Dallo
Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 15th day of January, 2019, and has executed the referenced patent application on the 30 day of November, 201~~8~~9

Nicholas A. Fasanella (J53414)

Nicholas Fasanella

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)

) ss

COUNTY OF

Montgomery

On 1/15/2019 before me, ROMUALD DALLO, personally ~~appeared~~
Nicholas Fasanella, 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.

Romuald Dallo

Notary's Signature

ROMUALD S. DALLO
Notary Public-Maryland
Montgomery County
My Commission Expires
April 15, 2021

(SEAL)