

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT3684300

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
DEVANG R. PAREKH	01/04/2016
PAUL SCHAEFER	01/04/2016
FENG CAO	01/04/2016
JASON CHINAKA	01/04/2016
BENJAMIN MONTGOMERY	01/04/2016
LONG CAO	01/04/2016
KATHLEEN BARRERA	01/05/2016
HENRY H. FUNG	01/04/2016
LOUIS ODDO	01/05/2016
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:	14989618
CORRESPONDENCE DATA	
Fax Number:	(216)621-4072
<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>	
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
NAME OF SUBMITTER:	CHRISTOPHER P. HARRIS
SIGNATURE:	/Christopher P Harris/

PATENT

DATE SIGNED:	01/06/2016
Total Attachments: 9 source=ST024626Assignment#page1.tif source=ST024626Assignment#page2.tif source=ST024626Assignment#page3.tif source=ST024626Assignment#page4.tif source=ST024626Assignment#page5.tif source=ST024626Assignment#page6.tif source=ST024626Assignment#page7.tif source=ST024626Assignment#page8.tif source=ST024626Assignment#page9.tif	

ASSIGNMENT

WHEREAS, I, Devang R. Parekh, together with Paul Schaefer, Feng Cao, Jason Chinaka, Benjamin Montgomery, Long Cao, Kathleen Barrera, Henry H. Fung, and Louis Oddo, hereinafter referred to as Assignor have jointly invented certain new and useful improvements in MIDDLEWARE ABSTRACTION LAYER (MAL), 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 4th day of January, 2017, and has executed the referenced patent application on the 4th day of January, 2017.

Devang R. Parekh
DEVANG R. PAREKH

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 CALIFORNIA)

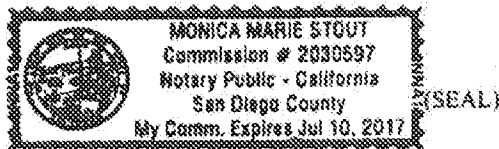
COUNTY OF San Diego) ss

On January 4, 2017 before me, Monica Marie Stout Notary Public, personally appeared DEVANG R. PAREKH, 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 California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

[Signature]
Notary's Signature



IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this 4th day of January, 2016, and has executed the referenced patent application on the 4th day of January, 2016.
Paul Schaefer
 PAUL SCHAEFER

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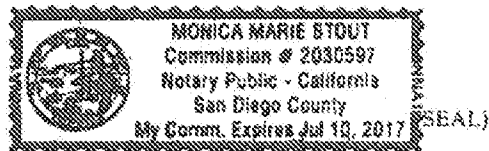
STATE OF CALIFORNIA)
) ss
 COUNTY OF San Diego

On January 4, 2016 before me, Monica Marie Stout, Notary Public, personally appeared PAUL SCHAEFER, 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 California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Monica Marie Stout
 Notary's Signature



IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this _____ day of _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

FENG CAO

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 CALIFORNIA)
) ss
 COUNTY OF _____

On _____ before me, _____, personally appeared FENG CAO, 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 California that the foregoing paragraph 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 _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

PAUL SCHAEFER

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 CALIFORNIA)
) ss
COUNTY OF _____)

On _____ before me, _____, personally appeared PAUL SCHAEFER, 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 California that the foregoing paragraph 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 04 day of January, 2016, and has executed the referenced patent application on the 04 day of January, 2016.
FENG CAO

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.

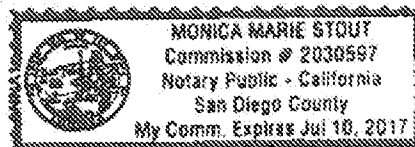
STATE OF CALIFORNIA)
) ss
COUNTY OF San Diego)

On January 4, 2016 before me, Monica Marie Stout, Notary Public, personally appeared FENG CAO, 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 California that the foregoing paragraph 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 24th day of January, 2015, and has executed the referenced patent application on the 24th day of January, 2015.
Jason Chinaka
 JASON CHINAKA

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.

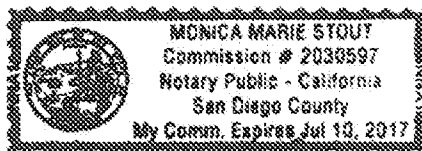
STATE OF CALIFORNIA)
) ss
 COUNTY OF San Diego

On January 5, 2016 before me, Monica Marie Stout, Notary Public, personally appeared JASON CHINAKA, 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 California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Signature]
 Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this _____ day of _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

BENJAMIN MONTGOMERY

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 CALIFORNIA)
) ss
 COUNTY OF _____

On _____ before me, _____, personally appeared BENJAMIN MONTGOMERY, 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 California that the foregoing paragraph 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 _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

JASON CHINAKA

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 CALIFORNIA)
) ss
COUNTY OF _____)

On _____ before me, _____, personally appeared JASON CHINAKA, 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 California that the foregoing paragraph 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 4th day of January, 2016, and has executed the referenced patent application on the 4th day of January, 2016. MS
Benjamin Montgomery
BENJAMIN MONTGOMERY

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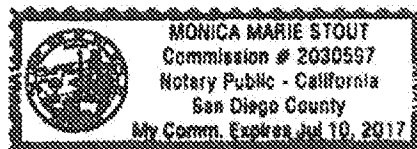
STATE OF CALIFORNIA)
) ss
COUNTY OF San Diego)

On January 9, 2016 before me, Monica Marie Stout, Notary Public, personally appeared BENJAMIN MONTGOMERY, 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 California that the foregoing paragraph 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 04 day of Jan, 2016, and has executed the referenced patent application on the 04 day of Jan, 2016.
Long Cao
 LONG CAO

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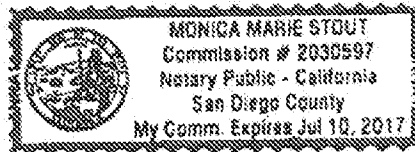
STATE OF CALIFORNIA)
) ss
 COUNTY OF San Diego

On January 4, 2016 before me, Monica Marie Stout, Notary Public, personally appeared LONG CAO, 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 California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Signature]
 Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this _____ day of _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

KATHLEEN BARRERA

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 CALIFORNIA)
) ss
 COUNTY OF _____

On _____ before me, _____, personally appeared KATHLEEN BARRERA, 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 California that the foregoing paragraph 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 _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

LONG CAO

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STATE OF CALIFORNIA)
) ss
COUNTY OF _____)

On _____ before me, _____, personally appeared LONG CAO, 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 California that the foregoing paragraph 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 5th day of January, 2016, and has executed the referenced patent application on the 5th day of January, 2016.
KATHLEEN BARRERA

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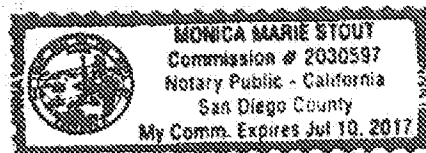
STATE OF CALIFORNIA)
) ss
COUNTY OF San Diego)

On January 5, 2016 before me, Monica Marie Stout, Notary Public, personally appeared KATHLEEN BARRERA, 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 California that the foregoing paragraph 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 4th day of January, 2016, and has executed the referenced patent application on the 4th day of January, 2016.

HENRY H. FUNG

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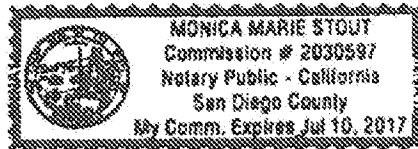
STATE OF CALIFORNIA)
) ss
COUNTY OF San Diego

On January 4, 2016 before me, Monica Marie Stout, Notary Public, personally appeared HENRY H. FUNG, 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 California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Signature]
Notary's Signature



(SEAL)

IN WITNESS WHEREOF, the undersigned has executed and delivered this instrument this _____ day of _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

LOUIS ODDO

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STATE OF CALIFORNIA)
) ss
COUNTY OF _____

On _____ before me, _____, personally appeared LOUIS ODDO, 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 California that the foregoing paragraph 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 _____, 2015, and has executed the referenced patent application on the _____ day of _____, 2015.

HENRY H. FUNG

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STATE OF CALIFORNIA)
) ss
COUNTY OF _____)

On _____ before me, _____, personally appeared HENRY H. FUNG, 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 California that the foregoing paragraph 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 5th day of January, 2016, and has executed the referenced patent application on the 5th day of January, 2016.
Louis Oddo
LOUIS ODDO

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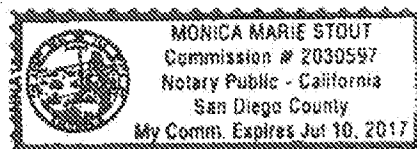
STATE OF CALIFORNIA)
) ss
COUNTY OF San Diego)

On January 4, 2016 before me, Monica Marie Stout, Notary Public, personally appeared LOUIS ODDO, 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 California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Monica Marie Stout
Notary's Signature



(SEAL)