#### 504862312 04/10/2018

### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 EPAS ID: PAT4909051

Stylesheet Version v1.2

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
ZIYAD HAKURA	01/04/2018
YURY URALSKY	01/05/2018
CHRISTOPH KUBISCH	01/05/2018
PIERRE BOUDIER	02/21/2018
HENRY MORETON	01/02/2018

#### RECEIVING PARTY DATA

Name: NVIDIA CORPORATION	
Street Address: 2701 SAN TOMAS EXPRESSWAY	
City:	SANTA CLARA
State/Country:	CALIFORNIA
Postal Code:	95050

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number	
Application Number:	15881566	

#### **CORRESPONDENCE DATA**

Fax Number: (408)715-1201

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: 4087151211

Email: rsmith@artegislaw.com, algdocketing@artegislaw.com

**Correspondent Name:** ARTEGIS LAW GROUP LLP/NVIDIA

710 LAKEWAY DRIVE Address Line 1:

Address Line 2: **SUITE 185** 

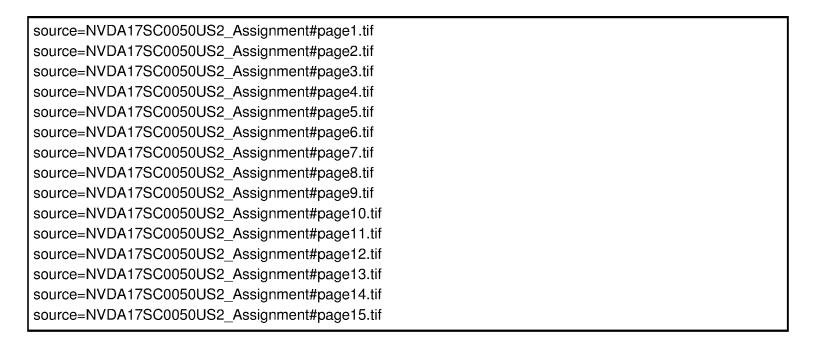
Address Line 4: SUNNYVALE, CALIFORNIA 94085

ATTORNEY DOCKET NUMBER:	NVDA/17-SC-0050-US2
NAME OF SUBMITTER:	JOHN C. CAREY
SIGNATURE:	/John C. Carey/
DATE SIGNED:	04/10/2018

**Total Attachments: 15** 

**PATENT** REEL: 045498 FRAME: 0957

504862312



## ASSIGNMENT FOR APPLICATION FOR PATENT WITH DECLARATION STATEMENT

#### WHEREAS:

1)	Names and Addresses of Inventors:  Ziyad HAKURA  San Jose, CA	2)	Yury URALSKY San Jose, CA	
3)	Christoph KUBISCH Aachen, Germany	4)	Pierre BOUDIER Los Gatos, CA	
5)	Henry MORETON Woodside, CA			

(hereinafter referred to as Assignors), have invented a certain invention entitled:

enclosed herewith or for which application for Letters Patent in the United States was filed on

# TECHNIQUES FOR REPRESENTING AND PROCESSING GEOMETRY WITHIN AN EXPANDED GRAPHICS PROCESSING PIPELINE

	under Serial No.	, and	
WHEREAS, <b>NVIDIA</b> place of business at 2701 referred to as Assignee), is application (hereinafter referreferred to as Invention), and or discovered by said Assign forms of protection (hereinaft groups of countries.	desirous of acquiring the red to as Application), an in and to all embodiments ors, and in and to any ar	Santa Clara, California entire right, title and in d the invention disclose s of the Invention, hereton d all patents, inventor's	95050 (hereinafter terest in and to said therein (hereinafter fore conceived, made certificates and other

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

- 1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a conventional, division, substitution, or continuation of said Application; and (d) in and to each and every reissue or extension of any of said Patents.
- 2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions,

oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filing and prosecuting substitute, conventional, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefore and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

- 3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.
- 4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.
- 5. In the event that the filing date and/or Application No. of said Invention are not entered at the time Assignors execute this document, and if such information is deemed necessary, Assignors hereby authorize and request the attorney/agent(s) of **Artegis Law Group**, **LLP**, to insert the filing date and/or Application No. of said application where needed.
- 6. This declaration is directed to the attached application, or (if following box is checked):

[ ]	United States application or PCT	international application nu	mper
	filed o	on	•
As a below na	amed inventor, I hereby declare tha	ıt:	

The above-identified application was made or authorized to be made by me;

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application; and

I acknowledge that any willful false statement made in this declaration is punishable under section 1001 of title 18 by fine or imprisonment of not more than 5 years, or both.

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

1)	1/4/18 (DATE)	Ziyad HAKURA	
2)	(DATE)	Yury URALSKY	
3)	(DATE)	Christoph KUBISCH	<u> </u>

Attorney	Docket No.: NVDA	/17-SC-0050-US2

4)	(DATE)	
		Pierre BOUDIER
5)	(DATE)	
٠,		Henry MORETON

## ASSIGNMENT FOR APPLICATION FOR PATENT WITH DECLARATION STATEMENT

#### WHEREAS:

1)	Names and Addresses of Inventors:  Ziyad HAKURA  San Jose, CA	2)	Yury URALSKY San Jose, CA	
3)	Christoph KUBISCH Aachen, Germany	4)	Pierre BOUDIER Los Gatos, CA	
5)	Henry MORETON Woodside, CA			

(hereinafter referred to as Assignors), have invented a certain invention entitled:

enclosed herewith or for which application for Letters Patent in the United States was filed on

# TECHNIQUES FOR REPRESENTING AND PROCESSING GEOMETRY WITHIN AN EXPANDED GRAPHICS PROCESSING PIPELINE

	under Serial No.	; and	
WHEREAS, NVIDIA	CORPORATION., a C	corporation of the State	of Delaware, having a
place of business at 2701	San Tomas Expresswa	iy, Santa Clara, Califor	nia 95050 (nereinanter
referred to as Assignee), is	desirous of acquiring t	he entire right, title and	interest in and to said
application (hereinafter refer	red to as Application),	and the invention disclo	sed therein (hereinafter
referred to as Invention), and	l in and to all embodime	nts of the Invention, here	etofore conceived, made
or discovered by said Assign	nors, and in and to any	and all patents, invento	r's certificates and other
forms of protection (hereinal	ter referred to as Paten	ts) thereon granted in a	ny and all countries and
groups of countries.			

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

- 1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a conventional, division, substitution, or continuation of said Application; and (d) in and to each and every reissue or extension of any of said Patents.
- 2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions,

oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filing and prosecuting substitute, conventional, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefore and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

- 3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.
- 4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.
- 5. In the event that the filing date and/or Application No. of said Invention are not entered at the time Assignors execute this document, and if such information is deemed necessary, Assignors hereby authorize and request the attorney/agent(s) of **Artegis Law Group, LLP**, to insert the filing date and/or Application No. of said application where needed.
- 6: This declaration is directed to the attached application, or (if following box is checked):

[ ] United States application or PCT international application number

filed on
As a below named inventor, I hereby declare that:
The above-identified application was made or authorized to be made by me;
I believe that I am the original inventor or an original joint inventor of a claimed

invention in the application; and

I acknowledge that any willful false statement made in this declaration is punishable

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

under section 1001 of title 18 by fine or imprisonment of not more than 5 years, or both.

1)	(DATE)	Ziyad HAKURA
2)	1/5/2018 (date)	Yury URALSKY
3)	(DATE)	Christoph KURISCH

Attorney Doc	ket No.: NVDA/1	7-SC-0050-US2

4)	(DATE)	Pierre BOUDIER
5)	(DATE)	Henry MORETON

### ASSIGNMENT FOR APPLICATION FOR PATENT WITH DECLARATION STATEMENT

#### WHEREAS:

1)	Names and Addresses of Inventors:  Ziyad HAKURA  San Jose, CA	2)	Yury URALSKY San Jose, CA	
3)	Christoph KUBISCH Aachen, Germany	4)	Pierre BOUDIER Los Gatos, CA	
5)	Henry MORETON Woodside, CA			

(hereinafter referred to as Assignors), have invented a certain invention entitled:

enclosed herewith or for which application for Letters Patent in the United States was filed on

# TECHNIQUES FOR REPRESENTING AND PROCESSING GEOMETRY WITHIN AN EXPANDED GRAPHICS PROCESSING PIPELINE

under Senai No	,
WHEREAS, NVIDIA CORPORATION. place of business at 2701 San Tomas Expre referred to as Assignee), is desirous of acqui application (hereinafter referred to as Applicat referred to as Invention), and in and to all embe or discovered by said Assignors, and in and to forms of protection (hereinafter referred to as I	, a Corporation of the State of Delaware, having a essway, Santa Clara, California 95050 (hereinafter ring the entire right, title and interest in and to said ion), and the invention disclosed therein (hereinafter adiments of the Invention, heretofore conceived, made any and all patents, inventor's certificates and other Patents) thereon granted in any and all countries and
groups of countries.	

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

- 1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a conventional, division, substitution, or continuation of said Application; and (d) in and to each and every reissue or extension of any of said Patents.
- 2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions,

oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filling and prosecuting substitute, conventional, divisional, continuing or additional applications covering said Invention; (d) for filling and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefore and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assigners in providing such cooperation shall be paid for by said Assignee.

- 3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.
- 4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.
- 5. In the event that the filing date and/or Application No. of said Invention are not entered at the time Assignors execute this document, and if such information is deemed necessary, Assignors hereby authorize and request the attorney/agent(s) of **Artegis Law Group, LLP**, to insert the filing date and/or Application No. of said application where needed.
- 6. This declaration is directed to the attached application, or (if following box is checked):

  [ ] United States application or PCT international application number filed on \_\_\_\_\_\_.

  As a below named inventor, I hereby declare that:

  The above-identified application was made or authorized to be made by me;

I believe that I am the original inventor or an original joint inventor of a claimed

invention in the application; and

I acknowledge that any willful false statement made in this declaration is punishable under section 1001 of title 18 by fine or imprisonment of not more than 5 years, or both.

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

1) .	(DATE)	Ziyad HAKURA
2)	(DATE)	Yury URALSKY
3)	<u> ]/5/20//8</u> (DATE)	Christoph KUBISCH

Attorney D	ocket No.: NVDA/	17-SC-0050-US2

4)	(DATE)	
		Pierre BOUDIER
5)	(DATE)	· · · · · · · · · · · · · · · · · · ·
<b>-</b> ,	<del></del>	Henry MORETON

### ASSIGNMENT FOR APPLICATION FOR PATENT WITH DECLARATION STATEMENT

WHEREAS:

groups of countries.

1	Names and Addresses of Inventors:			
1)	Ziyad HAKURA San Jose, CA	2)	Yury URALSKY San Jose, CA	
3)	Christoph KUBISCH Aachen, Germany	4)	Pierre BOUDIER Los Gatos, CA	
5)	Henry MORETON Woodside, CA			

(hereinafter referred to as Assignors), have invented a certain invention entitled:

enclosed herewith or for which application for Letters Patent in the United States was filed on

January 26, 2018 under Serial No. 15/881,566 ; and

## TECHNIQUES FOR REPRESENTING AND PROCESSING GEOMETRY WITHIN AN EXPANDED GRAPHICS PROCESSING PIPELINE

<u>막게 하지만 생각했다. 하면 한 화물이 없은 사람들은 항상이 하는 사람들이 되었다면 하는 것이 되었다. 그는 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은</u>
WHEREAS, NVIDIA CORPORATION., a Corporation of the State of Delaware, having a
place of business at 2701 San Tomas Expressway, Santa Clara, California 95050 (hereinafter
referred to as Assignee), is desirous of acquiring the entire right, title and interest in and to said application (hereinafter referred to as Application), and the invention disclosed therein (hereinafter referred to as Invention), and in and to all embodiments of the Invention, heretofore conceived, made
or discovered by said Assignors, and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter referred to as Patents) thereon granted in any and all countries and

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

- 1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a conventional, division, substitution, or continuation of said Application; and (d) in and to each and every reissue or extension of any of said Patents.
- 2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions,

oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filing and prosecuting substitute, conventional, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefore and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

- 3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.
- 4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.
- 5. In the event that the filing date and/or Application No. of said Invention are not entered at the time Assignors execute this document, and if such information is deemed necessary, Assignors hereby authorize and request the attorney/agent(s) of **Artegis Law Group, LLP**, to insert the filing date and/or Application No. of said application where needed.
- 6. This declaration is directed to the attached application, or (if following box is checked):

[X] United S	States application or I	PCT international a	pplication numbe
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5/881.566	filed on Janus	ary 26, 2018 .
	0,001,000	ned on ouride	11 20, 2010 .

As a below named inventor, I hereby declare that:

The above-identified application was made or authorized to be made by me;

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application; and

I acknowledge that any willful false statement made in this declaration is punishable under section 1001 of title 18 by fine or imprisonment of not more than 5 years, or both.

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

1)	(DATE)	
		Ziyad HAKURA
2)	(DATE)	
		Yury URALSKY
3)	(DATE)	
		Christoph KUBISCH

4) <u>[2/21/2da] (</u> DA	те) <u>(                                   </u>	~~
	Pierre BOUDIER	
	됐는 것을 하고 하는 것이 없는 것이 되었다. 	
	Henry MORETON	

#### ASSIGNMENT FOR APPLICATION FOR PATENT WITH DECLARATION STATEMENT

WHEREAS:

	Names and Addresses of Inventors:			
1)	Ziyad HAKURA San Jose, CA	2)	Yury URALSKY San Jose, CA	
3)	Christoph KUBISCH Aachen, Germany	4)	Pierre BOUDIER Los Gatos, CA	
5)	Henry MORETON Woodside, CA			

(hereinafter referred to as Assignors), have invented a certain invention entitled:

### TECHNIQUES FOR REPRESENTING AND PROCESSING GEOMETRY WITHIN AN EXPANDED GRAPHICS PROCESSING PIPELINE

enclosed herewith or fo	or which application for Letters under Serial No		vas filed on
place of business at referred to as Assigne application (hereinafte referred to as Invention or discovered by said	IVIDIA CORPORATION., a C 2701 San Tomas Expresswa ee), is desirous of acquiring the r referred to as Application), a n), and in and to all embodiment Assignors, and in and to any pereinafter referred to as Patent	y, Santa Clara, California he entire right, title and inte and the invention disclosed nts of the Invention, heretofo and all patents, inventor's co	95050 (hereinafter erest in and to said therein (hereinafter re conceived, made ertificates and other
NOW, THERE	FORE, in consideration of goo	od and valuable consideration	n acknowledged by

said Assignors to have been received in full from said Assignee:

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oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filing and prosecuting substitute, conventional, divisional, continuing or additional applications covering said Invention; (d) for filing and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefore and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.

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- 4. Said Assignors hereby warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.
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- 6. This declaration is directed to the attached application, or (if following box is checked):

  [ ] United States application or PCT international application number filed on \_\_\_\_\_\_.

  As a below named inventor, I hereby declare that:

The above-identified application was made or authorized to be made by me;

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application; and

I acknowledge that any willful false statement made in this declaration is punishable under section 1001 of title 18 by fine or imprisonment of not more than 5 years, or both.

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

1)	(DATE)	Ziyad HAKURA
2)	(DATE)	Yury URALSKY
3)	(DATE)	Christoph KUBISCH

4)	(DATE)	
5)	1/2/(3 (DATE)	Pierre BOUDIER  Henry MORETON

PATENT REEL: 045498 FRAME: 0973

**RECORDED: 04/10/2018**