

**PATENT ASSIGNMENT**

Electronic Version v1.1  
 Stylesheet Version v1.1

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT										
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT										
<b>CONVEYING PARTY DATA</b>											
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:70%;">Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Lars Nyland</td> <td>05/29/2008</td> </tr> <tr> <td>John R. Nickolls</td> <td>06/02/2008</td> </tr> <tr> <td>Gentaro Hirota</td> <td>06/03/2008</td> </tr> <tr> <td>Tanmoy Mandal</td> <td>05/29/2008</td> </tr> </tbody> </table>		Name	Execution Date	Lars Nyland	05/29/2008	John R. Nickolls	06/02/2008	Gentaro Hirota	06/03/2008	Tanmoy Mandal	05/29/2008
Name	Execution Date										
Lars Nyland	05/29/2008										
John R. Nickolls	06/02/2008										
Gentaro Hirota	06/03/2008										
Tanmoy Mandal	05/29/2008										
<b>RECEIVING PARTY DATA</b>											
<b>Name:</b>	NVIDIA Corporation										
<b>Street Address:</b>	2701 San Tomas Expressway										
<b>City:</b>	Santa Clara										
<b>State/Country:</b>	CALIFORNIA										
<b>Postal Code:</b>	95050										
<b>PROPERTY NUMBERS Total: 1</b>											
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;">Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>12054330</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	12054330						
Property Type	Number										
Application Number:	12054330										
<b>CORRESPONDENCE DATA</b>											
<b>Fax Number:</b>	(713)623-4846										
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>											
<b>Phone:</b>	(713) 623-4844										
<b>Email:</b>	kkeeler@pattersonsheridan.com										
<b>Correspondent Name:</b>	Patterson & Sheridan										
<b>Address Line 1:</b>	3040 Post Oak Blvd										
<b>Address Line 2:</b>	Suite 1500										
<b>Address Line 4:</b>	Houston, TEXAS 77056-6582										
<b>NAME OF SUBMITTER:</b>	John C. Carey										

OP \$40.00 12054330

Total Attachments: 8  
 source=0152\_EASGN (#page1.tif  
 source=0152\_EASGN (#page2.tif

source=0152\_EASGN (#page3.tif  
source=0152\_EASGN (#page4.tif  
source=0152\_EASGN (#page5.tif  
source=0152\_EASGN (#page6.tif  
source=0152\_EASGN (#page7.tif  
source=0152\_EASGN (#page8.tif

Attorney Docket No. NVDA/SC-08-0152-US1

**ASSIGNMENT FOR APPLICATION FOR PATENT**

WHEREAS:

**Lars NYLAND**, residing at  
241 Stable Rd.  
Carrboro, NC 27510

**John R. NICKOLLS**, residing at  
390 Cherry Ave.  
Los Altos, CA 94022

**Gentaro HIROTA**, residing at  
1283 Vincente Dr. Apt. 216  
Sunnyvale, CA 94086

**Tanmoy MANDAL**, residing at  
416 South 22<sup>nd</sup> St.  
San Jose, CA 95116

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

**SYSTEMS AND METHODS FOR COALESCING MEMORY ACCESSES OF PARALLEL THREADS**

enclosed herewith or for which application for Letters Patent in the United States was filed on March 24, 2008 , under Serial No. 12/054,330, and

WHEREAS, NVIDIA Corporation, a corporation of the State of Delaware, having a place of business at 2701 San Tomas Expressway, Santa Clara, CA 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 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.

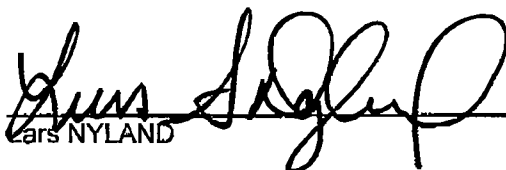
2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt

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.

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

1)	<u>May 29</u> , 2008	 _____ Lars NYLAND
2)	_____, 2008	_____ John R. NICKOLLS
3)	_____, 2008	_____ Gentaro HIROTA
3)	_____, 2008	_____ Tanmoy MANDAL

**ASSIGNMENT FOR APPLICATION FOR PATENT**

WHEREAS:

**Lars NYLAND**, residing at  
241 Stable Rd.  
Carrboro, NC 27510

**John R. NICKOLLS**, residing at  
390 Cherry Ave.  
Los Altos, CA 94022

**Gentaro HIROTA**, residing at  
1283 Vincente Dr. Apt. 216  
Sunnyvale, CA 94086

**Tanmoy MANDAL**, residing at  
416 South 22<sup>nd</sup> St.  
San Jose, CA 95116

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

**SYSTEMS AND METHODS FOR COALESCING MEMORY ACCESSES OF PARALLEL THREADS**

enclosed herewith or for which application for Letters Patent in the United States was filed on March 24, 2008, under Serial No. 12/054,330, and

WHEREAS, NVIDIA Corporation, a corporation of the State of Delaware; having a place of business at 2701 San Tomas Expressway, Santa Clara, CA 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 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.

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

1) \_\_\_\_\_, 2008

\_\_\_\_\_  
Lars NYLAND

2) 6/02/, 2008

  
\_\_\_\_\_  
John B. NICKOLLS

3) \_\_\_\_\_, 2008

\_\_\_\_\_  
Gentaro HIROTA

3) \_\_\_\_\_, 2008

\_\_\_\_\_  
Tanmoy MANDAL

**ASSIGNMENT FOR APPLICATION FOR PATENT**

WHEREAS:

**Lars NYLAND**, residing at  
241 Stable Rd.  
Carrboro, NC 27510

**John R. NICKOLLS**, residing at  
390 Cherry Ave.  
Los Altos, CA 94022

**Gentaro HIROTA**, residing at  
1283 Vincente Dr. Apt. 216  
Sunnyvale, CA 94086

**Tanmoy MANDAL**, residing at  
416 South 22<sup>nd</sup> St.  
San Jose, CA 95116

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

**SYSTEMS AND METHODS FOR COALESCING MEMORY ACCESSES OF PARALLEL THREADS**

enclosed herewith or for which application for Letters Patent in the United States was filed on March 24, 2008, under Serial No. 12/054,330, and

WHEREAS, NVIDIA Corporation, a corporation of the State of Delaware; having a place of business at 2701 San Tomas Expressway, Santa Clara, CA 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 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.

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

1)	_____	, 2008	_____
			Lars NYLAND
2)	_____	, 2008	_____
			John R. NICKOLLS
3)	<u>June 3</u>	, 2008	<u>Gentaro Hirota</u>
			Gentaro HIROTA
3)	_____	, 2008	_____
			Tanmoy MANDAL



Attorney Docket No. NVDA/SC-08-0152-US1

**ASSIGNMENT FOR APPLICATION FOR PATENT**

WHEREAS:

**Lars NYLAND**, residing at  
241 Stable Rd.  
Carrboro, NC 27510

**John R. NICKOLLS**, residing at  
390 Cherry Ave.  
Los Altos, CA 94022

**Gentaro HIROTA**, residing at  
1283 Vincente Dr. Apt. 216  
Sunnyvale, CA 94086

**Tanmoy MANDAL**, residing at  
416 South 22<sup>nd</sup> St.  
San Jose, CA 95116

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

**SYSTEMS AND METHODS FOR COALESCING MEMORY ACCESSES OF PARALLEL THREADS**

enclosed herewith or for which application for Letters Patent in the United States was filed on March 24, 2008, under Serial No. 12/054,330, and

WHEREAS, NVIDIA Corporation, a corporation of the State of Delaware, having a place of business at 2701 San Tomas Expressway, Santa Clara, CA 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 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.

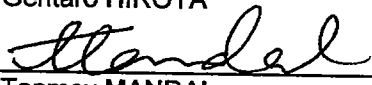
2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt

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.

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

1)	_____ , 2008	_____ Lars NYLAND
2)	_____ , 2008	_____ John R. NICKOLLS
3)	_____ , 2008	_____ Gentaro HIROTA
3)	<u>29 May</u> , 2008	 _____ Tanmoy MANDAL