

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4754976

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
VYDHYANATHAN KALYANASUNDHARAM	12/15/2017
KEVIN M. LEPAK	12/13/2017
AMIT P. APTE	12/13/2017
GANESH BALAKRISHNAN	12/13/2017
ERIC CHRISTOPHER MORTON	12/15/2017
ELIZABETH M. COOPER	12/20/2017
RAVINDRA N. BHARGAVA	12/14/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ADVANCED MICRO DEVICES, INC.
<b>Street Address:</b>	ONE AMD PLACE
<b>Internal Address:</b>	P.O. BOX 3453
<b>City:</b>	SUNNYVALE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	94088
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15846008
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(512)853-8801
<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>	
<b>Phone:</b>	512-853-8800
<b>Email:</b>	gjimenez@intprop.com
<b>Correspondent Name:</b>	MEYERTONS HOOD KIVLIN KOWERT & GOETZEL
<b>Address Line 1:</b>	P.O. BOX 398
<b>Address Line 4:</b>	AUSTIN, TEXAS 78767-0398
<b>ATTORNEY DOCKET NUMBER:</b>	5800-68700
<b>NAME OF SUBMITTER:</b>	RORY D. RANKIN
<b>SIGNATURE:</b>	/Rory D. Rankin/

<b>DATE SIGNED:</b>	12/29/2017
<b>Total Attachments: 9</b> source=170301_Assignment_5800-68700#page1.tif source=170301_Assignment_5800-68700#page2.tif source=170301_Assignment_5800-68700#page3.tif source=170301_Assignment_5800-68700#page4.tif source=170301_Assignment_5800-68700#page5.tif source=170301_Assignment_5800-68700#page6.tif source=170301_Assignment_5800-68700#page7.tif source=170301_Assignment_5800-68700#page8.tif source=170301_Assignment_5800-68700#page9.tif	

## ASSIGNMENT OF PATENT RIGHTS

This is an assignment of patent rights between inventor(s) Vydhyathan Kalyanasundharam, Kevin M. Lepak, Amit P. Apte, Ganesh Balakrishnan, Eric Christopher Morton, Elizabeth M. Cooper, Ravindra N. Bhargava, (hereinafter referred to as the "Inventor(s)") and Advanced Micro Devices, Inc., having a place of business at One AMD Place, P.O. Box 3453, Sunnyvale, CA 94088 (hereinafter referred to as the "Assignee").

WHEREAS, Inventor(s) are named as inventors in the patent application filed concurrently herewith in the United States of America, entitled "REGION BASED DIRECTORY SCHEME TO ADAPT TO LARGE CACHE SIZES", having a docket number of 5800-68700 (hereinafter referred to as the "Application"); and

WHEREAS, Assignee has a desire to acquire all rights, title, and interest in the invention(s) disclosed in the Application (hereinafter referred to as the "Invention(s)"), including any rights, title, and interest in the Invention(s) not previously transferred to Assignee through prior agreement.

NOW, THEREFORE, the parties agree as follows:

1. To the extent that Inventor(s) are subject to a prior agreement transferring rights, title, and/or interest in the Invention(s) to the Assignee, Inventor(s) hereby confirm such transfer.

2. To the extent that Inventor(s) retain any rights, title, or interest in the Invention(s) not vested in the Assignee on the date(s) of execution of this Assignment, Inventor(s) hereby assign and otherwise transfer to the Assignee their entire right, title, and interest, throughout the world, in and to: the Invention(s), including any patent applications, patents, invention registrations, and equivalents thereof (including any and all provisional, international, regional, and national patents and patent applications, and all divisions, continuations, continuations-in-part, renewals, reissues, reexams, substitutes and extensions thereof), for the Invention(s) and all rights to claim priority thereto. Inventor(s) further assign and otherwise transfer to Assignee all causes of action and remedies arising under any patent or patent application for the Invention(s) prior to, on, or after the date(s) of execution of this Assignment. Inventor(s) shall not be entitled to an accounting for any causes of action or remedies pursued by Assignee.

3. The transfers set forth in Paragraphs 1 and 2 above are in consideration for the sum of at least one U.S. dollar (US\$1) (or its equivalent) and/or other consideration for which both parties acknowledge to be valuable. Such consideration includes but is not limited to at least one of the following: employment, an independent contractor agreement, monetary payment, or other benefit hereby acknowledged as received.

4. Inventor(s) hereby authorize and request the Commissioner of Patents and Trademarks, or equivalent thereof, to issue the patent for the Invention, and all resulting patents therefrom, insofar as the Inventor(s)' interest is concerned, to the Assignee.

5. Inventor(s) further agree to execute any and all powers of attorney, applications, assignments, declarations, affidavits, and any other papers in connection therewith necessary to perfect Assignee's rights, title, and interest in the Invention(s).

6. Inventor(s) hereby authorize Assignee, its successors and assigns, its legal representatives, or anyone the Assignee may properly designate, to insert in this Assignment of Patent Rights the filing date and/or application number of the Application when ascertained.

7. Inventor(s) hereby further agree to, with respect to any patent application or patent for the Invention(s), at the expense of the Assignee:

- i) testify in any legal proceedings,
- ii) sign all lawful papers,
- iii) execute all divisional, continuation, continuation-in-part, reissue, reexamination, and substitute applications,
- iv) make all lawful oaths, and assist in vesting title in the Assignee and to aid the Assignee to obtain and enforce proper protection for the subject matter of the Invention(s) in all countries and regions, and
- v) notify Assignee promptly (by facsimile or first class mail) of any subpoena or contact by any person other than Assignee or its agents regarding the Invention or resultant patent(s) issuing therefrom, and in any event at least one week prior to any deposition, legal inquiry or legal proceeding relating to the above identified invention.

This assignment is executed on the date(s) of which the Inventor(s) have signed.

Inventor:

Vydhyanathan Kalyanasundharam  
Vydhyanathan Kalyanasundharam

Date: 12/15/2017

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

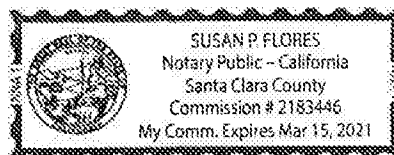
County of Santa Clara

On Dec. 15, 2017, 2017, before me Susan P. Flores,  
Notary Public, personally appeared Vydhyanathan Kalyanasundharam, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within 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 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.

S. Flores  
Notary Public



[SEAL]

Inventor:

Kevin M. Lepak  
Kevin M. Lepak

Date: December 13, 2017

State of Texas

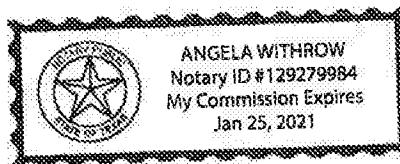
County of Travis

On December 13, 2017, before me Angela Withrow,  
Notary Public, personally appeared Kevin M. Lepak, who proved to me on the basis of  
satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within  
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 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 Texas, that the  
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Angela Withrow  
Notary Public



[SEAL]

Inventor:

Amit P. Apte

Date: 12/13/2017

State of Texas

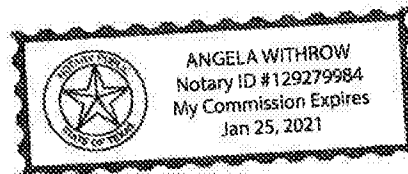
County of Travis

On December 13, 2017, before me Angela L. Withrow,  
Notary Public, personally appeared Amit P. Apte, who proved to me on the basis of satisfactory  
evidence to be the person(s) whose name(s) is/are subscribed to the within 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 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 Texas, that the  
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Signature]  
Notary Public



[SEAL]

Inventor:

[Signature]  
Ganesh Balakrishnan

Date: 12/13/17

State of Texas

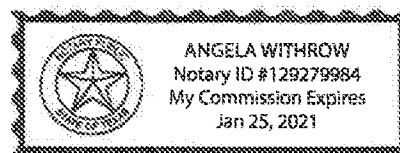
County of Travis

On December 13, 2017, before me Angela Withrow,  
Notary Public, personally appeared Ganesh Balakrishnan, who proved to me on the basis of  
satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within  
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 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 Texas, that the  
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

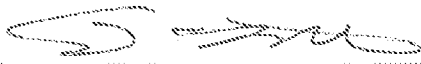
[Signature]  
Notary Public



[SEAL]



Inventor:



Eric Christopher Morton

Date: Dec 15 2017

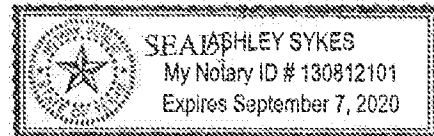
State of Texas

County of Travis

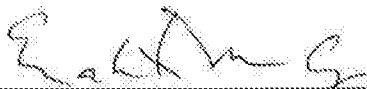
On December 15, 2017, before me Ashley Sykes,  
Notary Public, personally appeared Eric Christopher Morton, who proved to me on the basis of  
satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within  
instrument and acknowledged to me that he/she/they executed the same in his/her/their  
authorized capacity(ies), and that by his/her/their signature(s) on the instrument 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 Texas, that the  
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

  
Notary Public

Inventor:



Elizabeth M. Cooper

Date: 12/20/17

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

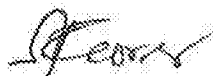
County of Santa Clara

On Dec. 20, 2017, before me Susan P. Flores,

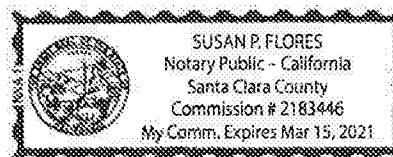
Notary Public, personally appeared Elizabeth M. Cooper, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument 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 Public



[SEAL]

Inventor:

Ravindra N. Bhargava  
Ravindra N. Bhargava

Date: 12/14/2017

State of Texas

County of TRAVIS

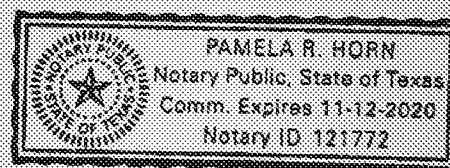
On DEC 14, 2017, before me PAMELA R. HORN

Notary Public, personally appeared Ravindra N. Bhargava, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within 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 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 Texas, that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Pamela R. Horn  
Notary Public



[SEAL]

**Customer Number 53806**  
Rory D. Rankin  
Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
P.O. Box 398  
Austin, TX 78767-0398