506159772 07/17/2020

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6206507

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ANDREW T. LAURITZEN	05/20/2008
ALTUG KOKER	06/18/2017
LOUIS FENG	06/19/2017
TOMASZ JANCZAK	02/21/2018
DAVID M. CIMINI	06/15/2017
KARTHIK VAIDYANATHAN	04/15/2020
ABHISHEK VENKATESH	03/19/2020
MURALI RAMADOSS	06/22/2017
MICHAEL APODACA	06/15/2017
PRASOONKUMAR SURTI	02/22/2018

RECEIVING PARTY DATA

Name:	INTEL CORPORATION
Street Address:	2200 MISSION COLLEGE BOULEVARD
City:	SANTA CLARA
State/Country:	CALIFORNIA
Postal Code:	95054

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15477015

CORRESPONDENCE DATA

Fax Number:

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: 2026839317

Email: admin@jordaniplaw.com

Correspondent Name: JORDAN IP LAW, LLC

Address Line 1: 12501 PROSPERITY DRIVE

Address Line 2: SUITE 401

Address Line 4: SILVER SPRING, MARYLAND 20904

ATTORNEY DOCKET NUMBER: P113728

PAIENI

506159772 REEL: 053237 FRAME: 0646

NAME OF SUBMITTER:	B. DELANO JORDAN
SIGNATURE:	/B. Delano Jordan/
DATE SIGNED:	07/17/2020

Total Attachments: 28 source=P113728 1722 Assignment executed#page1.tif source=P113728 1722 Assignment executed#page2.tif source=P113728 1722 Assignment executed#page3.tif source=P113728 1722 Assignment executed#page4.tif source=P113728 1722 Assignment executed#page5.tif source=P113728 1722 Assignment executed#page6.tif source=P113728_1722_Assignment_executed#page7.tif source=P113728_1722_Assignment_executed#page8.tif source=P113728 1722 Assignment executed#page9.tif source=P113728 1722 Assignment_executed#page10.tif source=P113728_1722_Assignment_executed#page11.tif source=P113728 1722 Assignment executed#page12.tif source=P113728 1722 Assignment executed#page13.tif source=P113728 1722 Assignment_executed#page14.tif source=P113728 1722 Assignment executed#page15.tif source=P113728 1722 Assignment executed#page16.tif source=P113728 1722 Assignment executed#page17.tif

source=P113728_1722_Assignment_executed#page10.tif source=P113728_1722_Assignment_executed#page12.tif source=P113728_1722_Assignment_executed#page13.tif source=P113728_1722_Assignment_executed#page14.tif source=P113728_1722_Assignment_executed#page15.tif source=P113728_1722_Assignment_executed#page15.tif source=P113728_1722_Assignment_executed#page16.tif source=P113728_1722_Assignment_executed#page17.tif source=P113728_1722_Assignment_executed#page18.tif source=P113728_1722_Assignment_executed#page19.tif source=P113728_1722_Assignment_executed#page20.tif source=P113728_1722_Assignment_executed#page21.tif source=P113728_1722_Assignment_executed#page23.tif source=P113728_1722_Assignment_executed#page24.tif source=P113728_1722_Assignment_executed#page25.tif source=P113728_1722_Assignment_executed#page25.tif source=P113728_1722_Assignment_executed#page26.tif source=P113728_1722_Assignment_executed#page26.tif source=P113728_1722_Assignment_executed#page27.tif source=P113728_1722_Assignment_executed#page27.tif source=P113728_1722_Assignment_executed#page27.tif source=P113728_1722_Assignment_executed#page27.tif source=P113728_1722_Assignment_executed#page28.tif

EMPLOYMENT AGREEMENT

In exchange for being employed by Intel Corporation ("Intel") or any of its subsidiaries, affiliates or successors (collectively, the "Intel Group"), I agree that:

- 1 General Conduct. While working for any company in the Intel Group, I will perform my assigned duties and comply with all Intel Group policies, procedures, guidelines, rules, and instructions, including Intel's Corporate Code of Conduct. The company within the Intel Group that is my employer is referred to in this Agreement as "Employer."
- 2. Prior Third Party Information 1 represent that I do not possess, have not brought, and will not bring to the Intel Group, nor use in the course of the performance of my duties at the Intel Group, any propnetary or confidential information of any former employer or third party without their written authorization.
- 3 Confidential Information. At all times, both during and after my employment with any company in the Intel Group, I will not use (except for the benefit and at the direction of the Intel Group) and will hold in confidence and not disclose (without written authorization from a company in the Intel Group, except to the extent I am authorized to do so in the course of my duties) any proprietary information or trade secret (technical, marketing, planning, financial, personnel or otherwise) of the Intel Group or any third party to which I gain access pursuant to my employment, until such information becomes generally and rightfully known outside the Intel Group without non-disclosure restriction, or for the maximum period of time for maintaining trade secrets as permitted by law in the jurisdiction in which I am employed if such period is shorter. I agree not to make unauthorized copies of such confidential information and to return to the Intel Group immediately upon my termination or upon request by my Employer or any other company in the Intel Group all tangible forms of such confidential information in the intel Group all tangible forms of such confidential information, including but not limited to drawings, computenzed data or programs, specifications, documents, devices, models, employee lists, customer lists or phone books, or any other Intel Group confidential information. I will, at all times, theat third parties' confidential information unless I have been advised of the need to treat that third parties' confidential information differently, in which event I agree to treat such third parties' confidential information in the manner to which I have been advised. I agree that any breach, violation or evasion of this provision will result in immediate and irreparable injuries and harm to the Intel Group, and I agree that any company in the Intel Group seeking to enforce this Agreement shall have recourse to the remedies to which such company may be entitled.
- 4. Ownershi p of Proprietary Devel opments. I acknowledge and agree to disclose to the Intel Group, promptly and in confidence, all patents, trade secrets, copyrights, mask works, trademarks, inventions, discoveries, designs, formulae, processes, methods, manufacturing techniques, improvements, ideas, copyrightable works, and other intellectual property which I create, invent or discover alone or with others during my employment with any company in the Intel Group (Propnetary Developments'). I agree that all Propnetary Developments (i) that were created at least in part not during my own time or (ii) that were created using Employer or other Employer or other Intel Group equipment, supplies, facilities or trade secrets or (iii) that relate at the time of conception or reduction to practice of the invention or creation or discovery to Employer or other Intel Group companies or (iv) that result from any work performed by me for Employer's or other Intel Group companies are, from the moment of their creation, invention or discovery, the sole property of Employer or Employer's designates has and shalf for all time have sole legal and equitable title to all Intel Proprietary Developments. I without additional compensation, I (a) agree promptly to disclose and (b) to the full extent allowed by law but only to the extent not already owned by Employer pursuant to this Agreement and applicable law, hereby assign to Employer or such other company in the Intel Group, I will provide all assistance reasonably requested by Employer's (or its designee's) reasonable expense, to secure and enforce its rights throughout the world with respect to the Intel Proprietary Developments. I agree to execute any and all documents (including assignment agreements) reasonably requested by Employer or its designee ("Ownership Documents"). To the extent that I fail for refuse to execute Ownership Documents, or cannot be located by Employer through the exercise of reasonable difference. I hereby agree to waive any pre-emplive or other rights

Notwithstanding anything else in this agreement, I have been notified and further understand that Intel Proprietary Developments do not include inventions which I developed entirely on my own time without using Intel Group equipment, supplies, facilities, or trade secret information, except for inventions which either (i) relate at the time of conception or reduction to practice of the invention to the Intel Group's business, or actual or demonstrably anticipated research or development of the Intel Group or (ii) result from any work performed by me for the Intel Group.

5. Licensed Employee Intellectual Property. The purpose of this section 5 is to enable the Intel Group to determine their rights and risks as to any intellectual property rights, whether vested or pending, which I own or control in whole or in part, prior to joining any company in the Intel Group ("Preexisting Employee Intellectual Property"). Unless identified on Appendix A with sufficient particularity to allow the Intel Group to identify the subject matter of the Preexisting Employee Intellectual Property, I hereby grant Employer (or its designee within the Intel Group) a non-exclusive, non-transferable (except within the Intel Group), perpetual, irrevocable, royally-free, world-wide license, with the right to sublicense, to make, have made, use, self, offer to self, import, reproduce, have reproduced, prepare derivative works of, distribute, and otherwise dispose of any product or document, under all patents, trade secrets, copyrights, mask works, trademarks, inventions, discoverines, designs, formulae, processes, methods, manufacturing techniques, improvements, ideas, copyrightable works, and other Preexisting Employee Intellectual Property excludes Property Developments as defined in section 4, or Preexisting Employee Intellectual Property identified as required above in Appendix A at the time of my execution of this Agreement and submitted directly by me to Intel Legal such that it is actually received by Intel Legal within five working days of my hiring.

If I fail to make any required disclosure or breach any term of sections 4 and 5, I agree that any applicable limitations periods shall be tolled and shall not run as to any claim, right, or cause of action Employer may have relating to such disclosure or breach that would have been discovered had the required disclosure been made, until such time as Employer obtains actual knowledge of the facts giving rise to its claim. Nothing contained in this section shall in any way limit or be exclusive of other remedies otherwise available in law or equity to the Intel Group.

- 6. Non-solicitation 1 agree that for 12 (twelve) months after my employment ends, regardless of the reason it ends, I will not solicit, directly or indirectly, any employee to leave his/her employment with any company in the intel Group. By way of example, I (a) shall not identify any employees working for any Intel Group company to any third party as potential employment candidates. (b) shall not personally or through another person recruit or solicit employees working for any intel Group company to work for any other employee, and/or (c) will not disclose or use information I learned by virtue of my employment concerning the identities, compensation or skills of any employee for the purpose of soliciting any employee to leave his/her employment with any company in the Intel Group I agree that any breach, violation or evasion of this provision with result in immediate and irreparable injuries and harm to the Intel Group, and I agree that the Intel Group company seeking to enforce this Agreement shall have recourse to the remedies of injunction and specific performance, or either of such remedies, as well as all other legal or equitable remedies to which such company may be entitled.
- 7 Computer Communications are Not Private. Lunderstand that atthough the companies within the Intel Group permit reasonable personal use of networked computer equipment, these resources and all information contained on them are the sole property of companies within the Intel Group. Computer use is not private or confidential, and someone other than the intended addressee may receive the message. Lunderstand and consent to my Employer's and/or the Intel Group's interception and review of both incoming and outgoing email, internet and all computer information, including any password-protected employee communications.
- 8 M scellaneous: I understand that if Intel is not my Employer, Intel is signing this Agreement as agent for the Intel Group company that is my Employer. I understand and agree that my employment with any company in the Intel Group is "at will." This means that both my Employer and I have the right to terminate my employment at any time, with or without advance notice and with or without cause (provided, however, that if I become employed by an Intel Group company in a non U.S. Tocation, the termination law of that country will apply if inconsistent with this Agreement).

The terms and conditions stated herein are severable. If any paragraph, provision, or clause in this Agreement is found or held to be invalid, unenforceable or void in any jurisdiction in which this Agreement is being performed, such provision shall be enforced to the greatest extent permitted by law, and the remainder of this Agreement and such provision as applied to other persons, places or circumstances shall remain in full force and effect.

This Agreement. (a) survives my employment with any company or companies in the Intel Group, (b) mures to the benefit of successors and assigns of my Employer (including successors within the Intel Group); and (c) is binding upon my heirs, assigns, and legal representatives. To the best of my information and belief, I am not a party to any other agreement which will interfere with my full compliance with this Agreement, except as specifically identified herein.

This Agreement may not be modified or amended except in a writing signed by the parties. Only the Vice President of Human Resources, Intel Corporation, or his or her delegate, or the General Counsel of Intel Corporation, or his or her delegate, has the authority to modify this agreement on behalf of the Intel Group.

This Agreement is effective as of my first day of employment with any company in the Intel Group, remains in effect if I become employed by any other company in the Intel Group (which shall then become my Employer hereunder) and supersedes any prior Employee Agreement signed by me with any company in the Intel Group

These carefully read all of the provisions of this Agreement and Lunderstand and will fully and faithfully comply with such provisions Intel Corporation Employee

D. Brace Sewell Vice President and General Counsel

) now

Andrew Lauritzen 1126 860

May 20, 2008

Social Security Number

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

which was filed on <u>April 1, 2017</u> as <u>US</u> Application Number <u>15/477,015</u>	gnaten imes delow, the	filing date and application number of s	ын аррисатоп мпеп кног	VB.)
US Application Number 15/477,015	which was filed on	April 1, 2017	88	
	US	Application Number	15/477,015	

(I hereby authorize and request any attorney having appropriate authority from the assignee to insert on the

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below.

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

Page 1 of 3

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignce, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof, and generally assist said Assignce, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignce, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Andrew T. Layritzen	Date signed
JUM	6/16/2012
Altug Koker	Date signed
Louis Feng	Date signed
Tomasz Janczak	Date signed
David M. Cimini	Date signed
	88
Karthik Vaidyanathan	Date signed
Abhishek Venkatesh	Date signed
Murali Ramadoss	Date signed
Michael Apodaca	Date signed

Page 2 of 3

Prasoonkumar Surti	Date signed

and

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

COUNTRY or International Office

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY **HIERARCHICAL-Z**

(I hereby authorize and requ designated lines below, the f	•		•	•	1e
which was filed on	April 1, 2017			as	
US		Application Number	15/477,015		ano

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below,

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Andrew T. Lauritzen	Date signed
Altug Koker	Date signed
40)	6/19/2017
Louis Feng	Date signed
Tomasz Janczak	Date signed
David M. Cimini	Date signed
Karthik Vaidyanathan	Date signed
Abhishek Venkatesh	Date signed
Murali Ramadoss	Date signed
Michael Anodaca	Date sioned

Page 2 of 3

Prasoonkumar Surti	Date signed

<u>ASSIGNMENT</u>

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

to nevery authorize and request any attorned designated lines below, the filing date and ap		
which was filed onApril 1, 2017		äs
US COUNTRY or International Office	Application Number	

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below.

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

Page 1 of 3

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, ficense, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Andrew T. Lauritzen	Date signed
Andrew L. Laurnzen	rvate signed
Altug Koker	Date signed
Louis Feng	Date signed
Janan Parad	
Tomasz Janczak	Dåte signed
David M. Cimini	Date signed
Karthik Vaidyanathan	Date signed
Abhishek Venkatesh	Date signed
Murali Ramadoss	Date signed
Michael Apodaca	Date signed

Page 2 of 3

Prasoonkumar Surti	Date signed

and

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

COUNTRY or International Office

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

designated lines below, the filing date and application number of said application when known.)			
which was filed on	April 1, 2017	as	

Application Number 15/477,015

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below,

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

REEL: 053237 FRAME: 0659

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Andrew T. Lauritzen	Date signed
Altug Koker	Date signed
Louis Feng	Date signed
Tomasz Janczak	Date signed
	6115117
David MCimini	Date signed
Karthik Vaidyanathan	Date signed
Abhishek Venkatesh	Date signed
Murali Ramadoss	Date signed
	DATENT

Michael Apodaca

Prasoonkumar Surti	Date signed

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

(I hereby authorize and request any attorney having appropriate authority from the assignee to insert	t on the
designated lines below, the filing date and application number of said application when known.)	

which was filed on	April 1, 2017		a	S
US		Application Number	15/477,015	and
COUNTRY or Inte	rnational Office		•	_

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below,

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

en and with said Assigner, he are covered and properly before any and the local property of the inbranes, or other agreement of techniques rights and property before conveyed has been made to other by the indevagend, and that full eight to convey the same as before a property is processed by the inderestance.

Andrew T. Laurazen	Date signed
	Date signed
Louis Feng	Date speed
Formasy Janezak	Date signed
David M. Cimini	Date signed
Kartisik Vaidvanathan	9-75-202€ Date signed
Abhishek Venkatesh	Date signed
Murali Ramadoss	Date signed
Michael Apodaca	Date signed

Page 2 of 3

Prasoonkumar Surti	Date signed

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

(I hereby authorize and request any attorney having appropriate authority from the assignee to i	isert on the
designated lines below, the filing date and application number of said application when known.)	

which was filed on	April 1, 2017			as
US		Application Number	15/477,015	and
COUNTRY or Inter	rnational Office		•	<u> </u>

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below,

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Andrew T. Lauritzen	Date signed
Altug Koker	Date signed
Louis Feng	Date signed
Tomasz Janczak	Date signed
David M. Cimini	Date signed
Karthik Vaidyanathan	Date signed
Dank Vien	3/19/2020
Abhishek Venkatesh	Date signed
Murali Ramadoss	Date signed
Michael Apodaca	Date signed

	Attorney Docket No.: P113728
Prasoonkumar Surti	Date signed

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer for

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

or neverty authorize and request any afterney having appropriate authority from the assignee to designated lines below, the filing date and application number of said application when known.)	insert on the
which was filed on <u>April 1, 2017</u>	

US Application Number 15/477,015 and

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below,

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

Page 1 of 3

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Date signed
Date signed
6/22/12
Date signed

Page 2 of 3

	Proconforme Court	**************************************
	r rasoonwiniisi Offifi	l late cioned
		a man ar Garage

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Sania Clara, California, 95054 USA ("Assignce"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

(I hereby authorize and request any attorne designated lines below, the filing date and a			
which was filed on April 1, 2017		as	
US COUNTRY or International Office	Application Number	15/477,015	and

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below,

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignce may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignce, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

Page 1 of 3

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

ned
ned
ied
/2017 led

Page 2 of 3

Prasoonkumar Surti	Date signed

ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

Andrew T. Lauritzen; Altug Koker; Louis Feng; Tomasz Janczak; David M. Cimini; Karthik Vaidyanathan; Abhishek Venkatesh; Murali Ramadoss; Michael Apodaca; Prasoonkumar Surti

hereby sell, assign, and transfer to:

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

TILE-BASED IMMEDIATE MODE RENDERING WITH EARLY HIERARCHICAL-Z

(I hereby authorize and request any attorney having appropriate authority from the assignee to insert on the

designa			pplication number of s	aid application when kno))
	US		Application Number	15/477,015	and
è	COUNTRY or Into	emational Office			
which h	as been executed by t	he undersigned pi	orior hereto or concurrent	tly herewith on the date(s)	indicated below,
and in a	nd to said application	and all Additions	al Applications, and all o	other patent applications th	nat have been or shall be
filed in	the United States and	all other countrie	es and international filing	g offices on any of said inv	ventions and
improve	ements; and in and to	all original and re	eissued patents that have	been or shall be issued in	the United States and
all other	countries and interne	itional filing offic	ces on said inventions an	id improvements; and in a	nd to all rights of
priority	resulting from the fili	ng of said applica	ations; as used herein "a	Additional Applications" i	ncludes but is not
limited.	to design, utility, utili	ty-model _t -division	nal, continuing, continu	ntion-in-part, substitute, re	neval, reissue, and
national	phase applications or	ı said inventions i	and improvements;		

Page 1 of 3

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute

REEL: 053237 FRAME: 0673

all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

	Andrew T. Lauritzen	Date signed
:	Altug Koker	Date signed
	Louis Feng	Date signed
	Tomasz Janczak	Date signed
	David M. Cimini	Date signed
	Karthik Vaidyanathan	Date signed
	Abhishek Venkatesh	Date signed
	Murali Ramadoss	Date signed
	Michael Apodaca	Date signed
	in the second se	

Page 2 of 3

PATENT

REEL: 053237 FRAME: 0674

Page 3 of 3

RECORDED: 07/17/2020