PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3824813

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MISHALI NAIK	08/08/2013
GANAPATI N. SRINIVASA	06/25/2013
ALON NAVEH	06/26/2013
PAOLO NARVAEZ	08/09/2013
ABIRAMI PRABHAKARAN	06/20/2013
EUGENE GORBATOV	07/09/2013
SCOTT D. HAHN	06/10/2013
BRYANT E. BIGBEE	06/05/2013
RUSSELL J. FENGER	06/25/2013
DHEERAJ R. SUBBAREDDY	06/24/2013
PAUL BRETT	09/24/2013
ELIEZER WEISSMANN	06/12/2013
DAVID A. KOUFATY	06/24/2013
GAURAV KHANNA	06/18/2013
ANDREW J. HERDRICH	06/05/2013
ANDREW D. HENROID	06/10/2013
INDER M. SODHI	08/26/2013

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:	13730565

CORRESPONDENCE DATA

Fax Number: (408)675-0442

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent PATENT

REEL: 038247 FRAME: 0888 503778167

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: (408)675-0441

Email: kathy@nicholsondevos.com

Correspondent Name: NICHOLSON DE VOS WEBSTER & ELLIOTT LLP

Address Line 1: 217 HIGH STREET

Address Line 4: PALO ALTO, CALIFORNIA 94301

ATTORNEY DOCKET NUMBER:	42P46784
NAME OF SUBMITTER:	HUI (HARRY) WANG
SIGNATURE:	/Hui Wang/
DATE SIGNED:	04/11/2016

Total Attachments: 18

source=42P46784_Assignments_All_Inventors#page1.tif source=42P46784 Assignments All Inventors#page2.tif source=42P46784 Assignments All Inventors#page3.tif source=42P46784 Assignments All Inventors#page4.tif source=42P46784 Assignments All Inventors#page5.tif source=42P46784 Assignments All Inventors#page6.tif source=42P46784 Assignments All Inventors#page7.tif source=42P46784_Assignments_All_Inventors#page8.tif source=42P46784 Assignments All Inventors#page9.tif source=42P46784 Assignments All Inventors#page10.tif source=42P46784_Assignments_All_Inventors#page11.tif source=42P46784_Assignments_All_Inventors#page12.tif source=42P46784 Assignments All Inventors#page13.tif source=42P46784 Assignments All Inventors#page14.tif source=42P46784 Assignments All Inventors#page15.tif source=42P46784 Assignments All Inventors#page16.tif source=42P46784 Assignments All Inventors#page17.tif source=42P46784 Assignments All Inventors#page18.tif

> PATENT REEL: 038247 FRAME: 0889

ASSIGNMENT

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

Mishali Naik, Ganapati N. Srinivasa, Alon Naveh, Paolo Narvaez, Abirami Prabharkaran, Eugene Gorbatov, Scott D. Hahn, Bryant E. Bigbee, Russell J. Fenger, Dheeraj R. Subbareddy, Paul Brett, Eliezer Weissmann, David A. Koufaty, Gaurav Khanna, Andrew J. Herdrich, Andrew D. Henroid, Inder M. Sodhi

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 foreign countries, in and to any and all inventions and improvements that are disclosed in the application (provisional or nonprovisional) for the United States patent entitled:

HETEROGENEOUS PROCESSOR APPARATUS AND METHOD

the Declaration for which, in the case of a nonprovisional, has been executed by the undersigned prior hereto or concurrently herewith, said patent application which can also be identified as follows (if necessary):

(I hereby authorize and request my attorney, associated with Customer Number 45209, to insert on the designated lines below, the filing date and application number of said application when known.)

United States Patent	Application Number	13/730.565	filed on	12/28/12 .

and in and to said application (nonprovisional or provisional) and all design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all nonprovisional applications claiming priority to said application, and all other patent applications that have been or shall be filed in the United States and all foreign countries 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 foreign countries on said inventions and improvements; and in and to all rights of priority resulting from the filing of said United States applications;

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 design, utility, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and all other patent applications on any and all said inventions and improvements; execute all rightful onths, 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

LGAPAL forms Page 1 of 3

in proven any and an equipped to said inventions and corporations, and all applications for inductional all patents on and improvements, in and Assigner, as adjusted and against and legal representatives, and

cover are with and Assigned its succession, awayes, and legal representatives that to assignment, grant, morgage, the end, or other agreement or having the rights and properly berein conveyed has been made to others by the uniformly the right to some a fattern expressed by presented by the universities.

pholips	08/08/2013
Mishali Naik	(Tiede) 's Date)
Ganapati N. Simivasa	(Today's Base)
Alon Naveh	(Tody '+ Date)
Paulo Narvaez	(Scolay's Duzi
Abirsmi Prabhakaran	Elistry's Evitor
Eugene Gorbatov	(Tustay's Date)
Scott O. Hahn	(Fostoy's Deate)
Bryant E. Bigbee	(Today's Date)
Russell J. Fonger	(Yushiy's Okau)
Ohoeraj R. Subbaroddy	(10dg/s Date)

13.584 5850

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.

Page 2 of 3

Each Inventor please sign <u>and Date</u> below		
Mishali Naik	(Today's Date)	
Ganapati N. Srinivasa	June 25 2013	
Ganapati N. Srinivasa	(Today's Date)	
Alon Naveh	(Today's Date)	
Paolo Narvaez	(Today's Date)	
Abirami Prabharkaran	(Today's Date)	
Eugene Gorbatov	(Today's Date)	
Scott D. Hahn	(Today's Date)	
Bryant E. Bigbee	(Today's Date)	
Russell J. Fenger	(Today's Date)	
Dheeraj R. Subbareddy	(Today's Date)	

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.

below
(Today's Date)
(Today's Date)
G/24/13 (Today's Date)
(Today's Date)
(Today's Date)
(Today's Date)
(Today's Date)
(Today's Date)
(Today's Date)
(Today's Date)

LGA/PAL forms Page 2 of 3

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, ussigns, and legal representatives; and

coverant 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.

Each hivenion please sign <u>and Dai</u> g b	eien
Mishali Naik	(Today's Date)
Ganapati N. Srinivasa	(Today's Date)
Alon Naveh	(Today's Date)
PU/Novan	8/9/2013
Paolo Narvaez	(Today's Date)
Abirami Prabharkaran	(Today's Dafe)
Eugene Gorbatov	(Today's Date)
Scott D. Hahn	(Today's Date)
Bryant E. Bigbee	(Today's Date)
Russell J. Fenger	(Today's Date)
Dheeraj R. Subbareddy	(Today's Date)

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.

Mishali Naik	(Today's Date)
Sanapati N. Srinivasa	(Today's Date)
Alon Naveh	(Today's Date)
Paolo Narvaez	(Today's Date)
Ahrshitep	06/20/2013
birami Prabhakaran	(Today's Date)
Eugene Gorbatov	(Today's Date)
Scott D. Hahn	(Today's Date)
Bryant E. Bigbee	(Today's Date)
Russell J. Fenger	(Today's Date)
,	, , , , , , , , , , , , , , , , , , , ,
eeraj R. Subbareddy	(Today's Date)

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.

Each Inventor please sign and Date below		
Mishali Naik	(Today's Date)	
Ganapati N. Srinivasa	(Today's Date)	
Alon Naveh	(Today's Date)	
Paolo Narvaez	(Today's Date)	
Abirami Prabhakaran	(Today's Date)	
Eugene Gorbatov	7/4/2003 (Today's Date)	
Scott D. Hahn	(Today's Date)	
Bryant E. Bigbee	(Today's Date)	
Russell J. Fenger	(Today's Date)	
Dheeraj R. Subbareddy	(Today's Date)	

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 Assignce, 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.

Each Inventor please sign <u>and Date</u>	below
Mishali Naik	(Today's Date)
Ganapati N. Srinivasa	(Today's Date)
Alon Naveh	(Today's Date)
Paolo Narvaez	(Today's Date)
Abirami Prabharkaran	(Today's Date)
Eugene Gorbatov	(Today's Date)
<u> 42.87.32.2. </u>	an and the responsible from the second and an arrange.
Scott D. Hahn	(Today's Date)
Bryant E. Bigbee	(Today's Date)
Russell J. Fenger	(Today's Date)
Dheeraj R. Subbareddy	(Today's Date)

LGA/PA1, forms Page 2 of 3

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.

ich Inventor please sign and Date	below
Mishali Naik	(Today's Date)
Ganapati N. Srinivasa	(Today's Date)
Alon Naveh	(Today's Date)
Paolo Narvaez	(Today's Date)
Abirami Prabharkaran	(Today's Date)
Eugene Gorbatov	(Today's Date)
Scott D. Hahn	(Today's Date)
Bryant E. Bigbee	6/5/13 (Today's Date)
Russell J. Fenger	(Today's Date)
Oheeraj R. Subbareddy	(Today's Date)

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.

Fach Inventor please sign <u>and Date</u> b	clow	
Mishali Naik	(Today's Date)	
Ganapati N. Srinivasa	(Today's Date)	
Alon Naveh	(Today's Date)	
Paolo Narvaez	(Today's Date)	
Abirami Prabharkaran	(Today's Date)	
Eugene Gorbatov	(Today's Date)	
Scott D. Hahn	(Today's Date)	
Bryant E. Bigbee	(Today's Date)	
Russell J. Fenger	6/2-5/2013 (Today's Date)	
Dheeraj R. Subbareddy	(Today's Date)	

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 Assignce, 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.

Each Inventor please sign and Date b	clow
Mishali Naik	(Today's Date)
Ganapati N. Srinivasa	(Today's Date)
Alon Naveh	(Today's Date)
Paolo Narvaez	(Today's Date)
Abirami Prabharkaran	(Today's Date)
Eugene Gorbatov	(Today's Date)
Scott D. Hahn	(Today's Date)
Bryant E. Bigbee	(Today's Date)
Russell J. Fenger	(Today's Date)
Dheerajik. Subbareddy	(Today's Date)
Abirami Prabharkaran Eugene Gorbatov Scott D. Hahn Bryant E. Bigbee Russell J. Fenger A. Addy	(Today's Date) (Today's Date) (Today's Date) (Today's Date) (Today's Date)

LGA/PAL forms

Page 2 of 3

Paul Brett	9/24/13 (Today's Date)
Ellezer Welssmann	(Today's Date)
David A. Koufaty	(Today's Date)
Gaurav Khanna	(Today's Date)
Andrew J. Herdrich	(Today's Date)
Andrew D. Henrold	(Today's Date)
Inder M. Sodhi	(Today's Date)

LGA/PAL forms

Page 3 of 3

Paul Brett	(Today's Date)
Lancard of Congression and Con	12/06/3
Ellezer Weissmann	(Today's Date)
David A. Koufaty	(Today's Date)
Gaurav Khanna	(Today's Date)
Andrew J. Herdrich	(Today's Date)
Andrew D. Henroid	(Today's Date)
Inder M. Sodhi	(Today's Date)

Paul Brett	(Today's Date)
Ellezer Weissmann	(Today's Date)
David A. Roufaty	6/2 Y//3 (Today's Date)
({.	
Gaurav Khanna	(Today's Date)
Andrew J. Herdrich	(Today's Date)
Andrew D. Henrold	(Today's Date)
Inder M. Sodhi	(Today's Date)

LGA/PAL forms

Page 3 of 3

TD-EGT7

Paul Brett	(Today's Date)
Eliezer Weissmann	(Today's Date)
David A. Koufaty	(Today's Date)
Gaukhen	06/18/13
Gaurav Khanna	(Today's Date)
Andrew J. Herdrich	(Today's Date)
Andrew D. Henroid	(Today's Date)
Inder M. Sodhi	(Today's Date)

Paul Brett	(Today's Date)
Eliezer Weissmann David A. Koufaty	(Today's Date)
	(Today's Date)
Gaurav Khanna	(Today's Date)
Andrew J. Herdrich	(Today's Date)
Andrew D. Henroid	(Today's Date)
Inder M. Sodhi	(Today's Date)

(Today's Date)
(Today's Date)
(Today's Date)
(Today's Date)
(Today's Date)
6/10/2013 (Today's Date)
(Today's Date)

LGA/PAL forms Page 3 of 3

PATENT REEL: 038247 FRAME: 0906

enterior (n. 1907).	(Today's Date)
nann	(Voday's Date)
aty	(Today's Date)
ma	(Today's Date)
drich	(Today's Date)
raid	(Today's Date)
	8 36 ()
orald Solve	2000 to 2000 to 100 de 200

LGA PAL Series

RECORDED: 04/11/2016

Page 3 at 3