#### 505826432 12/18/2019

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT5873262

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
ROBERT ULICHNEY	12/10/2019
PURDUE RESEARCH FOUNDATION	05/22/2017
HP PRINTING AND COMPUTING SOLUTIONS, S.L.U.	12/16/2019

### **RECEIVING PARTY DATA**

Name:	Hewlett-Packard Development Company, L.P.
Street Address:	10300 Energy Drive
City:	Spring
State/Country:	TEXAS
Postal Code:	77389

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

Property Type	Number
Application Number:	16342503

### CORRESPONDENCE DATA

Fax Number: (970)778-4063

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: (541)360-4450 Email: ipa.mail@hp.com

HP INC. **Correspondent Name:** 

Address Line 1: 3390 E. HARMONY ROAD MS 35 Address Line 4: FORT COLLINS, COLORADO 80528

ATTORNEY DOCKET NUMBER:	85725329
NAME OF SUBMITTER:	MONTSE DRUGUET
SIGNATURE:	/Montse Druguet/
DATE SIGNED:	12/18/2019

## **Total Attachments: 12**

source=85725329 Assignment HPDC Inv 2019 - ulichney#page1.tif

source=85725329 purdue Executed Assignment#page1.tif source=85725329 purdue Executed Assignment#page2.tif

source=85725329 purdue Executed Assignment#page3.tif

**PATENT REEL: 051311 FRAME: 0272** 

505826432

source=85725329 purdue Executed Assignment#page4.tif	
source=85725329 purdue Executed Assignment#page5.tif	
source=85725329 purdue Executed Assignment#page6.tif	
source=85725329 purdue Executed Assignment#page7.tif	
source=85725329 purdue Executed Assignment#page8.tif	
source=85725329 purdue Executed Assignment#page9.tif	
source=85725329 purdue Executed Assignment#page10.tif	
source=85725329 HPES - HPDC assignment#page1.tif	

HP Inc. 3390 E. Harmony Road Mail Stop 35 Fort Collins, Colorado 80528

RECORD	ID:	85725329
--------	-----	----------

### ASSIGNMENT OF PATENT APPLICATION

I, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, agree to assign and transfer and hereby assign and transfer to HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P., a Texas Limited Partnership having its principal place of business in Spring, Texas, (hereinafter "HPDC"), its successors, and its assigns, my entire right, title, and interest, including all rights of priority, in, to, and under an application for patent entitled (English-language title in parentheses if said application for patent is in another language):

and interest, i	icipal place of business in Sprir ncluding all rights of priority, in, tion for patent is in another lang	to, and under an applicat			
3D PRINTER	OBJECT HALFTONE IMAG	E GENERATION			
Filing Date:	16 April 2019	Application No.: _	6/342503		Patent Office: <u>US</u> ;
herein apatent design rights, country or reg patent, any ar said Inventior indirectly clain of, divisional a application for on or as a res	atter, including any and all inver " refers to any form of intellectu and utility model rights) (here ion or under any international a did all applications for patent din is, any and all applications for ns priority or benefit, and any a applications of, national-phase patent for any of said Inventio bult of said Applications for Pate ations for Patent or said Patents	al property protection incleinafter "Inventions"); any agreement for any of said ectly or indirectly claiming patent from which any nd all continuation applications of, regionalns) (hereinafter "Applicatent (hereinafter "Patents")	uding, withou and all exist Inventions ( priority to o application fo ations of, cor phase applic ions for Pate	at limitation, invention ricting and future applicating and future applicatingly defined in the second application patent for any of sattinuation-in-part applications of, renewals of, nt"); any and all patents	ghts, utility patent rights, ations for patent of any tion, said application for tion for patent for any of ild Inventions directly or ations (hereinafter CIPs) and substitutes for any s which may be granted
	Y represent that I convey my le, and interest herein assigned ith;		•		9
Applications f authorize HPI	IEREBY authorize HPDC, its or Patent in its name or in my DC, its successors, its assign patent office of said application	name in any country os, its nominees, and its	r region or u legal repres	nder any international entatives to insert the	agreement, and further filing date, application
duty it is to is:	EREBY authorize and request to sue patents, to issue to HPDC, cordance with the terms of this	its successors, or its ass			
such papers and HPDC, its such all known fact and sign all applications) generally to dimaintain, and and Patents, p	EREBY covenant and agree that as may be necessary or desirucessors, or its assigns; commus respecting said Inventions, A lawful papers (including, without relating to said Inventions, Appo everything possible to aid HP enforce, for its or their own benorovided the expenses which may its assigns, its nominees, or its	able to perfect the title inicate to HPDC, its succepplications for Patent, and limitation, divisional blications for Patent, and PDC, its successors, its arefit, proper intellectual pray be incurred by me in I	n said Invenessors, its assid Patents; te applications, Patents; and ssigns, its no operty protect	tions, Applications for signs, its nominees, or stify in any legal or ad- continuation application d make all rightful oath minees, and its legal re tion for said Inventions	Patent, and Patents, to its legal representatives, ministrative proceedings ons, CIPs, and reissuens and declarations and epresentatives to obtain, Applications for Patent,
IN WITN	ESS WHEREOF, I hereunto se	t my hand and seal:			
T.	2. Ulil		10	December	2019
Inventor's Sig	nature	***************************************	Day	Month	Year
Robert	Ulichn				
Given (First ar	d Middle) Name(s) Family N	lame			

PRF Ref No. 2017-ALLE-67882-01

#### ASSIGNMENT

WHEREAS, WE, JAN P. ALLEBACH, citizen of United States; RUIYI MAO, citizen of China; WANLING JIANG, citizen of China; (hereinafter "Assignors"), have made or developed a technology identified in a disclosure to Purdue Research Foundation (PRF) and assigned PRF reference number 2017-ALLE-67882, generally known as:

### "3D PRINTED OBJECT HALFTONE IMAGE GENERATION,"

which is further described in a patent application filed in the United States Patent and Trademark Office on <u>January 27, 2017</u>, and accorded Application No. PCT/US17/15385 ("Technology"); and

WHEREAS, Purdue Research Foundation, a statutory body corporate formed and existing under the Indiana Foundation or Holding Companies Act of 1921, having a place of business at 1801 Newman Road, West Lafayette, IN 47906 (hereinafter "Assignee"), is desirous of accepting and assuming all such right, title, and interests of the Assignor.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, the Assignor(s) do hereby sell, transfer, convey, assign and deliver unto the Assignee, its successors, assigns and legal representatives, any and all intellectual property rights, whether domestic or foreign related to the Technology, including but not limited to: all portions, and works in progress with respect thereto and all inventions, works of authorship, masks works, technology, information, know-how, materials and tools relating thereto or to the development, support or maintenance thereof; all copyright, patent rights, trade secret rights, trademark rights, mask works rights, and all other intellectual property rights and all business, contract rights and goodwill in, incorporated or embodied in, used to develop, or related to any of the foregoing and any registrations and applications for registrations of the foregoing throughout the United States of America and the world and any and all other applications arising therefrom, including any and all divisional applications, continuation applications, and continuation-in-part applications (but only and solely to the extent such continuation-in-part applications are described in the priority application to which such continuation-in-part applications claim priority and such priority is not

1 of 7

PRF Ref No. 2017-ALLE-67882-01

denied), of the Technology, and any and all patents to be issued and obtained therefore and thereon,

in the United States and throughout the world, including all reissued Patents, and extensions

thereof (collectively, the "Intellectual Property");

AND WE HEREBY agree to communicate to Assignee or its representative any facts

known to us respecting the Technology whether or not patentable, which we may conceive,

develop, make, produce or reduce to practice in whole or in part as a result of any employment,

research, or activity involving or relating to the use of Purdue University resources; and agree to

sign all lawful documents and make all rightful oaths and declarations relating to said Technology

and Intellectual Property; authorize Assignee to insert herein the date of application, serial number,

date of registration, and registration number of patents issued once known; and agree to otherwise

aid ASSIGNEE as necessary and desirable to:

1. Obtain, enforce, and maintain any issued letters patent in the United States or

throughout the world, when reasonably requested to do so by Assignee, including but not limited

to executing, acknowledging, and delivering to Assignee such written documents and instruments

as Assignee requests and giving testimony in support of Assignee's inventorship, as may be

necessary in Assignee's opinion to obtain and maintain patents in the United States of America

and throughout the world;

2. Secure or aid in securing and maintaining copyright protection in the Intellectual

Property and assist Assignee or its nominees in filing applications to register copyright in the

name of Assignee as owner in such Intellectual Property; and

3. Execute, acknowledge, and deliver to Assignee at its expense, such written

documents and instruments and do such other acts as may be necessary in the opinion of Assignee,

to vest the entire rights, title, and interests in and to the Intellectual Property to Assignee and to

confirm the complete ownership thereof by Assignee.

AND WE HEREBY authorize ASSIGNEE to take any and all action necessary to

effectuate this Assignment, including but not limited to, the filing of the Assignment with the U.S.

Patent and Trademark Office and U.S. Copyright Office.

2 of 7

PRF Ref No. 2017-ALLE-67882-01

AND WE HEREBY authorize and request the Director of the U.S. Patent and Trademark

Office or any other proper officer or agency throughout the world to issue any and all said letters

patent to Assignee.

AND WE HEREBY warrant and covenant that we have full rights to convey the entire

right, title and interest herein assigned and that we have not executed and will not execute any

instrument or assignment in conflict herewith;

This Assignment shall be binding upon Assignor(s) and their heirs, successors, and assigns.

Should any term of this Assignment be found invalid or unenforceable, it shall not affect the

validity or enforceability of any other term of this Assignment. The laws of the State of Indiana

will govern the interpretation, validity, and effect of this Assignment, without regard to the place

of making or to the place of performance.

This Assignment is hereby made effective as of the conception date of the Technology.

[SIGNATURES ON NEXT PAGE]

3 of 7

ACCEPTED BY ASSIGNOR:

Residence Address:

225 Northwestern Ave. Apt. 506 Address
W. Lafayette IN 47906

City, State and Zip

05/18/2017	Ruiyi Mao
Date	RUIYI MAO
	Residence Address:
	690 Leahy St, Apt 1
	Address

Redwood City, CA 94061
City, State and Zip

ACCEPTED	RΥ	ACCIGNOR
AL CPIELL	n	AGGIURON

05/17/2017 Date Wanting Jiang
WANLING JIANG

Residence Address:

925 Hilltop Dr. APT 403
Address

West Lafayette, IN 47906 City, State and Zip

ACCEPTED BY ASSIGNEE:

Date

By:

Printed: Bobak P. Jalaie

Title: Chief Patent Counsel and Director of IP - Legal

Office of Technology Commercialization

Purdue Research Foundation

#### ASSIGNMENT

WHEREAS, Ruiyi MAO, Jan ALLEBACH, Wanling JIANG, Lluis ABELLO ROSELLO, Robert ULICHNEY and Utpal Kumar SARKAR are inventor(s) of an invention subject to a patent application entitled "3D PRINTED OBJECT HALFTONE IMAGE GENERATION" and identified by HP Record ID: 85725329, Filing Date: 16 April 2019, Application No.: 16/342503, Patent Office: US.

WHEREAS, the said Lluis ABELLO ROSELLO and Utpal Kumar SARKAR were at the material time, employee(s) of HP PRINTING AND COMPUTING SOLUTIONS, S.L.U. (a Spanish Company).

WHEREAS, HP PRINTING AND COMPUTING SOLUTIONS, S.L.U. is by operation of Article 15, Subsection 1 of the Spanish Patent Act of 2015 relating to employee inventions, owner of all rights, title and interests in said invention arising out of the participation of its said employee in the creation of said invention.

NOW, THEREFORE, in accordance with an Agreement between HP PRINTING AND COMPUTING SOLUTIONS, S.L.U. and HP Inc. (A Delaware corporation having its principal place of business in Palo Alto, California), and a further agreement between HP Inc. and Hewlett-Packard Development Company, L.P. (a Texas limited partnership having its principal place of business in Spring, Texas, USA), the latter agreement also including the transfer to Hewlett-Packard Development Company, L.P. of the right to claim convention priority from applications filed in respect of the invention, HP PRINTING AND COMPUTING SOLUTIONS, S.L.U., at the direction of HP Inc., hereby perfects the assignment to Hewlett-Packard Development Company, L.P., its successors and assigns, of HP PRINTING AND COMPUTING SOLUTIONS, S.L.U.'s entire right. title, and interest, including all rights of priority, in, to, and under said patent application; the subject matter, including any and all inventions, improvements, and discoveries, set forth in said application for patent (as used herein "patent" refers to any form of intellectual property protection including, without limitation, invention rights, utility patent rights, design rights, and utility model rights) (hereinafter "Inventions"); any and all existing and future applications for patent of any country or region or under any international agreement for any of said Inventions (including, without limitation, said application for patent, any and all applications for patent directly or indirectly claiming priority to or benefit of any application for patent for any of said Inventions, any and all applications for patent from which any application for patent for any of said Inventions directly or indirectly claims priority or benefit, and any and all continuation applications of, continuation-in-part applications (hereinafter CIPs) of, divisional applications of, national-phase applications of, regional-phase applications of, renewals of, and substitutes for any application for patent for any of said Inventions) (hereinafter "Applications for Patent"); any and all patents which may be granted on or as a result of said Applications for Patent (hereinafter "Patents"); and any and all reissues, reexaminations, and extensions of said Applications for Patent or said Patents as consistent with the Agreement between HP PRINTING AND COMPUTING SOLUTIONS, S.L.U. and HP Inc., and HP Inc. and Hewlett-Packard Development Company. L.P. HP PRINTING AND COMPUTING SOLUTIONS, S.L.U. hereby authorizes HP Inc. and Hewlett-Packard Development Company, L.P., their successors, their assigns, their nominees, and their legal representatives to insert the filing date, application number, and patent office of said application for patent, now identified by the Record ID and title set forth above, when known to them.

IN WITNESS WHEREOF, this Assignment is executed by a duly authorized representative of HP PRINTING AND COMPUTING SOLUTIONS, S.L.U.

HP PRINTING AND COMPUTING SOLUTIONS, S.L.U.

By:

Alessandro Orsi

Title:

Associate General Counsel - IP Transactions

Date:

PIOG isdunded its

Record ID No. 85725329 Rev. Jan 2019

**RECORDED: 12/18/2019**