# 505142594 10/16/2018

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5189360

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
VANESSA VERZWYVELT	08/01/2017
MATTHEW A SHEPHERD	08/01/2017
MORGAN T SCHRAMM	08/22/2017
ANDREW E FITZHUGH	08/10/2017
LIHUA ZHAO	08/10/2017
JACOB TYLER WRIGHT	08/16/2017
HECTOR LEBRON	08/02/2017

### **RECEIVING PARTY DATA**

Name:	Hewlett-Packard Development Company, L.P.
Street Address:	11445 Compaq Center Drive West
City:	Houston
State/Country:	TEXAS
Postal Code:	77070

## **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16076241

# **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

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Correspondent Name: HP INC.

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Address Line 2: INTELLECTUAL PROPERTY

Address Line 4: FORT COLLINS, COLORADO 80528

ATTORNEY DOCKET NUMBER:	84999424
NAME OF SUBMITTER:	JOHN E. NEMAZI
SIGNATURE:	/John E. Nemazi/
DATE SIGNED:	10/16/2018

505142594 PATENT REEL: 047171 FRAME: 0230

# Total Attachments: 8 source=16076241\_84999424\_Assignment#page1.tif source=16076241\_84999424\_Assignment#page2.tif source=16076241\_84999424\_Assignment#page3.tif source=16076241\_84999424\_Assignment#page4.tif source=16076241\_84999424\_Assignment#page5.tif source=16076241\_84999424\_Assignment#page6.tif source=16076241\_84999424\_Assignment#page7.tif source=16076241\_84999424\_Assignment#page8.tif

PATENT REEL: 047171 FRAME: 0231

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

### PATENT APPLICATION

RECORD ID: 84630716	
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### ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each), for good and valuable consideration, the receipt of which is hereby acknowledged, and in furtherance of my/our obligations to HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P., a Texas Limited Partnership having its principal place of business in Houston, Texas, (hereinafter HPDC), and to its subsidiaries and affiliates, agree to assign and transfer and hereby assign and transfer to HPDC, its successors and assigns, the entire right, title and interest, including the right of priority, in, to and under an application for Patent

INFERRING OBJECT ATTRIBUTES

Filing Date:	07-AUG-2018	Application No.:	16/076,241	
divisionals, and	n(s) and improvement(s) set forth therein renewals of and substitutes for said app which may be granted thereon or therefo	dication for said Patent,	and any and all other P	atent of any

I/we additionally authorize HPDC to file applications in my/our name for Patent in any country, to be held and enjoyed by HPDC, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, and transfer not been made:

AND I/we hereby covenant that I/we have full right to convey the entire interest herein assigned, and that I/we have not executed and will not execute any agreement in conflict herewith, and I/we further covenant and agree that I/we will, each time a request is made, and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said invention(s) or improvement(s), said application and said Patent, to HPDC, its successors, assigns, nominees or legal representatives, and tive agree to communicate to HPDC, or to its nominee, all known facts respecting said invention(s) or improvement(s), said application and said Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisionals, continuations, C-I-P's, reissue and foreign applications, to make all rightful caths and declarations, and generally to do everything possible to aid HPDC, its successors, assigns, nominees and legal representatives to obtain and enforce, for its or their own benefit, proper patent protection for said invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by HPDC;

AND I/we hereby authorize and request the official of any country or countries whose duty it is to issue patents on applications as aforesaid, to issue to HPDC, as assignee of the entire right, title and interest, any end all Patent for said invention(s) or improvement(s) which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct the attorneys of record to insert the filing date and application number of said application for Patent, now identified by the Record ID and title set forth above, as soon as the same shall have been made known to them.

1	OF, I/we hereunto set n	ny/our hand(s) an	d seal(s): 8/1/2003
Inventor's Signature	7~~		Date Date
Vanessa	Verzwyvelt		
First/Middle Name	Last Name,	***************************************	<del></del>
_///4/4/4/	Mandel		01Ava 2017
Inventor's Signature			Date //
Matthew A	Shepherd		
First/Middle Name	Last Name		<del></del>
Rev 8/2014 (Assignment)		Page 1 of 2	

REEL: 047171 FRAME: 0232

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

# PATENT APPLICATION

Fort Collins, Colorado 80528		RECORD ID:	84630716
	ASSIGNMENT OF PA	TENT APPLICATION (cor	nt.)
MATE 2	)	August:	22, 2017
Inventore Signature		Date	
Morgan T	Schramm		
First/Middle Name	Last Name		
Inventor's Signature		Date	
Andrew E	Fitzhugh		
First/Middle Name	Last Name		
Inventor's Signature		Date	
Lihua	Zhao		
First/Middle Name	Last Name		
Inventor's Signature		Date	
Jacob Tyler	Wright		
First/Middle Name	Last Name		
Inventor's Signature		Date	
Hector	Lebron		
First/Middle Name	Last Name		
Inventor's Signature		Date	
First/Middle Name	Last Name		

HP Inc.	
3390 E. Harmony R	oad
Mail Stop 35	1
Fort Collins, Colorad	do 80528

## PATENT APPLICATION

RECORD ID:	84630716
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# ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each), for good and valuable consideration, the receipt of which is hereby acknowledged,

and in furtherance of my/our obligations to HI Limited Partnership having its principal place subsidiaries and affiliates, agree to assign and tr assigns, the entire right, title and interest, inclu- entitled;	of business in Houston, Text ansfer and hereby assign and t	as, (hereinafter HPDC), and to its ransfer to HPDC, its successors and
INFERRING OBJECT ATTRIBUTES		
Filing Date: 07-AUG-2018	Application No.:	16/076,241
and the invention(s) and improvement(s) set forth divisionals, and renewals of and substitutes for a countries thereto which may be granted thereon of Patent.	said application for said Patent,	and any and all other Patent of any
I/we additionally authorize HPDC to file applicate by HPDC, its successors, assigns, nominees or le Patent respectively may be granted, reissued or enjoyed by me/us had this assignment, and transfer	igal representatives, to the full elextended, as fully and entirely as	nd of the term or terms for which said
AND five hereby covenant that five have full ri- executed and will not execute any agreement in co- time a request is made, and without undue delay, e- perfect the title to said invention(s) or improvement nominees or legal representatives, and five agree- said invention(s) or improvement(s), said application papers, to execute all disclaimers and divisionals rightful ceths and declarations, and generally to do a legal representatives to obtain and enforce, for its improvement(s) in any and all countries provided the and assistance are paid by HPDC;	wriflict herewith, and I/we further of execute and deliver all such paper i(s), said application and said Pat to communicate to HPDC, or to on and said Patent, to testify in a secontinuations, C-I-P's, reissue everything possible to aid HPDC, or their own benefit, proper pa	covenant and agree that I/we will, each rs as may be necessary or desirable to ent, to HPDC, its successors, assigns, is nominee, all known facts respecting ny legal proceedings, to sign all lawful and foreign applications, to make all its successors, assigns, nominees and tent protection for said invention(s) or
AND I/we hereby authorize and request the capplications as aforesaid, to issue to HPDC, as as invention(s) or improvement(s) which may be issuecondance with the terms of this assignment.	ssignee of the entire right, title ar	nd interest, any and all Patent for said
I/we further authorize and direct the attorner application for Patent, now identified by the Record known to them.		
INWITNESS WHEREOF, I/we hereunto set r	my/our hand(s) and seal(s):	
to do it	8/	1/2017
Inventor's Signature	Date	'/ <del>* 01</del> /
Vanessa Verzwyveit		
First/Middle Name Last Name	***************************************	
MARTE A. Klankel		11 Aug 2017
Inventor's Signature	Date	
Matthew A Shepherd		
First/Middle Name Last Name	***************************************	
Rev 8/2014 (Assignment)	Page 1 of 2	

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

# PATENT APPLICATION

Fort Collins, Colorado 80528	8] ·	RECORD ID:	84630716
	ASSIGNMENT OF PA	TENT APPLICATION (con	t.)
Inventor's Signature		Date	
Morgan T	Schramm		
First/Middle Name	Last Name		
ANH			10/2017
Ynventor's Signature		Date /	'
Andrew &	Fitzhugh	***************************************	
First/Middle Name	Last Name		
Jeho	2000	8/	10/2017
Inventor's Signature	<del></del>	Date	
Lihua	Zhao		
First/Middle Name	Last Name	·······	
Inventor's Signature		Date	
Jacob Tyler	Wright		
First/Middle Name	Last Name		
Inventor's Signature		Date	
Hector	Lebron		
First/Middle Name	Last Name		
Inventor's Signature		Date	
First/Middle Name	Last Name		

Page 2 of 2

HP Inc.
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### PATENT APPLICATION

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INFERRING OBJECT ATTRIBUTES

Filing Date:	07-AUG-20	18	Application No.:	16/076,241	
divisionals, and	renewals of and	nent(s) set forth therein, a substitutes for said applic anted thereon or therefore	ation for said Patent,	and any and all o	other Patent of any

I/we additionally authorize HPDC to file applications in my/our name for Patent in any country, to be held and enjoyed by HPDC, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by melus had this assignment, and transfer not been made:

AND I/we hereby covenant that I/we have full right to convey the entire interest herein assigned, and that I/we have not executed and will not execute any agreement in conflict herewith, and I/we further covenant and agree that I/we will, each time a request is made, and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said invention(s) or improvement(s), said application and said Patent, to HPDC, its successors, assigns, nominees or legal representatives, and tive agree to communicate to HPDC, or to its nominee, all known facts respecting said invention(s) or improvement(s), said application and said Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisionals, continuations, C-I-P's, reissue and foreign applications, to make all rightful caths and declarations, and generally to do everything possible to aid HPDC, its successors, assigns, nominees and legal representatives to obtain and enforce, for its or their own benefit, proper patent protection for said invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by HPDC;

AND I/we hereby authorize and request the official of any country or countries whose duty it is to issue patents on applications as aforesaid, to issue to HPDC, as assignee of the entire right, title and interest, any end all Patent for said invention(s) or improvement(s) which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct the attorneys of record to insert the filing date and application number of said application for Patent, now identified by the Record ID and title set forth above, as soon as the same shall have been made known to them.

Tours Ten	EOF, I/we hereunto set r www.d	my/our hand(s) an	sand(s) and seal(s): $8/i/2oi7$		
Inventor's Signature	<u> </u>		Date		
Vanessa	Verzwyveit				
First/Middle Name	Last Name,	***************************************			
Mark - 1	1. Mandal		0/Aus 20/7		
Inventor's Signature			Date //		
Matthew A	Shepherd				
First/Middle Name	Last Name		···		
Sour 9/2014 / Assetsminanth		Page 1 of 2			

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# PATENT APPLICATION

Fort Collins, Colorado 80528	8]	RECORD ID: 84630716
	ASSIGNMENT OF PA	TENT APPLICATION (cont.)
Inventor's Signature		Data
Morgan T	Schramm	
First/Middle Name	Last Name	
Inventor's Signature		Date
Andrew E	Fitzhugh	
First/Middle Name	£ast Name	
Inventor's Signature		Date
Lihua	Zhao	
First/Middle Name	Last Name	
Jak Andrews Signature	K.	16 As 2017
Jacob Tyler	Wright	
First/Middle Name	Last Name	
Inventor's Signature		Date
Hector	Lebron	
First/Middle Name	East Name	<del></del>
Inventor's Signature		Date
First/Middle Name	Last Name	

Page 2 of 2

Ĭ,	IP Inc.
3	390 E. Harmony Road
ķ	tali Stop 35
£	ort Collins, Colorado 80528

Rev 8/2014 (Assignment)

## PATENT APPLICATION

## **ASSIGNMENT OF PATENT APPLICATION**

I/We, the undersigned (each), for good and valuable consideration, the receipt of which is hereby acknowledged, and in furtherance of my/our obligations to HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P., a Texas

subsidiaries and affili assigns, the entire ri- entitled:	ates, agree to assign and transfer ght, title and interest, including th	and hereby assign and t	as, (hereinafier HPDC), and to its ransfer to HPDC, its successors and and under an application for Palent
INFERRING OBJEC	T ATTRIBUTES		
Filing Date: 07-	AUG-2018	Application No.: _	16/076,241
divisionals, and renev	vals of and substitutes for said ap	plication for said Patent,	uations, continuations-in-part (C-I-P's), and any and all other Patent of any reexaminations, or extensions of said
I/we additionally authorize HPDC to file applications in my/our name for Patent in any country, to be held and enjoy by HPDC, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which a Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held a enjoyed by me/us had this assignment, and transfer not been made;			
executed and will not time a request is made perfect the title to said nominees or legal represald invention(s) or im- papers, to execute all rightful caths and decl- legal representatives in	execute any agreement in conflict to a, and without undue delay, execute invention(s) or improvement(s), sa resentatives, and I/we agree to com- provement(s), said application and I disclaimers and divisionals, conti- erations, and generally to do everyth to obtain and enforce, for its or the and all countries provided the expe-	ierewith, and I/we further is and deliver all such pape id application and said Pai imunicate to HPDC, or to said Patent, to testify in a inuations, C-I-P's, reissue hing possible to aid HPDC, eir own benefit, proper pa	nerein assigned, and that I/we have not povenant and agree that I/we will, each ers as may be necessary or desirable to tent, to HPDC, its successors, assigns, its nominee, all known facts respecting ny legal proceedings, to sign all lawful and foreign applications, to make all its successors, assigns, nominees and tent protection for said invention(s) or d by me/us in lending such cooperation
applications as afores invention(s) or improve	aid, to issue to HPDC, as assigned	of the entire right, title a	s whose duty it is to issue patents on nd interest, any and all Patent for said result of the application aforesaid, in
			date and application number of said on as the same shall have been made
INWITNESS WH	EREOF, I/we hereunto set my/ou	r hand(s) and seal(s):  S  Date	1/2017
Vanessa	Verzwyvelt		
First/Middle Name Inventor's Signature	Last Name,	Date	7/Ay 2017
Matthew A	Shepherd		
First/Middle Name	Last Name	***********************	

Page 1 of 2

HP Inc. 3390 E. Harmony Road

# PATENT APPLICATION

Mail Stop 35 Fort Collins, Colorado 805	28	RECORD ID: 84630716
	ASSIGNMENT OF PA	TENT APPLICATION (cont.)
Inventor's Signature		
Morgan T	Schramm	<del></del>
First/Middle Name	Last Name	
Inventor's Signature		Date
Andrew E	Fitzhugh	
First/Middle Name	Last Name	
Inventor's Signature		Date
Lihua	Zhao	
First/Middle Name	Last Name	
Inventor's Signature		Date
Jacob Tyler	Wright	
First/Middle Name	Last Name	<del></del>
	July II	2-Aug-17
Inventor's Signature	7	Date
Hector	Lebron	
First/Middle Name	Last Name	
Inventor's Signature		Date
First/Middle Name	Last Name	

Page 2 of 2

**PATENT REEL: 047171 FRAME: 0239** 

**RECORDED: 10/16/2018**