# 504419848 06/19/2017

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4466548

| SUBMISSION TYPE:      | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT     |

### **CONVEYING PARTY DATA**

| Name           | Execution Date |
|----------------|----------------|
| YUAN CHEN      | 10/31/2014     |
| VANISH TALWAR  | 11/14/2014     |
| NAILA FAROOQUI | 10/31/2014     |
| INDRAJIT ROY   | 10/31/2014     |

## **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: | 15522354 |

# **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:** (970) 898-7472

**Email:** hpe.ip.mail@hpe.com

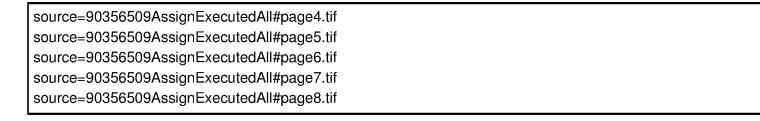
Correspondent Name: HEWLETT PACKARD ENTERPRISE
Address Line 1: 3404 E. HARMONY ROAD MS 79
Address Line 4: FORT COLLINS, COLORADO 80528

| ATTORNEY DOCKET NUMBER: | 90356509          |
|-------------------------|-------------------|
| NAME OF SUBMITTER:      | KATHY HUNGSBERG   |
| SIGNATURE:              | /Kathy Hungsberg/ |
| DATE SIGNED:            | 06/19/2017        |

## **Total Attachments: 8**

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PATENT 504419848 REEL: 042748 FRAME: 0058



Rev 8/2014 (Assignment)

| PATENT |  |  |
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| RECORD ID: | 84030631 |
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## ASSIGNMENT OF PATENT APPLICATION

| and in furtherance<br>Limited Partnershi<br>subsidieries and al                                                                                                                     | e of my/our obligations to HEVVL<br>ip having its principal place of t<br>filliates, agree to assign and transf                                                                                                                                                                                                                           | ole consideration, the receipt of which is hereby acknowledged,<br>ETT-PACKARD DEVELOPMENT COMPANY, L.P., a Texas<br>usiness in Houston, Texas, (hereinafter HPDC), and to its<br>er and hereby assign and transfer to HPDC, its successors and<br>the right of priority, in, to and under an application for Patent                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| INTEGRATED HE                                                                                                                                                                       | TEROGENEOUS PROCESSING (                                                                                                                                                                                                                                                                                                                  | INITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Filing Date:                                                                                                                                                                        | 04/27/2017                                                                                                                                                                                                                                                                                                                                | Application No.: 15/522354                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| divisionals, and re-                                                                                                                                                                | newals of and substitutes for said.                                                                                                                                                                                                                                                                                                       | ein, and any and all continuations, continuations-in-part (C-I-P's), application for said Patent, and any and all other Patent of any refore; and any reissues, or reexaminations, or extensions of said                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| by HPDC, its succe<br>Palent respectively                                                                                                                                           | essors, assigns, nominees or legal r                                                                                                                                                                                                                                                                                                      | in my/our name for Patent in any country, to be held and enjoyed<br>apresentatives, to the full end of the term or terms for which said<br>led, as fully and entirely as the same would have been held and<br>been made;                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| executed and will nations a request is made perfect the title to a nominees or legal nation(s) or papers, to execute rightful paths and regal representation or the provement(s) in | of execute any agreement in conflict<br>ade, and without undue delay, execu-<br>laid invention(s) or improvement(s), or<br>representatives, and I/we agree to con-<br>improvement(s), said application are<br>all disclaimers and divisionals, con-<br>declarations, and generally to do ev-<br>latives to obtain and enforce, for its of | o convey the entire interest herein assigned, and that I/we have not herewith, and I/we further coverient and agree that I/we will, each te and deliver all such papers as may be necessary or desirable to aid application and said Patent, to HPDC, its successors, assigns, immunicate to HPDC, or to its nominee, all known facts respecting disaid Patent, to testify in any legal proceedings, to sign all lawful intinuations, C-I-P's, reissue and foreign applications, to make all erything possible to aid HPDC, its successors, assigns, nominees in their own benefit, proper patent protection for said invention(s) or expenses which may be incurred by me/us in lending such |
| applications as afo<br>invention(s) or imp                                                                                                                                          | resaid, to issue to HPDC, as assign                                                                                                                                                                                                                                                                                                       | il of any country or countries whose duty it is to issue patents on<br>se of the entire right, title and interest, any and all Patent for said<br>and granted on or as a result of the application oforesaid, in                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                           | record to insert the filing date and application number of said<br>nd tille set forth above, as soon as the same shall have been made                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| IN WITNESS                                                                                                                                                                          | WHEREOF, I/we hereunto set my/                                                                                                                                                                                                                                                                                                            | our hand(s) and seal(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1                                                                                                                                                                                   | & Reduced Land                                                                                                                                                                                                                                                                                                                            | 10/31/2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Inventor's Signature                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                           | Oate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Yuan                                                                                                                                                                                | CHEN                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| First/Middle Name                                                                                                                                                                   | Last Name                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Inventor's Signature                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                           | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Vanish                                                                                                                                                                              | TALWAR                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| First/Middle Name                                                                                                                                                                   | Last Name                                                                                                                                                                                                                                                                                                                                 | ······································                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## **PATENT APPLICATION**

| RECORD ID: | 84030631 |
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# **ASSIGNMENT OF PATENT APPLICATION (cont.)**

| Inventor's Signature |           | Date |  |
|----------------------|-----------|------|--|
| Naila                | FAROOQUI  |      |  |
| First/Middle Name    | Last Name |      |  |
| Inventor's Signature |           | Date |  |
| Indrajit             | ROY       |      |  |
| First/Middle Name    | Last Name |      |  |
| Inventor's Signature |           | Date |  |
| First/Middle Name    | Last Name |      |  |
| Inventor's Signature |           | Date |  |
| First/Middle Name    | Last Name |      |  |
| Inventor's Signature |           | Date |  |
| First/Middle Name    | Last Name |      |  |
| Inventor's Signature |           | Date |  |
| First/Middle Name    | Last Name |      |  |
|                      |           |      |  |

Page 2 of 2

| PATENT APPLICATION | 20 | TENT | APPE | MA. | TION |
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| RECORD ID: | 84030631 |
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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 nd ¥.

| subsidiaries and affiliates.                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                            | sfer and hereby assign and transfer to HPDC, its successors and g the right of priority, in, to and under an application for Patent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                | SENEOUS PROCESSING                                                                                                                                                                                                                                                                         | UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Filing Date: 04/27/20                                                                                                                                                                                                          | 017                                                                                                                                                                                                                                                                                        | Application No.: 15/522354                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| divisionals, and renewals                                                                                                                                                                                                      | of and substitutes for sald                                                                                                                                                                                                                                                                | erein, and any and all continuations, continuations-in-part (C-I-P's),<br>application for said Patent, and any and all other Patent of any<br>persions; and any reissues, or reexaminations, or extensions of said                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| by HPDC, its successors.<br>Patent respectively may be                                                                                                                                                                         | assigne, nomineed or legal                                                                                                                                                                                                                                                                 | ns in my/our name for Patent in any country, to be held and enjoyed i representatives, to the full and of the term or femile for which said inded, as fully and entirely as the same would have been held and at been made;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| executed and will not executime a request is made, an perfect the title to said invenominees or legal represe said invention(s) or improvements, to execute all disrightful oaths and declaration and legal representatives to | ute any agreement in conflict<br>d without undue delay, exer-<br>ention(s) or improvement(s),<br>ntatives, and I/we agree to<br>ement(s), said application a<br>claimers and divisionals, o<br>lons, and generally to do e<br>to obtain and enforce, for its<br>and all countries provided | I to convey the entire interest herein essigned, and that I'we have not let herewill, and I'we further covenant and agree that I'vie will, each cute and deliver all such papers as may be necessary or desirable to, said application and said Patent, to HPDC, its successors, assigns, communicate to HPDC, or to its nominee, all known facts respecting and said Patent, to testify in any legal proceedings, to sign all tawfut ontinuations, C-I-P's, reissue and foreign applications, to make all everything possible to aid HPDC, its successors, assigns, nominees or their own benefit, proper patent protection for said invention(s) or the expenses which may be incurred by me/us in lending such |
| applications as aforesaid,                                                                                                                                                                                                     | to issue to HPDC, as assig<br>int(s) which may be issue                                                                                                                                                                                                                                    | dal of any country or countries whose duty it is to issue natents on<br>pree of the entire right, title and interest, any and all Patent for said<br>ad and granted on or as a result of the application aforesaid, in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                            | of record to insert the filling date and application number of said and title set forth above, as soon as the same shall have been made                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| IN WITNESS WHEN                                                                                                                                                                                                                | OF, live harounto set my                                                                                                                                                                                                                                                                   | /our hand(s) and seal(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| inventor's Signature                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                            | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Yuan                                                                                                                                                                                                                           | CHEN                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| First/Middle Name                                                                                                                                                                                                              | Last Name                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Sighway .                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                            | 11/14/14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Inventor's Signature                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                            | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Vanish                                                                                                                                                                                                                         | TALWAR                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| First/Middle Name                                                                                                                                                                                                              | Last Name                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Rev 8/2014 (Assignment)                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                            | Page 1 of 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Page 1 of 2

## PATENT APPLICATION

| RECORD ID: | <u>84030631</u> |
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# **ASSIGNMENT OF PATENT APPLICATION (cont.)**

| Inventor's Signature |           | Date |
|----------------------|-----------|------|
| Naila                | FAROOQUI  |      |
| First/Middle Name    | Last Name |      |
| Inventor's Signature |           | Date |
| Indrajit             | ROY       |      |
| First/Middle Name    | Last Name |      |
| Inventor's Signature |           | Date |
| First/Middle Name    | Last Name |      |
| Inventor's Signature |           | Date |
| First/Middle Name    | Last Name |      |
| Inventor's Signature |           | Date |
| First/Middle Name    | Last Name |      |
| Inventor's Signature |           | Date |
| First/Middle Name    | Last Name |      |

Rev 8/2014 (Assignment) Page 2 of 2

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| RECORD ID: | 84030631 |
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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                                                                                                                                                                 | d affiliates, agree to assign and trans                                                                                                                                                                                                                                                                                         | fer and hereby assign and transfer to HPDC, its successors and the right of priority, in, to and under an application for Patent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| INTEGRATED                                                                                                                                                                       | HETEROGENEOUS PROCESSING                                                                                                                                                                                                                                                                                                        | UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Filing Date:                                                                                                                                                                     | 04/27/2017                                                                                                                                                                                                                                                                                                                      | <b>Application No.:</b> 15/522354                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| divisionals, and                                                                                                                                                                 | renewals of and substitutes for said                                                                                                                                                                                                                                                                                            | rein, and any and all continuations, continuations-in-part (C-I-P's), application for said Patent, and any and all other Patent of any prefore; and any reissues, or reexaminations, or extensions of said                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| by HPDC, its su<br>Patent respective                                                                                                                                             | accessors, assigns, nominees or legal                                                                                                                                                                                                                                                                                           | is in my/our name for Patent in any country, to be held and enjoyed representatives, to the full end of the term or terms for which said ided, as fully and entirely as the same would have been held and been made;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| executed and w<br>time a request is<br>perfect the title t<br>nominees or leg<br>said invention(s)<br>papers, to exec<br>rightful oaths ar<br>and legal repres<br>improvement(s) | ill not execute any agreement in conflict made, and without undue delay, exect to said invention(s) or improvement(s), all representatives, and I/we agree to color improvement(s), said application a cute all disclaimers and divisionals, could declarations, and generally to do eventatives to obtain and enforce, for its | to convey the entire interest herein assigned, and that I/we have not the herewith, and I/we further covenant and agree that I/we will, each ute and deliver all such papers as may be necessary or desirable to said application and said Patent, to HPDC, its successors, assigns, communicate to HPDC, or to its nominee, all known facts respecting and said Patent, to testify in any legal proceedings, to sign all lawful intinuations, C-I-P's, reissue and foreign applications, to make all rerything possible to aid HPDC, its successors, assigns, nominees for their own benefit, proper patent protection for said invention(s) or the expenses which may be incurred by me/us in lending such |
| applications as invention(s) or                                                                                                                                                  | aforesaid, to issue to HPDC, as assig                                                                                                                                                                                                                                                                                           | al of any country or countries whose duty it is to issue patents on<br>nee of the entire right, title and interest, any and all Patent for said<br>I and granted on or as a result of the application aforesaid, in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                 | of record to insert the filing date and application number of said<br>and title set forth above, as soon as the same shall have been made                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| IN WITNES                                                                                                                                                                        | SS WHEREOF, I/we hereunto set my,                                                                                                                                                                                                                                                                                               | our hand(s) and seal(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Inventor's Signatu                                                                                                                                                               | ire                                                                                                                                                                                                                                                                                                                             | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Yuan                                                                                                                                                                             | CHEN                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| First/Middle Name                                                                                                                                                                | Last Name                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Inventor's Signatu                                                                                                                                                               | ure                                                                                                                                                                                                                                                                                                                             | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Vanish                                                                                                                                                                           | TALWAR                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| First/Middle Name                                                                                                                                                                | Last Name                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Rev 8/2014 (Assignme                                                                                                                                                             | nt)                                                                                                                                                                                                                                                                                                                             | Page 1 of 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

HEWLETT-PACKARD COMPANY Intellectual Property Administrator 3404 E. Harmony Road Mail Stop 35

## PATENT APPLICATION

| 3404 E. Harmony Road<br>Mail Stop 35 |                                          | RECORD ID:                            | 84030631   |  |  |
|--------------------------------------|------------------------------------------|---------------------------------------|------------|--|--|
| Fort Collins, Colorado 80528         |                                          |                                       |            |  |  |
| $\sim$                               | ASSIGNMENT OF PATENT APPLICATION (cont.) |                                       |            |  |  |
| 11 Trace in                          |                                          |                                       | 10/31/2014 |  |  |
| 17:Vrooci W                          |                                          | Date                                  |            |  |  |
| 4                                    | 54000018                                 |                                       |            |  |  |
| Naila                                | FAROOQUI<br>Last Name                    |                                       |            |  |  |
| Flrst/Middle Name                    | Lost Haine                               |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
| Inventor's Signature                 |                                          | Date                                  |            |  |  |
| Indrajit                             | ROY                                      |                                       |            |  |  |
| First/Middle Name                    | Last Name                                |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
| Inventor's Signature                 |                                          | Date                                  |            |  |  |
|                                      |                                          |                                       |            |  |  |
| C1                                   | Last Name                                |                                       |            |  |  |
| First/Middle Name                    | rast Maille                              |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
| Inventor's Signature                 |                                          | Date                                  |            |  |  |
|                                      |                                          |                                       |            |  |  |
| First/Middle Name                    | Last Name                                |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
| Inventor's Signature                 |                                          | Date                                  |            |  |  |
| inventor's Signature                 |                                          |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
| First/Middle Name                    | Last Name                                |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
|                                      |                                          |                                       |            |  |  |
| Inventor's Signature                 |                                          | Date                                  |            |  |  |
|                                      |                                          |                                       |            |  |  |
| First/Middle Name                    | Last Name                                | · · · · · · · · · · · · · · · · · · · |            |  |  |
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Page 2 of 2

Rev 8/2014 (Assignment)

| RECORD ID: | 84030631 |  |
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**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 H                                                                                                                                                                                                                                                  | IEWLETT-PACKARD DEVELOPMENT COMPANY, L.P., a Texas of business in Houston, Texas, (hereinafter HPDC), and to its                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subsidiaries and affiliate                                                                                                                                                                                                             | es, agree to assign and t                                                                                                                                                                                                                                                | ransfer and hereby assign and transfer to HPDC, its successors and<br>ding the right of priority, in, to and under an application for Patent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| INTEGRATED HETERO                                                                                                                                                                                                                      | OGENEOUS PROCESS                                                                                                                                                                                                                                                         | ING UNITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Filing Date: <u>04/27/2</u>                                                                                                                                                                                                            | 017                                                                                                                                                                                                                                                                      | Application No.: 15/522354                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| divisionals, and renewal                                                                                                                                                                                                               | s of and substitutes for                                                                                                                                                                                                                                                 | n therein, and any and all continuations, continuations-in-part (C-I-P's) said application for said Patent, and any and all other Patent of any or therefore; and any reissues, or reexaminations, or extensions of said                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| by HPDC, its successors<br>Patent respectively may                                                                                                                                                                                     | s, assigns, nominees or le                                                                                                                                                                                                                                               | eations in my/our name for Patent in any country, to be held and enjoyed egal representatives, to the full end of the term or terms for which said extended, as fully and entirely as the same would have been held and or not been made;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| executed and will not exe<br>time a request is made, a<br>perfect the title to said in<br>nominees or legal repres<br>said invention(s) or impre<br>papers, to execute all d<br>rightful oaths and declar<br>and legal representatives | ecute any agreement in or<br>and without undue delay, or<br>vention(s) or improvement<br>entatives, and I/we agree<br>ovement(s), said applicati<br>isclaimers and divisionals<br>ations, and generally to or<br>to obtain and enforce, for<br>and all countries provide | right to convey the entire interest herein assigned, and that I/we have no onflict herewith, and I/we further covenant and agree that I/we will, each execute and deliver all such papers as may be necessary or desirable to t(s), said application and said Patent, to HPDC, its successors, assigns to communicate to HPDC, or to its nominee, all known facts respecting on and said Patent, to testify in any legal proceedings, to sign all lawfus, continuations, C-I-P's, reissue and foreign applications, to make all to everything possible to aid HPDC, its successors, assigns, nominees reits or their own benefit, proper patent protection for said invention(s) or ed the expenses which may be incurred by me/us in lending such |
| applications as aforesaid                                                                                                                                                                                                              | l, to issue to HPDC, as a<br>nent(s) which may be is                                                                                                                                                                                                                     | official of any country or countries whose duty it is to issue patents or ssignee of the entire right, title and interest, any and all Patent for said sued and granted on or as a result of the application aforesaid, in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                          | eys of record to insert the filing date and application number of said<br>I ID and title set forth above, as soon as the same shall have been made                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| IN WITNESS WHEF                                                                                                                                                                                                                        | REOF, I/we hereunto set                                                                                                                                                                                                                                                  | my/our hand(s) and seal(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Inventor's Signature                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                          | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| Vanish                                                                                                                                                                                                                                 | TALWAR                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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## PATENT APPLICATION

| Mail Stop 35<br>Fort Collins, Colorado 80528                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  | RECORD ID:                             | 84030631 |
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| TOU COMMS, COLORDO ODOZO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | million,         | ************************************** | * \      |
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Rev 8/2014 (Assignment)

**RECORDED: 06/19/2017**