## 505030991 08/01/2018

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5077742

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

#### **CONVEYING PARTY DATA**

| Name                       | Execution Date |
|----------------------------|----------------|
| ARTHUR CARROLL CHOW        | 12/05/2016     |
| PAUL MON-WAH CHAN          | 02/08/2017     |
| PERRY AARON JONES HALDENBY | 12/05/2016     |
| RAKESH THOMAS JETHWA       | 02/08/2017     |
| EDDIE CHEUK LONG LAW       | 12/05/2016     |
| JOHN JONG SUK LEE          | 01/16/2017     |
| STEPHEN JOHN MCCANN        | 12/05/2016     |

## **RECEIVING PARTY DATA**

| Name:             | THE TORONTO-DOMINION BANK |
|-------------------|---------------------------|
| Street Address:   | 66 WELLINGTON STREET WEST |
| Internal Address: | TD TOWER, 12TH FLOOR      |
| City:             | TORONTO, ONTARIO          |
| State/Country:    | CANADA                    |
| Postal Code:      | M5K 1A2                   |

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

| Property Type       | Number   |
|---------------------|----------|
| Application Number: | 15275657 |

#### **CORRESPONDENCE DATA**

**Fax Number:** (202)379-9746

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:** 2027765252

Email: jacooke@duanemorris.com
Correspondent Name: JAMES A. COOKE, III
Address Line 1: 505 9TH STREET NW

Address Line 2: SUITE 1000

Address Line 4: WASHINGTON, D.C. 20004

| ATTORNEY DOCKET NUMBER: | G4144-00103           |
|-------------------------|-----------------------|
| NAME OF SUBMITTER:      | JAMES A. COOKE, III   |
| SIGNATURE:              | /James A. Cooke, III/ |

| DATE SIGNED:                        | 08/01/2018 |
|-------------------------------------|------------|
| Total Attachments: 28               |            |
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Insert Name(s) of

Arthur Carroll CHOW

Inventor(s)

Paul Mon-Wah CHAN

Perry Aaron Jones HALDENBY

Rakesh Thomas JETHWA

Eddie Cheuk Long LAW

John Jong Suk LEE

Stephen John McCANN

In consideration for good and valuable considerations, the receipt of which is acknowledged by each of the undersigned, the undersigned agree to assign, and hereby do assign, transfer and set over to

Insert name of Assignee

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Insert address of Assignee

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Insert Identification of

Automatic Provisioning of Services to

Application

Network-Connected Devices

Docket Number, or Foreign

Docket No. <u>G4144-00103</u>

Application Number

Alternative identification for filed applications

Application Number: 15/275,657

Filed: September 26, 2016

The undersigned further agree to cooperate with the Assignee in every way possible and to do all affirmative acts, and to execute all papers which counsel for Assignee shall advise are necessary and/or desirable without charge to Assignee in connection with said applications including, without limitation, the execution of separate assignments or Oaths/Declarations in connection with such applications, claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

The undersigned hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent of the United States resulting from said application or any division or divisions or continuing applications thereof to said Assignee, as Assignee of the entire interest, and hereby covenants that they have full right to convey the entire interest herein assigned, and that they have not executed and will not execute, any agreement in conflict herewith.

The undersigned hereby grant to Mark C. Comtois, Reg. No. 46,285; D. Joseph English, Reg. No. 42,514; Patrick D. McPherson, Reg. No. 46,255, Patrick C. Muldoon, Reg. No. 47,343, and James A. Cooke, III, Reg. No. 69,338; and all others associated with Customer Nos. 39290, the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office for recordation of this document.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

| name(s).<br>DEC 0 5 <b>2016</b> |   |
|---------------------------------|---|
| Date                            | Signature of Inventor Arthur Carroll CHOW |
| Witnessed by:  Name of Witness: | Antida Caron Crio W                       |
| Signature of Witness            | Date                                      |

| Date                 | Signature of Inventor                      |  |
|----------------------|--|--|
|                      | Paul Mon-Wah CHAN                          |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| Signature of Witness | Date                                       |  |
|                      |  |  |
| Date                 | Signature of Inventor                      |  |
|                      | Perry Aaron Jones HALDENBY                 |  |
| Witnessed by:        |  |  |
| Name of Witness:     | ·  |  |
| Signature of Witness | Date                                       |  |
|                      |  |  |
|                      |  |  |
| Date                 | Signature of Inventor Rakesh Thomas JETHWA |  |
| Witnessed by:        |  |  |
| Name of Witness:     | <del></del>                                |  |
| Signature of Witness | Date                                       |  |
|                      |  |  |
| Doto                 |  |  |
| Date                 | Signature of Inventor Eddie Cheuk Long LAW |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| Signature of Witness | Date                                       |  |

| Date                 | Signature of Inventor |
|----------------------|-----------------------|
|                      | John Jong Suk LEE     |
| Witnessed by:        |                       |
| Name of Witness:     |                       |
| O' A CWY             |                       |
| Signature of Witness | Date                  |
| ·                    |                       |
|                      |                       |
| Date                 | Signature of Inventor |
|                      | Stephen John McCANN   |
| Witnessed by:        |                       |
| Name of Witness:     |                       |
| Signature of Witness | Date                  |

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Perry Aaron Jones HALDENBY

Rakesh Thomas JETHWA

Eddie Cheuk Long LAW

John Jong Suk LEE

Stephen John McCANN

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| for filed applications  | Filed: September 26, 2016   |
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| necessary and/or desirable without char-  | ge to Assignee in connection with said applications   |
| including, without limitation, the execut   | tion of separate assignments or Oaths/Declarations in   |
| connection with such applications, claim  | ns or provisions of the International Convention for  |
| Protection of Industrial Property or simi   | lar agreements.   |
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| and all Letters Patent of the United State  | es resulting from said application or any division or   |
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| and hereby covenants that they have full  | right to convey the entire interest herein assigned, and  |
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| Reg. No. 42,514; Patrick D. McPherson, and James A. Cooke, III, Reg. No. 69,33 the power to insert on this assignment ar desirable in order to comply with the rul this document. | Mark C. Comtois, Reg. No. 46,285; D. Joseph English, Reg. No. 46,255, Patrick C. Muldoon, Reg. No. 47,343, 88; and all others associated with Customer Nos. 39290, by further identification which may be necessary or less of the United States Patent Office for recordation of the undersigned on the date(s) opposite the undersigned |
| name(s).  | the undersigned on the date(s) opposite the undersigned   |
| Date  | Signature of Inventor Arthur Carroll CHOW   |
| Witnessed by:   |   |
| Name of Witness:  |   |
| Traine OI Willioss.   | · · · · · · · · · · · · · · · · · · ·   |
| Signature of Witness  | Date  |

| Date                           | _ Signature of Inventor          | Leule                 |
|--------------------------------|----------------------------------|-----------------------|
| Date                           | _ Signature of inventor          | Paul Mon-Wah CHAN     |
| Witnessed by: Name of Witness: | Date_                            | UFEB 0 8 2017         |
|                                |                                  |                       |
| Date                           | Signature of Inventor<br>Perry 1 | Aaron Jones HALDENBY  |
| Witnessed by: Name of Witness: |                                  |                       |
| Signature of Witness           | Date _                           |                       |
| Date                           | -                                | Rakesh Thomas JETHWA  |
| Name of Witness:               |                                  |                       |
| Signature of Witness           | Date                             |                       |
|                                | ,                                |                       |
| Date                           | _ Signature of Inventor          | Eddie Cheuk Long LAW  |
| Witnessed by: Name of Witness: | ·                                | Louis Chenk Dollg LAW |
| Signature of Witness           | Date                             |                       |

| Date                 | Signature of Inventor     |                     |
|----------------------|---------------------------|---------------------|
|                      |                           | John Jong Suk LEE   |
| Witnessed by:        |                           |                     |
| Name of Witness:     |                           |                     |
| Signature of Witness | Date _                    |                     |
|                      |                           |                     |
|                      |                           |                     |
| Date                 | Signature of Inventor     |                     |
|                      | organizate of this extent | Stephen John McCANN |
| Witnessed by:        |                           |                     |
| Name of Witness:     |                           |                     |
| Signature of Witness | Date                      |                     |

Insert Name(s) of

Application Number

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Inventor(s)

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Perry Aaron Jones HALDENBY

Rakesh Thomas JETHWA

Eddie Cheuk Long LAW

John Jong Suk LEE

Stephen John McCANN

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Insert Identification of Automatic Provisioning of Services to

Application Network-Connected Devices

Docket Number, or Foreign Docket No. G4144-00103

Alternative identification Application Number: 15/275,657 for filed applications Filed: September 26, 2016 The undersigned further agree to cooperate with the Assignee in every way possible and to do all affirmative acts, and to execute all papers which counsel for Assignee shall advise are necessary and/or desirable without charge to Assignee in connection with said applications including, without limitation, the execution of separate assignments or Oaths/Declarations in connection with such applications, claims or provisions of the International Convention for Protection of Industrial Property or similar agreements. The undersigned hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent of the United States resulting from said application or any division or divisions or continuing applications thereof to said Assignee, as Assignee of the entire interest, and hereby covenants that they have full right to convey the entire interest herein assigned, and that they have not executed and will not execute, any agreement in conflict herewith. The undersigned hereby grant to Mark C. Comtois, Reg. No. 46,285; D. Joseph English, Reg. No. 42,514; Patrick D. McPherson, Reg. No. 46,255, Patrick C. Muldoon, Reg. No. 47,343, and James A. Cooke, III, Reg. No. 69,338; and all others associated with Customer Nos. 39290, the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office for recordation of this document. In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s). Signature of Inventor \_ Arthur Carroll CHOW Witnessed by: Name of Witness: Signature of Witness

> **PATENT** REEL: 046703 FRAME: 0114

Date

| Date                                 | Signature of Inventor                             |
|--------------------------------------|---|
|                                      | Paul Mon-Wah CHAN                                 |
| Witnessed by:                        |   |
| Name of Witness:                     |   |
| Signature of Witness                 | Date  |
| Dec 0 5 2016                         | Signature of Inventor  Perry Aaron Jones HALDENBY |
| Witnessed by:  Name of Witness:      | 0EC 0 5 2016  Date                                |
| Date                                 | Signature of Inventor Rakesh Thomas JETHWA        |
| Witnessed by:                        |   |
| Name of Witness:Signature of Witness |   |
| Date                                 | Signature of Inventor Eddie Cheuk Long LAW        |
| Witnessed by:                        |   |
| Name of Witness:                     | · · · · · · · · · · · · · · · · · · ·             |
| Signature of Witness                 | Date  |

| Date                 | Signature of Inventor                     |
|----------------------|---|
|                      | John Jong Suk LEE                         |
| Witnessed by:        |   |
| Name of Witness:     |   |
| Signature of Witness | Date                                      |
|                      |   |
| Date                 | Signature of Inventor Stephen John McCANN |
| Witnessed by:        | · ·                                       |
| Name of Witness:     |   |
| Signature of Witness | Date                                      |

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| Date                 | Signature of Inventor |                     |  |
|----------------------|-----------------------|---------------------|--|
|                      | C                     | Arthur Carroll CHOW |  |
|                      |                       |                     |  |
| Witnessed by:        |                       |                     |  |
| Name of Witness:     |                       |                     |  |
| Signature of Witness | Date _                |                     |  |

2

| Date                           | Signature of Inventor              |              |
|--------------------------------|------------------------------------|--------------|
|                                | Paul Mon-Wal                       | h CHAN       |
| Witnessed by:                  |                                    |              |
| Name of Witness:               |                                    |              |
| Signature of Witness           | Date                               |              |
|                                | i.                                 |              |
| Date                           | Signature of Inventor              |              |
|                                | Perry Aaron Jones HA               | LDENBY       |
| Witnessed by:                  |                                    |              |
| Name of Witness:               | <del> </del>                       |              |
| Signature of Witness           | Date                               |              |
| DateFEB 0 8 2017               | Signature of Inventor Rakesh Thoma | as JETHWA    |
| Witnessed by: Name of Witness: | Varez                              |              |
| Name of Witness: Wicole Al     | Date                               | FEB 0 8 2017 |
| Date                           | Signature of InventorEddie Cheuk L |              |
| Witnessed by:                  |                                    |              |
| Name of Witness:               |                                    |              |
| Signature of Witness           | Date                               |              |

| Date                 | Signature of Inventor                 |                     |
|----------------------|---------------------------------------|---------------------|
|                      |                                       | John Jong Suk LEE   |
| Witnessed by:        |                                       |                     |
| Name of Witness:     | · · · · · · · · · · · · · · · · · · · |                     |
| Signature of Witness | Date _                                |                     |
|                      |                                       |                     |
|                      |                                       |                     |
| Date                 | Signature of Inventor                 |                     |
|                      | Ü                                     | Stephen John McCANN |
| Witnessed by:        |                                       |                     |
| Name of Witness:     | <u>.</u>                              |                     |
| Signature of Witness | Date _                                |                     |

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| this document.                                 | The Office States Facility of the for recordation of  |
| ·  |   |
| In witness whereof, executed by the            | undersigned on the date(s) opposite the undersigned   |
| name(s).                                       | •   |
|  |   |
| Date   | Signature of Inventor Arthur Carroll CHOW   |
|  |   |
| Witnessed by:                                  |   |
| Name of Witness:                               |   |
|  | _   |
| Signature of Witness                           | Date  |

| Date                            | Signature of Inventor |                      |
|---------------------------------|-----------------------|----------------------|
|                                 |                       | Paul Mon-Wah CHAN    |
| Witnessed by:                   |                       |                      |
| Name of Witness:                |                       |                      |
| realite of witness.             |                       |                      |
| Signature of Witness            | Date _                |                      |
|                                 |                       |                      |
|                                 | •                     |                      |
| DateS                           | Signature of Inventor |                      |
| Date                            | Perry.                | Aaron Jones HALDENBY |
|                                 |                       |                      |
| Witnessed by:                   |                       |                      |
| Name of Witness:                |                       |                      |
| G. Carr                         | , .                   |                      |
| Signature of Witness            | Date _                | <u> </u>             |
|                                 |                       |                      |
|                                 |                       |                      |
| Date                            | Signature of Inventor |                      |
|                                 |                       | Rakesh Thomas JETHWA |
| Witnessed by:                   |                       | ,                    |
| Name of Witness:                |                       |                      |
| Traine of Williams.             |                       |                      |
| Signature of Witness            | Date _                |                      |
|                                 |                       |                      |
|                                 |                       |                      |
| Deta Deta 0 5 2016              | Signature of Inventor |                      |
| Date                            | Signature of inventor | Eddie Cheuk Long LAW |
| XX74                            |                       | <b>G</b>             |
| Witnessed by:                   | ?_                    |                      |
| Name of Witness: Nicote Alvarez |                       | Res.                 |
| Signature of Witness Whyte      | 7 Date _              | DEC 0 5 2018         |
|                                 | )                     |                      |

| Date                 | Signature of Inventor |
|----------------------|-----------------------|
|                      | John Jong Suk LEE     |
| Witnessed by:        |                       |
| Name of Witness:     | ·                     |
| Signature of Witness | Date                  |
|                      |                       |
|                      |                       |
| Date                 | Signature of Inventor |
|                      | Stephen John McCANN   |
| Witnessed by:        |                       |
| Name of Witness:     |                       |
| Signature of Witness | Date                  |

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Docket No. G4144-00103

Application Number

Alternative identification Application Number: 15/275,657 for filed applications Filed: September 26, 2016 The undersigned further agree to cooperate with the Assignee in every way possible and to do all affirmative acts, and to execute all papers which counsel for Assignee shall advise are necessary and/or desirable without charge to Assignee in connection with said applications including, without limitation, the execution of separate assignments or Oaths/Declarations in connection with such applications, claims or provisions of the International Convention for Protection of Industrial Property or similar agreements. The undersigned hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent of the United States resulting from said application or any division or divisions or continuing applications thereof to said Assignee, as Assignee of the entire interest, and hereby covenants that they have full right to convey the entire interest herein assigned, and that they have not executed and will not execute, any agreement in conflict herewith. The undersigned hereby grant to Mark C. Comtois, Reg. No. 46,285; D. Joseph English, Reg. No. 42,514; Patrick D. McPherson, Reg. No. 46,255, Patrick C. Muldoon, Reg. No. 47,343, and James A. Cooke, III, Reg. No. 69,338; and all others associated with Customer Nos. 39290, the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office for recordation of this document. In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s). Signature of Inventor \_ Arthur Carroll CHOW Witnessed by: Name of Witness:

Signature of Witness \_\_\_\_\_

PATENT REEL: 046703 FRAME: 0126

Date

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| Date                 | Signature of Inventor  |  |
|----------------------|--|--|
|                      | Paul Mon-Wah CHAN  |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| Signature of Witness | Date   |  |
|                      |  |  |
| Date                 | Signature of Inventor  |  |
|                      | Perry Aaron Jones HALDENBY   |  |
| Witnessed by:        |  |  |
| Name of Witness:     | All the second of the second o |  |
| Signature of Witness | Date   |  |
|                      |  |  |
|                      |  |  |
| Date                 | Signature of Inventor Rakesh Thomas JETHWA   |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| Signature of Witness | Date   |  |
|                      |  |  |
| Date                 | Signature of Inventor  |  |
|                      | Eddie Cheuk Long LAW   |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| Signature of Witness | Date   |  |

3

| Date JAN 1 6 2017,  | Signature of Inventor                     |  |
|---|---|--|
|   | John Jong Suk LEE                         |  |
| Witnessed by:  Name of Witness: NICOLO AWAYCE  Signature of Witness A Clubary | Date JAN 1 6 2017                         |  |
| Date  | Signature of Inventor Stephen John McCANN |  |
| Witnessed by:   |   |  |
| Name of Witness:  | <del></del>                               |  |
| Signature of Witness  | Date                                      |  |

Insert Name(s) of

Arthur Carroll CHOW

Inventor(s)

Paul Mon-Wah CHAN

Perry Aaron Jones HALDENBY

Rakesh Thomas JETHWA

Eddie Cheuk Long LAW

John Jong Suk LEE

Stephen John McCANN

In consideration for good and valuable considerations, the receipt of which is acknowledged by each of the undersigned, the undersigned agree to assign, and hereby do assign, transfer and set over to

Insert name of Assignee

The Toronto-Dominion Bank

66 Wellington Street West

TD Tower, 12<sup>th</sup> Floor

Toronto, Ontario, M5K 1A2

Canada

and its successors, legal representatives and assigns (hereinafter designated as the Assignee) the entire right, title and interest in the invention disclosed and/or claimed in the United States application identified below, as well as all applications for patent and any Letters Patent which may be granted therefore in the United States of America, Canada, and throughout the world, and in and to any and all divisions, continuations, continuations-in-part of said applications, or reissues or extensions of said patents or Letters Patent, and all rights under the International Convention for the Protection of Industrial Property:

Insert Identification of

Automatic Provisioning of Services to

Application

Network-Connected Devices

Docket Number, or Foreign

Docket No. <u>G4144-00103</u>

Application Number

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> PATENT REEL: 046703 FRAME: 0130

Date

Signature of Witness

| Date                 | Signature of Inventor                      |  |
|----------------------|--|--|
|                      | Paul Mon-Wah CHAN                          |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| Signature of Witness |  |  |
|                      |  |  |
|                      |  |  |
| Date                 | Signature of Inventor                      |  |
|                      | Perry Aaron Jones HALDENBY                 |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| Signature of Witness | Date                                       |  |
|                      |  |  |
|                      |  |  |
| D-4-                 | G. C.                                      |  |
| Date                 | Signature of Inventor Rakesh Thomas JETHWA |  |
| ·                    |  |  |
| Witnessed by:        |  |  |
| Name of Witness:     |  |  |
| at average           |  |  |
| Signature of Witness | Date                                       |  |
|                      |  |  |
|                      |  |  |
| Date                 | Signature of Inventor                      |  |
|                      | Eddie Cheuk Long LAW                       |  |
| Witnessed by:        |  |  |
| Name of Witness:     | ·  |  |
|                      |  |  |
| Signature of Witness | Date                                       |  |

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| Date                                       | Signature of Inventor |
|--|-----------------------|
|  | John Jong Suk LEE     |
| Witnessed by:                              |                       |
| Name of Witness:                           |                       |
| Signature of Witness                       | Date                  |
|  |                       |
|  |                       |
| Date Dec 5/2016                            | Signature of Inventor |
|  | Stephen John McCANN   |
| Witnessed by: Name of Witness: MICHAEL VAN | Cosh-w                |
| Name of Witness: //////                    | CORECC .              |
| Signature of Witness                       | Date                  |