

PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| MILOS DUNJIC | 02/08/2018 |
| PERRY AARON JONES HALDENBY | 10/16/2018 |
| JOHN JONG-SUK LEE | 12/01/2017 |
| RECEIVING PARTY DATA | |
| Name: | THE TORONTO-DOMINION BANK |
| Street Address: | 66 WELLINGTON STREET WEST |
| Internal Address: | TD TOWER, 15TH FLOOR |
| City: | TORONTO, ONTARIO |
| State/Country: | CANADA |
| Postal Code: | M5K 1A2 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 17399200 |
| CORRESPONDENCE DATA | |
| Fax Number: | (202)776-7801 |
| <i>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.</i> | |
| Phone: | 2027765252 |
| Email: | SMHill@duanemorris.com |
| Correspondent Name: | DUANE MORRIS LLP |
| Address Line 1: | 505 9TH STREET, N.W. |
| Address Line 4: | WASHINGTON, D.C. 20004 |
| ATTORNEY DOCKET NUMBER: | G4144-00561 |
| NAME OF SUBMITTER: | JAMES A. COOKE, III |
| SIGNATURE: | /James A. Cooke, III/ |
| DATE SIGNED: | 08/11/2021 |
| Total Attachments: 8 | |
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WORLDWIDE ASSIGNMENT

WHEREAS, WE, (hereinafter referred to as the "ASSIGNORS"):

Milos DUJNIC, Perry Aaron Jones HALDENBY, and John Jong-Suk LEE

have invented a certain new and useful invention entitled:

**REAL-TIME EXECUTION OF DATA EXCHANGES BETWEEN COMPUTING
SYSTEMS BASED ON SELECTIVELY ALLOCATED PARAMETERS**

for which a United States Patent application was filed on June 14, 2017, and accorded application serial number 15/622,269 (further identified by Attorney Docket No. G4144-00187 and TD Reference No. 17007-PMT-US-PAT, hereinafter the "Patent Application"), and

WHEREAS, **The Toronto-Dominion Bank** (hereinafter "Assignee"), a corporation organized under the laws of the Province of Ontario, CANADA, having a place of business at 66 Wellington Street West, TD Tower, 15th Floor, Toronto, Ontario, M5K 1A2, has acquired or is desirous of acquiring the entire and exclusive right, title and interest in and to the Patent Application inclusive of any and all priority rights derived therefrom and the inventions therein disclosed or claimed, and in and to all Letters Patent, in the United States of America, Canada, and throughout the world, which may be granted and issued therefore throughout the world;

NOW THEREFORE, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged by each of the undersigned, WE, ASSIGNORS does/do hereby sell, assign, transfer, and set over to the ASSIGNEE, its successors and assigns, the entire and exclusive right, title and interest in and to the Patent Application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the inventions therein disclosed or claimed, and in and to all Letters Patent and issues thereof which may be granted upon the Patent Application and in and to all Letters Patent which may be issued upon any substitutes, continuations, continuations-in-part, divisions, re-issues or extensions of the Patent Application or Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, and in and to any and all Letters Patent which may be granted for the inventions in any foreign country or countries including priority rights derived from any application for the inventions in any country;

AND WE, ASSIGNORS hereby agrees/agree to execute, upon request, any and all further papers without charge which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute the Patent Application, and any and all substitutes, continuations, continuations-in-part, divisions, or extensions thereof, and any and all reissues of the Letters Patent granted upon the Patent Application, and any and all applications for foreign Letters Patent on the inventions; and ASSIGNORS further agrees/agree to execute any and all further papers without charge which may be necessary or desirable to vest or perfect the title of

ASSIGNEE, its successors and assigns, in and to the Patent Application and the inventions therein disclosed or claimed, and in and to any and all Letters Patent and reissues thereof, in the United States of America, Canada, and foreign countries, which may be granted upon the Patent Application, and any substitutes, continuations, continuations-in-part, divisions, re-issues or extensions thereof, and upon any foreign applications;

AND WE, ASSIGNORS hereby authorizes/authorize and requests/request the Patent Office to issue each and every Letters Patent to be granted upon the Patent Application for United States Letters Patent, and upon any and all substitutes, continuations, continuations-in-part, divisions, or extensions of the Patent Application, and each and every reissue of the Letters Patent, to the ASSIGNEE, its successors and assigns, as the assignee of the entire right, title and interest therein, in accordance with this assignment;

AND WE, ASSIGNORS each individually hereby represent and warrant that I have read and fully understand the terms and provisions hereof, have had an opportunity to obtain independent legal advice, and have executed this assignment based upon my own judgment and advice of independent legal counsel (if sought), or alternatively, have waived the right to obtain independent legal counsel.

Inventor 1:

EXECUTED at (City, Province) TORONTO, ON, this 8 day of Feb, 2018

Milos DUJNIC
Milos DUJNIC

STATEMENT BY WITNESS

I, Nicole Alvarez, whose full Post Office address is
66 Wellington St. W. Toronto, ON M5K 1A2 was
personally present and did see the above named person, who is known to me, execute the above
Assignment.

(Signature of Witness)

WORLDWIDE ASSIGNMENT

WHEREAS, WE, (hereinafter referred to as the "ASSIGNORS"):

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have invented a certain new and useful invention entitled:

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WHEREAS, **The Toronto-Dominion Bank** (hereinafter "**Assignee**"), a corporation organized under the laws of the Province of Ontario, CANADA, having a place of business at 66 Wellington Street West, TD Tower, 15th Floor, Toronto, Ontario, M5K 1A2, has acquired or is desirous of acquiring the entire and exclusive right, title and interest in and to the Patent Application inclusive of any and all priority rights derived therefrom and the inventions therein disclosed or claimed, and in and to all Letters Patent, in the United States of America, Canada, and throughout the world, which may be granted and issued therefore throughout the world;

NOW THEREFORE, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged by each of the undersigned, WE, ASSIGNORS does/do hereby sell, assign, transfer, and set over to the ASSIGNEE, its successors and assigns, the entire and exclusive right, title and interest in and to the Patent Application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the inventions therein disclosed or claimed, and in and to all Letters Patent and issues thereof which may be granted upon the Patent Application and in and to all Letters Patent which may be issued upon any substitutes, continuations, continuations-in-part, divisions, re-issues or extensions of the Patent Application or Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, and in and to any and all Letters Patent which may be granted for the inventions in any foreign country or countries including priority rights derived from any application for the inventions in any country;

AND WE, ASSIGNORS hereby agrees/agree to execute, upon request, any and all further papers without charge which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute the Patent Application, and any and all substitutes, continuations, continuations-in-part, divisions, or extensions thereof, and any and all reissues of the Letters Patent granted upon the Patent Application, and any and all applications for foreign Letters Patent on the inventions; and ASSIGNORS further agrees/agree to execute any and all further papers without charge which may be necessary or desirable to vest or perfect the title of

ASSIGNEE, its successors and assigns, in and to the Patent Application and the inventions therein disclosed or claimed, and in and to any and all Letters Patent and reissues thereof, in the United States of America, Canada, and foreign countries, which may be granted upon the Patent Application, and any substitutes, continuations, continuations-in-part, divisions, re-issues or extensions thereof, and upon any foreign applications;

AND WE, ASSIGNORS hereby authorizes/authorize and requests/request the Patent Office to issue each and every Letters Patent to be granted upon the Patent Application for United States Letters Patent, and upon any and all substitutes, continuations, continuations-in-part, divisions, or extensions of the Patent Application, and each and every reissue of the Letters Patent, to the ASSIGNEE, its successors and assigns, as the assignee of the entire right, title and interest therein, in accordance with this assignment;

AND WE, ASSIGNORS each individually hereby represent and warrant that I have read and fully understand the terms and provisions hereof, have had an opportunity to obtain independent legal advice, and have executed this assignment based upon my own judgment and advice of independent legal counsel (if sought), or alternatively, have waived the right to obtain independent legal counsel.

Inventor 1:

EXECUTED at (City, Province) _____, this _____ day of _____, 2017

Milos DUJNIC

STATEMENT BY WITNESS

I, _____, whose full Post Office address is

_____ was
personally present and did see the above named person, who is known to me, execute the above Assignment.

(Signature of Witness)

Inventor 2:

EXECUTED at (City, Province) Toronto, ON, this 16th day of October, 2018


Perry Aaron Jones HALDENBY

STATEMENT BY WITNESS

I, Madalina Kinnear, whose full Post Office address is
66 Wellington St. W. 15th Floor, Toronto, ON M5K 1A2 was
personally present and did see the above named person, who is known to me, execute the above
Assignment.


(Signature of Witness)

WORLDWIDE ASSIGNMENT

WHEREAS, WE, (hereinafter referred to as the "ASSIGNORS"):

Milos DUJNIC, Perry Aaron Jones HALDENBY, and John Jong-Suk LEE

have invented a certain new and useful invention entitled:

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NOW THEREFORE, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged by each of the undersigned, WE, ASSIGNORS does/do hereby sell, assign, transfer, and set over to the ASSIGNEE, its successors and assigns, the entire and exclusive right, title and interest in and to the Patent Application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the inventions therein disclosed or claimed, and in and to all Letters Patent and issues thereof which may be granted upon the Patent Application and in and to all Letters Patent which may be issued upon any substitutes, continuations, continuations-in-part, divisions, re-issues or extensions of the Patent Application or Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, and in and to any and all Letters Patent which may be granted for the inventions in any foreign country or countries including priority rights derived from any application for the inventions in any country;

AND WE, ASSIGNORS hereby agrees/agree to execute, upon request, any and all further papers without charge which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute the Patent Application, and any and all substitutes, continuations, continuations-in-part, divisions, or extensions thereof, and any and all reissues of the Letters Patent granted upon the Patent Application, and any and all applications for foreign Letters Patent on the inventions; and ASSIGNORS further agrees/agree to execute any and all further papers without charge which may be necessary or desirable to vest or perfect the title of

ASSIGNEE, its successors and assigns, in and to the Patent Application and the inventions therein disclosed or claimed, and in and to any and all Letters Patent and reissues thereof, in the United States of America, Canada, and foreign countries, which may be granted upon the Patent Application, and any substitutes, continuations, continuations-in-part, divisions, re-issues or extensions thereof, and upon any foreign applications;

AND WE, ASSIGNORS hereby authorizes/authorize and requests/request the Patent Office to issue each and every Letters Patent to be granted upon the Patent Application for United States Letters Patent, and upon any and all substitutes, continuations, continuations-in-part, divisions, or extensions of the Patent Application, and each and every reissue of the Letters Patent, to the ASSIGNEE, its successors and assigns, as the assignee of the entire right, title and interest therein, in accordance with this assignment;

AND WE, ASSIGNORS each individually hereby represent and warrant that I have read and fully understand the terms and provisions hereof, have had an opportunity to obtain independent legal advice, and have executed this assignment based upon my own judgment and advice of independent legal counsel (if sought), or alternatively, have waived the right to obtain independent legal counsel.

Inventor 1:

EXECUTED at (City, Province) _____, this ____ day of _____, 2017

Milos DUJNIC

STATEMENT BY WITNESS

I, _____, whose full Post Office address is

_____ was
personally present and did see the above named person, who is known to me, execute the above Assignment.

(Signature of Witness)

TD Reference No. 17007-PMT-US-PAT
Firm Name: Duane Morris LLP


Inventor 3:

EXECUTED at (City, Province) Toronto, this 1 day of Dec, 2017


John Jong-Suk LEE

STATEMENT BY WITNESS

I, Nicole Alvarez, whose full Post Office address is
66 Wellington St. W. 15th Floor, Toronto, ON M5K 1A2 was
personally present and did see the above named person, who is known to me, execute the above
Assignment.


(Signature of Witness)