505638930 08/26/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

NIEW ACCIONIMENT

EPAS ID: PAT5685736

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PAUL MON-WAH CHAN	02/08/2017
PERRY AARON JONES HALDENBY	12/05/2016
JOHN JONG SUK LEE	01/16/2017

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15277540

CORRESPONDENCE DATA

Fax Number: (202)776-7801

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: 2027767800

Email: Irhayes@duanemorris.com
Correspondent Name: DUANE MORRIS LLP - DC

Address Line 1: 505 9TH STREET, NW, SUITE 1000

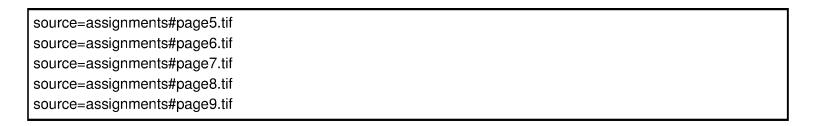
Address Line 4: WASHINGTON, D.C. 20004

ATTORNEY DOCKET NUMBER:	G4144-00013
NAME OF SUBMITTER:	JAMES A. COOKE, III
SIGNATURE:	/James A. Cooke, III/
DATE SIGNED:	08/26/2019

Total Attachments: 9

source=assignments#page1.tif source=assignments#page2.tif source=assignments#page3.tif source=assignments#page4.tif

PATENT 505638930 REEL: 050162 FRAME: 0326



ASSIGNMENT

Insert Names of

Paul Mon-Wah CHAN

Inventors

Perry Aaron Jones HALDENBY

John Jong Suk LEE

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
Insert address of Assignee	66 Wellington Street West
	TD Tower, 12 th 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	Processing Network Architecture With		
Application	Companion Database		
Docket Number, or Foreign	Docket No. <u>G4144-00013</u>		
Application Number			
Alternative identification	Application Number: 15/277,540		
for filed applications	Filed: September 27, 2016		

The undersigned further agree to cooperate with the Assignee in every way possible and

U.S. Application No. 15/277,540 Attorney Docket No. G4144-00013

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 No. 39,290, 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 dates opposite the undersigned names.

erb n s ma		
Date	Signature of Inventor	/Leul-
	Paul	l Mon-Wah CHAN
Witnessed by:		
Name of Witness: 50 km 5 (el_	
Signature of Witness	Date	(FEB D 8 2017)

U.S. Application No. 15/277,540 Attorney Docket No. G4144-00013

Date Signature of Inventor			
	Signature of InventorPerry Aaron Jones HALDENBY		
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		

ASSIGNMENT

Insert Names of

Paul Mon-Wah CHAN

Inventors

Perry Aaron Jones HALDENBY

John Jong Suk LEE

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
Insert address of Assignee	66 Wellington Street West
	TD Tower, 12 th 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	Processing Network Architecture With		
Application	Companion Database		
Docket Number, or Foreign	Docket No. <u>G4144-00013</u>		
Application Number			
Alternative identification	Application Number: 15/277,540		
for filed applications	Filed: September 27, 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 No. 39,290, 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 dates opposite the undersigned

Date ______ Signature of Inventor ______ Paul Mon-Wah CHAN

Witnessed by:

Name of Witness: ______ Date _____

U.S. Application No. 15/277,540 Attorney Docket No. G4144-00013

Date	DEC 0 5 2016	Signature of Inven	tor	MAN
			Perry A	Aaron Jones HALDENBY
Witnessed b	ру:			
Name of W	itness: <u>NICOLE AIVAR</u>	2		
Signature of	itness: <u>NICOLE AIVARO</u> f Witness <u>A Quan</u>	07	Date _	DEC 0 5 2016
Date		Signature of l	Inventor	
				John Jong Suk LEE
Witnessed b	py:			
Name of W	itness:			
Signature of	f Witness		Date _	

ASSIGNMENT

Insert Names of

Paul Mon-Wah CHAN

Inventors

Perry Aaron Jones HALDENBY

John Jong Suk LEE

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
Insert address of Assignee	66 Wellington Street West
	TD Tower, 12 th 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	Processing Network Architecture With
Application	Companion Database
Docket Number, or Foreign	Docket No. <u>G4144-00013</u>
Application Number	
Alternative identification	Application Number: 15/277,540
for filed applications	Filed: September 27, 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 No. 39,290, 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 dates opposite the undersigned names.

Date	Signature of Inventor	
		Paul Mon-Wah CHAN
Witnessed by:		
Name of Witness:		
Signature of Witness	Date	

Date	Signature of Inventor
	Signature of Inventor Perry Aaron Jones HALDENBY
Witnessed by:	
Name of Witness:	
Signature of Witness	Date
JAN 1 6 2017	Signature of Inventor John Jong Suk LEE
Witnessed by:	
Name of Witness: Nicole Alva Signature of Witness Number	Yarez_
Signature of Witness War	Date JAH 1 6 2017