507230636 04/13/2022 PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	ASSIGNMENT		
CONVEYING PARTY DATA			
	Name	Execution Date	
ROBERT PARK		02/02/2012	

	02/02/2012
BRADLEY KATSUYAMA	02/02/2012
RICHARD STEINER	02/02/2012
DANIEL AISEN	01/31/2012
ALLEN ZHANG	01/30/2012
JOHN SCHWALL	01/27/2012
THOMAS POPEJOY	02/10/2012

RECEIVING PARTY DATA

Name:	ROYAL BANK OF CANADA	
Street Address:	1, PLACE VILLE MARIE	
Internal Address:	4TH FLOOR, EAST WING	
City:	MONTREAL	
State/Country:	QUEBEC	
Postal Code:	H3C 3A9	

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	17719055
Application Number:	17719234

CORRESPONDENCE DATA

Fax Number:	(416)216-3930			
•		e-mail address first; if that is unsuccessful, it will be sent hat is unsuccessful, it will be sent via US Mail.		
Phone:	4162	62161888		
Email:	dockettor@nortonrosefulbright.com			
Correspondent Name:	NORTON ROSE FULBRIGHT CANADA LLP			
Address Line 1:	1, PLACE VILLE MARIE			
Address Line 4:	MONTREAL, QUEBEC H3B 1R1			
ATTORNEY DOCKET NUMBER: 05007268-10US-10/10US-11		05007268-10US-10/10US-11		
NAME OF SUBMITTER:		STEPHEN Y. LAM		

SIGNATURE:	/Stephen Y. Lam/		
DATE SIGNED:	04/13/2022		
Total Attachments: 9			
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Assignment - Worldwide

ASSIGNMENT (Worldwide)

WHEREAS,

(1) ROBERT PARK of New York, New York, U.S.A.,

(2) BRADLEY KATSUYAMA of New York, New York, U.S.A.,

(3) RICHARD STEINER of Wyckoff, New Jersey, U.S.A.,

(4) DANIEL AISEN of New York, New York, U.S.A.,

(5) ALLEN ZHANG of Princeton, New Jersey, U.S.A.,

(6) JOHN SCHWALL, of New York, New York, U.S.A.

(7) POPEJOY, Thomas L., of New York, New York, U.S.A.

hereinafter referred to, separately and collectively, as "ASSIGNORS", and whose full post office address is c/o Royal Bank of Canada, 4th Floor, East Wing, 1 Place Ville Marie, Montreal, Quebec, H3C 3A9, Canada, have made an invention relating to and entitled:

SYNCHRONIZED PROCESSING OF DATA BY NETWORKED COMPUTING RESOURCES

hereinafter referred to as the Invention, which Invention is described in one or more applications for Letters Patent identified as:

Country: United States Patent/Application Number: 61/285375 Filed: December 10, 2009 and **Country: United States** Patent/Application Number: 12/796,139 Filed: June 8, 2010 and Country: Canada Patent/Application Number: 2,707,196 Filed: June 8, 2010 and International Application No. PCT/CA2010/000872 Filed: 8 June 2010 and Country: United States Patent/Application Number: 13/281,486 Filed: October 26, 2011

hereinafter referred to as the Applications;

AND WHEREAS, ROYAL BANK OF CANADA, a Canadian Chartered Bank hereinafter referred to as Assignee, whose full post office address is 4th Floor, East Wing, 1 Place Ville Marie, Montreal, Quebec H3C 3A9, Canada, desires among other things to acquire Assignors' entire right, title, interest and benefit for Canada and all other countries and jurisdictions in and to the Invention and Applications;

NOW THEREFORE, in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors hereby confirm that as of at least September 30, 2009, they have sold, assigned, transferred and set over to Assignee and, for greater certainty, do hereby sell, assign, transfer and set over to Assignee, and to Assignee's successors, assigns, nominees or other legal representatives, their entire right, title, interest, property and benefit in and for United States, Canada and all other countries and jurisdictions in and to the Invention, together with their entire right, title, interest, property and benefit in and to the Applications, and any applications corresponding thereto in any country or jurisdiction, including any and all corresponding applications whether in the form of divisions, continuations, re-examinations, re-issues, extensions and national phases thereof, any and all Letters Patent and Registrations that may issue, be granted or result therefrom for the Invention, and any and all rights of priority resulting from the filing of the above-identified applications, the said corresponding applications and any previously filed applications in respect of the Invention under international conventions, treaties or otherwise, the same to be held and enjoyed as fully and exclusively as the same would have been held and enjoyed by Assignors had this sale, assignment, transfer and setting over not been made;

AND ASSIGNORS, on behalf of themselves and their heirs, executors and administrators, do hereby covenant and agree to do all such lawful acts and things and to execute and deliver without further consideration such further lawful assignments, instruments, assurances, applications and other documents as may reasonably be required by said Assignee, or by its successors, assigns, nominees, or other legal representatives, to obtain each said Letters Patent and Registrations of the United States and all other countries and jurisdictions for the Invention and vest or secure the same in Assignee, and in Assignee's successors, assigns, nominees or other legal representatives.

AND ASSIGNORS do hereby authorize any official whose duty it is to grant patents or registrations, to grant each said Letters Patent and Registration for the Invention to the Assignee, and to Assignee's successors, assigns, nominees or other legal representatives.

AND ASSIGNORS, on behalf of themselves and their heirs, executors and administrators, do hereby authorize said Assignee, its successors, assigns, nominees or other legal representatives, including its Patent Agents, Norton Rose Canada LLP, to amend the present assignment document to

insert or correct the filing date, serial number or other identifying information of the Applications as may be needed to record same.

ASSIGNORS UNDERSTAND AND AGREE that the attorneys and agents of the law firm of Norton Rose Canada LLP do not personally represent Assignors or Assignors' legal interests, but instead represent the interests of Assignee. Since Norton Rose Canada LLP cannot provide legal advice to Assignors with respect to this Assignment, Assignors acknowledge their right to seek their own independent legal counsel.

THIS ASSIGNMENT may be executed in counterparts, all of which shall be considered one and the same agreement. This Assignment shall be effective to transfer an Assignors' entire right, title, interest, property, and benefit to Assignee upon execution of this Assignment by such Assignors, regardless of whether any other Assignor executes this Agreement.

IN WITNESS WHEREOF, Assignors have hereunto signed their names on the day and year set forth below.

DATED this \underline{Z} da	ay of Felo,2	2012.
	ROBERT PARK	
	Per:	
	Name: ROBERT PARK	
	Title: MANAGING DIRECT	7R
STATEMENT OF WITNESS		,
I, <u>Samanth Della</u> (name of witness)	, state that I was personally present and did s	see
Robert Park	, who is personally known to me to be	the person (r

to be the person (name of authorized signing officer/inventor)

named in the above assignment, duly execute the same on the day and year set forth above.

(signature of witness)

DATED this da	y of Feb	,2012.
STATEMENT OF WITNESS	BRADLEY KATS Per: Name: Bhan Title: Mh	WYAMA Karry And
I,Samauthe Delu (name of witness)	, state that I was personally	v present and did see
Bradley Katsuyama of authorized signing officer/inventor)	, who is pe	rsonally known to me to be the (name
person named the above assignment	-	e day and year set forth above.

DATED this 2 day of Feb _____,2012.

RICHARD STEINER

Per: R. Ot. Name: Richard Steiner Title: Head of Martin Structure Strategy

STATEMENT OF WITNESS

I,Delta (name of witness)	_, state that I was personally present and did see
Richard Steiner authorized signing officer/inventor)	, who is personally known to me to be the (name of

person named the above assignment, duly execute the same on the day and year set forth above.

_____ (signature of witness)

- 5 -

DATED this 31^{s+} day of	Janvary ,2012.
	DANIEL AISEN
	Per: Jalan
	Name:
	Title:
STATEMENT OF WITNESS	
1, <u>Benjamin</u> Aisen (name of witness)	, state that I was personally present and did see

person named the above assignment, duly execute the same on the day and year set forth above.

ben auch

(signature of witness)

	- 7 -
DATED this day of	Jan ,2012.
	ALLEN ZHANG
	Per: <u>MWJM</u> Name: Alleo Zhaog
STATEMENT OF WITNESS	Name: Allen Zhang Title: Director
STATEMENT OF WITNESS	
I, <u>Shelah Reber</u> , state (name of witness)	that I was personally present and did see

Allen Zhang _____, who is personally known to me to be the (name of authorized signing officer/inventor)

person named the above assignment, duly execute the same on the day and year set forth above.

(signature of witness)

DATED this	7 day of	2012 JANUAN ,2012.
		JOHN SCHWALL
		Name: John Schwall Title: MD, Head of Product Mgmt.
		Title: MD, Head of Product MgmT.
TEMENT OF WITNES	<u>ss</u>	

<u>STA</u>

Samarcha Della____, state that I was personally present and did see Ι, _ (name of witness)

____, who is personally known to me to be the (name of John Schwall authorized signing officer/inventor)

person named the above assignment, duly execute the same on the day and year set forth above.

_____ (signature of witness)

DATED this (C day of	February	,2012.
	THOMAS L. POP	EJOY
	Per: <u>[</u> Name: Thoma Title: <i>Direct</i>	L. Popejes
STATEMENT OF WITNESS	<i>v v v v v v v v v v</i>	
I, (name of witness)	state that I was personall	y present and did see
Thomas L. Popejoy authorized signing officer/inventor)	, who is pers	onally known to me to be the (name of

person named the above assignment, duly execute the same on the day and year set forth above.

signature of witness)

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