504304357 04/04/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4351038

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MATTHEW MURPHY	03/30/2017
STEVEN M. TWOMBLY	03/29/2017
MARK WILLIAMS	03/29/2017
BRADLEY HOLLAND	03/30/2017
MARK A. NELSON	04/03/2017

RECEIVING PARTY DATA

Name:	BANK OF AMERICA CORPORATION
Street Address:	MAIL CODE NC 1-027-20-05
Internal Address:	214 N. TRYON ST.
City:	CHARLOTTE
State/Country:	NORTH CAROLINA
Postal Code:	28255

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15477830

CORRESPONDENCE DATA

Fax Number: (202)824-3001

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: (312) 463-5000

bwptopat@bannerwitcoff.com, msigur@bannerwitcoff.com Email:

BANNER & WITCOFF, LTD. **Correspondent Name:**

1100 13TH ST. NW Address Line 1:

Address Line 2: STE 1200

Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	007131.01878
NAME OF SUBMITTER:	JEFFREY H. CHANG
SIGNATURE:	/Jeffrey H. Chang/
DATE SIGNED:	04/04/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).

PATENT

REEL: 041837 FRAME: 0607 504304357

Total Attachments: 10 source=Executed Assignments#page1.tif source=Executed Assignments#page2.tif source=Executed Assignments#page3.tif source=Executed Assignments#page4.tif source=Executed Assignments#page5.tif source=Executed Assignments#page6.tif source=Executed Assignments#page7.tif source=Executed Assignments#page8.tif source=Executed Assignments#page9.tif source=Executed Assignments#page9.tif

PATENT REEL: 041837 FRAME: 0608

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	Data Transfer, Over Session or Connection, and Between Computing Device and Server Associated with a Routing Network for Modifying One or More Parameters of
	the Routing Network
As the below	named inventor, I hereby declare that:
This declaration is directed to:	A THE ACCIDED ADDICATION, OF
	United States application or PCT international application number
The above-ide	entified application was made or authorized to be made by me.
I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.
I hereby acknownissions	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or of not more than five (5) years, or both.
	ASSIGNMENT
State/Province date herewith authorize the	trad Holland ("Assignor"), a citizen of the <u>United States</u> (Country), residing in <u>Huntersville, NC</u> (City, e) have invented the above invention. If the following lines are blank, the above application was filed on even, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby attorneys for Bank of America to insert the filing date and application number below after they become for to filing the recordation.
	U.S. Application No. <u>15/477,830</u> filed <u>April 3, 2017</u>
Delaware, and title and interes	NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, est in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the of America, and in any and all countries foreign thereto:
payment for the said Assignor, representative countries foreit countries in its entitled under Letters Patent in-parts and exconfidential intrequest the Colinventions or minterest. I representation of the said	ORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or ne making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal s, the full and exclusive right, title and interest for the territory of the United States of America and all gn thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign own name and to claim any priority rights for such foreign applications to which such applications are international conventions, treaties, or otherwise), in and to said inventions and in and to all applications and granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, tensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, formation, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and mmissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said esulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and esent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will reconsideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or and all facts known to me regarding said inventions whenever requested, and that I will execute all non-

provisional, divisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal proceedings, sign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.

[Page 15 of 16]

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

Date: March 30, 2017

Signature:

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of	Data Transfer, Over Session or Connection, and Between Computing Device and		
Title of Invention	Server Associated with a Routing Network for Modifying One or More Parameters of		
As the helow	the Routing Network named inventor, I hereby declare that:		
This declaration is directed to:	Y The attached application, or		
	United States application or PCT international application number		
The above-ide	entified application was made or authorized to be made by me.		
I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.		
	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or tof not more than five (5) years, or both.		
	ASSIGNMENT		
State/Provinc date herewith authorize the	Mark Williams ("Assignor"), a citizen of the <u>United States</u> (Country), residing in <u>Thornton, PA</u> (City, e) have invented the above invention. If the following lines are blank, the above application was filed on even a, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby attorneys for Bank of America to insert the filing date and application number below after they become ior to filing the recordation.		
	U.S. Application No. <u>15/477,830</u> , filed <u>April 3, 2017</u> .		
WHEREAS, BANK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of Delaware, and having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, title and interest in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the United States of America, and in any and all countries foreign thereto:			
payment for t said Assignor, representative countries for e countries in it entitled under Letters Patent in-parts and e confidential ir request the Co inventions or interest. I repr without further nominees, any provisional, di proceedings, s	FORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal es, the full and exclusive right, title and interest for the territory of the United States of America and all eign thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign so wn name and to claim any priority rights for such foreign applications to which such applications are international conventions, treaties, or otherwise), in and to said inventions and in and to all applications and granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, continuations, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and presulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and resulting therefrom to said Assignee, or its successors, assigns, or and all facts known to me regarding said inventions whenever requested, and that I will execute all nonvisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal sign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its		

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

purposes are not retained in the approached in the end therefore a	re not publicly available.
LEGAL NAME OF INVENTOR	
Inventor: Mark Williams	Date: 3/29/17
Signature: Manu C. Well	

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

The state of the s		
Title of Invention	Data Transfer, Over Session or Connection, and Between Computing Device an Server Associated with a Routing Network for Modifying One or More Parameter the Routing Network	d s of
As the below	v named inventor, I hereby declare that:	***************************************
This declarati	A THE SUSCIECTION OF	
·	United States application or PCT international application number	
The above-ide	dentified application was made or authorized to be made by me.	
I believe that	t I am the original inventor or an original joint inventor of a claimed invention in the application.	
I hereby acknown	nowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fir nt of not more than five (5) years, or both.	ne or
	ASSIGNMENT	
State/Provinc date herewith authorize the	Steven Twombly ("Assignor"), a citizen of the <u>United States</u> (Country), residing in <u>Saco, ME</u> (City, ce) have invented the above invention. If the following lines are blank, the above application was filed on the ch, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby attorneys for Bank of America to insert the filing date and application number below after they become prior to filing the recordation.	even
	U.S. Application No. <u>15/477,830</u> , filed <u>April 3, 2017</u>	
Delaware, and title and inter	ANK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of and having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire rigners in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in sof America, and in any and all countries foreign thereto:	aht
payment for the said Assignor, representative countries fore countries in its entitled under Letters Patent in-parts and exponding the Color inventions or righterest. I represent further further cominees, any provisional, disproceedings, s	FORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salar the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledge, by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal ves, the full and exclusive right, title and interest for the territory of the United States of America and all eign thereto, and throughout the world and in space, (including the right to apply for Letters Patent in fore to own name and to claim any priority rights for such foreign applications to which such applications are er international conventions, treaties, or otherwise), in and to said inventions and in and to all applications at granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, continuative extensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize a commissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and present and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will see consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, and all facts known to me regarding said inventions whenever requested, and that I will execute all non-livisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal sign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its ssigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.	ed, I eign and tion- and d I

[Page 15 of 16]

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			Control of the Contro
LEGAL NAME OF INVENTOR			
Inventor: Steven Twombly Signature: Awar ho	ombly	Date: 3/24/17-	
signatura. 91-west 14	may	,	

REEL: 041837 FRAME: 0614

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	Data Transfer, Over Session or Connection, and Between Computing Device and Server Associated with a Routing Network for Modifying One or More Parameters of the Routing Network	
As the below	named inventor, I hereby declare that:	
This declaration is directed to:	V the affaction abbitcation, or	
	United States application or PCT international application number	
The above-ide	entified application was made or authorized to be made by me.	
I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.	
	pwledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or of not more than five (5) years, or both.	
	ASSIGNMENT	
above inventi comply with 3	Matthew Murphy, ("Assignor"), a citizen of the <u>United States</u> , residing in <u>Charlotte, NC</u> , have invented the on. If the following lines are blank, the above application was filed on even date herewith, otherwise, to 7 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby authorize the attorneys for Bank of sert the filing date and application number below after they become known and prior to filing the recordation. U.S. Application No. <u>15/477,830</u> , filed <u>April 3, 2017</u> .	
WHEREAS, BANK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of Delaware, and having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, title and interest in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the United States of America, and in any and all countries foreign thereto:		
NOW, THEREFORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or payment for the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I said Assignor, by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal representatives, the full and exclusive right, title and interest for the territory of the United States of America and all countries foreign thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), in and to said inventions and in and to all applications and Letters Patent granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, continuation-in-parts and extensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, confidential information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and request the Commissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said inventions or resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and interest. I represent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will without further consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or nominees, any and all facts known to me regarding said inventions whenever requested, and that I will execute all non-provisional, divisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal proceedings, sign all lawful papers, make all rightful oaths, and generally do		

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purposes are not retained in the application file and there	atore are not publicly available.	
LEGAL NAME OF INVENTOR		
Inventor: Matthew Murphy A. M.	Date: 3/30/17	
Signature: A Many		

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of	Data Transfer, Over Session or Connection, and Between Computing Device and
Invention	Server Associated with a Routing Network for Modifying One or More Parameters of
A - No - for all and	the Routing Network
As the below	named inventor, I hereby declare that:
This declaration is directed to:	V LITE attachen application, of
	United States application or PCT international application number
The above-lde	entified application was made or authorized to be made by me.
I believe that	am the original inventor or an original joint inventor of a claimed invention in the application.
	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or of not more than five (5) years, or both.
	ASSIGNMENT
invention. If t 37 C.F.R. §3.2	Mark Nelson ("Assignor"), a citizen of the <u>United States</u> , residing in <u>Waxhaw, NC</u> , have invented the above he following lines are blank, the above application was filed on even date herewith, otherwise, to comply with 1 for recordal of this assignment, I, an assignor below, hereby authorize the attorneys for Bank of America to g date and application number below after they become known and prior to filing the recordation.
	U.S. Application No. 15/477,830 filed April 3, 2017
Delaware, and title and inter-	NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of I having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, est in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the of America, and in any and all countries foreign thereto:
payment for t said Assignor, representative countries fore countries in it: entitled under Letters Patent in-parts and econfidential in request the Coinventions or interest. I represent without further nominees, any provisional, di proceedings, s	ORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal ess, the full and exclusive right, title and interest for the territory of the United States of America and all light thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign sown name and to claim any priority rights for such foreign applications to which such applications are international conventions, treaties, or otherwise), in and to said inventions and in and to all applications and granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, continuations, tensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, formation, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and or an advantage of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and resulting therefrom to said Assignee, or its successors and all deliver this assignment. I agree that I will are consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or and all facts known to me regarding said inventions whenever requested, and that I will execute all nonvisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal ign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its signs, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.

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LEGAL NAME OF INVENTOR			
Inventor: Mark Nelson	Date:	4/3/17	
Signature: Mul/A Mil			