505929609 02/21/2020

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT5976327

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the SPELLING OF ASSIGNOR ZHIHAO GAO'S LAST NAME TO GAO previously recorded on Reel 049872 Frame 0825. Assignor(s) hereby confirms the ASSIGNMENT TO ASSIGNEE CAPITAL ONE SERVICES LLC.

## **CONVEYING PARTY DATA**

Name	Execution Date
DANIEL GUNN	07/17/2019
ZHIHAO GAO	02/20/2020
PULKIT GULATI	07/26/2019
WILLIAM CARTAR	07/22/2019

## **RECEIVING PARTY DATA**

Name:	CAPITAL ONE SERVICES, LLC
Street Address:	1680 CAPITAL ONE DRIVE
City:	MCLEAN
State/Country:	VIRGINIA
Postal Code:	22102

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

Property Type	Number
Application Number:	16523270

## **CORRESPONDENCE DATA**

Fax Number: (312)463-5001

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: 3124635000

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

BANNER & WITCOFF, LTD. **Correspondent Name:** 71 SOUTH WACKER DRIVE Address Line 1:

Address Line 2: **SUITE 3600** 

Address Line 4: CHICAGO, ILLINOIS 60606

ATTORNEY DOCKET NUMBER:	009033.00008
NAME OF SUBMITTER:	SAMUEL P RICHEY
SIGNATURE:	/ Samuel P. Richey /
DATE SIGNED:	02/21/2020

## **Total Attachments: 5**

source=Corrective\_Assignment\_9033\_8#page1.tif source=Corrective\_Assignment\_9033\_8#page2.tif source=Corrective\_Assignment\_9033\_8#page3.tif source=Corrective\_Assignment\_9033\_8#page4.tif source=Original\_Coversheet\_9033\_8#page1.tif

Attorney Docket No. 009033.00008 (Client Ref.: P4136-US)

# COMBINED PATENT DECLARATION AND ASSIGNMENT

900000000000000000000000000000000000000	AED LA I EIA I DECTAKA IION AIAD A22IQIAIAIEIA I
TITLE OF INVENTION:	CONTROL SYSTEMS WITH INDEPENDENT DATA PROCESSING
	DECLARATION
As the below named inventor,	I hereby declare that:
<ul> <li>This declaration is directed to:</li> </ul>	
	United States application or PCT international application number
<ul><li>I believe that I am the</li><li>I hereby acknowledge</li></ul>	application was made or authorized to be made by me. e original inventor or an original joint inventor of a claimed invention in the application. e that any willful false statement made in this declaration is punishable under 18 U.S.C. conment of not more than five (5) years, or both.
	ASSIGNMENT
WHEREAS, I, the below named application number and filing	I Inventor/Assignor, have invented the above invention, having the following date:
U.S. Applica	tion No. <u>16/523,270</u> , filed <u>July 26, 2019</u> .
9	ereby authorize the attorneys for Assignee to insert the filing date and application ter they become known and prior to recording this document.
One Drive, McLean, Virginia 2	es, LLC ("Assignee"), a Corporation having offices and a place of business at 1680 Capital 2102, is desirous of acquiring the entire right, title and interest in and to the aforesaid plications and Letters Patent therefor granted in the United States of America, and in nereto:
salary and/or payment for the hereby acknowledged, I said A assigns and legal representation. America and all countries fore Letters Patent in foreign coun which such applications are erand in and to all applications a reexaminations, continuations with their associated goodwill use, or sell the inventions.	IT MAY CONCERN, be it known that, for good and valuable consideration, including making of inventions, or employee benefits, the receipt and sufficiency of which is ssignor, by these presents do sell, assign and transfer unto said Assignee, its successors, wes, the full and exclusive right, title and interest for the territory of the United States of ign thereto, and throughout the world and in space, (including the right to apply for tries in its own name and to claim any priority rights for such foreign applications to utitled under international conventions, treaties, or otherwise), in and to said inventions and Letters Patent granted therefor, and all non-provisionals, divisionals, reissues, continuation-in-parts and extensions thereof, and in and to all copyrights, trademarks trade secrets, confidential information, and compilations, necessary or useful to make, 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 le and interest. I represent and warrant that I have full right to agree to, execute, and
successors, assigns, or nomine that I will execute all non-prov applications, testify in any leg	ner consideration, but at the expense of Assignee, communicate to said Assignee, or its es, any and all facts known to me regarding said inventions whenever requested, and isional, divisional, reissue, reexamination, continuation and continuation-in-part all proceedings, sign all lawful papers, make all rightful oaths, and generally do Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent in all countries.
INVENTOR/ASSIGNOR:	
Legal Name: <u>Daniel Gun</u>	1
Address: <u>c/o Capital</u>	One Services, LLC, 1680 Capital One Drive, McLean, Virginia 22102
Signature:	Date: 7/17/2019  Date:

COMBINED PATENT DECLARATION AND ASSIGNMENT		
TITLE OF INVENTION:	CONTROL SYSTEMS WITH INDEPENDENT DATA PROCESSING	
As the below named invent	DECLARATION or Thereby declare that:	
This declaration is directed to:	The attached application, or	
3 40 6444 407	United States application or PCT international application number <u>16/523,270</u> filed on July 26, 2019.	
I believe that I am     I hereby acknowle	ed application was made or authorized to be made by me. the original inventor or an original joint inventor of a claimed invention in the application. dge that any willful false statement made in this declaration is punishable under 18 U.S.C. prisonment of not more than five (S) years, or both.	
	ASSIGNMENT	
WHEREAS, I, the below nan application number and fili	ned Inventor/Assignor, have invented the above invention, having the followinging date:	
	U.S. Application No. 16/523,270, filed July 26, 2019.	
	I hereby authorize the attorneys for Assignee to insert the filing date and application after they become known and prior to recording this document.	
One Drive, McLean, Virginia	vices, LLC ("Assignee"), a Corporation having offices and a place of business at 1680 Capital s 22102, is desirous of acquiring the entire right, title and interest in and to the aforesaid applications and Letters Patent therefor granted in the United States of America, and in n thereto:	
salary and/or payment for the hereby acknowledged, I said assigns and legal represents America and all countries for the testers Patent in foreign columbich such applications are and in and to all applications reexaminations, continuations, continuations.	OM IT MAY CONCERN, be it known that, for good and valuable consideration, including the making of inventions, or employee benefits, the receipt and sufficiency of which is disciplinary, by these presents do sell, assign and transfer unto said Assignee, its successors, stives, the full and exclusive right, title and interest for the territory of the United States of preign thereto, and throughout the world and in space, (including the right to apply for untries in its own name and to claim any priority rights for such foreign applications to entitled under international conventions, treaties, or otherwise), in and to said inventions and Letters Patent granted therefor, and all non-provisionals, divisionals, reissues, ons, continuation-in-parts and extensions thereof, and in and to all copyrights, trademarks will, trade secrets, confidential information, and compilations, necessary or useful to make,	
issue all Letters Patent on sa	est the Commissioner of Patents, and any official whose duty it is to issue patents, to add inventions or resulting therefrom to said Assignee, or its successors and assigns, as title and interest. I represent and warrant that I have full right to agree to, execute, and	
successors, assigns, or nomi that I will execute all non-pr applications, testify in any le	rther consideration, but at the expense of Assignee, communicate to said Assignee, or its inees, any and all facts known to me regarding said inventions whenever requested, and rovisional, divisional, reissue, reexamination, continuation and continuation-in-part egal proceedings, sign all lawful papers, make all rightful oaths, and generally do aid Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent as in all countries.	
INVENTOR/ASSIGNOR: Legal Name: <u>Zhihao G</u> Address: c/o Capit		
Signature: <u>Us</u>	,	

Attorney Docket No. 009033.00008 (Client Ref.: P4136-US)

## COMBINED PATENT DECLARATION AND ASSIGNMENT

State below named inventor, I hereby declare that:  ■ This declaration is directed to:  ■ United States application, or is directed to:  ■ United States application or PCT international application number	TITLE OF INVENTION:	CONTROL SYSTEMS WITH INDEPENDENT DATA PROCESSING
As the below named inventor, I hereby declare that:  • This declaration is directed to:  United States application, or is directed to:  United States application or PCT international application number		DECLARATION
United States application or PCT international application number	As the below named invent	
The above-identified 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 acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.  **ASSIGNMENT**  WHEREAS, I, the below named Inventor/Assignor, have invented the above invention, having the following application number and filing date:  U.S. Application No	Š	
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.  ASSIGNMENT  WHEREAS, I, the below named Inventor/Assignor, have invented the above invention, having the following application number and filling date:  U.S. Application No. 16/523,270 , filled July 26, 2019  If the above lines are blank, I hereby authorize the attorneys for Assignee to insert the filing date and application number immediately above after they become known and prior to recording this document.  WHEREAS, Capital One Services, LLC ("Assignee"), a Corporation having offices and a place of business at 1680 Capital One Drive, McLean, Virginia 22102, 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 and/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 fight 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 which such applications are entitled under international conventions, treaties, or otherwise), in and to said invent		land.
WHEREAS, I, the below named Inventor/Assignor, have invented the above invention, having the following application number and filing date:  U.S. Application No. 16/523,270 , filed July 26, 2019 .  If the above lines are blank, I hereby authorize the attorneys for Assignee to insert the filing date and application number immediately above after they become known and prior to recording this document.  WHEREAS, Capital One Services, LLC ("Assignee"), a Corporation having offices and a place of business at 1680 Capital One Drive, McLean, Virginia 22102, 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 and/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 Commi	<ul><li>I believe that I am I</li><li>I hereby acknowled</li></ul>	he original inventor or an original joint inventor of a claimed invention in the application. ge that any willful false statement made in this declaration is punishable under 18 U.S.C.
application number and filing date:  U.S. Application No. 16/523,270 , filed July 26, 2019 .  If the above lines are blank, I hereby authorize the attorneys for Assignee to insert the filing date and application number immediately above after they become known and prior to recording this document.  WHEREAS, Capital One Services, LLC ("Assignee"), a Corporation having offices and a place of business at 1680 Capital One Drive, McLean, Virginia 22102, 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 and/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		
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salary and/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 everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enfor	One Drive, McLean, Virginia inventions and in and to all	22102, is desirous of acquiring the entire right, title and interest in and to the aforesaid pplications and Letters Patent therefor granted in the United States of America, and in
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 everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.  INVENTOR/ASSIGNOR:  Legal Name: Pulkit Gulati  Address: C/o Capital One Services, LLC, 1680 Capital One Drive, McLean, Virginia 22102	salary and/or payment for thereby acknowledged, I said assigns and legal represental America and all countries for Letters Patent in foreign countries such applications are and in and to all application reexaminations, continuation with their associated goodw	he making of inventions, or employee benefits, the receipt and sufficiency of which is Assignor, by these presents do sell, assign and transfer unto said Assignee, its successors, tives, the full and exclusive right, title and interest for the territory of the United States of reign thereto, and throughout the world and in space, (including the right to apply for ntries in its own name and to claim any priority rights for such foreign applications to entitled under international conventions, treaties, or otherwise), in and to said inventions and Letters Patent granted therefor, and all non-provisionals, divisionals, reissues, as, continuation-in-parts and extensions thereof, and in and to all copyrights, trademarks
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 everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.  INVENTOR/ASSIGNOR:  Legal Name: Pulkit Gulati Address:	issue all Letters Patent on sa assignee of the entire right,	id inventions or resulting therefrom to said Assignee, or its successors and assigns, as
Legal Name: Pulkit Gulati  Address: c/o Capital One Services, LLC, 1680 Capital One Drive, McLean, Virginia 22102  7/26/2019	successors, assigns, or nomi that I will execute all non-pr applications, testify in any le everything reasonable for sa	nees, any and all facts known to me regarding said inventions whenever requested, and ovisional, divisional, reissue, reexamination, continuation and continuation-in-part gal proceedings, sign all lawful papers, make all rightful oaths, and generally do id Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent
Address: c/o Capital One Services, LLC, 1680 Capital One Drive, McLean, Virginia 22102  7/26/2019	INVENTOR/ASSIGNOR:	
		BocuSigned by: 7 / 26 / 2019

Attorney Docket No. 009033.00008 (Client Ref.: P4136-US)

## COMBINED PATENT DECLARATION AND ASSIGNMENT

TITLE OF INVENTION:	CONTROL SYSTEM	1S WITH INDEPENDENT DATA PROCESSING
	DECLAI	RATION
As the below named invent		
<ul> <li>This declaration is directed to:</li> </ul>	The attached applic	ation, or
	lane#	ation or PCT international applicationfiled on
<ul><li>I believe that I am</li><li>I hereby acknowled</li></ul>		nal joint inventor of a claimed invention in the application. ent made in this declaration is punishable under 18 U.S.C.
		VMENT
WHEREAS, I, the below nan application number and filing		ented the above invention, having the following
U.S. Appli	cation No. <u>16/523,270</u>	, filed <u>July 26, 2019</u> .
8		ys for Assignee to insert the filing date and application prior to recording this document.
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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 everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.		
INVENTOR/ASSIGNOR	######################################	
Legal Name: <u>William (</u> Address: c/o Capit		apital One Drive, McLean, Virginia 22102
	DocuSigned by:	_ 7/22/2019
Signature:	William Cartar	Date: 7722723

#### 505592012 07/26/2019

## PATENT ASSIGNMENT COVER SHEET

EPAS ID: PAT5638813 Electronic Version v1.1

Stylesheet Version v1.2

**SUBMISSION TYPE: NEW ASSIGNMENT NATURE OF CONVEYANCE: ASSIGNMENT** 

## **CONVEYING PARTY DATA**

Name	Execution Date
DANIEL GUNN	07/17/2019
ZHIHAO GAU	07/17/2019
PULKIT GULATI	07/26/2019
WILLIAM CARTAR	07/22/2019

## **RECEIVING PARTY DATA**

Name:	CAPITAL ONE SERVICES, LLC
Street Address:	1680 CAPITAL ONE DRIVE
City:	MCLEAN
State/Country:	VIRGINIA
Postal Code:	22102

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

Property Type	Number
Application Number:	16523270

## **CORRESPONDENCE DATA**

Fax Number: (312)463-5001

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: (202) 824-3000

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

BANNER & WITCOFF, LTD. **Correspondent Name:** Address Line 1: 71 SOUTH WACKER DRIVE

Address Line 2: **SUITE 3600** 

Address Line 4: CHICAGO, ILLINOIS 60606

ATTORNEY DOCKET NUMBER:	009033.00008
NAME OF SUBMITTER:	SAMUEL P. RICHEY
SIGNATURE:	/ Samuel P. Richey /
DATE SIGNED:	07/26/2019
	This document serves as an Oath/Declaration (37 CFR 1.63).

**Total Attachments: 4** 

**PATENT REEL: 051989 FRAME: 0608** RECORDED: 02/21/2020