504441056 06/30/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4487757

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SAMUEL TERRENCE TRIM	06/26/2017
PATRICIA ANNE DONNELLAN	06/20/2017
ELIYOHU ARON INGER	06/26/2017
KEYING LI	06/28/2017
PRANEETH REDDY VATTI	06/20/2017
YAN GUO	06/20/2017
SENTHIL VEL GUNASEKARAN	06/26/2017
NAGAJUNA ARAVAPALLI	06/22/2017
NEETA VINOD ATAL	06/22/2017
PRIYATHAM REDDY ALLALA	06/26/2017
STEPHEN ROBERT WHITE	06/21/2017
XIAOMING WANG	06/22/2017
MICHAEL GORDON HALE	06/26/2017
JASON DREW BLACK	06/27/2017

RECEIVING PARTY DATA

Name:	MICROSOFT TECHNOLOGY LICENSING, LLC
Street Address:	ONE MICROSOFT WAY
City:	REDMOND
State/Country:	WASHINGTON
Postal Code:	98052

PROPERTY NUMBERS Total: 1

Property Type	Number		
Application Number:	15640214		

CORRESPONDENCE DATA

Fax Number: (801)328-1707

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: 801-533-9800

Email: mstringham@wnlaw.com, usdocket@microsoft.com

PATENT REEL: 043070 FRAME: 0727

504441056

Correspondent Name: WORKMAN NYDEGGER/MICROSOFT

Address Line 1: 60 EAST SOUTH TEMPLE

Address Line 2: SUITE 1000

Address Line 4: SALT LAKE CITY, UTAH 84111

ATTORNEY DOCKET NUMBER:	13768.3214
NAME OF SUBMITTER:	J. LAVAR OLDHAM
SIGNATURE:	/J. LaVar Oldham/
DATE SIGNED:	06/30/2017

Total Attachments: 28

source=CombinedAssignments#page1.tif source=CombinedAssignments#page2.tif source=CombinedAssignments#page3.tif source=CombinedAssignments#page4.tif source=CombinedAssignments#page5.tif source=CombinedAssignments#page6.tif source=CombinedAssignments#page7.tif source=CombinedAssignments#page8.tif source=CombinedAssignments#page9.tif source=CombinedAssignments#page10.tif source=CombinedAssignments#page11.tif source=CombinedAssignments#page12.tif source=CombinedAssignments#page13.tif source=CombinedAssignments#page14.tif source=CombinedAssignments#page15.tif source=CombinedAssignments#page16.tif source=CombinedAssignments#page17.tif source=CombinedAssignments#page18.tif source=CombinedAssignments#page19.tif source=CombinedAssignments#page20.tif source=CombinedAssignments#page21.tif source=CombinedAssignments#page22.tif source=CombinedAssignments#page23.tif source=CombinedAssignments#page24.tif source=CombinedAssignments#page25.tif source=CombinedAssignments#page26.tif source=CombinedAssignments#page27.tif source=CombinedAssignments#page28.tif

> PATENT REEL: 043070 FRAME: 0728

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768,3214</u>

			orginal inventor or an original joint
		•	or claimed in a patent application
***************************************			Asset Relationships Across a Cloud
recentation, (,	'APPLICATION"), w	nich:	
	legal representative, Way, Resimond, REPRESENTATIVI on 2017-06-30 following Office	Microsoft Technology Lic Washington 98052 (S), to insert here and given Application	in parentheses (filed No. 15/640214 by the) this APPLICATION's
	wa fisi w	and was given Ap	ntication
Kulli	Ma	by the following Office	***************************************
	2 472	the me many with many	
	·····	······································	
and the APP continuing ap foreign counts ASSIC	LICATION (and all plications, in whole of ics ("APPLICATION in its income in its incom	other applications and parts in part, in and for the DERIVATIVES")): suthorizes, and requires	right of priority, in the INVENTION patents derived therefrom, such as United States, its territories, and all uests, ASSIGNEE'S LEGAL
			c, and Office into the following table
	<u>KATION DEKIVAI</u>	IVES after they are know	n: Office
Application		Filing Date	
		,	
8	***************************************	,	
***************************************		<u> </u>	

ļ	***************************************	ļ	
		<u></u>	
		<u>}</u>	
Wan an	and aldredge been been	idameiam sha masaine as a	dish is howby when the the

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768.3214</u>

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

	<u>(, , 7, 6 , 20/7</u>
Inventor's Signature	Date
Samuel Terrence TRIM	
Printed Name in English	Printed Name in Native Language (if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

entitled "Metho	i subject maner (od of Discoverir "PPLICATION"	<u>1g and Modeling Actor (</u>	sed and/or claimed in a patent application and Asset Relationships Across a Cloud
]] [[]	egal representati Way, Redmon REPRESENTAT on <u>2017-06-30</u> following Office	ve, Microsoft Technolog id, Washington 980 TVES), to insert and given Applica	izes, and requests, ASSIGNEE'S y Licensing, LLC, One Microsoft)52 (ASSIGNEE'S LEGAL here in parentheses (filed ation No. 15/640214 by the) this APPLICATION's when known;
	Vo	and was given by the following Off	
of itself and its sthe entire and ex and the APPLI continuing appl foreign countrie ASSIGN REPRESENTA	successors and as clusive rights, tit CATION (and ications, in wholes ("APPLICATIOR") IOR hereby TIVES to insert to	ssigns ("ASSIGNEE"), is tle and interest, including all other applications a le or in part, in and for ON DERIVATIVES")); authorizes, and the Application No., filing	gton limited liability company, on behalf sentitled to, and is desirous of acquiring, the right of priority, in the INVENTION and patents derived therefrom, such as the United States, its territories, and all requests, ASSIGNEE'S LEGAL and Office into the following table
of itself and its sthe entire and ex and the APPLI continuing appl foreign countrie ASSIGN REPRESENTA	successors and as clusive rights, tit CATION (and ications, in wholes ("APPLICATIOR") IOR hereby TIVES to insert to	ssigns ("ASSIGNEE"), is tle and interest, including all other applications a le or in part, in and for ON DERIVATIVES")); authorizes, and the Application No., filing	s entitled to, and is desirous of acquiring, the right of priority, in the INVENTION nd patents derived therefrom, such as the United States, its territories, and all requests, ASSIGNEE'S LEGAL
of itself and its sthe entire and ex and the APPLI continuing appl foreign countrie ASSIGN REPRESENTA	successors and as clusive rights, tit CATION (and ications, in wholes ("APPLICATIOR") IOR hereby TIVES to insert to	ssigns ("ASSIGNEE"), is tle and interest, including all other applications a le or in part, in and for ON DERIVATIVES")); authorizes, and the Application No., filing	s entitled to, and is desirous of acquiring, the right of priority, in the INVENTION nd patents derived therefrom, such as the United States, its territories, and all requests, ASSIGNEE'S LEGAL added.
of itself and its sthe entire and ex and the APPLI continuing appl foreign countrie ASSIGN REPRESENTA	successors and as clusive rights, tit CATION (and ications, in wholes ("APPLICATIOR") IOR hereby TIVES to insert to	ssigns ("ASSIGNEE"), is tle and interest, including all other applications a le or in part, in and for ON DERIVATIVES")); authorizes, and the Application No., filing	s entitled to, and is desirous of acquiring, the right of priority, in the INVENTION nd patents derived therefrom, such as the United States, its territories, and all requests, ASSIGNEE'S LEGAL added.
of itself and its sthe entire and ex and the APPLI continuing appl foreign countrie ASSIGN REPRESENTA	successors and as clusive rights, tit CATION (and ications, in wholes ("APPLICATIOR") IOR hereby TIVES to insert to	ssigns ("ASSIGNEE"), is tle and interest, including all other applications a le or in part, in and for ON DERIVATIVES")); authorizes, and the Application No., filing	s entitled to, and is desirous of acquiring, the right of priority, in the INVENTION nd patents derived therefrom, such as the United States, its territories, and all requests, ASSIGNEE'S LEGAL added.
of itself and its sthe entire and ex and the APPLI continuing appl foreign countrie ASSIGN REPRESENTA	successors and as clusive rights, tit CATION (and ications, in wholes ("APPLICATIOR") IOR hereby TIVES to insert to	ssigns ("ASSIGNEE"), is tle and interest, including all other applications a le or in part, in and for ON DERIVATIVES")); authorizes, and the Application No., filing	s entitled to, and is desirous of acquiring, the right of priority, in the INVENTION nd patents derived therefrom, such as the United States, its territories, and all requests, ASSIGNEE'S LEGAL added.

Page 1 of 2

entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as

PATENT REEL: 043070 FRAME: 0731

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

Talu Usuelly
Thyentor's Signature

Date

Patricia Anne DONNELLAN

Printed Name in English

Printed Name in Native Language (if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

inventor of s entitled "Met	ubject matter ("INVE	NTION") disclosed and/or nd Modeling Actor and Asse	nal inventor or an original joint claimed in a patent application et Relationships Across a Cloud
\boxtimes	legal representative,	GNOR hereby authorizes, and Microsoft Technology Licens Washington 98052 (A	sing, LLC, One Microsoft
	on 2017-06-30 following Office	ES), to insert here is and given Application No USPTO ng date, and Office, when known	o. <u>15/640214</u> by the) this APPLICATION's
		and was given Applic by the following Office ";	eation
of itself and it the entire and and the APP continuing ap	s successors and assig exclusive rights, title a LICATION (and all	ns ("ASSIGNEE"), is entitled and interest, including the right other applications and pate or in part, in and for the Uni	ited liability company, on behalf d to, and is desirous of acquiring, at of priority, in the INVENTION nts derived therefrom, such as ted States, its territories, and all
REPRESENT			es, ASSIGNEE'S LEGAL and Office into the following table
Application		Filing Date	Office

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768.3214</u>

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

Elizah Data Inventor's Signature	6/26/17 Date
_Eliyohu Aron INGER	
Printed Name in English	Printed Name in Native Language
***************************************	(if other than English)

13	٨	TE		T	À	22	7	15	J	V	JI	Γ
3. 2	٠,		21.3	8 E	4.5	الدوات			7 L	7.1	 ₩. J	Ł

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

subject matter ("INVENT)	ON") disclosed and/or claims leling Actor and Asset Re	al inventor or an original joint inventor on the definition of the desired of the
legal repres Way, Re REPRESEI on 2017- following C	entative, Microsoft Technolo dmond, Washington 98 VTATIVES), to insert	orizes, and requests, ASSIGNEE'S ogy Licensing, LLC, One Microsoft 8052 (ASSIGNEE'S LEGAL here in parentheses (filed ication No. 15/640214 by the) this APPLICATION's , when known;
No	and was giv by the following O	
of itself and its successors the entire and exclusive rig and the APPLICATION continuing applications, in foreign countries ("APPLI	and assigns ("ASSIGNEE"), hts, title and interest, includit (and all other applications whole or in part, in and fo CATION DERIVATIVES")	nington limited liability company, on behale, is entitled to, and is desirous of acquiring ing the right of priority, in the INVENTION and patents derived therefrom, such a cor the United States, its territories, and all)); requests, ASSIGNEE'S LEGAL
REPRESENTATIVES to	nsert the Application No., fill	ing date, and Office into the following table
Application No.	Filing Date	known; Office
	§	
<u> </u>		
<u></u>		

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as

Page 1 of 2

REEL: 043070 FRAME: 0735

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

REEL: 043070 FRAME: 0736

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768.3214</u>

inventor of s	ubject matter ("INV	ENTION") disclosed a	e original inventor or an original jo nd/or claimed in a patent applicati d Asset Relationships Across a Clo	on
	"APPLICATION"), v		a rusor itemmonompo Across a Cio	m
	will be filed. ASSI	GNOR hereby authorize	es, and requests, ASSIGNEE'S	
	Way, Redmond, REPRESENTATIV on 2017-06-30 following Office	Washington 98052 ES), to insert he and given Applicati	re in parentheses (filed on No. 15/640214 by the) this APPLICATION's	
	was filed on	and was given A	Innification	
		by the following Office		
		oy me ionowing Office	Para di Para d	
Pasalilik v Jakusiyalilik sillar			on limited liability company, on beha	
of itself and its the entire and a and the APPI continuing ap	s successors and assig exclusive rights, title : LICATION (and all	ons ("ASSIGNEE"), is e and interest, including the other applications and or in part, in and for the	ntitled to, and is desirous of acquiring the right of priority, in the INVENTIO patents derived therefrom, such a United States, its territories, and a	g, N
ASSIC REPRESENT	NOR hereby a	uthorizes, and re	equests, ASSIGNEE'S LEGA ate, and Office into the following tab	L ks
for any APPLI	ICATION DERIVAT	IVES after they are kno	wn;	e 😂
Application 1	Vo.	Filing Date	Office	
				\dashv
				1
				_
				4
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			- 1

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as

Page 1 of 2

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

(RRedly_	06/20/2017
Inventor's Signature	Date
Pranceth Reddy VATTI	
Printed Name in English	Printed Name in Native Language
	(if other than English)

PATENT ASSIGNMENT MS Docket No.: 402461-US-NP

,	3 C 6 8 AM ( V )	,	WN Docket No.: 137	768,3214
subject matte	r ("INVENTION")	disclosed and/or cl Modeling Actor and	inventor or an original jo aimed in a patent applid Asset Relationships Ac	cation entitled
×	will be filed. ASS	IGNOR hereby author	rizes, and requests, ASSIC	inee's
¥ .	Microsoft Way, F REPRESENTATI 2017-06-30 following Office	tedmond, Washington VES), to insert he and given Applica USPTO	nology Licensing, LLC 98052 (ASSIGNEE'S I ere in parentheses (filtion No. 15/640214 date, and Office, when kn	LEGAL led on _ by the ) this
	1111 210111011 31	\$p.p.10-caccoss.c. 1 100-, 1111126	2000, and 1711, 67, 67, 67, 67, 67, 67, 67, 67, 67, 67	O 11 113
	was filed on	and was give	n Application No	
		y the following Office 		
of itself and acquiring, the INVENTION such as continuand all foreign ASSI REPRESENT	its successors and entire and exclusive and the APPLICAT auing applications, a countries ("APPLICATED ATIVES to insert to	assigns ("ASSIGNE e rights, title and inter TON (and all other ap in whole or in part, in CATION DERIVATIV authorizes, and	requests, ASSIGNEI ling date, and Office into	is desirous of priority, in the ived therefrom, its territories,
Application ?		Filing Date	Office	

REEL: 043070 FRAME: 0739

PATENT

	200 W. C 2000
PATENT ASSIGNMI	

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768.3214</u>

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

inventor's Signature Hullo	
Yan GUO Date 6/20/2017	郭岩
Printed Name in English (if other than English)	Printed Name in Native Language

PATENT REEL: 043070 FRAME: 0740

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768,3214</u>

joint inventor entitled "Me	of subject matter ("I	NVENTION") disclosed and and Modeling Actor and As	he original inventor or an original or claimed in a patent application set Relationships Across a Cloud
Ø	will be filed. ASSI	GNOR hereby authorizes, an	d requests, ASSIGNEE'S
	Way, Redmond, REPRESENTATIV on 2017-06-30 following Office	Microsoft Technology Licen Washington 98052 ( ES), to insert here and given Application N USPTO ing date, and Office, when kn	ASSIGNEE'S LEGAL in parentheses (filed to be a continuous continuo
	was filed on	and was given Appli	cation
	No	by the following Office	
of itself and it the entire and and the APP continuing ap foreign countr	s successors and assign exclusive rights, title LICATION (and all plications, in whole ies ("APPLICATION	gns ("ASSIGNEE"), is entitle and interest, including the rig other applications and pate or in part, in and for the Un J DERIVATIVES"));	nited liability company, on behalf d to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all ts, ASSIGNEE'S LEGAL
REPRESENT	ATIVES to insert the	Application No., filing date, a	and Office into the following table
Application 1	Vo.	TVES after they are known; Filing Date	Office

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as

Page 1 of 2

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768.3214</u>

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

6. Molizer	6/26/2017
Inventor's Signature	Date
Senthil Vel GUNASEKARAN	్రాంత్ర్లు మాత్రించి కాబమ్
Printed Name in English	Printed Name in Native Language
	(if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

	"APPLICATION") will be filed. AS	, which: SIGNOR hereby authorizes, ar	nd requests, ASSIGNEE'S
	Way, Redmond REPRESENTATI on 2017-06-30 following Office	re, Microsoft Technology Licer I, Washington 98052 ( VES), to insert here and given Application N USPTO Iling date, and Office, when kr	ASSIGNEE'S LEGAL in parentheses (filed lo. 15/640214 by the) this APPLICATION's
	was filed on	and was given Appli	ication
		by the following Office	
of itself and it the entire and and the APP	s successors and as: exclusive rights, titl LICATION (and a	signs ("ASSIGNEE"), is entitle e and interest, including the rig ill other applications and pat	nited liability company, on behalf ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as
of itself and it the entire and and the APP continuing ap foreign counts ASSIC	s successors and assexclusive rights, titl LICATION (and a plications, in whole ies ("APPLICATION) BOOK hereby	signs ("ASSIGNEE"), is entitle e and interest, including the rig all other applications and pate or in part, in and for the Un ON DERIVATIVES")); authorizes, and reques	ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all sts, ASSIGNEE'S LEGAL
of itself and it the entire and and the APP continuing ap foreign counts ASSIC REPRESENT for any APPL	s successors and assexclusive rights, title LICATION (and a plications, in whole ies ("APPLICATION hereby ATIVES to insert the ICATION DERIVA	signs ("ASSIGNEE"), is entitle e and interest, including the rig ill other applications and pate or in part, in and for the Un ON DERIVATIVES"));  authorizes, and reques the Application No., filing date, a ATIVES after they are known;	ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all states. ASSIGNEE'S LEGAL and Office into the following table
of itself and it the entire and and the APP continuing ap foreign count ASSIC REPRESENT	s successors and assexclusive rights, title LICATION (and a plications, in whole ies ("APPLICATION hereby ATIVES to insert the ICATION DERIVA	signs ("ASSIGNEE"), is entitle e and interest, including the rig ill other applications and pate or in part, in and for the Un ON DERIVATIVES"));  authorizes, and reques te Application No., filing date, a	ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all states. ASSIGNEE'S LEGAL and Office into the following table
of itself and it the entire and and the APP continuing ap foreign counts ASSIC REPRESENT for any APPL	s successors and assexclusive rights, title LICATION (and a plications, in whole ies ("APPLICATION hereby ATIVES to insert the ICATION DERIVA	signs ("ASSIGNEE"), is entitle e and interest, including the rig ill other applications and pate or in part, in and for the Un ON DERIVATIVES"));  authorizes, and reques the Application No., filing date, a ATIVES after they are known;	ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all states. ASSIGNEE'S LEGAL and Office into the following table
of itself and it the entire and and the APP continuing ap foreign counts ASSIC REPRESENT for any APPL	s successors and assexclusive rights, title LICATION (and a plications, in whole ies ("APPLICATION hereby ATIVES to insert the ICATION DERIVA	signs ("ASSIGNEE"), is entitle e and interest, including the rig ill other applications and pate or in part, in and for the Un ON DERIVATIVES"));  authorizes, and reques the Application No., filing date, a ATIVES after they are known;	ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all states. ASSIGNEE'S LEGAL and Office into the following table
of itself and it the entire and and the APP continuing ap foreign counts ASSIC REPRESENT for any APPL	s successors and assexclusive rights, title LICATION (and a plications, in whole ies ("APPLICATION hereby ATIVES to insert the ICATION DERIVA	signs ("ASSIGNEE"), is entitle e and interest, including the rig ill other applications and pate or in part, in and for the Un ON DERIVATIVES"));  authorizes, and reques the Application No., filing date, a ATIVES after they are known;	ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all states. ASSIGNEE'S LEGAL and Office into the following table

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as

Page 1 of 2

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

A evagazjuna	06-22-2017
Inventor's Signature	Date
Nagarjuna ARAVAPALLI	
Printed Name in English	Printed Name in Native Language
	(if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768,3214

			und/or claimed in a patent application
	~	•	nd Asset Relationships Across a Cloud
Ecosystem" (6	'APPLICATION"), v	vhich:	
$\boxtimes$	will be filed. ASSI	GNOR hereby authoriz	es, and requests, ASSIGNEE'S
			Licensing, LLC, One Microsoft
			2 (ASSIGNEE'S LEGAL
	on 2017-06-30	ES), 10 INSER R and viven Annlicat	ere in parentheses (filed lion No. 15/640214 by the
	following Office	USPŤO	this APPLICATION's
	Application No., fili	ng date, and Office, wi	nen known;
	was filed on	and was given	Application
	No	by the following Office	se ————————————————————————————————————
		25, 	
and the APP continuing ap foreign countr ASSIC REPRESENT	LICATION (and all plications, in whole ries ("APPLICATION INOR hereby "ATIVES to insert the	other applications and or in part, in and for the second of the second o	the right of priority, in the INVENTION  Id patents derived therefrom, such as  the United States, its territories, and all  requests, ASSIGNEE'S LEGAL  date, and Office into the following table
for any APPL	ICATION DEKIVA: Na	TIVES after they are kn Filing Date	own; Office
Application	14C.	I IIIIIE, Date	

MS Docket No.: <u>402461-US-NP</u> WN Docket No.: <u>13768.3214</u>

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

Necta		06   22   2017
Inventor's Signature		Date
:		
Neeta Vinod ATAL		
Printed Name in Eng	glish	Printed Name in Native Language
		(if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768,3214

joint inventor entitled "Mel	of subject matter ("IN	IVENTION") disclosed and/ ind Modeling Actor and Ass	e original inventor or an original or claimed in a patent application et Relationships Across a Cloud
Ø	will be filed. ASSIC	GNOR hereby authorizes, and	d requests, ASSIGNEE'S
	Way, Redmond, REPRESENTATIVI on 2017-06-30 following Office	Microsoft Technology Licen: Washington 98052 (ASS), to insert here and given Application N USPTO ng date, and Office, when kn	ASSIGNEE'S LEGAL in parentheses (filed o. 15/640214 by the) this APPLICATION's
	was filed on	and was given Applic	cation
		by the following Office	
Microsoft Technology Licensing, LLC, a Washington limited liability company, on behalf of itself and its successors and assigns ("ASSIGNEE"), is entitled to, and is desirous of acquiring, the entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));			
ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S LEGAL REPRESENTATIVES to insert the Application No., filing date, and Office into the following table for any APPLICATION DERIVATIVES after they are known;			
Application 1		Filing Date	Office
<u> </u>			
		***************************************	

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as

PATENT REEL: 043070 FRAME: 0747

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

Inventor's Signature

Priyatham Reddy ALLALA
Printed Name in English

Printed Name in English

Printed Name in English

Printed Name in Native Language
(if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

inventor of su entitled "Meth	bject matter ("INVE	NTION") disclosed and/or nd Modeling Actor and Asso	inal inventor or an original joint claimed in a patent application et Relationships Across a Cloud
	legal representative, legal representative, legal way, Redmond, REPRESENTATIVE on 2017-06-30 following Office	GNOR hereby authorizes, and Microsoft Technology Licens Washington 98052 (ACS), to insert here in an and given Application Notes 100 (1997) and Office, when known as the control of the c	sing, LLC, One Microsoft ASSIGNEE'S LEGAL on parentheses (filed on 15/640214 by the one of this APPLICATION's
		and was given Applic by the following Office;	eation
of itself and its the entire and e and the APPI continuing app foreign countri	successors and assign exclusive rights, title a LICATION (and all plications, in whole of es ("APPLICATION	ns ("ASSIGNEE"), is entitled not interest, including the right other applications and pate r in part, in and for the Unit DERIVATIVES"));	ited liability company, on behalf d to, and is desirous of acquiring, at of priority, in the INVENTION onts derived therefrom, such as ted States, its territories, and all
REPRESENTA			ss, ASSIGNEE'S LEGAL and Office into the following table
Application N		Filing Date	Office

MS Docket No.: 402461-US-NP WN Docket No.: 13768,3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

Inventor's Signature

Stephen Robert WHITE

Printed Name in English

Printed Name in Native Language
(if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

of subject ma	atter ("INVENTION"	) disclosed and/or claimed	entor or an original joint inventor in a patent application entitled ships Across a Cloud Ecosystem"
×	legal representative, Way, Redmond, REPRESENTATIVE on 2017-06-30 following Office	GNOR hereby authorizes, and Microsoft Technology Licens Washington 98052 (AES), to insert here is and given Application No USPTO ag date, and Office, when known as the second se	sing, LLC, One Microsoft ASSIGNEE'S LEGAL in parentheses (filed b. 15/640214 by the _) this APPLICATION's
		and was given Application by the following Office;	cation
of itself and it the entire and and the APP continuing ap	s successors and assig exclusive rights, title a LICATION (and all	ns ("ASSIGNEE"), is entitled and interest, including the right other applications and pate or in part, in and for the Unit DERIVATIVES"));	nited liability company, on behalf d to, and is desirous of acquiring, at of priority, in the INVENTION ants derived therefrom, such as ted States, its territories, and all
REPRESENT			ts, ASSIGNEE'S LEGAL and Office into the following table
Application		Filing Date	Office

MS Docket No. (402461-115-N<u>P</u> WN Docket No. (1768-1214

continuing applications, in whole or in part, in and for the United States, its territories, and all toreign countries ("APPLICATION DERIVATIVES")).

Xironing Nacy	6/23/2017
Inventor's Signature	Date
Naming WANG	主成吗
Printed Name in English	Printed Name in Native Language
	(if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

	"APPLICATION"		
X	will be filed. AS	SSIGNOR hereby authoriz	es, and requests, ASSIGNEE'S
	Way, Redmor REPRESENTAT on 2017-06-30 following Office	nd, Washington 9805 TVES), to insert h and given Applicat	tion No. <u>15/640214</u> by the ) this APPLICATION's
	was filed on	and was given	Application
	No	by the following Office ".	ce
of itself and it the entire and and the APP	ts successors and a exclusive rights, to LICATION (and	ssigns ("ASSIGNEE"), is itle and interest, including all other applications ar	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION ad patents derived therefrom, such as
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby CATIVES to insert	ssigns ("ASSIGNEE"), is itle and interest, including all other applications are ole or in part, in and for to ION DERIVATIVES"));  authorizes, and the Application No., filing	ton limited liability company, on behalf entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT for any APPI	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby TATIVES to insert LICATION DERIVES.	ssigns ("ASSIGNEE"), is itle and interest, including all other applications ar ole or in part, in and for t ION DERIVATIVES"));  authorizes, and the Application No., filing /ATIVES after they are kr	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table town;
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby TATIVES to insert LICATION DERIVES.	ssigns ("ASSIGNEE"), is itle and interest, including all other applications arole or in part, in and for to ION DERIVATIVES"));  authorizes, and	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT for any APPI	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby TATIVES to insert LICATION DERIVES.	ssigns ("ASSIGNEE"), is itle and interest, including all other applications ar ole or in part, in and for t ION DERIVATIVES"));  authorizes, and the Application No., filing /ATIVES after they are kr	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table town;
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT for any APPI	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby TATIVES to insert LICATION DERIVES.	ssigns ("ASSIGNEE"), is itle and interest, including all other applications ar ole or in part, in and for t ION DERIVATIVES"));  authorizes, and the Application No., filing /ATIVES after they are kr	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table town;
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT for any APPI	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby TATIVES to insert LICATION DERIVES.	ssigns ("ASSIGNEE"), is itle and interest, including all other applications ar ole or in part, in and for t ION DERIVATIVES"));  authorizes, and the Application No., filing /ATIVES after they are kr	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table town;
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT for any APPI	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby TATIVES to insert LICATION DERIVES.	ssigns ("ASSIGNEE"), is itle and interest, including all other applications ar ole or in part, in and for t ION DERIVATIVES"));  authorizes, and the Application No., filing /ATIVES after they are kr	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table town;
of itself and in the entire and and the APP continuing ap foreign count ASSIG REPRESENT for any APPI	ts successors and a exclusive rights, to LICATION (and oplications, in who ries ("APPLICAT GNOR hereby TATIVES to insert LICATION DERIVES.	ssigns ("ASSIGNEE"), is itle and interest, including all other applications ar ole or in part, in and for t ION DERIVATIVES"));  authorizes, and the Application No., filing /ATIVES after they are kr	entitled to, and is desirous of acquiring, the right of priority, in the INVENTION of patents derived therefrom, such as he United States, its territories, and all requests, ASSIGNEE'S LEGAL date, and Office into the following table town;

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

Wentor's Signature 26 June 2017

Date

Michael Gordon HALE

Printed Name in English Printed Name in Native Language

(if other than English)

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

entitled " Meth	od of Discovering a	nd Modeling Actor and Ass	set Relationships Across a Cloud
	APPLICATION"), w		•
	legal representative, Way, Redmond, REPRESENTATIVI on 2017-06-30 following Office	GNOR hereby authorizes, an Microsoft Technology Licen Washington 98052 (ES), to insert here and given Application NUSPTO ag date, and Office, when kn	sing, LLC, One Microsoft ASSIGNEE'S LEGAL in parentheses (filed to 15/640214 by the) this APPLICATION's
		and was given Appli by the following Office	cation
the entire and e and the APPI continuing app foreign countri ASSIG REPRESENTA	exclusive rights, title and all all all all all all all all all al	and interest, including the rig other applications and pat or in part, in and for the Un DERIVATIVES")); authorizes, and reques Application No., filing date, a	ed to, and is desirous of acquiring, ht of priority, in the INVENTION ents derived therefrom, such as ited States, its territories, and all sts. ASSIGNEE'S LEGAL and Office into the following table
Application N	io.	IVES after they are known; Filing Date	
			th is hereby acknowledged by the to the ASSIGNEE, ASSIGNOR's

I Jason Drew BLACK ("ASSIGNOR") am the original inventor or an original joint

inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application

Page 1 of 2

entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as

PATENT REEL: 043070 FRAME: 0755

MS Docket No.: 402461-US-NP WN Docket No.: 13768.3214

continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

Jason Drew BLACK
Printed Name in English
Printed Name in English
Printed Name in English
Printed Name in Native Language
(if other than English)