504317836 04/12/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4364518

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MARK MARRON	04/10/2017

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number		
Application Number:	15485458		

CORRESPONDENCE DATA

Fax Number: (202)318-2583

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: 202-842-8800

Email: usdocket@microsoft.com, dcpatentfiling@dbr.com

Correspondent Name: DRINKER BIDDLE & REATH/MICROSOFT

Address Line 1: 1500 K STREET, N.W.

Address Line 2: SUITE 1100

Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	401737-US-NP [556560]
NAME OF SUBMITTER: JAMES R. CARPENTER	
SIGNATURE: /James R. Carpenter/	
DATE SIGNED:	04/12/2017

Total Attachments: 2

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PATENT 504317836 REEL: 041982 FRAME: 0252

PATENT ASSIGNMENT

I <u>Mark MARRON</u> ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "<u>SYSTEMS, METHODS, AND COMPUTER-READABLE MEDIA FOR USING IMMUTABLE AND COPY-ON-WRITE DATA SEMANTICS TO OPTIMIZE RECORD AND REPLAY FRAMEWORKS" ("APPLICATION"), which:</u>

MS Docket No.: 401737-US-NP

\boxtimes	will	be	filed.	ASSIGNOR	hereby	auth	orizes,	and	req	uests,
	ASSI	GNE	E'S legal	representa	tive, Micr	osoft	Techno	ology	Lice	nsing,
	LLC,	One	Microso	ft Way, Redi	mond, Wa	ashing	ton 980)52 (A	SSIG	NEE'S
	LEG/	AL R	EPRESEN	TATIVES), t	o insert	here	in par	renthe	eses	(filed
	on		12 APR	IL 2017	and		given	Δ	ppli	cation
	No.	<u>15/4</u>	85,458	by the	following	g Offic	ce <u>US</u>	- Uni	ted :	<u>States</u>
	<u>Pate</u>	nt ar	nd Trade	<u>mark Office</u>) this API	PLICAT	ΓΙΟΝ's A	Applic	atio	n No.,
	filing	g dat	e, and O	ffice, when	known;					
	was	filed	on	•	and was g	given /	Applicat	tion		
	No_			by the f	ollowing	Office				
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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 No.	Filing Date	Office	
ed oppolyspension for the second of the seco		николиколиколикон (1965) — 1850 до подерон и постолого по де де до 1860 д	e territor region es (Alleria) (Alleria) (Alleria) , quaer antes est de la 2000 de 2000 de 2000 de 2000 de 2000 de
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		100 100 100 100 100 100 100 100 100 100	- CONTRACTOR OF THE CONTRACTOR

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).

1 1 11	4/10/17
Inventor's Signature	Date
Mark MARRON	The second secon
Printed Name in English	Printed Name in Native Language
_	(if other than English)

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RECORDED: 04/12/2017