506196090 08/10/2020

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
FILIP ILIEVSKI	05/22/2018
MATISSE J. MILOVICH	05/04/2018
CHRISTOPHER M. MILLER	06/18/2018
BUDHADIPTA DAN	06/04/2018
JACK E. GRAVES	05/22/2018
EVAN C. CULL	05/24/2018
IRENE PERALI	05/26/2018
MIRA S. MISRA	06/06/2018
SHEILA P. NABANJA	06/04/2018
LUCIAN ION	06/04/2018
JAMES J. REUTHER	06/04/2018
CHRISTY F. CULL	10/28/2018

RECEIVING PARTY DATA

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Street Address:	ONE APPLE PARK WAY
City:	CUPERTINO
State/Country:	CALIFORNIA
Postal Code:	95014

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	16108792	

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REEL: 053446 FRAME: 0616 506196090

PATENT -

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NAME OF SUBMITTER:	ANDREW R. BASILE, JR.	
SIGNATURE:	/Andrew R. Basile, Jr./	
DATE SIGNED:	08/10/2020	
Total Attachments: 8		
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PATENT REEL: 053446 FRAME: 0617

PATENT ASSIGNMENT AND AGREEMENT

This Patent Assignment and Agreement ("Assignment") is made and entered into by the undersigned inventors (collectively, "Assignors" and individually an "Assignor") in favor of Apple Inc., a California corporation having an office at One Apple Park Way; Cupertino, California 95014, ("Assignee").

Background

The Assignors are the named in	ventors of a certain invention or inventions entitled "Tire-
Road Friction Estimation and Mapping"	as set forth in the following patent application
· · · · ·	
U.S. Pat. App. Ser. No.	filed on

The Assignors desire to assign to Assignee all right, title and interest in and to the Invention, including the Application, subject to the terms of this Assignment.

Assignment and Agreement

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged:

Each Assignor has sold, assigned, and transferred, and by these presents hereby sells, assigns, and transfers, unto Assignee, its successors and assigns, the full and exclusive right, title, and interest in and to: (a) the above-identified invention or inventions and all improvements and modifications thereof; (b) the above-identified application and all other patent applications of the United States and countries foreign thereto for the above-identified invention or inventions and all improvements and modifications thereof; (c) all patents which may issue from said applications in the United States and countries foreign thereto; (d) all divisions, continuations, reissues, reexaminations, and extensions of said applications and patents; and (e) the right to claim for any of said applications the full benefits and priority rights under the International Convention and any other international agreement to which the United States adheres; such right, title, and interest to be held and enjoyed by Assignee, its successors and assigns, to the full end of the term or terms for which any and all such patents may be granted as fully and entirely as would have been held and enjoyed by Assignor had this Assignment not been made.

Each Assignor hereby authorizes and requests the Commissioner of Patents and Trademarks to issue said patents to Assignee as assignee of the entire interest, for the sole use and benefit of Assignee, its successors and assigns.

Each Assignor hereby agrees to: (a) communicate to Assignee, its successors and assigns, or their representatives or agents, all facts and information known or available to the Assignor respecting said invention or inventions, improvements, and modifications including evidence for interference, reexamination, reissue, opposition, revocation, extension, or infringement purposes or other legal, judicial, or administrative proceedings, whenever requested by Assignee; (b) testify in person or by affidavit as required by Assignee, its successors and assigns, in any such proceeding in the United States or a country foreign thereto; (c) execute and deliver, upon request by Assignee, all lawful papers including, but not limited to, original, divisional, continuation, and reissue applications, renewals, assignments, powers of attorney, oaths, affidavits, declarations, depositions; and (d) provide all reasonable assistance to Assignee, its successors and assigns, in obtaining and enforcing proper title in

PATENT REEL: 053446 FRAME: 0618

Assignment for US	Patent Application	(continued)
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Each Assignor hereby represents and warrants that assignor has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that Assignor has not executed and will not execute any document or instrument in conflict herewith.

Each Assignor hereby grants to the law firm of Young Basile Hanlon & MacFarlane, P.C. the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

NA	MES AND SIGNATURES OF ASSIGNOR	
Name: Filip Ilievski	Signature: Russian Signature	Date: 5/22/2018
Name: Matisse J. Milovich	Signature:	Date:
Name: Christopher M. Miller	Signature:	Date:
Name: Budhadipta Dan	Signature:	Date:
Name: Jack E. Graves	Signature:	Date:
Name: Evan C. Cull	Signature:	Date:
Name: Irene Perali	Signature:	Date:
Name: Mira S. Misra	Signature:	Date:
Name: Sheila P. Nabanja	Signature:	Date:
Name: Lucian Ion	Signature:	Date:
Name: James J. Reuther	Signature:	Date:

Assignment for	US	Patent Application	(continued)

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NAMES AND SIGNATURES OF ASSIGNOR		
Name: Filip Ilievski	Signature:	Date:
Name: Matisse J. Milovich	Signature: Allibrich	Date: 5/4/2018
Name: Christopher M. Miller	Signature:	Date:
Name: Budhadipta Dan	Signature:	Date:
Name: Jack E. Graves	Signature:	Date:
Name: Evan C. Cull	Signature:	Date:
Name: Irene Perali	Signature:	Date:
Name: Mira S. Misra	Signature:	Date:
Name: Sheila P. Nabanja	Signature:	Date:
Name: Lucian Ion	Signature:	Date:
Name: James J. Reuther	Signature:	Date:

Assignment for US	Patent Application	(continued)
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NA	MES AND SIGNATURES OF ASSIGNOR	lia.
Name: Filip Ilievski	Signature:	Date: Z Muse M
Name: Matisse J. Milovich	Signature:	Date:) pigner
Name: Christopher M. Miller	Signature: Chat And 1	Date:
Name: Budhadipta Dan	Signature: B. Don	Date: 6 / 4 / 2018
Name: Jack E. Graves	Signature.	Date: 22 My 2018
Name: Evan C. Cull	Signature: 2 Call	Date: 24 May 18
Name: Irene Perali	Signature: your Pench	Date:
Name: Mira S. Misra	Signature:	Date: Zaparate
Name: Sheila P. Nabanja	Signature: Akban	Date: 06 1 0 4 12018
Name: Lucian Ion	Signature:	Date: 95/04/2018
Name: James J. Reuther	Signature:	Date:

Assignment for US Pat	nt Application	(continued)
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N/	AMES AND SIGNATURES OF ASSIGNOR	
Name: Filip Ilievski	Signature:	Date:
Name: Matisse J. Milovich	Signature:	Date:
Name: Christopher M. Miller	Signature: Off Zarila	Date: 6/18/201
Name: Budhadipta Dan	Signature:	Date:
Name: Jack E. Graves	Signature:	Date:
Name: Evan C. Cull	Signature:	Date:
Name: Irene Perali	Signature:	Date:
Name: Mira S. Misra	Signature:	Date:
Name: Sheila P. Nabanja	Signature:	Date:
Name: Lucian Ion	Signature:	Date:
Name: James J. Reuther	Signature:	Date: 1/4/2018

Assianment for	US Patent Application	(continued)	
' ACCIMENTICIES FOR	CO I GEOLIE I (PPI) COLICO.	(00:10:10:00:00:00:00:00:00:00:00:00:00:0	

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Each Assignor understands and agrees that the attorneys and agents of the law firm of Young Basile Hanlon & MacFarlane P.C. do not personally represent the Assignor or Assignor's legal interests, but instead represent the interests of Assignee; since said attorneys and agents cannot provide legal advice to Assignor with respect to this Assignment, each Assignor acknowledges its right to seek its own independent legal counsel.

NAMES AND SIGNATURES OF ASSIGNOR				
Name: Filip Ilievski	Signature:	Date:		
Name: Matisse J. Milovich	Signature:	Date:		
Name: Christopher M. Miller	Signature:	Date:		
Name: Budhadipta Dan	Signature:	Date:		
Name: Jack E. Graves	Signature:	Date:		
Name: Evan C. Cull	Signature:	Date:		
Name: Irene Perali	Signature:	Date:		
Name: Mira S. Misra	Signature: Rum dustay	Date: 6/6/18		
Name: Sheila P. Nabanja	Signature:	Date:		
Name: Lucian Ion	Signature:	Date:		
Name: James J. Reuther	Signature:	Date:		

PATENT REEL: 053446 FRAME: 0623

PATENT ASSIGNMENT AND AGREEMENT

This Patent Assignment and Agreement ("Assignment") is made and entered into by the undersigned inventors (collectively, "Assignors" and individually an "Assignor") in favor of Apple Inc., a California corporation having an office at One Apple Park Way; Cupertino, California 95014, ("Assignee").

Background

The Assignors are the named inventors of a certain invention or inventions entitled "Tire-Road Friction Estimation and Mapping" as set forth in the following patent application

U.S. Pat. App. Ser. No. 16/108,792 filed on August 22, 2018.

The Assignors desire to assign to Assignee all right, title and interest in and to the Invention, including the Application, subject to the terms of this Assignment.

Assignment and Agreement

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged:

Each Assignor has sold, assigned, and transferred, and by these presents hereby sells, assigns, and transfers, unto Assignee, its successors and assigns, the full and exclusive right, title, and interest in and to: (a) the above-identified invention or inventions and all improvements and modifications thereof; (b) the above-identified application and all other patent applications of the United States and countries foreign thereto for the above-identified invention or inventions and all improvements and modifications thereof; (c) all patents which may issue from said applications in the United States and countries foreign thereto; (d) all divisions, continuations, reissues, reexaminations, and extensions of said applications and patents; and (e) the right to claim for any of said applications the full benefits and priority rights under the International Convention and any other international agreement to which the United States adheres; such right, title, and interest to be held and enjoyed by Assignee, its successors and assigns, to the full end of the term or terms for which any and all such patents may be granted as fully and entirely as would have been held and enjoyed by Assignor had this Assignment not been made.

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Assignment for U.S. Pat. App. Ser. No. 16/108,792 (continued)

and protection for said invention or inventions, improvements, and modifications under the intellectual property laws of the United States and countries foreign thereto.

Each Assignor hereby represents and warrants that assignor has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that Assignor has not executed and will not execute any document or instrument in conflict herewith.

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NAMES AND SIGNATURES OF ASSIGNOR	
O(1)	Date: 10 /28/18
Name: Christy F. Cull Signature: Chusty Hull	

PATENT REEL: 053446 FRAME: 0625

RECORDED: 08/10/2020