PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5842158

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the NATURE OF CONVEYANCE FROM CHANGE OF NAME TO ASSIGNMENT previously recorded on Reel 050353 Frame 0568. Assignor(s) hereby confirms the NATURE OF CONVEYANCE SHOULD BE ASSIGNMENT.

CONVEYING PARTY DATA

Name	Execution Date
UBER TECHNOLOGIES, INC.	07/02/2019

RECEIVING PARTY DATA

Name:	UATC, LLC
Street Address:	1455 MARKET STREET, 4TH FLOOR
City:	SAN FRANCISCO
State/Country:	CALIFORNIA
Postal Code:	94103

PROPERTY NUMBERS Total: 25

Property Type	Number
Application Number:	16199832
Application Number:	16288255
Application Number:	16299527
Application Number:	62754942
Application Number:	62754950
Application Number:	62768767
Application Number:	62768774
Application Number:	62768790
Application Number:	62768796
Application Number:	62768816
Application Number:	62768829
Application Number:	62768841
Application Number:	62768845
Application Number:	62768847
Application Number:	62768849
Application Number:	62768850
Application Number:	62768898
Application Number:	62783965

Property Type	Number
Application Number:	62786710
Application Number:	62790818
Application Number:	62790827
Application Number:	62796808
Application Number:	62796974
Application Number:	62797040
Application Number:	62799314

CORRESPONDENCE DATA

Fax Number: (864)233-7342

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.

Email: USDOCKETING@DORITY-MANNING.COM,
jchapman@dority-manning.com

Correspondent Name: DORITY & MANNING, P.A. AND UATC, LLC

Address Line 1: PO BOX 1449

Address Line 4: GREENVILLE, SOUTH CAROLINA 29602

ATTORNEY DOCKET NUMBER:	UBER-GEN
NAME OF SUBMITTER:	ERIK K. SIVERTSON
SIGNATURE:	/Erik K. Sivertson/
DATE SIGNED:	11/27/2019

Total Attachments: 20

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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5714905

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	CHANGE OF NAME

CONVEYING PARTY DATA

Name	Execution Date
UBER TECHNOLOGIES, INC.	07/02/2019

RECEIVING PARTY DATA

Name:	UATC, LLC
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Application Number:	16199832
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Application Number:	62768847
Application Number:	62768849
Application Number:	62768850
Application Number:	62768898
Application Number:	62783965
Application Number:	62786710
Application Number:	62790818

PATENT ASSIGNMENT

This Patent Assignment (this "*Assignment*"), dated and effective as of July 1, 2019 (the "*Effective Date*"), is entered into by and among Uber Technologies, Inc., a Delaware corporation ("*Uber*"), Auto Horizon, LLC, a Delaware limited liability company ("*Auto Horizon*"), and UATC, LLC, a Delaware limited liability company ("*UATC*"). Uber, Auto Horizon and UATC are sometimes referred to herein individually as a "*Party*" and collectively as the "*Parties*."

WHEREAS, prior to the Effective Date, Uber, Rennpferd, LLC, a Delaware limited liability company and the sole Auto Horizon equity holder ("*Rennpferd*") and Auto Horizon entered into that certain Patent Distribution Agreement, dated as of June 29, 2019 (the "*Distribution Agreement*"), pursuant to which Auto Horizon distributed, transferred and assigned all right, title and interest in and to the patents and patent applications listed on the attached Exhibit A (the "*AH Patents*") owned by Auto Horizon to Rennpferd, and then Rennpferd immediately distributed, transferred and assigned all right, title and interest in and to the AH Patents to Uber (the "*AH Transfer*");

WHEREAS, prior to the Effective Date but following the completion of the AH Transfer, Uber, certain of Uber's subsidiaries and UATC entered into that certain Business Asset Contribution Agreement, dated as of June 30, 2019 (the "*Contribution Agreement*"), pursuant to which, among other things, Uber contributed, transferred and assigned to UATC all of Uber's right, title and interest in and to (i) the AH Patents and (ii) the patents and patent applications listed on the attached Exhibit B (the "*UTI Patents*", and, together with the AH Patents, the "*Transferred Patents*").

NOW THEREFORE, for good and valuable consideration, the receipt of which is acknowledged, Auto Horizon (on behalf of Uber as the registered owner of the AH Patents) and Uber (collectively, the "*Registered Patent Holders*") hereby assign and transfer to UATC all right, title and interest in and to the Transferred Patents owned by the Registered Patent Holders including in and to any and all divisionals, continuations, continuations-in-part, substitutes, reexaminations, renewals, reissues and patents which have or which may be filed therson or may be granted therefor, including any and all counterparts worldwide, including all right, title and interest in and to all income, royalties, damages and payments now or hereafter due or payable with respect to the Transferred Patents, and all causes of action (whether in law or equity) and the right to sue, counterclaim, and recover for the past, present and future infringement of the Transferred Patents.

Each of the Registered Patent Holders agree that if requested by UATC, without charge to either of them but at the cost and expense of UATC, each of the Registered Patent Holders will perform any reasonable action which may be necessary to secure and to vest in UATC the full and entire right, title and interest in, to and under the Transferred Patents, including promptly communicating and providing any and all known and accessible facts, data or any other pertinent information thereof and promptly executing and delivering any and all papers, documents, forms, declarations, oaths, affidavits and other legal instruments.

The Registered Patent Holders authorize and request any official of any country or countries, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to UATC, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

[Counterpart Signature Pages Follow]

IN WITNESS WHEREOF, the Parties have caused this Patent Assignment to be signed by a duly authorized representative to be effective as of July 1, 2019.

UBER TECHNOLOGIES, INC.

By: _____
Name: Francois Chadwick
Title: VP, Tax & Accounting

Please see attached

State of _____)
) *ss.*
County of _____)

On _____, before me, _____, Notary Public, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

Place Notary Seal Above

My Commission Expires: _____

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Francisco)

On 7/1/2019 before me, James Wiley Molito, Notary Public
(insert name and title of the officer)

personally appeared Foxcats Chadwick,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

JAMES WILEY MOLITO
Notary Public - California
San Francisco County
Commission # 2163988
My Comm. Expires Sep 2, 2020

Signature _____ (Seal)

IN WITNESS WHEREOF, the Parties have caused this Patent Assignment to be signed by a duly authorized representative to be effective as of July 1, 2019.

AUTO HORIZON, LLC

By: _____
Name: Francois Chadwick
Title: Manager

Please see attached

State of _____)
) *ss.*
County of _____)

On _____, before me, _____, Notary Public, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

Place Notary Seal Above

My Commission Expires: _____

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Francisco)

On 3/1/2019 before me, James Wiley Molito, Notary Public
(insert name and title of the officer)

personally appeared Francis Chadwick,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

JAMES WILEY MOLITO
Notary Public - California
San Francisco County
Commission # 2163988
My Comm. Expires Sep 2, 2020

Signature _____ (Seal)

IN WITNESS WHEREOF, the Parties have caused this Patent Assignment to be signed by a duly authorized representative to be effective as of July 1, 2019.

UATC, LLC

By: _____
Name: Keir Gumbs
Title: Manager

State of District of Columbia)
) ss.
County of _____)

On July 2nd, 2019, before me, Morgan Harris Keir Gumbs, Notary Public, personally appeared Keir Gumbs, personally known to me or proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary Public

MORGHAN FAIRLEY HARRIS
NOTARY PUBLIC DISTRICT OF COLUMBIA
My Commission Expires June 30, 2020

Place Notary Seal Above

My Commission Expires: _____

Signature Page to Patent Assignment

Exhibit B

UTI Patents

UP-00157CN	PLANAR-BEAM, LIGHT DETECTION AND RANGING SYSTEM	3/2/2017 201780022918.8	3/3/2016 109074073	12/21/2018		0	CN	China	Pending
UP-00157CA	PLANAR-BEAM, LIGHT DETECTION AND RANGING SYSTEM	3/2/2017 3,015,894	3/3/2016			0	CA	Canada	Pending
UP-00157AU	PLANAR-BEAM, LIGHT DETECTION AND RANGING SYSTEM	3/2/2017 2017225790	3/3/2016			0	AU	Australia	Pending
UP-00464WO	SENSOR ASSEMBLY FOR VEHICLES	1/30/2019 PCT/US2019/015882	1/31/2018			0	WO	WIPO (PCT)	Pending
UP-00606US	ROTARY DATA COUPLER	11/17/2017 15/816,700	11/17/2017		1/8/2019 10177820	0	US	United States	In Force
UP-00864USP	LIDAR DESIGN TO MITIGATE CROSS-TALK	8/2/2018 62/714,042	8/2/2018			1	US	United States	Pending
UP-00580USP1	LIDAR MANUFACTURING AT SCALE	2/9/2018 62/628,586	2/9/2018			1	US	United States	Lapsed
UP-00579USP	High Dynamic Range Lidar	12/11/2017 62/597,343	12/11/2017			1	US	United States	Lapsed
UP-00606USC1	ROTARY DATA COUPLER	11/9/2018 16/186,056	11/17/2017			0	US	United States	Pending
UP-00606WO	ROTARY DATA COUPLER	11/16/2018 PCT/US2018/061553	11/17/2017			0	WO	WIPO (PCT)	Pending
UP-00140US-5	AUTONOMOUS VEHICLE LOCALIZATION USING IMAGE ANALYSIS AND MANIPULATION	6/30/2017 15/640,340	7/1/2016 20180005050	1/4/2018		0	US	United States	Pending
UP-00140US-4	AUTONOMOUS VEHICLE LOCALIZATION USING PASSIVE IMAGE DATA	6/30/2017 15/640,334	7/1/2016 20180005407	1/4/2018		0	US	United States	Pending
UP-00140US-3	AUTONOMOUS VEHICLE LOCALIZATION USING SUBMAPS	6/30/2017 15/640,313	7/1/2016 20180003511	1/4/2018		0	US	United States	Pending
UP-00662USP	Light-Weight Highway Localization for Autonomous Vehicles	11/15/2017 62/586,759	11/15/2017			1	US	United States	Lapsed
UP-00662WO	Lightweight Vehicle Localization Systems and Methods	11/15/2018 PCT/US2018/061219	11/15/2017			0	WO	WIPO (PCT)	Pending
UP-00966USP	Exploiting Sparse Semantic HD Maps for Affordable Localization	11/16/2018 62/768,845	11/16/2018			1	US	United States	Pending
UP-00967USP	Retrieve-Regress-Refine: City-scale Image Localization for Autonomous Driving	11/17/2018 62/768,898	11/17/2018			1	US	United States	Pending
UP-00662US	Lightweight Vehicle Localization Systems and Methods	9/6/2018 16/123,289	11/15/2017			0	US	United States	Pending
UP-00455US	IMU DATA OFFSET COMPENSATION FOR AN AUTONOMOUS VEHICLE	9/25/2018 16/140,897	12/15/2017			0	US	United States	Pending
UP-00160US	ROAD REGISTRATION DIFFERENTIAL GPS	4/26/2016 15/138,935	4/26/2016 20170307763	10/26/2017		0	US	United States	Pending
UP-00455USP	IMU DATA OFFSET COMPENSATION FOR AN AUTONOMOUS VEHICLE	12/15/2017 62/599,220	12/15/2017			1	US	United States	Lapsed
UP-01046USP	SCAFFOLDS FOR GLOBALLY CONSISTENT MAPS	1/28/2019 62/797,693	1/28/2019			1	US	United States	Pending
UP-00644US	VEHICLE POSE SYSTEM	5/23/2018 15/987,517	1/12/2018			0	US	United States	Pending
UP-00454USP	GEOREFERENCED TRAJECTORY SYSTEM	3/27/2018 62/648,541	3/27/2018			1	US	United States	Pending
UP-00863USP	OBJECT DETECTION BASED ON LIDAR INTENSITY	7/31/2018 62/712,479	7/31/2018			1	US	United States	Pending
UP-00644USP	VEHICLE POSE SYSTEM	1/12/2018 62/617,006	1/12/2018			1	US	United States	Lapsed
UP-00676USP	MAP SELECTION FOR VEHICLE POSE SYSTEM	1/12/2018 62/617,012	1/12/2018			1	US	United States	Lapsed
UP-00869USP	LEARNING TO LOCALIZE USING A LIDAR INTENSITY MAP	6/15/2018 62/685,875	6/15/2018			1	US	United States	Pending
UP-00676US	MAP SELECTION FOR VEHICLE POSE SYSTEM	5/23/2018 15/987,534	1/12/2018			0	US	United States	Pending
UP-00935USP	LOG TRAJECTORY ESTIMATION FOR GLOBALLY CONSISTENT MAPS	1/28/2019 62/797,638	1/28/2019			1	US	United States	Pending

UP-00863US	OBJECT DETECTION BASED ON LIDAR INTENSITY	10/22/2018	16/166,950	7/31/2018				0	US	United States	Pending
UP-00486USP1	Low Quality Pose Lane Associator	1/3/2018	62/613,273	1/3/2018				1	US	United States	Lapsed
UP-00486USP2	Low Quality Pose	1/3/2018	62/613,248	1/3/2018				1	US	United States	Lapsed
UP-00486US1	Low Quality Pose Lane Associator	3/7/2018	15/914,713	1/3/2018				0	US	United States	Pending
UP-00486US2	Low Quality Pose	3/7/2018	15/914,740	1/3/2018				0	US	United States	Pending
UP-00140-1AU	AUTONOMOUS VEHICLE CONTROL USING SUBMAPS	1/2/2019	AU 2017290902	7/1/2016				0	AU	Australia	Pending
UP-00140-1CA	AUTONOMOUS VEHICLE CONTROL USING SUBMAPS	12/31/2018	3,029,742	7/1/2016				0	CA	Canada	Pending
UP-00140-1EP	AUTONOMOUS VEHICLE CONTROL USING SUBMAPS	1/10/2019	17821436.7	7/1/2016				0	EP	European Patent Office	Pending
UP-00140-1BR	AUTONOMOUS VEHICLE CONTROL USING SUBMAPS	12/31/2018	BR 11 2018 077539 8	7/1/2016				0	BR	Brazil	Pending
UP-00153RU	VEHICLE TRACTION MAP FOR AUTONOMOUS VEHICLES	12/12/2016	2018125029	12/10/2015				0	RU	Russian Federation	Pending
UP-00153EP	VEHICLE TRACTION MAP FOR AUTONOMOUS VEHICLES	12/12/2016	16874074.4	12/10/2015	3386828	10/17/2018		0	EP	European Patent Office	Pending
UP-00153CA	VEHICLE TRACTION MAP FOR AUTONOMOUS VEHICLES	12/12/2016	3,006,661	12/10/2015				0	CA	Canada	Pending
UP-00140US-1	AUTONOMOUS VEHICLE CONTROL USING SUBMAPS	6/30/2017	15/640,289	7/1/2016	20180004225	1/4/2018		0	US	United States	Pending
UP-00140US-2P	SUBMAP SYSTEM FOR USE IN AUTONOMOUSLY OPERATING VEHICLES	10/24/2016	62/412,041	10/24/2016				1	US	United States	Lapsed
UP-00140US-1P	SUBMAP SYSTEM FOR USE IN AUTONOMOUSLY OPERATING VEHICLES	7/1/2016	62/357,903	7/1/2016				1	US	United States	Lapsed
UP-00153WO	VEHICLE TRACTION MAP FOR AUTONOMOUS VEHICLES	12/12/2016	PCT/US2016/066235	12/10/2015	2017100797	6/15/2017		0	WO	WIPO (PCT)	Pending
UP-00153US-2	VEHICLE TRACTION MAP FOR AUTONOMOUS VEHICLES	12/12/2016	15/376,574	12/10/2015	20170167881	6/15/2017		0	US	United States	Pending
UP-00140-1WO	AUTONOMOUS VEHICLE CONTROL USING SUBMAPS	7/1/2017	PCT/US2017/040532	7/1/2016	2018006082	1/4/2018		0	WO	WIPO (PCT)	Pending
UP-00140US-2	SYSTEM AND METHOD FOR MANAGING SUBMAPS FOR CONTROLLING AUTONOMOUS VEHICLES	6/30/2017	15/640,296	7/1/2016	20180004226	1/4/2018		0	US	United States	Pending
UP-00981USP	Convolutional Recurrent Network for Road Boundary Extraction	11/16/2018	62/768,796	11/16/2018				1	US	United States	Pending
UP-00373US	DEPLOYING HUMAN-DRIVEN VEHICLES FOR AUTONOMOUS VEHICLE ROUTING AND LOCALIZATION MAP UPDATING	5/25/2017	15/604,979	5/25/2017	20180342165	11/29/2018	1/22/2019 10186156	0	US	United States	In Force
UP-00165US	DISPARITY MAPPING FOR AN AUTONOMOUS VEHICLE	6/8/2016	15/176,561	6/8/2016	20170359561	12/14/2017		0	US	United States	Pending
UP-00462US	ROAD ANOMALY DETECTION FOR AUTONOMOUS VEHICLE	11/6/2018	16/181,718	11/7/2017				0	US	United States	Pending
UP-00462USP	ROAD ANOMALY DETECTION FOR AUTONOMOUS VEHICLES	11/7/2017	US62/582,503	11/7/2017				1	US	United States	Lapsed
UP-00934USP	LOCAL MAP SERVER AND MULTIPLEXER	1/23/2019	62/795,728	1/23/2019				1	US	United States	Pending
UP-00715US	"Matching Adversarial Networks"	11/15/2018	16/191,735	11/15/2017				0	US	United States	Pending
UP-00812US	Structured Prediction Crosswalk Generation	3/14/2019	16/353,871	3/14/2018				0	US	United States	Pending
UP-00666US	Map Automation - Lane Classification	11/7/2018	16/183,012	11/7/2017				0	US	United States	Pending
UP-00931USP	Missing Traffic Face Detector	12/26/2018	62/785,034	12/26/2018				1	US	United States	Pending

UP-00559US	Autonomous Vehicles Featuring Vehicle Intention System	9/11/2017	15/700,466	8/31/2017	20190066506	2/28/2019	0	US	United States	Pending
UP-00501USP	Systems and Methods for Autonomous Vehicle Lane Change Control	11/6/2017	62/582,005	11/6/2017			1	US	United States	Lapsed
UP-00418US	Context-Specific Tolerance for Motion Control in Autonomous Vehicles	9/15/2017	15/705,507	9/15/2017	20190086924	3/21/2019	0	US	United States	Pending
UP-00484USP	Systems and Methods for Low-Latency Braking Action for an Autonomous Vehicle	8/23/2017	62/549,355	8/23/2017			1	US	United States	Lapsed
UP-00484US	Systems and Methods for Low-Latency Braking Action for an Autonomous Vehicle	10/16/2017	15/784,684	8/23/2017	20190061712	2/28/2019	0	US	United States	Pending
UP-00413US	Systems and Methods for Speed Limit Context Awareness	7/18/2017	15/652,654	7/18/2017	20190025843	1/24/2019	0	US	United States	Pending
UP-00286USC1	COLLISION-AVOIDANCE SYSTEM FOR AUTONOMOUS-CAPABLE VEHICLES	5/23/2018	15/987,460	6/23/2017	20180373263	12/27/2018	0	US	United States	Pending
UP-00717USP	Autonomous Vehicle Safe Stop	1/30/2018	62/623,815	1/30/2018			1	US	United States	Lapsed
UP-00698USP1	Discrete Design Architecture For Motion Planning System of an Autonomous Vehicle	1/15/2018	62/617,417	1/15/2018			1	US	United States	Lapsed
UP-00695USP	Methods, Devices, and Systems For Analyzing Motion Plans of Autonomous Vehicles	1/26/2018	62/622,233	1/26/2018			1	US	United States	Lapsed
UP-00604US2	Systems and Methods for Streaming Processing for Autonomous Vehicles	5/18/2018	15/983,499	1/12/2018			0	US	United States	Pending
UP-00604US3	Systems and Methods for Streaming Processing for Autonomous Vehicles	5/18/2018	15/983,504	1/12/2018			0	US	United States	Pending
UP-00698US2	Discrete Decision Architecture for Motion Planning System of an Autonomous Vehicle	8/8/2018	16/058,430	1/15/2018			0	US	United States	Pending
UP-00901US	Gridlock Solver for Motion Planning System of an Autonomous Vehicle	9/11/2018	16/127,786	6/6/2018			0	US	United States	Pending
UP-00281USC1	Adaptive Vehicle Motion Control System	4/26/2018	15/963,662	2/2/2017	20180246517	8/30/2018	0	US	United States	Pending
UP-00094USC1	VEHICLE CONTROLS BASED ON THE MEASURED WEIGHT OF FREIGHT	8/1/2018	16/051,659	12/20/2016	20180339711	11/29/2018	0	US	United States	Pending
UP-00698WO	DISCRETE DECISION ARCHITECTURE FOR MOTION PLANNING SYSTEM OF AN AUTONOMOUS VEHICLE	1/14/2019	PCT/US2019/013464	1/15/2018			0	WO	WIPO (PCT)	Pending
UP-00979USP	End-to-end Interpretable Neural Motion Planner	11/16/2018	62/768,847	11/16/2018			1	US	United States	Pending
UP-00777US	Motion-Plan Validator for Autonomous Vehicle	5/15/2018	15/980,264	3/23/2018			0	US	United States	Pending
UP-00796US	Initial Trajectory Generator for Motion Planning System of Autonomous Vehicles	6/15/2018	16/009,572	5/11/2018			0	US	United States	Pending
UP-00226WO	NEURAL NETWORK SYSTEM FOR AUTONOMOUS VEHICLE CONTROL	10/12/2017	PCT/US2017/056277	10/17/2016	2018075325	4/26/2018	0	WO	WIPO (PCT)	Pending
UP-01056USP	Jointly Learnable Behavior and Trajectory Planning for Self-Driving Vehicles	3/1/2019	62/812,963	3/1/2019			1	US	United States	Pending
UP-00865US	Motion Planning System of an Autonomous Vehicle	9/5/2018	16/122,520	8/23/2018			0	US	United States	Pending
UP-00567WO	Systems and Methods for Road Surface Dependent Motion Planning	12/7/2018	PCT/US2018/064383	12/7/2017			0	WO	WIPO (PCT)	Pending

UP-00208US-1	SENSOR CLEANING SYSTEM FOR VEHICLES	7/18/2016	15/213,110	7/18/2016	20180015907	1/18/2018	1/29/2019	10189450	0	US	United States	In Force
UP-00426US	Sequential Sensor Cleaning System for Autonomous Vehicle	7/7/2017	15/643,598	7/7/2017	20190009752	1/10/2019	1/8/2019	10173646	0	US	United States	In Force
UP-00585US	Nozzles and Systems for Cleaning Vehicle Sensors	12/12/2017	15/839,100	11/8/2017			12/4/2018	10144394	0	US	United States	In Force
UP-00162US	SIDEPOD STEREO CAMERA SYSTEM FOR AN AUTONOMOUS VEHICLE	3/14/2016	15/069,428	3/14/2016	20170259753	9/14/2017	9/18/2018	10077007	0	US	United States	In Force
UP-00145US	INTELLIGENT LENS MASKING SYSTEM FOR AN AUTONOMOUS VEHICLE	12/22/2015	14/979,351	12/22/2015	20170177000	6/22/2017	8/14/2018	10048696	0	US	United States	In Force
UP-00950US	Systems and Methods for Identifying Perception Sensor Degradation	2/28/2019	16/288,255	12/31/2018					0	US	United States	Pending
UP-00856USP	Systems and Methods for Pipelined Processing Of Sensor Data Using Hardware	6/8/2018	62/682,550	6/8/2018					1	US	United States	Pending
UP-00407US	CARGO TRAILER SENSOR ASSEMBLY	10/23/2017	15/790,329	10/23/2017					0	US	United States	Pending
UP-00145USC1	LENS MASKING SYSTEM FOR A VEHICLE	6/26/2018	16/018,246	12/22/2015	20180299903	10/18/2018			0	US	United States	Pending
UP-00875USP	Systems and Methods for Tamper Evident Electronic Detection	11/2/2018	62/754,950	11/2/2018					1	US	United States	Pending
UP-00208-1WO	SENSOR CLEANING SYSTEM FOR VEHICLES	7/13/2017	PCT/US2017/042005	7/18/2016	2018017395	1/25/2018			0	WO	WIPO (PCT)	Pending
UP-00145EP	INTELLIGENT LENS MASKING SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	16879983.1	12/22/2015	3394694	10/31/2018			0	EP	European Patent Office	Pending
UP-00145JP	INTELLIGENT LENS MASKING SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	2018-532386	12/22/2015					0	JP	Japan	Pending
UP-00145IL	INTELLIGENT LENS MASKING SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	260002	12/22/2015					0	IL	Israel	Pending
UP-00330WO	AUTONOMOUS VEHICLE SENSOR CLEANING SYSTEM	3/27/2018	PCT/US2018/024556	4/7/2017	2018187089	10/11/2018			0	WO	WIPO (PCT)	Pending
UP-00330US-2	Autonomous Vehicle Sensor Cleaning System	4/7/2017	15/482,251	4/7/2017	20180290631	10/11/2018			0	US	United States	Pending
UP-00330US-1	Autonomous Vehicle Sensor Cleaning System	4/7/2017	15/482,219	4/7/2017	20180290632	10/11/2018			0	US	United States	Pending
UP-00585USP	Nozzles and Systems for Cleaning Sensors of an Autonomous Vehicle	11/8/2017	62/583,143	11/8/2017					1	US	United States	Lapsed
UP-00253USP	Color Filter Array for Image Capture Device	12/29/2016	62/439,910	12/29/2016					1	US	United States	Lapsed
UP-00145WO	INTELLIGENT LENS MASKING SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	PCT/US2016/067821	12/22/2015	2017112690	6/29/2017			0	WO	WIPO (PCT)	Pending
UP-00253US	Color Filter Array for Image Capture Device	12/21/2017	15/850,452	12/29/2016	20180188427	7/5/2018			0	US	United States	Pending
UP-00252US	Image Capture Device with Customizable Regions of Interest	12/29/2016	15/393,306	12/29/2016	20180189574	7/5/2018			0	US	United States	Pending
UP-00637WO	VEHICLE SENSOR CLEANING SYSTEM	11/5/2018	PCT/US2018/059201	11/8/2017					0	WO	WIPO (PCT)	Pending
UP-00637USP	Cleaning Patterns for Autonomous Vehicle Sensor Cleaning System	11/8/2017	62/583,153	11/8/2017					1	US	United States	Lapsed
UP-00473US	FUSED SENSOR VIEW FOR SELF-DRIVING TRUCK	1/30/2018	15/883,941	1/30/2018					0	US	United States	Pending
UP-00403US	LIDAR SENSOR ASSEMBLY INCLUDING DOVETAIL JOINT COUPLING FEATURES	5/15/2018	15/980,669	5/15/2018					0	US	United States	Pending
UP-00856US	Systems and Methods for Pipelined Processing of Sensor Data Using Hardware	9/14/2018	16/131,529	6/8/2018					0	US	United States	Pending
UP-00623USP	VEHICLE DYNAMICS MONITOR FOR AUTONOMOUS VEHICLE	11/22/2017	62/589,701	11/22/2017					1	US	United States	Lapsed

UP-00208-1JP	SENSOR CLEANING SYSTEM FOR VEHICLES	7/13/2017 2019502186		7/18/2016		0	JP	Japan	Pending
UP-00208-1EP	SENSOR CLEANING SYSTEM FOR VEHICLES	7/13/2017 17831590.9		7/18/2016		0	EP	European Patent Office	Pending
UP-00208-1CN	SENSOR CLEANING SYSTEM FOR VEHICLES	7/13/2017 N\A		7/18/2016		0	CN	China	Pending
UP-00950USP	Systems and Methods for Identifying Perception Sensor Degradation	12/31/2018 62/786,710		12/31/2018		1	US	United States	Pending
UP-00585USC1	Nozzles and Systems for Cleaning Vehicle Sensors	9/26/2018 16/142,485		11/8/2017		0	US	United States	Pending
UP-00875US	Systems and Methods for Tamper Evident Electronic Detection	11/26/2018 16/199,832		11/2/2018		0	US	United States	Pending
UP-00637US	Vehicle Sensor Cleaning System	12/12/2017 15/839,137		11/8/2017		0	US	United States	Pending
UP-00623US	Vehicle Dynamics Monitor For Autonomous Vehicle	1/29/2018 15/882,294		11/22/2017		0	US	United States	Pending
UP-00121AU	METHODS, SYSTEMS AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	3/14/2014 2014239979		3/15/2013	10/5/2017 2014239979	0	AU	Australia	In Force
UP-00121KR	METHODS, SYSTEMS AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	3/14/2014 10-2015-7029111		3/15/2013	11/23/2017 101803164	0	KR	South Korea	In Force
UP-00121WO	METHODS, SYSTEMS AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	3/14/2014 PCT/US2014/027126		3/15/2013	9/25/2014	0	WO	WIPO (PCT)	Lapsed
UP-00121JP	METHODS, SYSTEMS AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	3/14/2014 2016-502343		3/15/2013	5/16/2016	0	JP	Japan	Pending
UP-00121EP	METHODS, SYSTEMS AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	3/14/2014 14770009.0		3/15/2013	1/20/2016	0	EP	European Patent Office	Pending
UP-00121CN	METHODS, SYSTEMS AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	3/14/2014 201480022190.5		3/15/2013	12/16/2015	0	CN	China	Pending
UP-00121CA	METHODS, SYSTEMS, AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	3/14/2014 2,902,430		3/15/2013		0	CA	Canada	Pending
UP-00121US	METHODS, SYSTEMS, AND APPARATUS FOR MULTI-SENSORY STEREO VISION FOR ROBOTICS	4/21/2016 14/777,427		3/15/2013	8/4/2016	0	US	United States	Pending
UP-00309US	Machine-Learning Based Autonomous Vehicle Management System	3/31/2017 15/475,228		3/31/2017	10/4/2018 4/2/2019 10248121	0	US	United States	Pending
UP-00825US	Platform Configurations for Autonomous Vehicles	7/25/2018 16/045,081		7/3/2018		0	US	United States	Pending
UP-00939USP	Neural Architecture Search With Graph Hypernetworks	9/27/2018 62/737,500		9/27/2018		1	US	United States	Pending
UP-00790USP	Learning to Reweight Examples for Machine-Learned Models	2/13/2018 62/630,159		2/13/2018		1	US	United States	Lapsed
UP-00404US	ENCODED ROAD STRIPING FOR AUTONOMOUS VEHICLES	3/28/2017 15/472,076		3/28/2017	10/4/2018	0	US	United States	Pending
UP-00422US	Last Mile Delivery Systems and Methods Using a Combination of Autonomous Launch and Delivery Vehicles	9/19/2017 15/708,748		9/19/2017		0	US	United States	Pending
UP-00399US	Noise Testing in an Autonomous Vehicle	3/23/2018 15/933,730		6/15/2017	12/20/2018	0	US	United States	Pending
UP-00399USP	Noise Testing in an Autonomous Vehicle	6/15/2017 62/519,924		6/15/2017		1	US	United States	Lapsed

UP-00969USP	Learning to Localize through Compressed Binary Maps	11/16/2018	62/768,816	11/16/2018					1	US	United States	Pending
UP-00970USP	Learning to Match with Deep Structured Attention	11/16/2018	62/768,849	11/16/2018					1	US	United States	Pending
UP-00821US	Automated Delivery Systems for Autonomous Vehicles	7/17/2018	16/037,719	5/22/2018					0	US	United States	Pending
UP-00821USP	Systems and Methods for Providing Automated Delivery Systems	5/22/2018	62/674,674	5/22/2018					1	US	United States	Pending
UP-00820USP	Systems and Methods for Providing Automated Cleaning Systems	5/22/2018	62/674,670	5/22/2018					1	US	United States	Pending
UP-00825USP	Platform Configurations for Autonomous Vehicles	7/3/2018	62/693,644	7/3/2018					1	US	United States	Pending
UP-00820US	Automated Cleaning Systems for Autonomous Vehicles	7/17/2018	16/037,610	5/22/2018					0	US	United States	Pending
UP-00852USP	Efficient Second-Order Multi-layer Pruning	5/18/2018	62/673,471	5/18/2018					1	US	United States	Pending
UP-00771US	NETWORK COMPUTER SYSTEM TO DETERMINE SUITABILITIES OF VEHICLES USING BLOCKCHAIN RECORDS	7/19/2018	16/039,634	7/19/2018					0	US	United States	Pending
UP-00172US	TRAFFIC SIGNAL ANALYSIS SYSTEM	3/9/2016	15/065,681	3/9/2016	20170262709	9/14/2017	6/5/2018	9990548	0	US	United States	In Force
UP-00166US	OBJECT DETECTION FOR AN AUTONOMOUS VEHICLE	5/6/2016	15/148,970	5/6/2016			6/6/2017	9672446	0	US	United States	In Force
UP-00166IL	OBJECT DETECTION FOR AN AUTONOMOUS VEHICLE	5/4/2017	252104	5/6/2016	252104	1/31/2018	5/1/2018	252104	0	IL	Israel	In Force
UP-00316US	FPGA Device for Image Classification	4/25/2017	15/496,144	4/25/2017			4/9/2019	10255525	0	US	United States	Pending
UP-00277USC1	Systems and Methods to Track Vehicles Proximate Perceived By an Autonomous Vehicle	7/19/2018	16/039,864	3/30/2017	20180322650	11/8/2018	3/12/2019	10229510	0	US	United States	In Force
UP-00315US	Image-Based Pedestrian Detection	9/8/2017	15/698,824	4/25/2017	20180307921	10/25/2018	10/23/2018	10108867	0	US	United States	In Force
UP-00277US	Systems and Methods to Track Vehicles Proximate Perceived by an Autonomous Vehicle	8/28/2017	15/688,704	3/30/2017	10037613	7/31/2018	7/31/2018	10037613	0	US	United States	In Force
UP-00153US-6	SYSTEM AND METHOD TO DETERMINE TRACTION OF DISCRETE LOCATIONS OF A ROAD SEGMENT	12/12/2016	15/376,596	12/10/2015	20170168489	6/15/2017	7/10/2018	10018472	0	US	United States	In Force
UP-01051USP	Autonomous Vehicle Systems and Methods	2/6/2019	62/802,200	2/6/2019					1	US	United States	Pending
UP-00714USP	Efficient Convolutions for Real-Time Semantic Segmentation of 3D Point Clouds	11/15/2017	62/586,777	11/15/2017					1	US	United States	Lapsed
UP-00781USP	Object Detection and Determination of Motion Information Using Curve-Fitting in Autonomous Vehicle Applications	4/10/2018	62/655,432	4/10/2018					1	US	United States	Pending
UP-00811US2	Three-Dimensional Object Detection	3/14/2019	16/353,463	3/14/2018					0	US	United States	Pending
UP-00870USP	EXPLOITING HD MAPS FOR 3D OBJECT DETECTION	6/15/2018	62/685,871	6/15/2018					1	US	United States	Pending
UP-00333US	Range-View Lidar-Based Object Detection	5/31/2017	15/609,256	5/31/2017	20180348374	12/6/2018			0	US	United States	Pending
UP-00332US	Top-View Lidar-Based Object Detection	5/31/2017	15/609,141	5/31/2017	20180349746	12/6/2018			0	US	United States	Pending
UP-00166EP	IMPROVED OBJECT DETECTION FOR AN AUTONOMOUS VEHICLE	5/5/2017	17169669.3	5/6/2016	3242250				0	EP	European Patent Office	Pending
UP-00166CN	IMPROVED OBJECT DETECTION FOR AN AUTONOMOUS VEHICLE	5/5/2017	201710311393.1	5/6/2016	107450529	12/8/2017			0	CN	China	Pending

UP-00665WO	Systems and Methods for Generating Sparse Geographic Data for Autonomous Vehicles	11/15/2018	PCT/US2018/061231	11/15/2017			0	WO	WIPO (PCT)	Pending
UP-00811US1	Three-Dimensional Object Detection	3/14/2019	16/353,457	3/14/2018			0	US	United States	Pending
UP-00846USP	Generation of Polar Occlusion Maps for Autonomous Vehicles	7/25/2018	62/703,167	7/25/2018			1	US	United States	Pending
UP-00788US	Object Association for Autonomous Vehicles	7/18/2018	16/038,730	4/30/2018			0	US	United States	Pending
UP-00787US	Traffic Signal State Classification for Autonomous Vehicles	7/18/2018	16/038,789	4/30/2018			0	US	United States	Pending
UP-00781US	Object Detection and Determination of Motion Information Using Curve-Fitting in Autonomous Vehicle Applications	6/27/2018	16/020,193	4/10/2018			0	US	United States	Pending
UP-00975USP	Multi-Task Multi-Sensor Fusion for 3D Object Detection	11/16/2018	62/768,790	11/16/2018			1	US	United States	Pending
UP-00977USP	Geometry Preserving 3D Object Detection	11/16/2018	62/768,841	11/16/2018			1	US	United States	Pending
UP-00972USP	Non-Parametric Memory for Spatio-Temporal Segmentation	11/16/2018	62/768,829	11/16/2018			1	US	United States	Pending
UP-00973USP	UPSNet: A Unified Panoptic Segmentation Network	11/16/2018	62/768,767	11/16/2018			1	US	United States	Pending
UP-00971USP	Deep Structured Scene Flow	11/16/2018	62/768,774	11/16/2018			1	US	United States	Pending
UP-00811USP2	Three-Dimensional Object Detection	10/31/2018	62/753,434	10/31/2018			1	US	United States	Pending
UP-00960USP	Systems and Methods for Detecting an Object Velocity	1/31/2019	62/799,314	1/31/2019			1	US	United States	Pending
UP-00475WO	Systems and Methods for Determining Tractor-Trailer Angles and Distances	10/26/2018	PCT/US2018/057703	10/26/2017			0	WO	WIPO (PCT)	Pending
UP-00835USP	Providing Actionable Uncertainties in Autonomous Vehicles	6/28/2018	62/691,124	6/28/2018			1	US	United States	Pending
UP-00789US	Object Detection and Property Determination for Autonomous Vehicles	7/18/2018	16/038,740	5/17/2018			0	US	United States	Pending
UP-00584WO	Multiple Stage Image Based Object Detection and Recognition	12/4/2018	PCT/US2018/063839	12/5/2017			0	WO	WIPO (PCT)	Pending
UP-00835US	Providing Actionable Uncertainties in Autonomous Vehicles	7/24/2018	16/043,759	6/28/2018			0	US	United States	Pending
UP-00315USC1	Image-Based Pedestrian Detection	10/8/2018	16/154,348	4/25/2017	20190042865	2/7/2019	0	US	United States	Pending
UP-01049USP	Discrete Residual Flow for Probabilistic Pedestrian Behavior Prediction	2/2/2019	62/800,435	2/2/2019			1	US	United States	Pending
UP-00960US	Systems and Methods for Detecting an Object Velocity	3/12/2019	16/299,527	1/31/2019			0	US	United States	Pending
UP-00172USC1	TRAFFIC SIGNAL ANALYSIS SYSTEM	3/20/2018	15/926,211	3/9/2016	20180218226	8/2/2018	0	US	United States	Pending
UP-00937USP	DCFlowNet: Semi-Supervised 2D Optical Flow Estimation via Depth Consistency Through Time	9/14/2018	62/731,523	9/14/2018			1	US	United States	Pending
UP-00811USP1	Exploiting Continuous Convolutions for 3D Object Detection with Multisensor Fusion	3/14/2018	62/643,072	3/14/2018			1	US	United States	Lapsed
UP-00789USP	Object Detection and Property Determination for Autonomous Vehicles	5/17/2018	62/672,745	5/17/2018			1	US	United States	Pending
UP-00788USP	Object Association for Autonomous Vehicles	4/30/2018	62/664,678	4/30/2018			1	US	United States	Pending

UP-00466USP	Anomaly Detection Systems and Methods for Autonomous Vehicles	10/3/2017	62/567,533	10/3/2017	1	US	United States	Lapsed
UP-00458USP	Object Motion Prediction and Autonomous Vehicle Control	8/8/2017	62/542,506	8/8/2017	1	US	United States	Lapsed
UP-00458US	Object Motion Prediction and Autonomous Vehicle Control	10/13/2017	15/783,005	8/8/2017	0	US	United States	Pending
UP-00446USP	Machine Learning for Predicting Locations of Objects Perceived by Autonomous Vehicles	7/21/2017	62/535,343	7/21/2017	1	US	United States	Lapsed
UP-00446US	Machine Learning for Predicting Locations of Objects Perceived by Autonomous Vehicles	8/23/2017	15/684,865	7/21/2017	0	US	United States	Pending
UP-00279US	Machine-Learning Based Vehicle Motion Control System	2/2/2017	15/423,215	2/2/2017	0	US	United States	Pending
UP-00278US	Prediction of Future Locations of Objects Proximate to Autonomous Vehicles Based on Nominal Pathways	2/16/2017	15/434,179	2/16/2017	0	US	United States	Pending
UP-00107US	CONTROL SYSTEM TO ADJUST OPERATION OF AN AUTONOMOUS VEHICLE BASED ON A PROBABILITY OF INTERFERENCE BY A DYNAMIC OBJECT	5/10/2016	15/151,394	5/10/2016	0	US	United States	Pending
UP-00638USP	Object Interaction Prediction Systems and Methods for Autonomous Vehicles	11/22/2017	62/589,951	11/22/2017	1	US	United States	Lapsed
UP-00688USP	Object Motion Prediction and Vehicle Control Systems and Methods for Autonomous Vehicles	12/8/2017	62/596,308	12/8/2017	1	US	United States	Lapsed
UP-00658USP1	End-to-End Tracking of Objects	11/15/2017	62/586,700	11/15/2017	1	US	United States	Lapsed
UP-00467USC1	Systems and Methods for Prioritizing Object Prediction for Autonomous Vehicles	12/6/2018	16/211,376	8/23/2017	0	US	United States	Pending
UP-00872USP2	System and Method for Determining Object Intention through Visual Attributes	11/2/2018	62/754,942	11/2/2018	1	US	United States	Pending
UP-00871USP2	Multi-Task Machine-Learned Models For Object Intention Determination in Autonomous Driving	10/19/2018	62/748,057	10/19/2018	1	US	United States	Pending
UP-00718USP	Autonomous Vehicle Motion Control Systems and Methods	11/29/2017	62/592,024	11/29/2017	1	US	United States	Lapsed
UP-00688WO	OBJECT MOTION PREDICTION AND VEHICLE CONTROL SYSTEMS AND METHODS FOR AUTONOMOUS VEHICLES	10/19/2018	PCT/US2018/056628	12/8/2017	0	WO	WIPO (PCT)	Pending
UP-00466WO	ANOMALY DETECTION SYSTEMS AND METHODS FOR AUTONOMOUS VEHICLES	9/28/2018	PCT/US2018/053514	10/3/2017	0	WO	WIPO (PCT)	Pending
UP-00688USC1	Object Motion Prediction and Vehicle Control Systems and Methods for Autonomous Vehicles	11/21/2018	16/198,114	12/8/2017	0	US	United States	Pending
UP-00638WO	Object Interaction Prediction Systems and Methods for Autonomous Vehicles	11/21/2018	PCT/US2018/062171	11/22/2017	0	WO	WIPO (PCT)	Pending
UP-00658US2	Systems and Methods for Object Detection, Tracking, and Motion Prediction	9/7/2018	16/124,966	11/15/2017	0	US	United States	Pending
UP-00466US	Anomaly Detection Systems and Methods for Autonomous Vehicles	10/25/2017	15/793,291	10/3/2017	0	US	United States	Pending

UP-01025USP	Autonomous Vehicle Service Simulation	1/10/2019 62/790,818	1/10/2019	1	US	United States	Pending
UP-00779USP	Reducing Autonomous Vehicle Downtime and Idle Data Usage	5/2/2018 62/665,868	5/2/2018	1	US	United States	Pending
UP-00806USP2	Autonomous Vehicle Idle State Task Selection for Improved Computational Resource Usage	9/10/2018 62/729,042	9/10/2018	1	US	United States	Pending
UP-00759USP2	Controlling an Autonomous Vehicle and the Service Selection of an Autonomous Vehicle	9/10/2018 62/729,087	9/10/2018	1	US	United States	Pending
UP-00819USP2	Generating Service Pools across Different Service Entities for Autonomous Vehicles	9/10/2018 62/729,053	9/10/2018	1	US	United States	Pending
UP-00807USP2	Selective Activation of Autonomous Vehicles	9/10/2018 62/729,071	9/10/2018	1	US	United States	Pending
UP-00867USP	Autonomous Vehicle Fleet Management for Improved Computational Resource Usage	10/31/2018 62/753,482	10/31/2018	1	US	United States	Pending
UP-00868USP1	Methods and Systems for Configuring and Instructing Autonomous Vehicles	12/21/2018 62/783,965	12/21/2018	1	US	United States	Pending
UP-00866USP	Autonomous Vehicle Capability and Operational Domain Evaluation and Selection for Improved Computational Resource Usage	10/16/2018 62/746,298	10/16/2018	1	US	United States	Pending
UP-00709US2	Autonomous Vehicle Application Programming Interface And Communications Systems And Methods	3/12/2018 15/918,599	1/29/2018	0	US	United States	Pending
UP-00709US1	Autonomous Vehicle Application Programming Interface And Communications Systems And Methods	3/12/2018 15/918,588	1/29/2018	0	US	United States	Pending
UP-01028USP	Cloud Software Development Kit for Third-Party Autonomous Vehicles	1/25/2019 62/796,974	1/25/2019	1	US	United States	Pending
UP-00819USP1	Generating Service Pools Across Different Service Entities for Autonomous Vehicles	4/12/2018 62/656,677	4/12/2018	1	US	United States	Pending
UP-00759USP1	Controlling an Autonomous Vehicle and the Service Selection of an Autonomous Vehicle	4/11/2018 62/656,143	4/11/2018	1	US	United States	Pending
UP-00854USP	Integration Platform for Autonomous Vehicles	7/27/2018 62/711,150	7/27/2018	1	US	United States	Pending
UP-01009USP	Vehicle Integration Platform (VIP) Security	1/25/2019 62/796,808	1/25/2019	1	US	United States	Pending
UP-00782USP2	ON-DEMAND TRANSPORT SELECTION PROCESS FACILITATING THIRD-PARTY AUTONOMOUS VEHICLES	10/29/2018 62/751,921	10/29/2018	1	US	United States	Pending
UP-00854US	Integration Platform for Autonomous Vehicles	10/30/2018 16/174,974	7/27/2018	0	US	United States	Pending
UP-01024USP2	Testing Library for Offboard Vehicle Service Testing System	1/25/2019 62/797,040	1/25/2019	1	US	United States	Pending
UP-00709WO	Autonomous Vehicle Application Programming Interface and Communications Systems and Methods	1/29/2019 PCT/US2019/015665	1/29/2018	0	WO	WIPO (PCT)	Pending

UP-00558USP	Deterministic Simulation Framework for Autonomous Vehicle Testing	11/2/2017	62/580,703	11/2/2017				1	US	United States	Lapsed
UP-00428US	Systems and Methods for Automated Testing of Autonomous Vehicles	7/12/2017	15/647,866	7/12/2017				0	US	United States	Pending
UP-00480USP	Autonomous Vehicle Hybrid Simulation Testing	8/24/2017	62/549,613	8/24/2017				1	US	United States	Lapsed
UP-00480US	Autonomous Vehicle Hybrid Simulation Testing	9/8/2017	15/699,473	8/24/2017				0	US	United States	Pending
UP-00760US	Systems and Methods for a Scenario Tagger for Autonomous Vehicles	5/14/2018	15/978,732	3/21/2018				0	US	United States	Pending
UP-00696USP	Passenger Experience and Biometric Monitoring in an Autonomous Vehicle	1/23/2018	62/620,735	1/23/2018				1	US	United States	Lapsed
UP-00965USP	LidarSIM: Combining Physics and Deep Learning for LiDAR Simulation	11/16/2018	62/768,850	11/16/2018				1	US	United States	Pending
UP-00887US	Systems and Methods for Generating Artificial Scenarios for an Autonomous Vehicle	11/26/2018	16/199,843	10/26/2018				0	US	United States	Pending
UP-00601USP	Autonomous Vehicle Testing Systems and Methods	10/25/2017	62/576,844	10/25/2017				1	US	United States	Lapsed
UP-00887USP	Systems and Methods for Generating Artificial Scenarios for an Autonomous Vehicle	10/26/2018	62/751,061	10/26/2018				1	US	United States	Pending
UP-00602US	Simulated Sensor Testing	2/12/2018	15/893,729	12/13/2017				0	US	United States	Pending
UP-00558US	Deterministic Simulation Framework for Autonomous Vehicle Testing	12/7/2017	15/834,691	11/2/2017				0	US	United States	Pending
UP-00577US	Autonomous Vehicle Simulation Testing Systems and Methods	12/11/2017	15/837,341	10/27/2017				0	US	United States	Pending
UP-00143US	THERMAL REDUCTION SYSTEM FOR AN AUTOMATED VEHICLE	12/22/2015	14/979,248	12/22/2015	20170174037	6/22/2017	1/2/2018 9855816	0	US	United States	In Force
UP-00247WO	Decreasing Vehicle Power Consumption	12/22/2017	PCT/US2017/068104	12/28/2016	2018125782	7/5/2018		0	WO	WIPO (PCT)	Pending
UP-00557USP	Power and Thermal Management Systems and Methods for Autonomous Vehicles	9/8/2017	62/555,895	9/8/2017				1	US	United States	Lapsed
UP-00143JP	THERMAL REDUCTION SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	2018-532388	12/22/2015	2019503583	2/7/2019		0	JP	Japan	Pending
UP-00143CN	THERMAL REDUCTION SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	201680082277.0	12/22/2015	109196966	1/11/2019		0	CN	China	Pending
UP-00143KR	THERMAL REDUCTION SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	10-2018-7020920	12/22/2015				0	KR	South Korea	Pending
UP-00143EP	THERMAL REDUCTION SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	16879958.3	12/22/2015	3395132	10/31/2018		0	EP	European Patent Office	Pending
UP-00600USP	Modular Devices and Systems for Cooling a Computing System of an Autonomous Vehicle	12/1/2017	62/593,454	12/1/2017				1	US	United States	Lapsed
UP-00570USP	Systems and Methods for Cooling Vehicle Systems of an Autonomous Vehicle	10/6/2017	62/568,839	10/6/2017				1	US	United States	Lapsed
UP-00557US	Power and Thermal Management Systems and Methods for Autonomous Vehicles	10/2/2017	15/722,346	9/8/2017	20190080602	3/14/2019		0	US	United States	Pending
UP-00143WO	THERMAL REDUCTION SYSTEM FOR AN AUTONOMOUS VEHICLE	12/20/2016	PCT/US2016/067718	12/22/2015	2017112648	6/29/2017		0	WO	WIPO (PCT)	Pending
UP-00143USC1	THERMAL REDUCTION SYSTEM FOR AN AUTONOMOUS VEHICLE	6/14/2017	15/623,229	12/22/2015	20170282675	10/5/2017		0	US	United States	Pending
UP-00247US	Decreasing an Autonomous Vehicle Power Consumption	12/28/2016	15/392,274	12/28/2016	20180178741	6/28/2018		0	US	United States	Pending

UP-01024USP1	Offboard Vehicle Service Testing System	1/10/2019	62/790,827	1/10/2019	1	US	United States	Pending