PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6958981

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
BRAIN CORPORATION	10/04/2021

RECEIVING PARTY DATA

Name:	HERCULES CAPITAL, INC.	
Street Address:	400 HAMILTON AVENUE, SUITE 310	
Internal Address:	ATTENTION: CHIEF LEGAL OFFICER	
City:	PALO ALTO	
State/Country:	CALIFORNIA	
Postal Code:	94301	

PROPERTY NUMBERS Total: 173

Property Type	Number
Patent Number:	8315305
Patent Number:	8467623
Patent Number:	8793205
Patent Number:	8942466
Patent Number:	8943008
Patent Number:	8972315
Patent Number:	8977582
Patent Number:	8983216
Patent Number:	8990133
Patent Number:	8996177
Patent Number:	9008840
Patent Number:	9014416
Patent Number:	9015092
Patent Number:	9047568
Patent Number:	9070039
Patent Number:	9082079
Patent Number:	9098811
Patent Number:	9104186
Patent Number:	9111215

PATENT REEL: 057851 FRAME: 0574

506912146

Property Type	Number
Patent Number:	9111226
Patent Number:	9123127
Patent Number:	9152915
Patent Number:	9156165
Patent Number:	9183493
Patent Number:	9189730
Patent Number:	9193075
Patent Number:	9195934
Patent Number:	9208432
Patent Number:	9213937
Patent Number:	9218563
Patent Number:	9224090
Patent Number:	9239985
Patent Number:	9242372
Patent Number:	9248569
Patent Number:	9256215
Patent Number:	9275326
Patent Number:	9296101
Patent Number:	9311593
Patent Number:	9311594
Patent Number:	9314924
Patent Number:	9346167
Patent Number:	9358685
Patent Number:	9364950
Patent Number:	9367798
Patent Number:	9373038
Patent Number:	9384443
Patent Number:	9390369
Patent Number:	9405975
Patent Number:	9489623
Patent Number:	9552546
Patent Number:	9566710
Patent Number:	9579790
Patent Number:	9604359
Patent Number:	9613308
Patent Number:	9687984
Patent Number:	9717387
Patent Number:	9764468

Property Type	Number
Patent Number:	9789605
Patent Number:	9792546
Patent Number:	9821457
Patent Number:	9821470
Patent Number:	9840003
Patent Number:	9844873
Patent Number:	9848112
Patent Number:	9849588
Patent Number:	9860077
Patent Number:	9862092
Patent Number:	9870617
Patent Number:	9873196
Patent Number:	9902062
Patent Number:	9939253
Patent Number:	9950426
Patent Number:	9987743
Patent Number:	9987752
Patent Number:	10001780
Patent Number:	10016896
Patent Number:	10032280
Patent Number:	10055850
Patent Number:	10057593
Patent Number:	10105841
Patent Number:	10131052
Patent Number:	10155310
Patent Number:	10166675
Patent Number:	10184787
Patent Number:	10194163
Patent Number:	10197664
Patent Number:	10241514
Patent Number:	10268919
Patent Number:	10274325
Patent Number:	10282849
Patent Number:	10293483
Patent Number:	10293485
Patent Number:	10295972
Patent Number:	10322507
Patent Number:	10369694

Property Type	Number
Patent Number:	10376117
Patent Number:	10377040
Patent Number:	10379539
Patent Number:	10391628
Patent Number:	10464213
Patent Number:	10507580
Patent Number:	10657409
Patent Number:	10688657
Patent Number:	10717191
Patent Number:	10723018
Patent Number:	10728436
Patent Number:	10728570
Patent Number:	10807230
Patent Number:	10810456
Patent Number:	10818016
Patent Number:	10820009
Patent Number:	10823576
Patent Number:	10843338
Patent Number:	10852730
Patent Number:	10860882
Patent Number:	10895629
Patent Number:	10899008
Patent Number:	10967519
Patent Number:	10989521
Patent Number:	11042775
Patent Number:	11099575
Application Number:	16908038
Application Number:	16269129
Application Number:	16235250
Application Number:	16131128
Application Number:	16454199
Application Number:	16031950
Application Number:	16271234
Application Number:	15495804
Application Number:	15785161
Application Number:	16150609
Application Number:	16447261
Application Number:	16682430

Property Type	Number
Application Number:	16679548
Application Number:	16454695
Application Number:	17231566
Application Number:	63191719
Application Number:	17199721
Application Number:	63182198
Application Number:	63127611
Application Number:	63088583
Application Number:	17145908
Application Number:	17206940
Application Number:	63222593
Application Number:	17313077
Application Number:	63117125
Application Number:	17346386
Application Number:	16268861
Application Number:	17386001
Application Number:	17140468
Application Number:	17149951
Application Number:	17231613
Application Number:	63131643
Application Number:	63093997
Application Number:	17232481
Application Number:	16939779
Application Number:	17205692
Application Number:	16030690
Application Number:	63174701
Application Number:	17157897
Application Number:	15942123
Application Number:	63216613
Application Number:	16168368
Application Number:	63143482
Application Number:	17226471
Application Number:	17176501
Application Number:	17345407
Application Number:	17242362
Application Number:	63154365
Application Number:	16527292
Application Number:	17142669

Property Type	Number
Application Number:	17216775
Application Number:	16199582

CORRESPONDENCE DATA

Fax Number:

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: 16167423945

Email: hkooy@btlaw.com

Correspondent Name: HILLARY KOOY

Address Line 1: 171 MONROE AVE NW, SUITE 1000 Address Line 4: GRAND RAPIDS, MICHIGAN 49503

ATTORNEY DOCKET NUMBER:	81193.12
NAME OF SUBMITTER:	HILLARY KOOY
SIGNATURE:	/s/ Hillary Kooy
DATE SIGNED:	10/08/2021

Total Attachments: 30

```
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page1.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page2.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page3.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page4.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page5.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page6.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page7.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page8.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page9.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page10.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page11.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page12.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page13.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page14.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page15.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page16.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page17.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page18.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page19.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page20.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page21.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page22.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page23.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page24.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page25.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page26.tif
source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page27.tif
```

source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page28.tif source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page29.tif source=05. Hercules - Brain Corp. - IP Security Agreement [Executed] (10.2021)(21076887.1)#page30.tif

INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement is entered into as of October 4, 2021 by and between HERCULES CAPITAL, INC., a Maryland corporation, in its capacity as administrative agent and collateral agent for itself and the Lenders (as defined in the Loan Agreement (as defined below)) (in such capacity, the "Agent") and BRAIN CORPORATION, a California corporation, and each of its Subsidiaries (hereinafter collectively referred to as the "Grantor").

RECITALS

- A. Lenders have agreed to make certain advances of money and to extend certain financial accommodation to Grantor (the "Loans") in the amounts and manner set forth in that certain Loan and Security Agreement by and between Agent, the Lenders and Grantor dated the Closing Date (as the same may be amended, modified or supplemented from time to time, the "Loan Agreement"; capitalized terms used herein are used as defined in the Loan Agreement). The Lenders are willing to make the Loans to Grantor, but only upon the condition, among others, that Grantor shall grant to Agent, for the benefit of the Lenders, a security interest in certain Copyrights, Trademarks, Patents, and mask works to secure the obligations of Grantor under the Loan Agreement.
- B. Pursuant to the terms of the Loan Agreement, Grantor has granted to Agent, for the benefit of the Lenders, a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.
- NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of its obligations under the Loan Agreement, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

To secure its obligations under the Loan Agreement, Grantor grants and pledges to Agent, for the benefit of the Lenders, a security interest in all of Grantor's right, title and interest in, to and under its Intellectual Property (including without limitation those Copyrights, Patents and Trademarks listed on Exhibits A, B and C hereto), and including without limitation all proceeds thereof (such as, by way of example but not by way of limitation, license royalties and proceeds of infringement suits), the right to sue for past, present and future infringements, all rights corresponding thereto throughout the world and all reissues, divisions continuations, renewals, extensions and continuations-in-part thereof (together the "Intellectual Property Collateral"). Notwithstanding the foregoing, the Intellectual Property Collateral shall not include any personal property or other assets excluded from the Collateral pursuant to Section 3.2 of the Loan Agreement.

This security interest is granted in conjunction with the security interest granted to Agent, for the benefit of the Lenders, under the Loan Agreement. The rights and remedies of Agent with respect to the security interest granted hereby are in addition to those set forth in the Loan Agreement and the other Loan Documents, and those which are now or hereafter available to Agent, for the benefit of the Lenders, as a matter of law or equity. Each right, power and remedy of Agent provided for herein or in the Loan Agreement or any of the Loan Documents, or now or hereafter existing at law or in equity shall be cumulative and concurrent and shall be in addition to every right, power or remedy provided for herein and the exercise by Agent of any one or more of the rights, powers or remedies provided for in this Intellectual Property Security Agreement, the Loan Agreement or any of the other Loan Documents, or now or hereafter

DMS 20864818.4

existing at law or in equity, shall not preclude the simultaneous or later exercise by any person, including Lender, of any or all other rights, powers or remedies.

Grantor hereby authorizes Agent to file and/or record, in the relevant office(s), including the United States Patent and Trademark Office and the United States Copyright Office, this Intellectual Property Security Agreement and any and all amendments and/or modifications hereto, including to the Exhibits attached hereto from time to time, and other documents, without the signature of Grantor either in Agent's name or in the name of Agent as agent and attorney-in-fact for Grantor.

Sections 11.9 (Governing Law), 11.10 (Consent to Jurisdiction and Venue) and 11.11 (Mutual Waiver of Jury Trial / Judicial Reference) of the Loan Agreement are incorporated herein by this reference as though set forth in full.

[Balance of Page Intentionally Left Blank]

DMS 20864818.4

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the Closing Date.

GRANTOR:
BRAIN CORPORATION
Signature:
Print Name: <u>David Pinn</u>
Title: Chief Financial Officer
Address: Attention: David Pinn, Chief Financial Officer 10182 Telesis Court, Suite 100 San Diego, CA 92121 email: david.pinn@braincorp.com
AGENT:
HERCULES CAPITAL, INC.
Signature:
Print Name: Jennifer Choe
Title: Associate General Counsel

[Signature Page to Intellectual Property Security Agreement]

Address:

Attention: Chief Legal Officer 400 Hamilton Avenue, Suite 310

Palo Alto, CA 94301 email: legal@htgc.com

DMS 20864818

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the Closing Date.

GRANTOR:	
BRAIN CORPORATION	
Signature:	
Print Name:	
Title:	
Address: Attention: David Pinn, Chief Financial Officer 10182 Telesis Court, Suite 100 San Diego, CA 92121 email: david.pinn@braincorp.com	
AGENT:	
HERCULES CAPITAL, INC.	
Signature:	
Print Name: <u>Jennifer Choe</u>	
Title: Associate General Counsel	
Address: Attention: Chief Legal Officer 400 Hamilton Avenue, Suite 310 Palo Alto CA 94301	

[Signature Page to Intellectual Property Security Agreement]

email: legal@htgc.com

EXHIBIT A

Copyrights

None.

DMS 20864818.4

EXHIBIT B

Patents

					Application			
IP Dacket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
The Double of the Control			ADAPTIVE PLASTICITY	- Approximation 1407	- Duu			
			APPARATUS AND METHODS					
	UNITED		FOR SPIKING NEURON					
P23359US00	STATES	NEW	NETWORK	13/660,923	10/25/2012	9.183.493	11/10/2015	ISSUED
	UNITED		ADAPTIVE PREDICTOR	, ,	<u> </u>	, ,	, ,	
P23396US00	STATES	NEW	APPARATUS AND METHODS	13/842,530	3/15/2013	9,764,468	9/19/2017	ISSUED
	UNITED		ADAPTIVE PREDICTOR	, ,	1 ' '	, ,	, ,	
P23396US01	STATES	CON	APPARATUS AND METHODS	15/707,985	9/18/2017	10,155,310	12/18/2018	ISSUED
	UNITED		ADAPTIVE PREDICTOR					
P23396US02	STATES	CON	APPARATUS AND METHODS	16/171,635	10/26/2018	10/688,657	6/23/2020	ISSUED
	UNITED		ADAPTIVE PREDICTOR					
P23396US03	STATES	CON	APPARATUS AND METHODS	16/908,038	6/22/2020			PUBLISHED
			ADAPTIVE ROBOTIC					
	UNITED		INTERFACE APPARATUS AND					
P23403US00	STATES	NEW	METHODS	13/907,734	5/31/2013	9,242,372	1/26/2016	ISSUED
			ADAPTIVE ROBOTIC					
	UNITED		INTERFACE APPARATUS AND					
P23403US01	STATES	CON	METHODS	14/595,163	1/12/2015	9,821,457	11/21/2017	ISSUED
			APPARATUS AND METHODS					
			FOR ACTIVITY-BASED					
	UNITED		PLASTICITY IN A SPIKING					
P23295US00	STATES	NEW	NEURON NETWORK	13/660,967	10/25/2012	8,972,315	3/3/2015	ISSUED
			APPARATUS AND METHODS					
			FOR BACKWARD					
	UNITED		PROPAGATION OF ERRORS IN					
P23368US00	STATES	NEW	A SPIKING NEURON NETWORK	14/054,366	10/15/2013	9,489,623	11/8/2016	ISSUED
			APPARATUS AND METHODS					
			FOR CONTEXT					
	UNITED		DETERMINATION USING REAL					
P23375US00	STATES	NEW	TIME SENSOR DATA	14/489,368	9/17/2014	9,821,470	11/21/2017	ISSUED
			APPARATUS AND METHODS					
			FOR CONTROL OF ROBOT					
	UNITED		ACTIONS BASED ON		0/0/004		6/7/0046	
P23335US00	STATES	NEW	CORRECTIVE USER INPUTS	14/171,762	2/3/2014	9,358,685	6/7/2016	ISSUED
			APPARATUS AND METHODS					
	LINUTED		FOR CONTROL OF ROBOT					
D2222511004	UNITED	CON	ACTIONS BASED ON	15/174.050	6/6/2016	0.700.605	10/17/2017	ICCLIED
P23335US01	STATES	CON	CORRECTIVE USER INPUTS APPARATUS AND METHODS	15/174,858	6/6/2016	9,789,605	10/17/2017	ISSUED
			FOR CONTROL OF ROBOT					
	UNITED		ACTIONS BASED ON					
P23335US02	STATES	CON	CORRECTIVE USER INPUTS	 15/785,181	10/16/2017	10,322,507	6/18/2019	ISSUED
1 233330302	JIAILJ	COIV	APPARATUS AND METHODS	13/703,101	10/10/2017	10,322,307	0/10/2013	133020
			FOR CONTROL OF ROBOT					
	UNITED		ACTIONS BASED ON					
P23335US03	STATES	CON	CORRECTIVE USER INPUTS	16/402.758	5/3/2019	10,843,338	11/24/2020	ISSUED
		T	APPARATUS AND METHODS	-,,-		,- :-,	,,	
	UNITED		FOR DETECTION OF OBJECTS					
P23288US01	STATES	CON	USING BROADBAND SIGNALS	16/225,949	12/19/2018	10,895,629	1/19/2021	ISSUED
			APPARATUS AND METHODS	, ,	, ,,===	, -,3	, ,	
			FOR DETECTION OF OBJECTS					
			USING BROADBAND SIGNALS					
			(AFTER FINAL					
	UNITED		CONSIDERATION PILOT					
P23288US00	STATES	NEW	PROGRAM 2.0)	14/804,043	7/20/2015	10,197,664	2/5/2019	ISSUED

DMS 20864818.4

					Application		l	
IP Docket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
n Daute na.	- Double of		APPARATUS AND METHODS	- Toppinsation 110			iogar butt	- Diariog
			FOR DISTANCE ESTIMATION					
	UNITED		USING MULTIPLE IMAGE					
P23331US00	STATES	NEW	SENSORS	14/285,414	5/22/2014	9,939,253	4/10/2018	ISSUED
			APPARATUS AND METHODS					
			FOR DISTANCE ESTIMATION					
	UNITED		USING MULTIPLE IMAGE					
P23331US01	STATES	CON	SENSORS	15/948,885	4/9/2018	10,184,787	1/22/2019	ISSUED
			APPARATUS AND METHODS					
			FOR DISTANCE ESTIMATION					
	UNITED		USING MULTIPLE IMAGE		l			
P23331US02	STATES	CON	SENSORS	16/214,730	12/10/2018	10,989,521	4/27/2021	ISSUED
			APPARATUS AND METHODS					
D22270LIC00	UNITED	NIESA/	FOR DISTANCE ESTIMATION	14/226 274	7/9/2014	10.057.503	0/21/2010	ICCLIED
P23278US00	STATES	NEW	USING STEREO IMAGERY	14/326,374	7/8/2014	10,057,593	8/21/2018	ISSUED
	UNITED		APPARATUS AND METHODS FOR DISTANCE ESTIMATION					
P23278US01	STATES	CON	USING STEREO IMAGERY	16/104,646	8/17/2018	10,820,009	10/27/2020	ISSUED
1232700301	JIAILS	CON	APPARATUS AND METHODS	10/104,040	0/1//2010	10,020,003	10/2//2020	1330ED
	UNITED		FOR EFFICACY BALANCING IN					
P23366US00	STATES	NEW	A SPIKING NEURON NETWORK	13/954.575	7/30/2013	9,552,546	1/24/2017	ISSUED
. 20000000	0.7.1.20	11211	APPARATUS AND METHODS	10,551,575	1,00,2010	3,002,010	1/2://2017	100020
			FOR ENCODING OF SENSORY					
	UNITED		DATA USING ARTIFICIAL					
P23388US00	STATES	NEW	SPIKING NEURONS	13/623,820	9/20/2012	9,047,568	6/2/2015	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR ENCODING VECTOR INTO					
P23380US00	STATES	NEW	PULSE-CODE OUTPUT	13/689,712	11/29/2012	9,152,915	10/6/2015	ISSUED
			APPARATUS AND METHODS					
			FOR GATING ANALOG AND					
			SPIKING SIGNALS IN					
	UNITED		ARTIFICIAL NEURAL					
P23363US00	STATES	NEW	NETWORKS	13/761,090	2/6/2013	9,213,937	12/15/2015	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR GENERALIZED STATE- DEPENDENT LEARNING IN					
P23390US00	STATES	NEW	SPIKING NEURON NETWORKS	13/560,902	7/27/2012	9,256,215	2/9/2016	ISSUED
F233900300	JIAILS	INLV	APPARATUS AND METHODS	13/300,302	1/21/2012	3,230,213	2/3/2010	1330ED
	UNITED		FOR HAPTIC TRAINING OF					
P23336US02	STATES	CON	ROBOTS	15/464,104	3/20/2017	9,844,873	12/19/2017	ISSUED
			APPARATUS AND METHODS	, ,	, ,	, ,	, ,	
	UNITED		FOR HAPTIC TRAINING OF					
P23336US03	STATES	CON	ROBOTS	15/845,832	12/18/2017	10/717,191	7/21/2020	ISSUED
			APPARATUS AND METHODS					
			FOR OBJECT DETECTION VIA					
	UNITED		OPTICAL FLOW					
P23381US00	STATES	NEW	CANCELLATION	13/689,717	11/29/2012	9,193,075	11/24/2015	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR ONLINE TRAINING OF					
P23308US02	STATES	CON	ROBOTS	16/269,129	2/6/2019			ALLÓWED
			APPARATUS AND METHODS					
	UNITED		FOR OPERATING ROBOTIC DEVICES USING SELECTIVE					
P23289US00	STATES	NEW	STATE SPACE TRAINING	14/070,269	11/1/2013	9,566,710	2/14/2017	ISSUED
r 23203U3UU	JIMIES	INLVV	APPARATUS AND METHODS	14/0/0,203	11/1/2013	9,300,710	Z/14/ZU1/	IDDUED
			FOR OPERATING ROBOTIC					
	UNITED		DEVICES USING SELECTIVE					
P23289US02	STATES	CON	STATE SPACE TRAINING	16/235,250	12/28/2018			PUBLISHED
	1		APPARATUS AND METHODS		,,			
			FOR POLYCHRONOUS					
			ENCODING AND					
	UNITED		MULTIPLEXING IN NEURONAL					
P23349US00	STATES	NEW	PROSTHETIC DEVICES	13/117,048	5/26/2011	9,311,593	4/12/2016	ISSUED

					Application			
IP Dacket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
ii Docket No.		, , , , , , , , , , , , , , , , , , ,	APPARATUS AND METHODS	- Application 140	Duce	1.0.00.014.02	ISSUE DUCE	Stuces
			FOR PROCESSING INPUTS IN					
	UNITED		AN ARTIFICIAL NEURON					
P23365US00	STATES	NEW	NETWORK	13/922,116	6/19/2013	9,239,985	1/19/2016	ISSUED
123303000	317(123	11211	APPARATUS AND METHODS	13/322/110	0,13,2013	3,233,303	1,13,2010	155625
			FOR PROGRAMMING AND					
	UNITED		TRAINING OF ROBOTIC					
P23328US01	STATES	FCA	DEVICES	14/613,237	2/3/2015	10,105,841	10/23/2018	ISSUED
1233200301	31/(123	10/1	APPARATUS AND METHODS	14/013/23/	2/3/2013	10,103,041	10,23,2010	155025
			FOR PROGRAMMING AND					
	UNITED		TRAINING OF ROBOTIC					
P23328US02	STATES	CON	DEVICES	16/131,128	9/14/2018			PUBLISHED
120020002	5 II (1 E S	55.1	APPARATUS AND METHODS	10, 101,120	3,11,2010			
			FOR PROGRAMMING AND					
	UNITED		TRAINING OF ROBOTIC					
P23338US00	STATES	NEW	HOUSEHOLD APPLIANCES	14/632,842	2/26/2015	9,717,387	8/1/2017	ISSUED
1233300300	317(123	1424	APPARATUS AND METHODS	14,032,042	2,20,2013	3,717,307	0,1,201,	ISSOLD
			FOR PROGRAMMING AND					
	UNITED		TRAINING OF ROBOTIC					
P23338US01	STATES	CON	HOUSEHOLD APPLIANCES	15/665,146	7/31/2017	10,376,117	8/13/2019	ISSUED
7233360301	JIAILS	CON	APPARATUS AND METHODS	13/003,140	7/31/2017	10,370,117	8/13/2013	1330ED
			FOR PROGRAMMING AND					
	UNITED		TRAINING OF ROBOTIC					
P23338US02	STATES	CON	HOUSEHOLD APPLIANCES	16/454,199	6/27/2019			PUBLISHED
F 233360302	JIAILS	CON	APPARATUS AND METHODS	10/454,133	0/2//2013			FOBLISHED
	UNITED		FOR PULSE-CODE INVARIANT					
P23347US00	STATES	NEW	OBJECT RECOGNITION	13/152,084	6/2/2011	9,405,975	9/2/2016	ISSUED
P23347U30U	SIAIES	INEVV		15/152,064	6/2/2011	9,403,973	8/2/2016	ISSUED
			APPARATUS AND METHODS					
	LINITED		FOR REAL TIME ESTIMATION					
Daggoricoo	UNITED	NIEVA	OF DIFFERENTIAL MOTION IN	14/205 205	E /22 /2014	10 104 163	1 /20 /2010	ICCLIED
P23290US00	STATES	NEW	LIVE VIDEO	14/285,385	5/22/2014	10,194,163	1/29/2019	ISSUED
			APPARATUS AND METHODS					
	LIMITED		FOR REAL TIME ESTIMATION					
D22200LIC01	UNITED	CON	OF DIFFERENTIAL MOTION IN	16/210 270	12/5/2019	10/729 570	7/20/2020	ISSUED
P23290US01	STATES	CON	LIVE VIDEO	16/210,370	12/5/2018	10/728,570	7/28/2020	ISSUED
			APPARATUS AND METHODS					
	LINUTED		FOR REINFORCEMENT-					
pagagalicoo	UNITED	NIEVA	GUIDED SUPERVISED	12/000 075	4/10/2012	0.000.040	4/14/2015	ICCLIED
P23303US00	STATES	NEW	LEARNING AND METHODS	13/866,975	4/19/2013	9,008,840	4/14/2015	ISSUED
			APPARATUS AND METHODS					
	LIMITED		FOR REINSORCEMENT					
paaagaucoo	UNITED	NIEVA	LEARNING IN ARTIFICIAL	12/400 200	C /F /2012	0.042.000	1 /27 /2015	ICCLIED
P23283US00	STATES	NEW	NEURAL NETWORKS	13/489,280	6/5/2012	8,943,008	1/27/2015	ISSUED
	LIMITED		APPARATUS AND METHODS					
D2227411000	UNITED	NEVA:	FOR REMOTELY CONTROLLING	14/490 242	0/17/2014	0.040.500	12/20/2017	ICCLIED
P23374US00	STATES	NEW	ROBOTIC DEVICES	14/489,242	9/17/2014	9,849,588	12/26/2017	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR REMOVAL OF LEARNED					
P23377US00	STATES	NEW	BEHAVIORS IN ROBOTS	14/489,373	9/17/2014	9,579,790	2/28/2017	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR SAFE NAVIGATION OF			1		
P23339US00	STATES	NEW	ROBOTIC DEVICES	14/749,423	6/24/2015	9,840,003	12/12/2017	ISSUED
			APPARATUS AND METHODS					
			FOR SALIENCY DETECTION					
	UNITED		BASED ON COLOR					
P23379US00	STATES	NEW	OCCURRENCE ANALYSIS	14/637,191	3/3/2015	9,870,617	1/16/2018	ISSUED
			APPARATUS AND METHODS					
			FOR SALIENCY DETECTION					
	UNITED		BASED ON COLOR					
P23379US01	STATES	CON	OCCURRENCE ANALYSIS	15/871,862	1/15/2018	10,810,456	10/20/2020	ISSUED

		.						
ID Deelcok No	Carratur	Naw/Can	TNA	Analization No	Application	Dokust No.	torus Pots	Chahiir
IP Docket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
			APPARATUS AND METHODS					
			FOR STATE-DEPENDENT					
	UNITED		LEARNING IN SPIKING				_ / /	
P23298US00	STATES	NEW	NEURON NETWORKS	13/722,769	12/20/2012	8,990,133	3/24/2015	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR TEMPORAL PROXIMITY					
P23404US00	STATES	NEW	DETECTION	14/191,383	2/26/2014	9,373,038	6/21/2016	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR TEMPORAL PROXIMITY					
P23404US01	STATES	CON	DETECTION	15/187,533	6/20/2016	11,042,775	6/22/2021	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR TRACKING SALIENT					
P23304US01	STATES	FCA	FEATURES	14/637,164	3/3/2015	10,032,280	7/24/2018	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR TRACKING SALIENT					
P23304US02	STATES	CON	FEATURES	16/042,901	7/23/2018	10,860,882	12/8/2020	ISSUED
	UNITED		APPARATUS AND METHODS	, ,	, ,			
P23328US10	STATES	FCA	FOR TRAINING OF ROBOTS	14/588,168	12/31/2014	9,687,984	6/27/2017	ISSUED
			APPARATUS AND METHODS			-,,	-,-,,	
	UNITED		FOR TRAINING PATH					
P23328US07	STATES	FCA	NAVIGATION BY ROBOTS	14/607,018	1/27/2015	9,604,359	3/28/2017	ISSUED
P23326U3U7	SIAIES	FCA		14/00/,016	1/2//2013	9,004,339	3/26/2017	ISSUED
	LIMITED		APPARATUS AND METHODS					
B2222011000	UNITED	601	FOR TRAINING PATH	45/470 600	2/27/2017	0 000 000	2/27/2010	ICCLIED
P23328US08	STATES	CON	NAVIGATION BY ROBOTS	15/470,629	3/27/2017	9,902,062	2/27/2018	ISSUED
			APPARATUS AND METHODS					
	UNITED		FOR TRAINING PATH					
P23328US09	STATES	CON	NAVIGATION BY ROBOTS	15/901,777	2/21/2018	10/293,483	5/21/2019	ISSUED
			APPARATUS AND METHODS					
	UNITED		OF HIERARCHICAL TRAINING					
P23328US04	STATES	CON	OF ROBOTS	16/031,950	7/10/2018			PUBLISHED
			AUTONOMOUS MULTI-					
	UNITED		TASKING MODULAR ROBOTIC					
P23321US06	STATES	FCA	SYSTEM	16/271,234	2/8/2019			PUBLISHED
	UNITED		BISTATIC OBJECT DETECTION					
P23350US00	STATES	NEW	APPARATUS AND METHODS	13/238,932	9/21/2011	9,156,165	10/13/2015	ISSUED
	UNITED		BISTATIC OBJECT DETECTION					
P23339US01	STATES	DIV	APPARATUS AND METHODS	14/752,688	6/26/2015	9,873,196	1/23/2018	ISSUED
	UNITED		BISTATIC OBJECT DETECTION	, ,	, ,	, ,	, ,	
P23339US02	STATES	CON	APPARATUS AND METHODS	15/877,243	1/22/2018	10,807,230	10/20/2020	ISSUED
1233330302	3174123	0011	CONDITIONAL PLASTICITY	13/077,213	1,22,2010	10,007,230	10/20/2020	133023
	UNITED		SPIKING NEURON NETWORK					
P23358US00	STATES	NEW	APPARATUS AND METHODS	13/541.531	7/3/2012	9,111,215	8/18/2015	ISSUED
F233380300	JIAILS	INLVV		13/341,331	7/3/2012	9,111,213	8/18/2013	1330ED
			CONTRAST ENHANCEMENT SPIKING NEURON NETWORK					
	UNITED							
paaacauroo		NENA	SENSORY PROCESSING	12/710 042	12/10/2012	0 122 127	0/1/2015	ICCLIED
P23362US00	STATES	NEW	APPARATUS AND METHODS	13/710,042	12/10/2012	9,123,127	9/1/2015	ISSUED
			DISCREPANCY DETECTION					
	UNITED		APPARATUS AND METHODS					
P23411US00	STATES	NEW	FOR MACHINE LEARNING	14/088,258	11/22/2013	9,248,569	2/2/2016	ISSUED
			DYNAMICALLY					
			RECONFIGURABLE					
	UNITED		STOCHASTIC LEARNING					
P23302US00	STATES	NEW	APPARATUS AND METHODS	13/487,576	6/4/2012	9,015,092	4/21/2015	ISSUED
			FEATURE DETECTION					
			APPARATUS AND METHODS					
	UNITED		FOR TRAINING OF ROBOTIC					
P23328US06	STATES	CON	NAVIGATION	15/495,804	4/24/2017			PUBLISHED
			HIERARCHICAL ROBOTIC					
	UNITED		CONTROLLER APPARATUS					
P23334US00	STATES	NEW	AND METHODS	13/918,298	6/14/2013	9,792,546	10/17/2017	ISSUED
. 2000 10000	2		HIERARCHICAL ROBOTIC	_0,010,200	5, 2 1, 2015	5,. 52,540	10,11,2017	
	UNITED		CONTROLLER APPARATUS					
P23334US01	STATES	CON	AND METHODS	15/785,161	10/16/2017			PUBLISHED
r23334U3U1	SIMIES	LON	VIAD IAIE ILIODO	13/103/101	10/10/201/			LOBEIDHED

					Application			
IP Dacket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
n Douce Ho.	UNITED	, very con	HOME ANIMATION	- Application Ito.	Duce	1 DCC1/E1VD2	Dage Dute	States
P23376US00	STATES	NEW	APPARATUS AND METHODS	14/489,353	9/17/2014	9,860,077	1/2/2018	ISSUED
F233700300	JIAILS	INLVV	INTERFACE FOR USE WITH	14/409,333	3/17/2014	9,800,077	1/2/2018	1330LD
	UNITED		TRAINABLE MODULAR					
Daggericoa		DIV		14/050 005	12/2/2015	0.000.000	1 /0 /2010	ICCLIED
P23285US02	STATES	עוע	ROBOTIC APPARATUS	14/958,825	12/3/2015	9,862,092	1/9/2018	ISSUED
			INVARIANT PULSE LATENCY					
00000711000	UNITED		CODING SYSTEMS AND	40/005 046	E /4 E /2042	0.000.046	2/47/2045	ICCLIED
P23297US02	STATES	CON	METHODS	13/895,246	5/15/2013	8,983,216	3/17/2015	ISSUED
			INVARIANT PULSE LATENCY					
			CODING SYSTEMS AND					
	UNITED		METHODS SYSTEMS AND					
P23297US01	STATES	FCA	METHODS	12/869,583	8/26/2010	8,467,623	6/18/2013	ISSUED
			METHODS AND APPARATUS					
	UNITED		FOR TRACKING OBJECTS					
P23287US03	STATES	CON	USING SALIENCY	16/291,470	3/4/2019	10,657,409	5/19/2020	ISSUED
			MODULATED PLASTICITY					
			APPARATUS AND METHODS					
	UNITED		FOR SPIKING NEURON					
P23360US00	STATES	NEW	NETWORK	13/660,945	10/25/2012	9,111,226	8/18/2015	ISSUED
			MODULATED STOCHASTICITY					
			SPIKING NEURON NETWORK					
	UNITED		CONTROLLER APPARATUS					
P23393US00	STATES	NEW	AND METHODS	13/623,801	9/20/2012	9,189,730	11/17/2015	ISSUED
			MULTITHREADED APPARATUS					
			AND METHODS FOR					
	UNITED		IMPLEMENTING PARALLEL					
P23324US00	STATES	NEW	NETWORKS	13/895,163	5/15/2013	9,390,369	7/12/2016	ISSUED
			NEURAL NETWORK LEARNING				.,,	
	UNITED		AND COLLABORATION					
P23355US01	STATES	FCA	APPARATUS AND METHODS	13/830,398	3/14/2013	9,208,432	12/8/2015	ISSUED
1233330001	UNITED	1 67 (OPTICAL DETECTION	13/030,330	3,11,2013	3,200, 132	12,0,2013	100010
P23333US00	STATES	NEW	APPARATUS AND METHODS	14/321,736	7/1/2014	9,848,112	12/19/2017	ISSUED
1233330300	UNITED	145.44	OPTICAL DETECTION	14/321,730	7/1/2014	3,040,112	12/15/2017	133012
P23333US01	STATES	CON		15/845,891	12/18/2017	10/728,436	7/28/2020	ISSUED
P23333U3U1	SIAIES	CON	APPARATUS AND METHODS	13/043,031	12/16/2017	10/726,430	7/26/2020	ISSUED
	LIMITED		PERSISTENT PREDICTOR					
D2222011C12	UNITED	FCA.	APPARATUS AND METHODS	14/705 407	F /C /201 F	10 121 052	11/20/2010	ICCLIED
P23328US12	STATES	FCA	FOR TASK SWITCHING	14/705,487	5/6/2015	10,131,052	11/20/2018	ISSUED
			PERSISTENT PREDICTOR					
	UNITED		APPARATUS AND METHODS					
P23328US13	STATES	CON	FOR TASK SWITCHING	16/150,609	10/3/2018			PUBLISHED
			PREDICTIVE ROBOTIC					
	UNITED		CONTROLLER APPARATUS					
P23281US00	STATES	NEW	AND METHODS	13/918,620	6/14/2013	9,314,924	4/19/2016	ISSUED
			PREDICTIVE ROBOTIC					
	UNITED		CONTROLLER APPARATUS					
P23281US01	STATES	CON	AND METHODS	15/132,003	4/18/2016	9,950,426	4/24/2018	ISSUED
		[PREDICTIVE ROBOTIC]
	UNITED		CONTROLLER APPARATUS					
P23281US02	STATES	CON	AND METHODS	15/960,300	4/23/2018	10,369,694	8/6/2019	ISSUED
			PREDICTIVE ROBOTIC					
	UNITED		CONTROLLER APPARATUS					
P23281US03	STATES	CON	AND METHODS	16/447,261	6/20/2019			PUBLISHED
			PROPORTIONAL-INTEGRAL-					
			DERIVATIVE CONTROLLER					
			EFFECTING EXPANSION					
			KERNELS COMPRISING A					
			PLURALITY OF SPIKING					
			NEURONS ASSOCIATED WITH					
	UNITED		A PLURALITY OF RECEPTIVE					
P23391US00	STATES	NEW	FIELDS	13/656,987	10/22/2012	9,082,079	7/14/2015	ISSUED
		<u> </u>	RATE STABILIZATION	, -,	,,	,,-,-	, ., _ 5 _ 5	
	UNITED		THROUGH PLASTICITY IN					
P23361US00	STATES	NEW	SPIKING NEURON NETWORK	13/691,554	11/30/2012	9,275,326	3/1/2016	ISSUED
. 233010300	JIMILJ	14544	ST IMING INCOMORNING INCOME	1 20,002,004	1 11/30/2012	2,212,320	3/ 1/ 2010	100000

ID Doelos No	Country	Now/Fas	Title	Application No.	Application	Datast Nis	Iceus Dots	Ctatur
IP Docket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
			REDUCED DEGREE OF FREEDOM ROBOTIC					
	UNITED		CONTROLLER APPARATUS					
P23330US01	STATES	CON	AND METHODS	15/967,240	4/30/2018	10,507,580	12/17/2019	ISSUED
1255500501	STATES	CON	REDUCED DEGREE OF	13/30/,240	4,30,2010	10,507,500	12/1//2015	ISSOLD
			FREEDOM ROBOTIC					
	UNITED		CONTROLLER APPARATUS					
P23330US03	STATES	CON	AND METHODS	16/682,430	11/13/2019			PUBLISHED
	0.7.1.20		ROBOTIC CONTROL	20,000,000				
	UNITED		ARBITRATION APPARATUS					
P23410US00	STATES	NEW	AND METHODS	14/040,498	9/27/2013	9,296,101	3/29/2016	ISSUED
	UNITED		ROBOTIC LEARNING AND	, ,	, ,	, ,	, ,	
P23389US00	STATES	NEW	EVOLUTION APPARATUS	13/623,826	9/20/2012	8,793,205	7/29/2014	ISSUED
	UNITED		ROBOTIC TRAINING	, ,	· ·			
P23299US00	STATES	NEW	APPARATUS AND METHODS	13/841,980	3/15/2013	8,996,177	3/31/2015	ISSUED
	UNITED		ROBOTIC TRAINING					
P23307US00	STATES	NEW	APPARATUS AND METHODS	13/918,338	6/14/2013	9,384,443	7/5/2016	ISSUED
			SALIENT FEATURES TRACKING					
	UNITED		APPARATUS AND METHODS					
P23287US02	STATES	FCA	USING VISUAL INITIALIZATION	14/637,138	3/3/2015	10,055,850	8/21/2018	ISSUED
	UNITED		SENSORY INPUT PROCESSING					
P23284US00	STATES	NEW	APPARATUS AND METHODS	13/152,119	6/2/2011	8,942,466	1/27/2015	ISSUED
			SENSORY INPUT PROCESSING					
	UNITED		APPARATUS IN A SPIKING					
P23353US00	STATES	NEW	NEURAL NETWORK	13/465,903	5/7/2012	9,224,090	12/26/2015	ISSUED
	UNITED		SENSORY PROCESSING					
P23301US01	STATES	CON	APPARATUS AND METHODS	13/540,429	7/2/2012	9,014,416	4/21/2015	ISSUED
			SPIKING NEURON CLASSIFIER					
			APPARATUS AND METHODS					
	UNITED		USING CONDITIONALLY					
P23398US00	STATES	NEW	INDEPENDENT SUBSETS	13/756,372	1/31/2013	9,195,934	11/24/2015	ISSUED
			SPIKING NEURON NETWORK					
	UNITED		ADAPTIVE CONTROL					
P23392US00	STATES	NEW	APPARATUS AND METHODS	13/623,842	9/20/2012	9,367,798	6/14/2016	ISSUED
	UNITED		SPIKING NEURON NETWORK					
P23356US00	STATES	NEW	APPARATUS AND METHODS	13/488,106	6/4/2012	9,098,811	8/4/2015	ISSUED
			SPIKING NEURON NETWORK					
			APPARATUS AND METHODS					
	UNITED		FOR ENCODING OF SENSORY					
P23394US00	STATES	NEW	DATA	13/623,838	9/20/2012	9,311,594	4/12/2016	ISSUED
			SPIKING NEURON NETWORK					
	UNITED		SENSORY PROCESSING					
P23296US00	STATES	NEW	APPARATUS AND METHODS	13/548,071	7/12/2012	8,977,582	3/10/2015	ISSUED
			SPIKING NEURON SENSORY					
			PROCESSING APPARATUS AND					
B0007411600	UNITED	NEW	METHODS FOR SALIENCY	40/660 000	40/05/0040	0040560	40/00/0045	ISSUED
P23371US00	STATES	NEW	DETECTION CONTROL	13/660,982	10/25/2012	9218563	12/22/2015	ISSUED
D2244211600	UNITED	NIENA/	SPOOFING REMOTE CONTROL	14/244 000	4/2/2244	0.612.202	4/4/2047	ICCLIED
P23413US00	STATES	NEW	APPARATUS AND METHODS	14/244,892	4/3/2014	9,613,308	4/4/2017	ISSUED
			STOCHASTIC APPARATUS AND					
	LIMITED		METHODS FOR					
מספפתו	UNITED	NEVA/	IMPLEMENTING GENERALIZED	12/407 400	6/4/2012	0104196	0/11/2015	ICCLIED
P23384US00	STATES	NEW	LEARNING RULES SYSTEM AND METHOD FOR	13/487,499	6/4/2012	9104186	8/11/2015	ISSUED
	UNITED		MOTION CONTROL OF					
P23417US01	STATES	DCA	ROBOTS	16/679,548	9/11/2019			PUBLISHED
r 2341/U3U1	JIAIES	DCA	SYSTEMS AND METHODS FOR	10/0/3,340	3/11/2019			LOBLISHED
	UNITED		ASSISTING A ROBOTIC					
P23294US00	STATES	NEW	APPARATUS	15/423,442	2/2/2017	10,377,040	8/13/2019	ISSUED
1 232340300	JIMIEJ	INFAA	SYSTEMS AND METHODS FOR	13/443,444	2/2/201/	10,377,040	0/13/2019	ISSUED
	UNITED		ASSISTING A ROBOTIC					
D23204116U1		COM		16/45/1695	6/27/2010			DIBLICHED
P23294US01	STATES	CON	APPARATUS	16/454,695	6/27/2019	1		PUBLISHED

					Application			
IP Dacket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
m Dounce no.	Country	interior con	SYSTEMS AND METHODS FOR	- Application 1402	Duce		153GC DUCC	Status
	UNITED		AUTOMATIC DETECTION OF					
P23279US00	STATES	NEW	SPILLS	15/179,851	6/10/2016	9,987,752	6/5/2018	ISSUED
1232730300	317(123	11211	SYSTEMS AND METHODS FOR	15/1/5,051	0,10,2010	3,307,732	0,3,2010	133022
	UNITED		AUTOMATIC DETECTION OF					
P23279US01	STATES	CON	SPILLS	15/997,397	6/4/2018	10,464,213	11/5/2019	ISSUED
1232/30301	JIAILS	CON	SYSTEMS AND METHODS FOR	13/33/,33/	0,4,2010	10,404,213	11/3/2013	1330ED
	UNITED		AUTOMATIC DETECTION OF					
P23279US02	STATES	CON	SPILLS	16/582,302	9/25/2019	10,967,519	4/6/2021	ISSUED
1 2327 30302	JIAILS	CON	SYSTEMS AND METHODS FOR	10/382,302	3/23/2013	10,507,515	4,0,2021	IJJOED
			CLOUD EDGE TASK					
	UNITED		PERFORMANCE AND					
P23421US01	STATES	CON	COMPUTING USING ROBOTS	17/231,566	4/15/2021			PUBLISHED
F 234210301	JIAILS	CON	SYSTEMS AND METHODS FOR	17/231,300	4/13/2021			FOBLISHED
			CONFIGURING A ROBOT TO					
	UNITED		SCAN FOR FEATURES WITHIN					
P24579US00	STATES	NEW	AN ENVIRONMENT	63/191,719	5/21/2021			PENDING
F243730300	JIAILS	INLVV	SYSTEMS AND METHODS FOR	03/191,/19	3/21/2021			FLINDING
	UNITED		DETECTING BLIND SPOTS FOR					
P23317US01	STATES	CON	ROBOTS	 17/199,721	3/12/2021			PUBLISHED
P23317U3U1	STATES	CON		1//199,/21	3/12/2021			PUBLISHED
			SYSTEMS AND METHODS FOR					
	UNITED		DETECTING ERRONEOUS RANGE SENSOR					
P24576US00		NEW	MEASUREMENTS	63/182,198	4/30/2021			PENDING
P24576U3UU	STATES	NEVV		03/182,198	4/30/2021			PENDING
			SYSTEMS AND METHODS FOR					
			DETECTING FLOOR FROM					
	LINUTED		NOISY DEPTH					
D244E2UC00	UNITED	NIEVA/	MEASUREMENTS FOR	C2/127 C11	12/19/2020			PENDING
P24452US00	STATES	NEW	ROBOTS	63/127,611	12/18/2020			PENDING
			SYSTEMS AND METHODS FOR					
	LINUTED		DETECTING MOUNTING					
D24402LIC00	UNITED	NIEVA/	ERRORS OF A CLIFF	C2 (000 F02	10/7/2020			DENIDING
P24402US00	STATES	NEW	DETECTION SENSOR	63/088,583	10/7/2020			PENDING
			SYSTEMS AND METHODS FOR					
			DETECTION OF FEATURES					
	LINUTED		WITHIN DATA COLLECTED BY					
D2 41 701 ICO1	UNITED	FC4	A PLURALITY OF ROBOTS BY A	17/145 000	1/11/2021			DUBLICHED
P24179US01	STATES	FCA	CENTRALIZED SERVER	17/145,908	1/11/2021			PUBLISHED
	LINUTED		SYSTEMS AND METHODS FOR					
D2 422211C04	UNITED	FC4	DETERMINING A POSE OF A	17/206.940	2/10/2021			DENIDING
P24222US01	STATES	FCA	SENSOR ON A ROBOT	17/206,940	3/19/2021			PENDING
			SYSTEMS AND METHODS FOR					
	LINUTED		DYNAMIC ROUTE PLANNING					
P23293US00	UNITED	NEW	IN AUTONOMOUS NAVIGATION	15/241 612	11/2/2016	10,001,780	6/19/2018	ISSUED
P23293U3UU	STATES	INEVV	SYSTEMS AND METHODS FOR	15/341,612	11/2/2016	10,001,780	6/19/2016	ISSUED
	UNITED		DYNAMIC ROUTE PLANNING IN AUTONOMOUS					
P23293US01	STATES	CON	NAVIGATION	 16/011,499	6/18/2018	10 270 520	8/13/2019	ISSUED
P23293U3U1	STATES	CON		10/011,499	0/10/2010	10,379,539	0/13/2019	1330ED
	LIMITED		SYSTEMS AND METHODS FOR					
D2.4610UC00	UNITED	NEW/	EDITING ROUTES FOR	62/222 502	7/16/2021			DENIDING
P24610US00	STATES	NEW	ROBOTIC DEVICES	63/222,593	7/16/2021			PENDING
			SYSTEMS AND METHODS FOR					
	LIMITED		ENHANCING PERFORMANCE					
P24263US01	UNITED	EC^	AND MAPPING OF ROBOTS	17/212 077	E /E /2021			DENIDING
r24203U3U1	STATES	FCA	USING MODULAR DEVICES	17/313,077	5/6/2021			PENDING
			SYSTEMS AND METHODS FOR					
			FILTERING UNDERESTIMATED					
			DISTANCE MEASUREMENTS					
	LIMITED		FROM PERIODIC PULSE-					
D3.4.430U.C00	UNITED	NEW,	MODULATED TIME-OF-FLIGHT	62/117 125	11/22/2020			DENIDING
P24429US00	STATES	NEW	SENSORS	63/117,125	11/23/2020			PENDING

					Application			
IP Dacket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
232112	- Country		SYSTEMS AND METHODS FOR	, ipprication its	Duce	•	IDJGE DATE	5.0.0.0
			IMPROVED CONTROL OF					
	UNITED		NONHOLONOMIC ROBOTIC					
P23460US01	STATES	CON	SYSTEMS	17/346,386	6/14/2021			PENDING
			SYSTEMS AND METHODS FOR					
			INITIALIZING A ROBOT TO					
	UNITED		AUTONOMOUSLY TRAVEL A		_			
P23318US00	STATES	NEW	TRAINED ROUTE	15/152,436	5/11/2016	10,241,514	3/26/2019	ISSUED
			SYSTEMS AND METHODS FOR					
	UNITED		INITIALIZING A ROBOT TO AUTONOMOUSLY TRAVEL A					
P23318US01	STATES	CON	TRAINED ROUTE	16/268,861	2/6/2019			PENDING
. 255155551	5174125	100.1	SYSTEMS AND METHODS FOR	10,200,001	2, 0, 2013			1 2.13.110
	UNITED		INVARIANT PULSE LATENCY					
P23297US03	STATES	FCA	CODING	12/869,573	8/26/2010	8,315,305	11/20/2012	ISSUED
			SYSTEMS AND METHODS FOR					
			LASER AND IMAGING					
	UNITED		ODOMETRY FOR					
P23510US01	STATES	CON	AUTONOMOUS ROBOTS	17/386,001	7/27/2021			PENDING
	LIMITED		SYSTEMS AND METHODS FOR					
P23259US02	UNITED STATES	CEQ	OPERATING AUTONOMOUS TUG ROBOTS	 17/140,468	1/4/2021			PUBLISHED
F232390302	SIAILS	+ CLQ	SYSTEMS AND METHODS FOR	17/140,408	1/4/2021			POBLISHED
			OPTIMIZING ROUTE					
	UNITED		PLANNING FOR TIGHT TURNS					
P23266US01	STATES	CEQ	FOR ROBOTIC APPARATUSES	17/149,951	1/15/2021			PUBLISHED
			SYSTEMS AND METHODS FOR					
			PERSISTENT MAPPING OF					
			ENVIRONMENTAL					
			PARAMETERS USING A					
	UNITED		CENTRALIZED CLOUD SERVER	17/201 612	. /. = /0.00			
P23420US01	STATES	CON	AND A ROBOTIC NETWORK	17/231,613	4/15/2021			PUBLISHED
	LIMITED		SYSTEMS AND METHODS FOR					
P23320US01	UNITED STATES	FCA	PRECISE NAVIGATION OF AUTONOMOUS DEVICES	16/260,590	1/29/2019	11,099,575	8/24/2021	ISSUED
1255200501	STATES	10/	SYSTEMS AND METHODS FOR	10/200,550	1,23,2013	11,055,575	0,24,2021	ISSOLD
			PRECISELY ESTIMATING A					
			ROBOTIC FOOTPRINT FOR					
	UNITED		EXECUTION OF NEAR-					
P24472US00	STATES	NEW	COLLISION MOTIONS	63/131,643	12/29/2020			PENDING
			SYSTEMS AND METHODS FOR					
	UNITED		PREDICTIVE/RECONSTRUCTIVE					
P23292US01	STATES	FCA	VISUAL OBJECT TRACKER	15/627,096	6/19/2017	10/282,849	5/7/2019	ISSUED
	LIMITED		SYSTEMS AND METHODS FOR					
P23292US02	UNITED STATES	CON	PREDICTIVE/RECONSTRUCTIVE VISUAL OBJECT TRACKER	16/357,536	3/19/2019	10,818,016	10/27/2020	ISSUED
F232920302	SIAILS	CON	SYSTEMS AND METHODS FOR	10/33/,330	3/19/2019	10,818,010	10/2//2020	1330ED
	UNITED		PRODUCING OCCUPANCY					
P24412US00	STATES	NEW	MAPS FOR ROBOTIC DEVICES	63/093,997	10/20/2020			PENDING
			SYSTEMS AND METHODS FOR					
			QUANTITATIVELY MEASURING					
	UNITED		WHEEL SLIPPAGE IN					
P24237US01	STATES	FCA	DIFFERENTIAL DRIVE ROBOTS	17,232,481	4/16/2021			PENDING
			SYSTEMS AND METHODS FOR					
D00000::000	UNITED	NEW	REMOTE OPERATING AND/OR	45/262511	44/00/00:-	40/700 015	7/00/0005	
P23306US00	STATES	NEW	MONITORING OF A ROBOT	15/362,544	11/28/2016	10/723,018	7/28/2020	ISSUED
	LIMITED		SYSTEMS AND METHODS FOR					
P23306US01	UNITED STATES	CON	REMOTE OPERATING AND/OR MONITORING OF A ROBOT	 16/939,779	7/27/2020			PUBLISHED
r 233000301	JIMIES	CON	SYSTEMS AND METHODS FOR	10/333,//3	1/21/2020			LOBLISHED
	UNITED		REROUTING ROBOTS TO					
P23329US01	STATES	CON	AVOID NO-GO ZONES	17/205,692	3/18/2021			PUBLISHED
				, ,	_, _, _, _	i	1	

					Application			
IP Docket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
	•		SYSTEMS AND METHODS FOR					
	UNITED		ROBOTIC BEHAVIOR AROUND					
P23319US00	STATES	NEW	MOVING BODIES	15/199,224	6/30/2016	10,016,896	7/10/2018	ISSUED
			SYSTEMS AND METHODS FOR					
	UNITED		ROBOTIC BEHAVIOR AROUND					
P23319US01	STATES	CON	MOVING BODIES	16/030,690	7/9/2018			PUBLISHED
			SYSTEMS AND METHODS FOR					
			ROBOTIC DETECTION OF					
	UNITED		ESCALATORS AND MOVING					
P24564US00	STATES	NEW	WALKWAYS	63/174,701	4/14/2021			PENDING
	UNITED		SYSTEMS AND METHODS FOR					
P23291US00	STATES	NEW	ROBOTIC MAPPING	15/340,807	11/1/2016	10,274,325	4/30/2019	ISSUED
	UNITED		SYSTEMS AND METHODS FOR					
P23291US01	STATES	CON	ROBOTIC MAPPING	16/356,160	3/18/2019	10/823,576	11/3/2020	ISSUED
	UNITED		SYSTEMS AND METHODS FOR					
P23305US01	STATES	FCA	ROBOTIC MOBILE PLATFORMS	15/891,202	2/7/2018	10,852,730	12/1/2020	ISSUED
	UNITED		SYSTEMS AND METHODS FOR					
P23311US00	STATES	NEW	ROBOTIC PATH PLANNING	15/474,816	3/30/2017	10,293,485	5/21/2019	ISSUED
D2224411604	UNITED	CON	SYSTEMS AND METHODS FOR	46/276 227	4/5/2010	40,000,000	1/25/2021	ICCLIED
P23311US01	STATES	CON	ROBOTIC PATH PLANNING	16/376,237	4/5/2019	10,899,008	1/26/2021	ISSUED
D2224411C02	UNITED	CON	SYSTEMS AND METHODS FOR	17/157 007	1 /25 /2024			BUBLICHED
P23311US02	STATES	CON	ROBOTIC PATH PLANNING	17/157,897	1/25/2021			PUBLISHED
P23322US00	UNITED	NEW	SYSTEMS AND METHODS FOR ROBUST ROBOTIC MAPPING	15/043 133	2/20/2019			PUBLISHED
P23322U30U	STATES UNITED	INEVV	SYSTEMS AND METHODS FOR	15/942,123	3/30/2018			POBLISHED
P24594US00	STATES	NEW	STOPPING ROBOTIC TUGS	63/216,613	6/30/2021			PENDING
F 24J 34U 3UU	STATES	INLVV	SYSTEMS AND METHODS FOR	03/210,013	0/30/2021			FLINDING
	UNITED		TRACKING OBJECTS USING					
P23287US01	STATES	FCA	SALIENCY	14/860,579	9/21/2015	10/268,919	4/23/2019	ISSUED
1232070301	SIAILS	TCA	SYSTEMS AND METHODS FOR	14,000,575	3/21/2013	10/200,515	+/23/2013	1550ED
			TRAINING A ROBOT TO					
	UNITED		AUTOMOMOUSLY TRAVEL A					
P23286US01	STATES	CON	ROUTE	16/168,368	10/23/2018			PUBLISHED
. 23233333	5 II (1 E S	00.1	SYSTEMS AND METHODS TO	10,100,000	10,20,2010			. 002.01123
			OPERATE CONTROLLABLE					
	UNITED		DEVICES WITH GESTURES					
P23282US00	STATES	NEW	AND/OR NOISES	15/143,397	4/29/2016	10,295,972	5/21/2019	ISSUED
			SYSTEMS, APPARATUSES AND					
			METHODS FOR IMPROVING					
			FEATURE DETECTION USING					
			ROBOTIC DEVICES AND					
	UNITED		IMPROVED OPTICAL CODE					
P24487US00	STATES	NEW	RECOGNITION	63/143,482	1/29/2021			PENDING
			SYSTEMS, APPARATUSES AND					
			METHODS FOR REMOVING					
	UNITED		FALSE POSITIVES FROM	,				
P23275US01	STATES	CON	SENSOR DETECTION	17/226,471	4/9/2021			PUBLISHED
			SYSTEMS, APPARATUSES, AND					
			METHODS FOR BIAS					
	LINUTES		DETERMINATION AND VALUE					
D2220011004	UNITED	CON	CALCULATION OF	17/176 504	2/16/2024			DUDUCUES
P23280US01	STATES	CON	PARAMETERS OF A ROBOT	17/176,501	2/16/2021			PUBLISHED
	LIMITED		SYSTEMS, APPARATUSES, AND					
P23458US01	UNITED STATES	CON	METHODS FOR DETECTING ESCALATORS	 17/345,407	6/11/2021			PENDING
r 204J0U3U1	SIAIES	CON	SYSTEMS, APPARATUSES, AND	1//343,40/	0/11/2021			PENDING
			METHODS FOR DYNAMIC					
			FILTERING OF HIGH INTENSITY					
			BROADBAND					
			ELECTROMAGNETIC WAVES					
			FROM IMAGE DATA FROM A					
	UNITED		SENSOR COUPLED TO A					
P23425US01	STATES	CON	ROBOT	17/242,362	4/28/2021			PENDING
5 ,250001	J 17 (1 L)	1 0014		1 1//2 12,502	1 1/20/2021	l		LEINDING

	1				Application			
IP Dacket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
			SYSTEMS, APPARATUSES, AND					
			METHODS FOR ONLINE					
	UNITED		CALIBRATION OF RANGE					
P24529US00	STATES	NEW	SENSORS FOR ROBOTS	63/154,365	2/26/2021			PENDING
			SYSTEMS, APPARATUSES, AND	, ,	, ,			
			METHODS FOR RAPID					
			MACHINE LEARNING FOR					
	UNITED		FLOOR SEGMENTATION FOR					
P23577US00	STATES	NEW	ROBOTIC DEVICES	16/527,292	7/31/2019			PUBLISHED
			SYSTEMS, METHODS AND					
			APPARATUSES FOR					
	UNITED		CALIBRATING SENSORS					
P23260US01	STATES	CON	MOUNTED ON A DEVICE	17/142,669	1/6/2021			PUBLISHED
			SYSTEMS, METHODS AND					
			APPARATUSES FOR					
	UNITED		CALIBRATING SENSORS					
P23260US02	STATES	CIP	MOUNTED ON A DEVICE	17/216,775	3/30/2021			PUBLISHED
			TEMPORAL WINNER TAKES					
			ALL SPIKING NEURON					
			NETWORK SENSORY					
	UNITED		PROCESSING APPARATUS AND				- / /	
P23364US00	STATES	NEW	METHODS	13/757,607	2/1/2013	9,070,039	6/30/2015	ISSUED
			TRAINABLE CONVOLUTIONAL					
	LIMITED		NETWORK APPARATUS AND					
D2227211C00	UNITED	NIEVA/	METHODS FOR OPERATING A	14/265 112	4/20/2014	0 246 167	E/24/2016	ICCLIED
P23372US00	STATES	NEW	ROBOTIC VEHICLE	14/265,113	4/29/2014	9,346,167	5/24/2016	ISSUED
P23285US01	UNITED STATES	DIV	TRAINABLE MODULAR ROBOTIC APPARATUS	14/946,589	11/19/2015	10,166,675	1/1/2019	ISSUED
PZ3Z63U3U1	UNITED	DIV	TRAINABLE MODULAR	14/340,363	11/19/2013	10,100,073	1/1/2019	ISSUED
P23285US03	STATES	CON	ROBOTIC APPARATUS	16/199,582	11/26/2018			PUBLISHED
F 232830303	JIAILS	CON	TRAINABLE MODULAR	10/199,382	11/20/2018			FOBLISHED
	UNITED		ROBOTIC APPARATUS AND					
P23332US00	STATES	NEW	METHODS	14/208,709	3/13/2014	9,987,743	6/5/2018	ISSUED
1233320300	3171123	11211	TRAINABLE MODULAR	11/200,703	3,13,2011	3,307,713	0,3,2010	100020
	UNITED		ROBOTIC APPARATUS AND					
P23332US01	STATES	DIV	METHODS	15/474,880	3/30/2017	10,391,628	8/27/2019	ISSUED
	UNITED		TRAINABLE MODULAR	,,				
P23369US00	STATES	NEW	ROBOTIC METHODS	14/209,578	3/13/2014	9,364,950	6/14/2016	ISSUED
			SYSTEMS AND METHODS FOR	,,,				
			CALIBRATING NONVISIBLE					
			LIGHT EMITTING SENSORS					
P23576WO00	WIPO	CEQ	USING ALIGNMENT TARGETS	PCT/US20/43974	7/29/2020			PUBLISHED
			SYSTEMS AND METHODS FOR					
			CLOUD EDGE TASK					
			PERFORMANCE AND					
P23421WO00	WIPO	CEQ	COMPUTING USING ROBOTS	PCT/US19/56483	10/16/2019			PUBLISHED
			SYSTEMS AND METHODS FOR					
			DETECTING BLIND SPOTS FOR					
P23317WO00	WIPO	CEQ	ROBOTS	PCT/US19/050774	9/12/2019			PUBLISHED
			SYSTEMS AND METHODS FOR					
			DETECTING GLASS AND					
			SPECULAR SURFACES FOR					
P24283WO00	WIPO	CEQ	ROBOTS	PCT/US21/32696	5/17/2021			PENDING
			SYSTEMS AND METHODS FOR					
			DETECTION OF FEATURES					
			WITHIN DATA COLLECTED BY					
D22570W000	WIPO	CEO	A PLURALITY OF ROBOTS BY A	DCT/US20/40600	7/2/2020			DIIBLICHED
P23570WO00	WIFU	CEQ	CENTRALIZED SERVER	PCT/US20/40609	7/2/2020			PUBLISHED
			SYSTEMS AND METHODS FOR DISINFECTON AND					
			SANITATION OF					
			ENVIRONMENTS BY ROBOTIC					
P24229WO00	WIPO	CEQ	DEVICES	PCT/US21/24863	3/30/2021			PENDING
				. , , ,	. , ,			

IP Dacket No.	Country	New/Con	Title	Application No.	Application Date	Patent No.	Issue Date	Status
			SYSTEMS AND METHODS FOR ENGAGING BRAKES ON A					
P24319WO00	WIPO	CEQ	ROBOTIC DEVICE	PCT/US21/41484	7/13/2021			PENDING
			SYSTEMS AND METHODS FOR					
			ENHANCING PERFORMANCE					
P24263WO00	WIPO	CEQ	AND MAPPING OF ROBOTS USING MODULAR DEVICES	PCT/US21/31008	5/6/2021			PENDING
12420377000	WIII O	CLQ	SYSTEMS AND METHODS FOR	101/0321/31008	3/0/2021			TENDING
			IMPROVED CONTROL OF					
			NONHOLONOMIC ROBOTIC					
P23460WO00	WIPO	CEQ	SYSTEMS SYSTEMS AND METHODS FOR	PCT/US19/65655	12/11/2019			PUBLISHED
			LASER AND IMAGING					
			ODOMETRY FOR					
P23510WO00	WIPO	CEQ	AUTONOMOUS ROBOTS	PCT/US20/16070	1/31/2020			PUBLISHED
			SYSTEMS AND METHODS FOR					
			LOCALIZING DEVICES USING NETWORK SIGNATURES AND					
			COVERAGE MAPS MEASURED					
P23580WO00	WIPO	CEQ	BY ROBOTS	PCT/US20/45352	8/7/2020			PUBLISHED
			SYSTEMS AND METHODS FOR					
			MERGING DISJOINT MAP AND ROUTE DATA WITH RESPECT					
			TO A SINGLE ORIGIN FOR					
P23522WO00	WIPO	CEQ	AUTONOMOUS ROBOTS	PCT/US20/20322	2/28/2020			PUBLISHED
		SYSTEMS AND METHODS FOR						
			OPTIMIZING ROUTE PLANNING FOR TIGHT TURNS					
P23266WO00	WIPO	CEQ	FOR ROBOTIC APPARATUSES	PCT/US19/41991	7/16/2019			PUBLISHED
			SYSTEMS AND METHODS FOR	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
			PERSISTENT MAPPING OF					
			ENVIRONMENTAL					
			PARAMETERS USING A CENTRALIZED CLOUD SERVER					
P23420WO00	WIPO	CEQ	AND A ROBOTIC NETWORK	PCT/US19/56476	10/16/2019			PUBLISHED
			SYSTEMS AND METHODS FOR					
			PRESERVING DATA AND					
			HUMAN CONFIDENTIALITY DURING FEATURE					
			IDENTIFICATION BY ROBOTIC					
P24332WO00	WIPO	CEQ	DEVICES	PCT/US21/70987	7/27/2021			PENDING
			SYSTEMS AND METHODS FOR					
P23329WO00	WIPO	CEQ	REROUTING ROBOTS TO AVOID NO-GO ZONES	PCT/US19/51835	9/19/2019			PUBLISHED
P23329VVO00	WIFO	CEQ	SYSTEMS AND METHODS FOR	PC1/0319/31633	9/19/2019			PUBLISHED
			ROUTE SYNCHRONIZATION					
P24215WO00	WIPO	CEQ	FOR ROBOTIC DEVICES	PCT/US21/22125	3/12/2021			PENDING
			SYSTEMS AND METHODS FOR					
			TRAINING NEURAL NETWORKS ON A CLOUD					
			SERVER USING SENSORY DATA					
P23727WO00	WIPO	CEQ	COLLECTED BY ROBOTS	PCT/US20/60731	11/16/2020			PUBLISHED
			SYSTEMS AND METHODS FOR					
P24300WO00	WIPO	CEQ	WIRE DETECTION AND AVOIDANCE FOR ROBOTS	PCT/US21/36302	6/8/2021			PENDING
r 24300W000	VVIFU	CEQ	SYSTEMS, APPARATUSES, AND	FC1/U321/303U2	0/0/2021			FEINDING
			METHODS FOR A					
			DISTRIBUTED ROBOTIC					
			NETWORK OF DATA					
P23536W/000	WIPO	CEO	COLLECTION AND INSIGHT	PCT/US20/26314	4/2/2020			PLIBLISHED
23536WO00	WIPO	CEQ	GENERATION	PCT/US20/26314	4/2/2020			PUBLISHED

					Application			
IP Dacket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
P23280WO00	WIPO	CEQ	SYSTEMS, APPARATUSES, AND METHODS FOR BIAS DETERMINATION AND VALUE CALCULATION OF PARAMETERS A ROBOT	PCT/US19/46788	8/16/2019			PUBLISHED
P24180WO00	WIPO	CEQ	SYSTEMS, APPARATUSES, AND METHODS FOR CALIBRATING LIDAR SENSORS OF A ROBOT USING INTERSECTING LIDAR SENSORS	PCT/US21/14313	1/21/2021			PUBLISHED
P24315WO00	WIPO	CEQ	SYSTEMS, APPARATUSES, AND METHODS FOR CALIBRATING LIDAR SENSORS OF A ROBOT USING INTERSECTING LIDAR SENSORS	PCT/US21/39688	6/29/2021			PENDING
P23537WO00	WIPO	CEQ	SYSTEMS, APPARATUSES, AND METHODS FOR COST EVALUATION AND MOTION PLANNING FOR ROBOTIC DEVICES	PCT/US20/26320	4/2/2020			PUBLISHED
P23458WO00	WIPO	CEQ	SYSTEMS, APPARATUSES, AND METHODS FOR DETECTING ESCALATORS	PCT/US19/65643	12/11/2019			PUBLISHED
P23596WO00	WIPO	CEQ	SYSTEMS, APPARATUSES, AND METHODS FOR OPERATING A VARIABLE HEIGHT SWEEPER APPARATUS	PCT/US20/48812	8/31/2020			PUBLISHED
P23260WO00	WIPO	CEQ	SYSTEMS, METHODS AND APPARATUSES FOR CALIBRATING SENSORS MOUNTED ON A DEVICE	PCT/US19/40237	7/2/2019			PUBLISHED
P23305GB01	UNITED KINGDOM	DCA	SYSTEMS AND METHODS FOR ROBOTIC MOBILE PLATFORMS	18706155.1	2/8/2018	3580626	1/6/2021	ISSUED
P23576TW00	TAIWAN	CEQ	SYSTEMS AND METHODS FOR CALIBRATING NONVISIBLE LIGHT EMITTING SENSORS USING ALIGNMENT TARGETS	109125859	7/30/2020			PUBLISHED
			SYSTEMS AND METHODS FOR IMPROVED CONTROL OF NONHOLONOMIC ROBOTIC					
P23460TW00	TAIWAN	CEQ	SYSTEMS SYSTEMS AND METHODS FOR MERGING DISJOINT MAP AND ROUTE DATA WITH RESPECT TO A SINGLE ORIGIN FOR	108145501	12/12/2019			PUBLISHED
P23522TW00	TAIWAN	CEQ	AUTONOMOUS ROBOTS SYSTEMS AND METHODS FOR QUANTITATIVELY MEASURING WHEEL SLIPPAGE IN	109106807	3/2/2020			PUBLISHED
P24237TW00	TAIWAN	CEQ	DIFFERENTIAL DRIVE ROBOTS SYSTEMS, APPARATUSES, AND METHODS FOR DETECTING	110114008	4/19/2021			PENDING
P23458TW00	TAIWAN	CEQ	ESCALATORS SYSTEMS, APPARATUSES, AND METHODS FOR OPERATING A VARIABLE HEIGHT SWEEPER APPARATUS	108145371	9/3/2020			PUBLISHED
P23396TW00	SOUTH KOREA	DCA	SYSTEMS AND METHODS FOR CONTROL SYSTEM SAFETY OF ROBOTS	1020197036150	5/9/2018			PENDING

					Application			
IP Docket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
			SYSTEMS AND METHODS FOR					
	COLUTIA		DYNAMIC ROUTE PLANNING					
Daaaaakboo	SOUTH	DCA	IN AUTONOMOUS	1020107015505	10/21/2017			DENIDING
P23293KR00	KOREA	DCA	NAVIGATION SYSTEMS AND METHODS FOR	1020197015595	10/31/2017			PENDING
	SOUTH		INITIALIZING A ROBOT TO					
P23318KR00	KOREA	DCA	AUTONOMOUSLY TRAVEL A TRAINED ROUTE	1020187035946	5/11/2017			PENDING
F23310KN00	KOREA	DCA	SYSTEMS AND METHODS FOR	102018/033940	3/11/2017			FENDING
			OPTIMIZING ROUTE					
	SOUTH		PLANNING FOR TIGHT TURNS					
P23266KR00	KOREA	DCA	FOR ROBOTIC APPARATUSES	2021-7004518	7/16/2019			PENDING
,			SYSTEMS AND METHODS FOR		.,,			
	SOUTH		ROBOTIC BEHAVIOR AROUND					
P23319KR00	KOREA	DCA	MOVING BODIES	1020197001472	6/30/2017			PENDING
	SOUTH		SYSTEMS AND METHODS FOR		, , ,			
P23291KR00	KOREA	DCA	ROBOTIC MAPPING	1020197015593	10/31/2017			PENDING
			SYSTEMS AND METHODS FOR					
			TRAINING A ROBOT TO					
	SOUTH		AUTOMOMOUSLY TRAVEL A					
P23286KR00	KOREA	DCA	ROUTE	1020187035942	5/11/2017			PENDING
			SYSTEMS, APPARATUSES, AND					
	SOUTH		METHODS FOR DETECTING					
P23458KR00	KOREA	DCA	ESCALATORS	2021-7021410	12/11/2019			PENDING
			SYSTEMS AND METHODS FOR					
P23305SG01	SINGAPORE	DCA	ROBOTIC MOBILE PLATFORMS	11201907368S	2/8/2018			PENDING
	SAUDI		SYSTEMS AND METHODS FOR					
P23305SA01	ARABIA	DCA	ROBOTIC MOBILE PLATFORMS	519402461	2/8/2018			PENDING
			SYSTEMS AND METHODS FOR					
P23305QA01	QATAR	DCA	ROBOTIC MOBILE PLATFORMS	QA20190800431	2/8/2018			PENDING
			SYSTEMS AND METHODS FOR					
P23305KW01	KUWAIT	DCA	ROBOTIC MOBILE PLATFORMS	KWP2019000276	2/8/2018			PENDING
			APPARATUS AND METHODS					
			FOR DETECTION OF OBJECTS					
P23288JP00	JAPAN	DCA	USING BROADBAND SIGNALS	2018523358	7/19/2016	6773781	10/5/2020	ISSUED
			SYSTEMS AND METHODS FOR					
D222041D00	IADAN	DCA	ASSISTING A ROBOTIC	2010541747	2/2/2010			DENIDING
P23294JP00	JAPAN	DCA	APPARATUS	2019541747	2/2/2018			PENDING
			SYSTEMS AND METHODS FOR AUTOMATIC DETECTION OF					
P23279JP00	JAPAN	DCA	SPILLS	2019516920	6/9/2017			PENDING
P232/9JP00	JAPAN	DCA	SYSTEMS AND METHODS FOR	2019310920	0/9/2017			PENDING
			CONTROL SYSTEM SAFETY OF					
P23417JP00	JAPAN	DCA	ROBOTS	2019561845	5/9/2018			PENDING
1254173100	3/11/114	Bert	SYSTEMS AND METHODS FOR	2013301043	3,3,2010			TENDING
			DETECTING BLIND SPOTS FOR					
P23317JP00	JAPAN	DCA	ROBOTS	JP2021-514048	9/12/2019			PENDING
. 2001, 0. 00	5, 11, 111		SYSTEMS AND METHODS FOR	0. 2022 02 10 10	3,12,2313			
			DYNAMIC ROUTE PLANNING					
			IN AUTONOMOUS					
P23293JP00	JAPAN	DCA	NAVIGATION	2019523827	10/31/2017			PUBLISHED
	-		SYSTEMS AND METHODS FOR		, ,===			
			IMPROVED CONTROL OF					
			NONHOLONOMIC ROBOTIC					
P23460JP00	JAPAN	DCA	SYSTEMS	2021-533844	12/11/2019			PENDING
			SYSTEMS AND METHODS FOR					
			INITIALIZING A ROBOT TO					
			AUTONOMOUSLY TRAVEL A					
P23318JP00	JAPAN	DCA	TRAINED ROUTE	2019511832	5/11/2017			PUBLISHED
			SYSTEMS AND METHODS FOR					
			REMOTE OPERATING AND/OR					
	JAPAN	DCA	MONITORING OF A ROBOT	2019527413	11/28/2017	1	l	PUBLISHED

					Application			
IP Docket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
,, , , , , , , , , , , , , , , , , , ,	,		SYSTEMS AND METHODS FOR					S.C.C.G.G
			REROUTING ROBOTS TO					
P23329JP00	JAPAN	DCA	AVOID NO-GO ZONES	JP2021-515581	9/19/2019			PENDING
12332331 00	JAIAN	DCA	SYSTEMS AND METHODS FOR	37 2021 313301	3/13/2013			TENDING
			ROBOTIC BEHAVIOR AROUND					
P23319JP00	JAPAN	DCA	MOVING BODIES	2018567170	6/30/2017			PENDING
F233193F00	JAFAN	DCA	SYSTEMS AND METHODS FOR	2018307170	0/30/2017			FLINDING
P23291JP00	JAPAN	DCA	ROBOTIC MAPPING	2019523542	10/31/2017			PENDING
P23291JP00	JAPAN	DCA		2019525542	10/31/2017			PENDING
D2220F1D01	IADAN	DCA	SYSTEMS AND METHODS FOR ROBOTIC MOBILE PLATFORMS	2010542045	2/0/2010			DENIDING
P23305JP01	JAPAN	DCA		2019543045	2/8/2018			PENDING
D222111D00	IADAN	DC4	SYSTEMS AND METHODS FOR	2010552202	2/26/2019			DENIDING
P23311JP00	JAPAN	DCA	ROBOTIC PATH PLANNING	2019553292	3/26/2018			PENDING
			SYSTEMS AND METHODS FOR					
			TRAINING A ROBOT TO					
Dagger Dag	IA DANI	564	AUTOMOMOUSLY TRAVEL A	2040544024	E /44 /2047			DENIDING
P23286JP00	JAPAN	DCA	ROUTE	2019511831	5/11/2017			PENDING
			SYSTEMS, APPARATUSES, AND					
			METHODS FOR DETECTING					
P23458JP00	JAPAN	DCA	ESCALATORS	2021533466	12/11/2019			PENDING
			SYSTEMS AND METHODS FOR					
			DYNAMIC ROUTE PLANNING					
	HONG		IN AUTONOMOUS					
P23293HK00	KONG	CEQ	NAVIGATION	62020001513.4	1/15/2020			PUBLISHED
			SYSTEMS AND METHODS FOR					
	HONG		ROBOTIC BEHAVIOR AROUND					
P23319HK00	KONG	CEQ	MOVING BODIES	19130358.5	9/30/2019			PUBLISHED
	HONG		SYSTEMS AND METHODS FOR					
P23291HK00	KONG	CEQ	ROBOTIC MAPPING	62020001498.8	1/15/2020			PUBLISHED
			SYSTEMS AND METHODS FOR					
			TRAINING A ROBOT TO					
	HONG		AUTOMOMOUSLY TRAVEL A					
P23286HK00	KONG	CEQ	ROUTE	19128908.1	8/29/2019			PUBLISHED
			SYSTEMS AND METHODS FOR					
P23305DE01	GERMANY	DCA	ROBOTIC MOBILE PLATFORMS	602018011630.3	2/8/2018	3580626	1/6/2021	ISSUED
			SYSTEMS AND METHODS FOR		, ,			
P23305FR01	FRANCE	DCA	ROBOTIC MOBILE PLATFORMS	18706155.1	2/8/2018	3580626	1/6/2021	ISSUED
	EUROPEAN		APPARATUS AND METHODS					
	PATENT		FOR DETECTION OF OBJECTS					
P23288EP00	CONVENT	DCA	USING BROADBAND SIGNALS	16828414.9	7/19/2016			PUBLISHED
1232002100	EUROPEAN	Dert	SYSTEMS AND METHODS FOR	10020111.5	7/15/2010			TODEISTIED
	PATENT		ASSISTING A ROBOTIC					
P23294EP00	CONVENT	DCA	APPARATUS	18706048.8	2/2/2018			PUBLISHED
1 2323461 00	EUROPEAN	DCA	SYSTEMS AND METHODS FOR	10700040.0	2/2/2010			TOBLISTIED
	PATENT		AUTOMATIC DETECTION OF					
P23279EP00	CONVENT	DCA	SPILLS	17811081.3	6/9/2017			PUBLISHED
F23279LF00	CONVENT	DCA		17811081.3	0/3/2017			FUBLISHED
	FUDODEAN		SYSTEMS AND METHODS FOR					
	EUROPEAN		CLOUD EDGE TASK					
D004045D00	PATENT	564	PERFORMANCE AND	40072044 4	40/46/2040			DENIBING
P23421EP00	CONVENT	DCA	COMPUTING USING ROBOTS	19873811.4	10/16/2019			PENDING
	EUROPEAN		SYSTEMS AND METHODS FOR					
	PATENT		CONTROL SYSTEM SAFETY OF					
P23417EP00	CONVENT	DCA	ROBOTS	18728286.8	5/9/2018			PUBLISHED
	EUROPEAN		SYSTEMS AND METHODS FOR					
	PATENT		DETECTING BLIND SPOTS FOR					
	CONVENT	DCA	ROBOTS	19858731.3	9/12/2019			PUBLISHED
P23317EP00					l			
P23317EP00			SYSTEMS AND METHODS FOR					
P23317EP00	EUROPEAN		SYSTEMS AND METHODS FOR DYNAMIC ROUTE PLANNING					
P23317EP00	EUROPEAN PATENT							
		DCA	DYNAMIC ROUTE PLANNING	17867114.5	10/31/2017			PUBLISHED
	PATENT	DCA	DYNAMIC ROUTE PLANNING IN AUTONOMOUS	17867114.5	10/31/2017			PUBLISHED
	PATENT	DCA	DYNAMIC ROUTE PLANNING IN AUTONOMOUS NAVIGATION	17867114.5	10/31/2017			PUBLISHED
P23317EP00 P23293EP00	PATENT CONVENT	DCA	DYNAMIC ROUTE PLANNING IN AUTONOMOUS NAVIGATION SYSTEMS AND METHODS FOR	17867114.5	10/31/2017			PUBLISHED

					Application			
IP Docket No.	Country	New/Con	Title	Application No.	Date	Patent No.	Issue Date	Status
			SYSTEMS AND METHODS FOR					
	EUROPEAN		LASER AND IMAGING					
D005405B00	PATENT		ODOMETRY FOR	20740244	4 /24 /2022			DENIBING
P23510EP00	CONVENT	DCA	AUTONOMOUS ROBOTS	20748214.2	1/31/2020			PENDING
	EUROPEAN		SYSTEMS AND METHODS FOR					
D222E0ED00	PATENT	DCA	OPERATING AUTONOMOUS	10021210 1	7/2/2010			DUBLICHED
P23259EP00	CONVENT	DCA	TUG ROBOTS SYSTEMS AND METHODS FOR	19831318.1	7/2/2019			PUBLISHED
	EUROPEAN		OPTIMIZING ROUTE					
	PATENT		PLANNING FOR TIGHT TURNS					
P23266EP00	CONVENT	DCA	FOR ROBOTIC APPARATUSES	19837252.6	7/16/2019			PUBLISHED
			SYSTEMS AND METHODS FOR		<u> </u>			
			PERSISTENT MAPPING OF					
			ENVIRONMENTAL					
	EUROPEAN		PARAMETERS USING A					
	PATENT		CENTRALIZED CLOUD SERVER					
P23420EP00	CONVENT	DCA	AND A ROBOTIC NETWORK	19872877.6	10/16/2019			PUBLISHED
	EUROPEAN		SYSTEMS AND METHODS FOR					
	PATENT		REMOTE OPERATING AND/OR					
P23306EP00	CONVENT	DCA	MONITORING OF A ROBOT	17875006.3	11/28/2017			PUBLISHED
	EUROPEAN		SYSTEMS AND METHODS FOR					
Daggarence	PATENT	DC4	REROUTING ROBOTS TO	10062710.2	0/10/2010			DUDUGUED
P23329EP00	CONVENT	DCA	AVOID NO-GO ZONES	19862719.2	9/19/2019			PUBLISHED
	EUROPEAN PATENT		SYSTEMS AND METHODS FOR ROBOTIC BEHAVIOR AROUND					
P23319EP00	CONVENT	DCA	MOVING BODIES	17821370.8	6/30/2017			PUBLISHED
P23319EP00	EUROPEAN	DCA	MOVING BODIES	1/8213/0.8	0/30/2017			PUBLISHED
	PATENT		SYSTEMS AND METHODS FOR					
P23291EP00	CONVENT	DCA	ROBOTIC MAPPING	17868024.5	10/31/2017			PUBLISHED
1232312100	EUROPEAN	Dert	NOBOTIC WINT INTO	17000024.5	10/31/2017			TOBEISTIEB
	PATENT		SYSTEMS AND METHODS FOR					
P23305EP01	CONVENT	DCA	ROBOTIC MOBILE PLATFORMS	18706155.1	2/8/2018	3580626	1/6/2021	ISSUED
	EUROPEAN							
	PATENT		SYSTEMS AND METHODS FOR					
P23311EP00	CONVENT	DCA	ROBOTIC PATH PLANNING	18718982.4	3/26/2018			PUBLISHED
			SYSTEMS AND METHODS FOR					
	EUROPEAN		TRAINING A ROBOT TO					
	PATENT		AUTOMOMOUSLY TRAVEL A					
P23286EP00	CONVENT	DCA	ROUTE	17796888.0	5/11/2017			PENDING
	EUROPEAN		SYSTEMS, APPARATUSES, AND					
	PATENT		METHODS FOR DETECTING					
P23458EP00	CONVENT	DCA	ESCALATORS	19894540.4	12/11/2019			PENDING
	FUROREAN		SYSTEMS, METHODS AND					
	EUROPEAN PATENT		APPARATUSES FOR CALIBRATING SENSORS					
P23260EP00	CONVENT	DCA	MOUNTED ON A DEVICE	19831415.5	7/2/2019			PUBLISHED
1 2320011 00	CONTENT	DOM	SYSTEMS AND METHODS FOR	15051415.5	,,2,2013			7 000131100
			ASSISTING A ROBOTIC					
P23294CN00	CHINA	DCA	APPARATUS	201880019765.6	2/2/2018			PUBLISHED
			SYSTEMS AND METHODS FOR		, ,			
			CONTROL SYSTEM SAFETY OF					
P23417CN00	CHINA	DCA	ROBOTS	201880044427.8	5/9/2018			PUBLISHED
			SYSTEMS AND METHODS FOR					
			DYNAMIC ROUTE PLANNING		1			
			IN AUTONOMOUS					
P23293CN00	CHINA	DCA	NAVIGATION	201780074759.6	10/31/2017			PUBLISHED
			SYSTEMS AND METHODS FOR		_			
			INITIALIZING A ROBOT TO					
			AUTONOMOUSLY TRAVEL A					
P23318CN00	CHINA	DCA	TRAINED RO	201780041844.2	5/11/2017			PUBLISHED

POOCEEN County New Cos File						l Americantian			
P3319CN00	ID Docket No	Country	Now/Con	Title	Application No	Application	Patent No	terus Dats	Ctatue
P3316CN00	F. DOGNEC NO.	Country	NEW/COD		жррнсасын мы.	Date	raceor No.	issue pare	Status
P123266CN00									
P232366CN00 CHINA DCA FOR ROBOTIC APPARATUSES 201980059154.9 7/16/2019 PUBLISHED									
P23319CN00 CHINA DCA NORTHODS FOR ROBOTIC BEHAVIOR AROUND MOVING BODIES P23319CN00 CHINA DCA SYSTEMS AND METHODS FOR ROBOTIC BEHAVIOR AROUND MOVING BODIES P23319CN00 CHINA DCA SYSTEMS AND METHODS FOR ROBOTIC METHODS FOR ROBO	Dagacconoo	CHINA	DC4		201000050154.0	7/16/2010			DUBLICHED
P23319CN00	P23266CN00	CHINA	DCA		201980059154.9	//16/2019			POBLISHED
P23319CN00 CHINA DCA									
P23319CN00				ROBOTIC BEHAVIOR AROUND					
P23319CN00 CHINA DCA	P23319CN00	CHINA	DCA	MOVING BODIES	201780049815.0	6/30/2017			PUBLISHED
P23319CN00				SYSTEMS AND METHODS FOR					
P23291CN00				ROBOTIC BEHAVIOR AROUND					
P23291CN00	P23319CN00	CHINA	DCA	MOVING BODIES	201780049815.0	6/30/2017			PUBLISHED
P23305CN01				SYSTEMS AND METHODS FOR					
P23305CN01	P23291CN00	CHINA	DCA	ROBOTIC MAPPING	201780074773.6	10/31/2017			PUBLISHED
P23305CN01									
P23311CN00	P23305CN01	CHINA	I DCA		201880021717.0	2/8/2018			PUBLISHED
P23311CN00	1233030101	CHIVA	DCA		201000021717.0	2/0/2010			TOBLISTIED
SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE	D22211CN00	CHINA	DC4		201000020042.7	2/20/2010			DUBLICHED
TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 201780041655.5 5/11/2017 PUBLISHED	P23311CN00	CHINA	DCA		201880028942.7	3/26/2018			PUBLISHED
P23286CN00 CHINA DCA ROUTE 201780041655.5 5/11/2017 PUBLISHED									
P23286CN00 CHINA DCA ROUTE 201780041655.5 5/11/2017 PUBLISHED P23260CN00 CHINA DCA MOUNTED ON A DEVICE 201980057665.7 7/2/2019 PUBLISHED P23260CN00 CHINA DCA MOUNTED ON A DEVICE 201980057665.7 7/2/2019 PUBLISHED P23279CA00 CANADA DCA SYSTEMS AND METHODS FOR AUTOMATIC DETECTION OF SPILLS 3026806 6/9/2017 PENDING P23417CA00 CANADA DCA ROBOTS 3063206 5/9/2018 PENDING P23417CA00 CANADA DCA ROBOTS 3063206 5/9/2018 PENDING P23293CA00 CANADA DCA ROBOTS 3042532 10/31/2017 PENDING P23293CA00 CANADA DCA NAVIGATION 3042532 10/31/2017 PENDING P23318CA00 CANADA DCA TRAINED ROUTE 3023557 5/11/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING									
SYSTEMS, METHODS AND APPARATUSES FOR CALBRATING SEMSORS MOUNTED ON A DEVICE 201980057665.7 7/2/2019 PUBLISHED									
APPARATUSES FOR CALIBRATING SENSORS MOUNTED ON A DEVICE 201980057665.7 7/2/2019 PUBLISHED	P23286CN00	CHINA	DCA	ROUTE	201780041655.5	5/11/2017			PUBLISHED
P23260CN00				SYSTEMS, METHODS AND					
P23260CN00				APPARATUSES FOR					
P23279CA00 CANADA DCA SPILLS 3026806 6/9/2017 PENDING				CALIBRATING SENSORS					
P23279CA00 CANADA DCA SPILLS 3026806 6/9/2017 PENDING	P23260CN00	CHINA	DCA	MOUNTED ON A DEVICE	201980057665.7	7/2/2019			PUBLISHED
P23279CA00 CANADA DCA SPILLS 3026806 6/9/2017 PENDING				SYSTEMS AND METHODS FOR					
P23279CA00 CANADA DCA SPILLS 3026806 6/9/2017 PENDING									
SYSTEMS AND METHODS FOR CONTROL SYSTEM SAFETY OF ROBOTS SYSTEMS AND METHODS FOR DYNAMIC ROUTE PLANNING IN AUTONOMOUS NAVIGATION SYSTEMS AND METHODS FOR INITIALIZING A ROBOT TO AUTONOMOUS TRAINED ROUTE SYSTEMS AND METHODS FOR ROBOTIC BEHAVIOR AROUND ROBOTIC BEHAVIOR AROUND ROBOTIC BEHAVIOR AROUND SYSTEMS AND METHODS FOR ROBOTIC MAPPING SYSTEMS AND METHODS FOR ROBOTIC MAPPING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A AUTOMOMOUSLY TRAVEL AUTOMOMOMOUSLY TRAVEL AUTOMOMOUSLY TRAVEL	P23279CA00	CANADA	DCA		3026806	6/9/2017			PENDING
P23417CA00 CANADA DCA ROBOTS 3063206 5/9/2018 PENDING	1232736760	C/ (I I / I D/ I	DC/1		502000	0,5,2017			TENDING
P23417CA00 CANADA DCA ROBOTS 3063206 5/9/2018 PENDING									
SYSTEMS AND METHODS FOR DYNAMIC ROUTE PLANNING IN AUTONOMOUS NAVIGATION 3042532 10/31/2017 PENDING	D22417CA00	CANIADA	DC4		2002200	F /0 /2010			DENIDING
P23293CAOO CANADA DCA NAVIGATION 3042532 10/31/2017 PENDING P23293CAOO CANADA DCA NAVIGATION 3042532 10/31/2017 PENDING SYSTEMS AND METHODS FOR INITIALIZING A ROBOT TO AUTONOMOUSLY TRAVEL A P23318CAOO CANADA DCA TRAINED ROUTE 3023557 5/11/2017 PENDING P23319CAOO CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING SYSTEMS AND METHODS FOR ROBOTIC BEHAVIOR AROUND ROBOTIC BEHAVIOR AROUND SYSTEMS AND METHODS FOR ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23291CAOO CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SO23552 5/11/2017 PENDING	P23417CA00	CANADA	DCA		3003200	3/9/2018		-	PENDING
P23293CA00 CANADA DCA NAVIGATION 3042532 10/31/2017 PENDING									
P23293CA00 CANADA DCA NAVIGATION 3042532 10/31/2017 PENDING P23318CA00 CANADA DCA SYSTEMS AND METHODS FOR INITIALIZING A ROBOT TO AUTONOMOUSLY TRAVEL A 3023557 5/11/2017 PENDING P23318CA00 CANADA DCA TRAINED ROUTE 3023557 5/11/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3023552 5/11/2017 PENDING									
SYSTEMS AND METHODS FOR INITIALIZING A ROBOT TO AUTONOMOUSLY TRAVEL A TRAINED ROUTE 3023557 5/11/2017 PENDING									
P23318CA00 CANADA DCA TRAINED ROUTE 3023557 5/11/2017 PENDING	P23293CA00	CANADA	DCA	NAVIGATION	3042532	10/31/2017			PENDING
AUTONOMOUSLY TRAVEL A TRAINED ROUTE 3023557 5/11/2017 PENDING				SYSTEMS AND METHODS FOR					
P23318CA00 CANADA DCA TRAINED ROUTE 3023557 5/11/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3023552 5/11/2017 PENDING				INITIALIZING A ROBOT TO					
P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING SYSTEMS AND METHODS FOR ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR SYSTEMS AND METHODS FOR				AUTONOMOUSLY TRAVEL A					
P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A P23286CA00 CANADA DCA ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE SYSTEMS AND METHODS FOR SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROBOT TO AUTOMOMOMOUSLY TRAVEL A ROBOT TO AUTOMOMOMOUSLY TRAVEL A	P23318CA00	CANADA	DCA	TRAINED ROUTE	3023557	5/11/2017			PENDING
P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3023552 5/11/2017 PENDING				SYSTEMS AND METHODS FOR					
P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOTIC MAPPING 3023552 5/11/2017 PENDING				ROBOTIC BEHAVIOR AROUND					
P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING	P23319CA00	CANADA	DCA		3028451	6/30/2017			PENDING
P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING	. 20013 0. 100	G/ 11 11 12 / 1	1 2011		5525.52	3,53,232,			
P23319CA00 CANADA DCA MOVING BODIES 3028451 6/30/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING P23286CA00 CANADA DCA ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING P23286CA00 CANADA DCA ROUTE 3023552 5/11/2017 PENDING									
P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING	D33310CA00	CANADA	l DCA		3028451	6/30/2017			DENIDING
P23291CA00 CANADA DCA ROBOTIC MAPPING 3042531 10/31/2017 PENDING SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A 3023552 5/11/2017 PENDING P23286CA00 CANADA DCA ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOMOUSLY TRAVEL A ROUTE TOTAL TRAINING A ROBOT TO AUTOMOMOMOMOMOMOMOMOMOMOMOMOMOMOMOMOMOMOM	1 23313CAUU	CANADA	I DCA		3020431	0/30/201/		+	LEMPING
SYSTEMS AND METHODS FOR TRAINING A ROBOT TO AUTOMOMOUSLY TRAVEL A ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR PENDING	D22204C40C	CANADA	DC4		2042524	10/21/2017			DENIDING
P23286CA00 CANADA DCA ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR	P23291CA00	CANADA	I DCA		3042531	10/31/201/		-	PENDING
P23286CA00 CANADA DCA ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR									
P23286CA00 CANADA DCA ROUTE 3023552 5/11/2017 PENDING SYSTEMS AND METHODS FOR									
SYSTEMS AND METHODS FOR				AUTOMOMOUSLY TRAVEL A					
	P23286CA00	CANADA	DCA	ROUTE	3023552	5/11/2017			PENDING
P23305BH01 BAHRAIN DCA ROBOTIC MOBILE PLATFORMS 20190192 2/8/2018 PENDING				SYSTEMS AND METHODS FOR					
	P23305BH01	BAHRAIN	DCA	ROBOTIC MOBILE PLATFORMS	20190192	2/8/2018			PENDING

EXHIBIT C

Trademarks

HM Ref./Country	MARK Class/Serial or Reg. No./Date	STATUS
2866.TM4861US00 United States	AUTODELIVERY Class: 12 Registration No. 5974326 - SupplementalRegister Registration Date: January 28, 2020	REGISTERED
2866.TM3662US09 United States	EMMA Class: 9 Registration No. 5292420 Registration Date: September 19, 2017	REGISTERED
2866. TM5298US00 United States	BRAIN (Stylized) brain Classes: 7, 12, 42 Application No. 90100866 Application Date: August 7, 2020	PUBLISHED
2866.TM3665US00 United States	BRAINOS Classes: 9 and 42 Registration No. 4716660 Registration Date: April 7, 2015	REGISTERED
2866.TM3665US00A United States	BRAINOS Classes: 9 and 42	UNFILED
2866.TM3673US07 United States	Design Only (Brain Logo) Classes: 7 Registration No. 4956266 Registration Date: May 10, 2016	REGISTERED
2866.TM3673US09 United States	Design Only (Brain Logo) Classes: 9 Registration No. 4736818 Registration Date: May 12, 2015	REGISTERED
2866.TM4360US00 United States	Design Only (Brain Swirl) Classes: 7, 9, 42 Registration No. 5855331 Registration Date: September 10, 2019	REGISTERED

DMS 20864818.4

HM Ref./Country	MARK Class/Serial or Reg. No./Date	STATUS
	<u></u>	
n/a Worldwide	BRAIN CORP & Design	Common law, unregistered
2866.TM3665AUWO Australia (extension ofIR)	BRAINOS Classes: 9, 42 Application No. 1907760 Extension of International Registration No.1389081 International Registration Date: December 6,2017	REGISTERED
2866.TM4360AUWO Australia (extension ofIR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Local Registration No. 2014132 Extension of International Registration No.1470744 International Registration Date: April 12, 2019	REGISTERED
2866.TM4131BX00 Benelux	BRAIN Classes: 9, 42 Registration No. 941210 Registration Date: July 10, 2013	REGISTERED
2866.TM4130BX00 Benelux	BRAIN CORPORATION & Design Classes: 9, 42 Registration No. 948511 Registration Date: February 26, 2014 CORPORATION	REGISTERED
2866.TM3665CA00 Canada	BRAINOS Classes: 9, 42 Application No. 1925716 Application Date: October 17, 2018	PENDING
2866.TM4360CA00 Canada	Design Only (Brain Swirl) Classes: 7, 9, 42 Application No. 1959861 Application Date: April 29, 2019	PENDING

HM Ref./Country	MARK Class/Serial or Reg. No./Date	STATUS
2866.TM4991CN09 China	BrainOS Powered Class: 9 Registration No: 42867835 Registration Date: August 7, 2020	REGISTERED
2866.TM4126CN00 China	BSTEM Class: 9 Registration No. 14149985 Registration Date: April 21, 2015	REGISTERED
2866.TM3673CN00 China	Design Only (Brain Logo) Class: 9 Registration No. 14166461 Registration Date: June 7, 2015	REGISTERED
2866.TM4360CNWO China (extension of IR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: July 24, 2019	REGISTERED
2866.TM3665CNWO China (extension of IR)	Class: 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017	REGISTERED (awaiting Statement of Grant of Protection from WIPO)
2866.TM3665EUWO European Union(extension of IR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017	REGISTERED
2866.TM4360EUWO European Union(extension of IR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: November 8, 2019	REGISTERED

HM Ref./Country	MARK Class/Serial or Reg. No./Date	STATUS
	0	
2866.TM4126EU00 European Union	BSTEM Class: 9 Registration No. 12639738 Registration Date: July 18, 2014	REGISTERED
2866.TM3673EU00 European Union	Design Only (Brain Logo) Classes: 7, 9, 12 Registration No. 12685129 Registration Date: November 3, 2014	REGISTERED
2866.TM4360INWO India (extension of IR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 Local Registration No. 4198983 International Registration Date: April 12, 2019	REGISTERED
2866.TM3665INWO India (extension of IR)	BRAINOS Classes: 9 and 42 Local Registration No. 3924216 Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: March 14, 2019	REGISTERED
2866.TM3665IDWO Indonesia (extension ofIR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017	REGISTERED
2866.TM4360IDWO Indonesia (extension ofIR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: April 24, 2020	REGISTERED

HM Ref./Country	MARK Classification Page No. (Date	STATUS
2866.TM3665WO00 International Registration (designating AU, CH, CN, EU, ID, IN, JP, KR, MX, PH, SG, TH, TR,UK, VN)	Class/Serial or Reg. No./Date BRAINOS Classes: 1 and 42 International Registration No. 1389081 International Registration Date: December 6,2017	REGISTERED
2866.TM4360WO00 International Registration (designating AU, CH, CN, EU, ID, IN, JP, KR, MX, PH, SG, TH, TR,UK, VN)	Design Only (Brain Swirl) Classes: 7, 9, 42 International Registration No. 1470744 International Registration Date: April 12, 2019	REGISTERED
2866.TM4360JPWO Japan(extension of IR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019	REGISTERED (Class 42 services amended locally)
2866.TM3665JPWO Japan (extension of IR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: February 22, 2019	REGSITERED
2866.TM3665KRWO Korea, Republic of(extension of IR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: May 28, 2019	REGISTERED
2866.TM4360KRWO Korea (extension of IR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019	PUBLISHED (Class 7 goods and Class 42 services amended locally)
2866.TM3665MXWO09 Mexico (extension of IR)	BRAINOS Class: 9 Local Registration No. 1987384 Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: April 4, 2019	REGISTERED
2866.TM3665MXWO42	BRAINOS	REGISTERED

HM Ref./Country	MARK Class/Serial or Reg. No./Date	STATUS
Mexico (extension of IR)	Class: 42 Local Registration No. 1985836 Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: March 28, 2019	
2866.TM4360MXWO7 Mexico (extension of IR)	Design Only (Brain Swirl) Class: 7 Local Registration No. 2186761 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: December 11, 2020	REGISTERED
2866.TM4360MXWO9 Mexico (extension of IR)	Design Only (Brain Swirl) Class: 9 Local Registration No. 2186762 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: December 11, 2020	REGISTERED
2866.TM4360MXWO42 Mexico(extension of IR)	Design Only (Brain Swirl) Class: 42 Local Registration No. 2186763 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: December 11, 2020	REGISTERED
2866.TM4360PHWO Philippines (extension ofIR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: April 6, 2020	REGISTERED

HM Ref./Country	MARK	STATUS
7	Class/Serial or Reg. No./Date	
2866.TM3665PHWO Philippines (extension ofIR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: October 21, 2018	CLOSED (instructions to allow registration to lapse received 5/17/2021)
2866.TM3665SGWO Singapore (extension ofIR)	BRAINOS Classes: 9 and 42 Local Registration No. 40201816356T Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: March 26, 2019	REGISTERED
2866.TM4360SGWO Singapore (extension ofIR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Local Registration No. 20201912488R Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: August 12, 2020	REGISTERED
2866.TM4360CHWO Switzerland (extensionof IR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019 Local Grant Date: May 8, 2020	REGISTERED
2866.TM3665CHWO Switzerland (extensionof IR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017	REGISTERED
2866.TM3665THWO Thailand (extension ofIR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017	PENDING (goods may be listed slightly different locally from other extension countries; awaiting entryof amendments)
2866.TM4360THWO Thailand (extension ofIR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744	PENDING

DMS 20864818.4

HM Ref./Country	MARK Class/Serial or Reg. No./Date	STATUS
	International Registration Date: April 12, 2019	
2866.TM3665TRWO Turkey (extension ofIR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017	REGISTERED
2866.TM4360TRWO Turkey (extension ofIR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019	REGISTERED
2866.TM4360GBWO United Kingdom(extension of IR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Local Application No. WO0000001470744 Extension of International Registration No. 1470744 International Registration Date: April 12, 2019 Local Grant Date: August 20, 2019	REGISTERED
2866.TM4360GB00 United Kingdom (created automatically pursuant to Brexit)	Design Only (Brain Swirl) Classes: 7, 9, 42 Registration No. UK00801470744 Registration Date: November 8, 2019	REGISTERED
2866.TM4126GB00 United Kingdom (automatically cloned pursuant to Brexit)	BSTEM Class: 9 Registration No. UK00912639738Registration Date: July 18, 2014	REGISTERED
2866.TM3673GB00 United Kingdom (automatically cloned pursuant to Brexit)	Design Only (Brain Logo) Classes: 7, 9, 12 Registration No. UK00912685129 Registration Date: November 3, 2014	REGISTERED

HM Ref./Country	MARK Class/Serial or Reg. No./Date	STATUS
2866.TM3665GBWO United Kingdom(extension of IR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017	REGISTERED
2866. TM3665GB00 United Kingdom (automatically cloned pursuant to Brexit)	BRAINOS Classes: 9 and 42 Registration No. UK00801389081Registration Date: July 17, 2018	REGISTERED
2866.TM3665VNWO Vietnam (extension ofIR)	BRAINOS Classes: 9 and 42 Extension of International Registration No.1389081 International Registration Date: December 6,2017 Local Grant Date: August 29, 2019	REGISTERED
2866.TM4360VNWO Vietnam (extension ofIR)	Design Only (Brain Swirl) Classes: 7, 9, 42 Extension of International Registration No.1470744 International Registration Date: April 12, 2019	REGISTERED

DMS 20864818.4

RECORDED: 10/08/2021