PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DUS OPERATING INC.	09/16/2022

RECEIVING PARTY DATA

Name:	NEW EAGLE, LLC
Street Address:	5220 SOUTH STATE ROAD
City:	ANN ARBOR
State/Country:	MICHIGAN
Postal Code:	48108

PROPERTY NUMBERS Total: 7

Property Type	Number
Application Number:	17205676
Application Number:	17205712
Application Number:	17245039
Application Number:	17245038
Application Number:	17362215
Application Number:	17362209
Application Number:	16951508

CORRESPONDENCE DATA

Fax Number: (734)418-3320

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.

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ATTORNEY DOCKET NUMBER:	NEW101
NAME OF SUBMITTER:	STEVEN L. CRANE
SIGNATURE:	/STEVENLCRANE/
DATE SIGNED:	09/20/2022

Total Attachments: 15
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ASSIGNMENT AND ASSUMPTION AGREEMENT
(AMENDMENT ONE)

WHEREAS, DUS Operating, Inc. ("Assignor" or "Dura") and New Eagle, LLC ("Assignee" or "New Eagle") (each a "Party" and collectively the "Parties") executed an Assignment and Assumption Agreement ("Agreement") effective as of May 13, 2022 (the "Effective Date"); and

WHEREAS, the Agreement memorialized Assignor's transfer of its advanced driver assistance system ("ADAS") business to New Eagle (the "Business Transfer") for total consideration of $5,000,000 received from Assignee; and

WHEREAS, the Business Transfer contemplated Assignor's conveyance to Assignee of all assets, tangible or intangible, necessary for Assignee to operate the ADAS business; and

WHEREAS, to effectuate the Business Transfer via the Agreement, Assignor assigned certain patents related to the transferred ADAS business ("Transferred ADAS Patents") to Assignee; and

WHEREAS, Assignor wishes to assign, and Assignee agrees to accept, certain additional ADAS Patents and/or patent applications related to the ADAS business, as set forth in Schedules A, B and C hereto ("Additional ADAS Patents"), which Dura originally intended to convey to New Eagle for no additional consideration, but which inadvertently were not included; and

WHEREAS, the Agreement authorized the Parties to "execute such additional instruments, agreements and documents and to take such other actions as may be necessary to affect the purposes of this Agreement"; and

WHEREAS, the Parties wish to memorialize the transfer of the Additional ADAS Patents to New Eagle, as originally contemplated by the Agreement, via this Amendment to the Agreement ("Amendment").

NOW, THEREFORE, in connection with the Business Transfer, and in light of the premises and provisions contained in the Agreement, and the valuable consideration provided by Assignee to Assignor pursuant thereto, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, Assignor and Assignee hereby agree as follows:

1. Assignment. Effective as of execution of this Amendment (the "Effective Time"), for good and valuable consideration, the Assignor hereby conveys all of their right, title and interest in and to all the Additional ADAS Patents and/or patent applications as set forth in Schedules A, B and C hereto, including all corresponding foreign patents and patent applications, invention disclosures, divisionals, continuations, continuations in part, reissues, and reexaminations, if any, including all causes of action, enforcement rights, infringement claims (including the right to sue or pursue remedies for past, present, and future infringement) based upon, arising out of or relating to any of the Additional ADAS Patents, subject to the terms and conditions sets forth in the Agreement thereto, the rights of joint owners (if any), and rights granted to others prior to the Effective Date (if any).

2. Representations and Warranties of Assignor. Assignor has been duly formed, is validly existing, and in good standing under the laws of its state of incorporation. Assignor has all requisite power and authority to execute, deliver and perform its obligations under this Amendment. This Amendment and the transactions contemplated herein have been duly and validly authorized, executed and delivered by Assignor, and this Amendment constitutes a valid and binding agreement enforceable against Assignor in accordance with its terms. No other action on the part of Assignor is necessary to authorize the execution and delivery of this Amendment or the consummation of the transactions contemplated herein. Assignor is the legal and beneficial owners of the Additional ADAS Patents, and hereby contributes, transfers, assigns, conveys and delivers to Assignee all its right, title and interest in the Additional ADAS Patents.

3. Representations and Warranties of Assignee. Assignee has been duly formed, is validly existing and is in good standing under the laws of their state of incorporation. Assignee has all the requisite power and authority to execute, deliver and perform its obligations under this Amendment. This Amendment and the transactions contemplated herein have been duly and validly authorized, executed and delivered by Assignee and this Amendment constitutes a valid and binding agreement of Assignee enforceable against Assignee in accordance with its terms. No other action on the part of Assignee is necessary to authorize the execution and delivery by Assignee of this Amendment or the consummation of the transactions contemplated herein.

4. Further Assurances. Each party covenants and agrees, at its own expense, to execute such additional instruments, agreements and documents and to take such other actions as may be necessary to affect the purposes of this Amendment.

5. Miscellaneous. This Amendment may be executed in any number of counterparts, each such counterpart being deemed to be an original instrument and all such counterparts together constituting the same agreement. Execution and delivery of this Amendment may be accomplished by means of a facsimile machine or telecopy, by e-mail delivery of a ".pdf" format data file, or by any electronic signature complying with the U.S. federal ESIGN Act of 2000, including without limitation by DocuSign. This Amendment shall in all respects be governed by, and construed in accordance with, the Agreement thereto, and the laws of the State of Delaware, including all matters of construction, validity and performance (but excluding conflict of laws rules and principles).

[*Signature Page Follows*]

IN WITNESS WHEREOF, the undersigned have executed this Amendment as of the date below.

ASSIGNOR: DUS OPERATING INC.

By: ______________________
Name: Jonathan Greenberg
Title: Deputy General Counsel
Date: September 16, 2022

ASSIGNEE: NEW EAGLE, LLC

By: ______________________
Name: Sanjay Singh
Title: Chief Executive Officer
Date: September 16, 2022

Transferred Assets

Schedule A – US

App. No.	Pat. No.	Client Ref.No.	Title	Abstract
Unfiled	Unfiled	19-08	USING FACIAL AND GESTURE CONTROL BACKED BY HYBRID CNN WITH THE AID OF DRIVE RMONITORING CAMERA TO CHANGE INTERNAL CAR SETTINGS WITH TOUCH	
17/205676	N/A	19-19	SURROUND VIEW LOCALIZATION OF A VEHICLE	A method of predicting lane line types with neural networks includes capturing optical information with one or more optical sensors disposed on a vehicle. The method further includes cropping the optical information to a predetermined size, passing cropped optical information through a neural network, and assessing the optical information to detect locations of a plurality of lane lines in the optical information. The method further includes predicting a plurality of values assigned to predetermined lane line types of the plurality of lane lines. The method further determines a maximum confidence value for each of the plurality of values assigned to the predetermined lane line types for each of the plurality of lane lines; and extracts a lane line label corresponding to the maximum confidence value for each of the plurality of lane lines.

17/205712		19-20	SURROUND VIEW LOCALIZATION OF A VEHICLE	A system and method for calculating coordinates for localization of a vehicle include continuously receive optical data from an optical sensing system having one or more cameras, and detect one or more parking spots within the optical data. The system and method determine a first location of the vehicle relative to the one or more parking spots, and plan a first path from a first location to second location different from the first location. One or more vehicle positioning systems is engaged to move the vehicle from the first location to the second location, and the first path is adjusted in real time in response to the optical data as the vehicle moves between the first location and the second location. The one or more vehicle positioning systems is then to adjust movement of the vehicle along the first path once the first path has been adjusted.
17/245039		19-26	USE OF NEURAL NETWORKS TO PREDICT LANE LINE TYPES	A method of predicting lane line types with neural networks includes capturing optical information with one or more optical sensors disposed on a vehicle. The method further includes cropping the optical information to a predetermined size, passing cropped optical information through a neural network, and assessing the optical information to detect locations of a plurality of lane lines in the optical information. The method further includes predicting a plurality of values assigned to predetermined lane line types of the plurality of lane lines. The method further determines a maximum confidence value for each of the plurality of values assigned to the predetermined lane line types for each of the plurality of lane lines; and extracts a lane line label corresponding to the maximum confidence value for each of the plurality of lane lines.

17/245038		19-27	THE USE OF HCNN TO PREDICT LANE LINES TYPES	A method of predicting lane line types utilizing a heterogeneous convolutional neural network (HCNN) includes capturing an input image with one or more optical sensors disposed on a host member, passing the input image through the HCNN, the HCNN having at least three distinct sub-networks, the three distinct sub-networks: predicting object locations in the input image with a first sub-network; predicting lane line locations in the input image with a second sub-network; and predicting lane line types for each predicted lane line in the input image with a third sub-network.
17/362215		19-47	LOCALIZATION OF AUTONOMOUS VEHICLES USING CAMERA, GPS, AND IMU	A method of localizing a host member through sensor fusion includes capturing an input image with one or more optical sensors disposed on the host member and determining a location of the host member through a global positioning system (GPS) input. The method tracks movement of the host member through an inertial measurement unit (IMU) input, generates coordinates for the host member from the GPS input and the IMU input. The method compares the input image and a high definition (HD) map input to verify distances from the host member to predetermined objects within the input image and within the HD map input. The method continuously localizes the host member by fusing the GPS input, the IMU input, the input image, and the HD map input.
17/362209		19-48	USE OF DBSCAN FOR LANE DETECTION	A system and method of lane detection using density based spatial clustering of applications with noise (DBSCAN) includes capturing an input image with one or more optical sensors disposed on a motor vehicle. The method further includes passing the input image through a heterogeneous convolutional neural network (HCNN). The HCNN generates an HCNN output. The method further includes processing the HCNN output with DBSCAN to selectively classify outlier data points and clustered data points in the HCNN output. The method further includes generating a DBSCAN output

				selectively defining the clustered data points as predicted lane lines within the input image. The method further includes marking the input image by overlaying the predicted lane lines on the input image.
16/951508		20-09	USE OF NEURAL NETWORKS IN CONTROL SYSTEMS	A neural network control system and method includes vehicle sensors in communication with a neural network controller in a vehicle. The neural network (NN) operates in at least two modes: a training mode and a control mode. The NN consists of at least computational five layers the layers containing a plurality of neurons. Sensor data is received by an NN controller and processed through the layers where each of the neurons applies a weight to the sensor data. In the training mode the weights are continuously adjusted until a threshold difference between a known reference signal and a plant output is achieved. In the control mode, the NN controller continuously and recursively sends a control signal commanding the plant to adjust an actuator position in response to the sensor data until a disturbance in the sensor data is substantially eliminated.

Transferred Assets

Schedule B – CN

App. No.	Pat. No.	Client Ref.No.	Title	Abstract
CN201810359420.7	108944919	17-13-CN	A METHOD AND SYSTEM FOR GENERATING A PERCEPTION SCENE GRAPH HAVING A FOCUS REGION FOR A MOTOR VEHICLE	The present invention provides a method and system for generating a Perceived Scene Graph (PSG) for a motor vehicle having a focal region, a plurality of external sensors collect information about a spatial volume including a surrounding area proximate the motor vehicle, a perception controller processes the information to generate a PSG having a virtual three-dimensional (3-D) model of the spatial volume and area proximate the motor vehicle, the perception controller is configured to allocate variable processing power to process selected portions of the collected sensor information, at least focal regions are defined, the focal region is a subset of the spatial volume and/or area proximate the motor vehicle, the perception controller increases processing power to process portions of the collected information related to the focal region such that a high fidelity 3-D model of the focal region is generated.
CN2020101511739	N/A	18-115	A CONVOLUTIONAL NEURAL NETWORK SYSTEM FOR OBJECT DETECTION AND LANE DETECTION IN A MOTOR VEHICLE	A system and method for predictive object detection and lane detection for an automotive vehicle includes a Convolutional Neural Network (CNN) that receives an input image and a lane line module. The CNN includes: a set of Convolution and Pooling Layers (CPL) trained to detect objects and lane markers from the input images, and to classify the objects into an object class, the lane markers into a lane marker class to generate a plurality of feature maps; receiving a fully connected layer of the feature map, the fully connected layer generating a plurality of object bounding box predictions for each object class from the feature map and a plurality of lane bounding box predictions for each lane marker class; and a non-maximum

				suppression layer to generate a final object bounding box prediction for each object class and a plurality of final lane bounding box predictions for each lane marker class.
CN2019101687165	CN110232304	18-25-CN	HETEROGENEOUS CONVOLUTIONAL NEURAL NETWORK FOR MULTI-PROBLEM SOLVING	A heterogeneous convolutional neural network (HCNN) system includes a visual reception system generating an input image. A feature extraction layer (FEL) portion of convolutional neural networks includes multiple convolution, pooling and activation layers stacked together. The FEL includes multiple stacked layers, a first set of layers learning to represent data in a simple form including horizontal and vertical lines and blobs of colors. Following layers capture more complex shapes such as circles, rectangles, and triangles. Subsequent layers pick up complex feature combinations to form a representation including wheels, faces and grids. The FEL portion outputs data to each of: a first sub-network which performs a first task of object detection, classification, and localization for classes of objects in the input image to create a detected object table; and a second sub-network which performs a second task of defining a pixel level segmentation to create a segmentation data set.
CN2022104612514	N/A	19-26	USE OF NEURAL NETWORKS TO PREDICT LANE LINE TYPES	A method of predicting lane line types with neural networks includes capturing optical information with one or more optical sensors disposed on a vehicle. The method further includes cropping the optical information to a predetermined size, passing cropped optical information through a neural network, and assessing the optical information to detect locations of a plurality of lane lines in the optical information. The method further includes predicting a plurality of values assigned to predetermined lane line types of the plurality of lane lines. The method further determines a maximum confidence value for each of the plurality of values assigned to the predetermined lane line types for each of the plurality of lane lines; and extracts a lane line label corresponding to the

				maximum confidence value for each of the plurality of lane lines.
CN2022104522791	N/A	19-27-CN	THE USE OF HCNN TO PREDICT LANE LINES TYPES	A method of predicting lane line types utilizing a heterogeneous convolutional neural network (HCNN) includes capturing an input image with one or more optical sensors disposed on a host member, passing the input image through the HCNN, the HCNN having at least three distinct sub-networks, the three distinct sub-networks: predicting object locations in the input image with a first sub-network; predicting lane line locations in the input image with a second sub-network; and predicting lane line types for each predicted lane line in the input image with a third sub-network.
CN2022105272191	N/A	19-47-CN	LOCALIZATION OF AUTONOMOUS VEHICLES USING CAMERA, GPS, AND IMU	A method of localizing a host member through sensor fusion includes capturing an input image with one or more optical sensors disposed on the host member and determining a location of the host member through a global positioning system (GPS) input. The method tracks movement of the host member through an inertial measurement unit (IMU) input, generates coordinates for the host member from the GPS input and the IMU input. The method compares the input image and a high definition (HD) map input to verify distances from the host member to predetermined objects within the input image and within the HD map input. The method continuously localizes the host member by fusing the GPS input, the IMU input, the input image, and the HD map input.
CN2022104995899	N/A	19-48-CN	USE OF DBSCAN FOR LANE DETECTION	A system and method of lane detection using density based spatial clustering of applications with noise (DBSCAN) includes capturing an input image with one or more optical sensors disposed on a motor vehicle. The method further includes passing the input image through a heterogeneous convolutional neural network (HCNN). The HCNN generates an HCNN output. The

				method further includes processing the HCNN output with DBSCAN to selectively classify outlier data points and clustered data points in the HCNN output. The method further includes generating a DBSCAN output selectively defining the clustered data points as predicted lane lines within the input image. The method further includes marking the input image by overlaying the predicted lane lines on the input image.
CN2021113685191	N/A	20-09-CN	THE USE OF NEURAL NETWORKS IN CONTROL SYSTEMS	A neural network control system and method includes vehicle sensors in communication with a neural network controller in a vehicle. The neural network (NN) operates in at least two modes: a training mode and a control mode. The NN consists of at least computational five layers the layers containing a plurality of neurons. Sensor data is received by an NN controller and processed through the layers where each of the neurons applies a weight to the sensor data. In the training mode the weights are continuously adjusted until a threshold difference between a known reference signal and a plant output is achieved. In the control mode, the NN controller continuously and recursively sends a control signal commanding the plant to adjust an actuator position in response to the sensor data until a disturbance in the sensor data is substantially eliminated.

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Schedule C – EP

App. No.	Pat. No.	Client Ref.No.	Title	Abstract
EP18169676.6	EP3419001	17-13-EP	A method and system for generating a perception scene graph having a focus region for a motor vehicle	The invention relates to a method and a system for generating a perception scene graph (PSG) having a focus region for a motor vehicle. Information is collected about a volume of space including surrounding areas adjacent a motor vehicle by a plurality of external sensors. The information is processed by a perception controller to generate the PSG having a virtual three-dimensional (3-D) model of the volume of space and area adjacent the motor vehicle. The perception controller is configured to allocate variable processing power to process selected portions of the collected sensor information. At least one focus region is defined. A focus region is a sub-set of the volume of space and/or area adjacent the motor vehicle. Processing power is increased by the perception controller to process the portions of the collected information relating to the focus region such that a high fidelity 3-D model of the focus region is generated.
EP19160818	EP3537348	18-25	HETEROGENEOUS CONVOLUTIONAL NEURAL NETWORK FOR MULTI-PROBLEM SOLVING	A heterogeneous convolutional neural network (HCNN) system includes a visual reception system generating an input image. A feature extraction layer (FEL) portion of convolutional neural networks includes multiple convolution, pooling and activation layers stacked together. The FEL includes multiple stacked layers, a first set of layers learning to represent data in a simple form including horizontal and vertical lines and blobs of colors. Following layers capture more complex shapes such as circles, rectangles, and triangles. Subsequent layers pick up complex feature combinations to form a representation including wheels, faces and grids. The FEL portion outputs data

				to each of: a first sub-network which performs a first task of object detection, classification, and localization for classes of objects in the input image to create a detected object table; and a second sub-network which performs a second task of defining a pixel level segmentation to create a segmentation data set.
EP22170232.7	N/A	19-26-EP	USE OF NEURAL NETWORKS TO PREDICT LANE LINE TYPES	A method of predicting lane line types with neural networks includes capturing optical information with one or more optical sensors disposed on a vehicle. The method further includes cropping the optical information to a predetermined size, passing cropped optical information through a neural network, and assessing the optical information to detect locations of a plurality of lane lines in the optical information. The method further includes predicting a plurality of values assigned to predetermined lane line types of the plurality of lane lines. The method further determines a maximum confidence value for each of the plurality of values assigned to the predetermined lane line types for each of the plurality of lane lines; and extracts a lane line label corresponding to the maximum confidence value for each of the plurality of lane lines.
EP22170297.0	N/A	19-27-EP	THE USE OF HCNN TO PREDICT LANE LINES TYPES	A method of predicting lane line types utilizing a heterogeneous convolutional neural network (HCNN) includes capturing an input image with one or more optical sensors disposed on a host member, passing the input image through the HCNN, the HCNN having at least three distinct sub-networks, the three distinct sub-networks: predicting object locations in the input image with a first sub-network; predicting lane line locations in the input image with a second sub-network; and predicting lane line types for each predicted lane line in the input image with a third sub-network.

EP22180541.9	N/A	19-47-EP	LOCALIZATION OF AUTONOMOUS VEHICLES USING CAMERA, GPS, AND IMU	A method of localizing a host member through sensor fusion includes capturing an input image with one or more optical sensors disposed on the host member and determining a location of the host member through a global positioning system (GPS) input. The method tracks movement of the host member through an inertial measurement unit (IMU) input, generates coordinates for the host member from the GPS input and the IMU input. The method compares the input image and a high definition (HD) map input to verify distances from the host member to predetermined objects within the input image and within the HD map input. The method continuously localizes the host member by fusing the GPS input, the IMU input, the input image, and the HD map input.
EP22180548.4	N/A	19-48-EP	USE OF DBSCAN FOR LANE DETECTION	A system and method of lane detection using density based spatial clustering of applications with noise (DBSCAN) includes capturing an input image with one or more optical sensors disposed on a motor vehicle. The method further includes passing the input image through a heterogeneous convolutional neural network (HCNN). The HCNN generates an HCNN output. The method further includes processing the HCNN output with DBSCAN to selectively classify outlier data points and clustered data points in the HCNN output. The method further includes generating a DBSCAN output selectively defining the clustered data points as predicted lane lines within the input image. The method further includes marking the input image by overlaying the predicted lane lines on the input image.
EP21208824.9	N/A	20-09-EP	THE USE OF NEURAL NETWORKS IN CONTROL SYSTEMS	A neural network control system and method includes vehicle sensors in communication with a neural network controller in a vehicle. The neural network (NN) operates in at least two modes: a training mode and a control mode. The NN consists of at least computational five layers the layers

				containing a plurality of neurons. Sensor data is received by an NN controller and processed through the layers where each of the neurons applies a weight to the sensor data. In the training mode the weights are continuously adjusted until a threshold difference between a known reference signal and a plant output is achieved. In the control mode, the NN controller continuously and recursively sends a control signal commanding the plant to adjust an actuator position in response to the sensor data until a disturbance in the sensor data is substantially eliminated.