503890470 06/27/2016

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3937119

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------------------|----------------|
| HIDEO INOUE | 05/21/2016 |
| MASAHIRO MIO | 05/13/2016 |
| MASAYUKI OKUWA | 05/30/2016 |
| TSUKASA SHIMIZU | 05/23/2016 |
| MINORU KAMATA | 05/20/2016 |
| TAKUMA ITO | 05/20/2016 |
| PONGSATHORN RAKSINCHAROENSAK | 05/17/2016 |
| MASAO NAGAI | 06/09/2016 |

RECEIVING PARTY DATA

| Name: | TOYOTA JIDOSHA KABUSHIKI KAISHA |
|-------------------|--|
| Street Address: | 1, TOYOTA-CHO, TOYOTA-SHI |
| City: | AICHI-KEN |
| State/Country: | JAPAN |
| Postal Code: | 471-8571 |
| Name: | THE UNIVERSITY OF TOKYO |
| Street Address: | 3-1, HONGO 7-CHOME |
| Internal Address: | BUNKYO-KU |
| City: | TOKYO |
| State/Country: | JAPAN |
| Postal Code: | 113-8654 |
| Name: | NATIONAL UNIVERSITY CORPORATION TOKYO UNIVERSITY OF AGRICULTURE AND TECHNOLOGY |
| Street Address: | 3-8-1 HARUMI-CHO |
| Internal Address: | FUCHU-SHI |
| City: | TOKYO |
| State/Country: | JAPAN |
| Postal Code: | 1838538 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15154023 |

PATENT

503890470 REEL: 039173 FRAME: 0470

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: 2022937060

Email: hsammane@sughrue.com
Correspondent Name: SUGHRUE MION, PLLC

Address Line 1: 2100 PENNSYLVANIA AVENUE NW

Address Line 2: SUITE 800

Address Line 4: WASHINGTON, D.C. 20037

| ATTORNEY DOCKET NUMBER: | Q225934 |
|-------------------------|--|
| NAME OF SUBMITTER: | HAFIDA SAMMANE |
| SIGNATURE: | /Hafida Sammane/ |
| DATE SIGNED: | 06/27/2016 |
| | This document serves as an Oath/Declaration (37 CFR 1.63). |

Total Attachments: 12

source=Assignment#page1.tif source=Assignment#page2.tif source=Assignment#page3.tif source=Assignment#page4.tif source=Assignment#page5.tif source=Assignment#page6.tif source=Assignment#page7.tif source=Assignment#page8.tif source=Assignment#page9.tif

source=Assignment#page10.tif

source=Assignment#page11.tif

source=Assignment#page12.tif

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I/We, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; and

Whereas, TOYOTA JIDOSHA KABUSHIKI KAISHA of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan, The University of Tokyo of 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan, and National University Corporation Tokyo University of Agriculture and Technology of 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan (assignee), desires to acquire the entire right, title, and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including all divisions, and continuations thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues thereof, including the right to claim priority under 35 U.S.C. §119, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States when called upon to do so by the assignee.

VEHICLE CONTROL APPARATUS

The above identified application was made or was authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

I have reviewed and understand the contents of the application for which this assignment with declaration is being submitted.

I am aware of the duty to disclose to the Office all information known to me to be material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this assignment with declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☑ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified patent application-as-filed, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application, and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

| NAME OF SOLE OR FIRST INVENTOR: | | |
|---|--------------------------------|--|
| Given Name | | |
| (first and middle [if any]) Hideo | Family Name or Surname INOUE | |
| Inventor's signature Adeo Grane | Date May 21, 2016 | |
| Residence: Ashigarakami-gun, Kanagawa-ken, Japan | | |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan | 1 | |
| NAME OF SECOND INVENTOR: | | |
| Given Name (first and middle [if any]) Masahiro | Family Name or Surname MIO | |
| Inventor's signature Masahiro Miv | Date May 13 2016 | |
| Residence: Fuji-shi, Shizuoka-ken, Japan | | |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan | 1 | |
| NAME OF THIRD INVENTOR: | | |
| Given Name (first and middle [if any]) Masayuki | Family Name or Surname OKUWA | |
| Inventor's signature | Date | |
| Residence: Nagakute-shi, Aichi-ken, Japan | | |
| c/o KABUSHIKI KAISHA TOYOTA CHUO KENKY Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1192. | That was | |
| NAME OF FOURTH INVENTOR: | | |
| Given Name (first and middle [if any]) Tsukasa | Family Name or Surname SHIMIZU | |
| Inventor's signature | Date | |
| Residence: Nagakute-shi, Aichi-ken, Japan | | |
| c/o KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1192, Japan | | |
| NAME OF FIFTH INVENTOR: | | |
| Given Name (first and middle [if any]) Minoru | Family Name or Surname KAMATA | |
| Inventor's signature | Date | |
| Residence: Kawasaki-shi, Kanagawa-ken, Japan | | |
| c/o The University of Tokyo Mailing Address: 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan | | |
| | Date | |
| | | |

| NAME OF SIXTH INVENTOR: | | |
|---|---|--|
| Given Name (first and middle [if any]) Takuma | Family Name or Surname ITO | |
| Inventor's signature | Date | |
| Residence: Kashiwa-shi, Chiba-ken, Japan | | |
| c/o The University of Tokyo Mailing Address: 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 J | apan | |
| NAME OF SEVENTH INVENTOR: | | |
| Given Name (first and middle [if any]) Pongsathorn | Family Name or Surname RAKSINCHAROENSAK | |
| Inventor's signature | Date | |
| Residence: Fuchu-shi, Tokyo, Japan | | |
| c/o National University Corporation Tokyo University of Agriculture and Technology Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | |
| NAME OF EIGHTH INVENTOR: | | |
| Given Name (first and middle [if any]) Masao | Family Name or Surname NAGAI | |
| Inventor's signature | Date | |
| Residence: Fuchu-shi, Tokyo, Japan | | |
| c/o National University Corporation Tokyo Universit Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | |

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I/We, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; and

Whereas, TOYOTA JIDOSHA KABUSHIKI KAISHA of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan, The University of Tokyo of 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan, and National University Corporation Tokyo University of Agriculture and Technology of 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan (assignee), desires to acquire the entire right, title, and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including all divisions, and continuations thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues thereof, including the right to claim priority under 35 U.S.C. §119, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States when called upon to do so by the assignee.

VEHICLE CONTROL APPARATUS

The above identified application was made or was authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application for which this assignment with declaration is being submitted.

I am aware of the duty to disclose to the Office all information known to me to be material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this assignment with declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☑ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified patent application-as-filed, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application, and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

| NAME OF SOLE OR FIRST INVENTOR: | | ~~ |
|---|--|-------|
| Given Name | | |
| (first and middle [if any]) Hideo | Family Name or Surname INOUE | -(-,- |
| | | |
| Inventor's signature | Date | |
| . No.en teo de la Suze o o o minima de la versione | | |
| Residence: Ashigarakami-gun, Kanagawa-ken, Japan | | ••• |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japar | S | |
| | <u>, </u> | بنبن |
| NAME OF SECOND INVENTOR: | | 444 |
| Given Name (first and middle [if any]) Masahiro | Family Name or Surname MIO | |
| (A) Se bire Masses (A day) | | |
| Inventor's signature | Date | |
| 2 | | |
| Residence: Fuji-shi, Shizuoka-ken, Japan | | |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA | | |
| Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japar | 3 | **** |
| NAME OF THIRD INVENTOR: | | |
| Given Name | Forth North Summer OF UWA | |
| (first and middle [if any]) Masayuki | Family Name or Surname OKUWA | |
| Inventor's signature Masayaki Okuwa | Date May 30, 2016 | |
| | | |
| Residence: Nagakute-shi, Aichi-ken, Japan | | |
| c/o KABUSHIKI KAISHA TOYOTA CHUO KENK Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1.192 | | |
| | | ~~ |
| NAME OF FOURTH INVENTOR: | | _ |
| Given Name (first and middle [if any]) Tsukasa | Family Name or Surname SHIMIZU | |
| 111111111111111111111111111111111111111 | , | |
| Inventor's signature Francisco Shiniya | Date May 23, 2016 | |
| | × × × × × × × × × × × × × × × × × × × | |
| Residence: Nagakute-shi, Aichi-ken, Japan | | |
| c/o KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1192, Japan | | |
| NAME OF FIFTH INVENTOR: | | |
| | | |
| Given Name (first and middle [if any]) Minoru | Family Name or Surname KAMATA | |
| | | |
| Inventor's signature | Date | |
| | | |
| Residence: Kawasaki-shi, Kanagawa-ken, Japan | | |
| c/o The University of Tokyo | nua ir | |
| Mailing Address: 3-1, Hungo 7-chome, Bunkyo-ku, Tokyo 113-8654 Ja | (%) XII | ••• |

| NAME OF SIXTH INVENTOR: | | | |
|---|------------------------|------------------|--|
| Given Name (first and middle [if any]) Takuma | Family Name or Surname | то | |
| Inventor's signature | Date | | |
| Residence: Kashiwa-shi, Chiba-ken, Japan | | | |
| c/o The University of Tokyo Mailing Address: 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan | | | |
| NAME OF SEVENTH INVENTOR: | | | |
| Given Name (first and middle [if any]) Pongsathorn | Family Name or Surname | RAKSINCHAROENSAK | |
| Inventor's signature | Date | 3 | |
| Residence: Fuchu-shi, Tokyo, Japan | | | |
| c/o National University Corporation Tokyo University of Agriculture and Technology Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | | |
| NAME OF EIGHTH INVENTOR: | | | |
| Given Name (first and middle [if any]) Masao | Family Name or Surname | NAGAI | |
| Inventor's signature | Date | 3 | |
| Residence: Fuchu-shi, Tokyo, Japan | | | |
| c/o National University Corporation Tokyo University of Agriculture and Technology Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | | |

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I'We, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; and

Whereas, TOYOTA JIDOSHA KABUSHIKI KAISHA of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan, The University of Tokyo of 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan, and National University Corporation Tokyo University of Agriculture and Technology of 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan (assignee), desires to acquire the entire right, title, and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including all divisions, and continuations thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues thereof, including the right to claim priority under 35 U.S.C. §119, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States when called upon to do so by the assignee.

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

As the below named inventor, I hereby declare that:

This assignment with declaration is
| The attached application, or
| directed to: | United States Application or PCT International Application Number 15/154,023 | filed on May 13, 2016 (Confirmation No.______).

The application is entitled:

VEHICLE CONTROL APPARATUS

The above identified application was made or was authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application for which this assignment with declaration is being submitted.

I am aware of the duty to disclose to the Office all information known to me to be material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this assignment with declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☑ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified patent application-as-filed, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application, and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

| NAME OF SOLE OR FIRST INVENTOR: | | |
|---|---|---|
| Given Name | | |
| (first and middle [if any]) Hideo | Family Name or Surname | INOUE |
| Inventor's signature | Date | |
| Residence: Ashigarakami-gun, Kanagawa-ken, Japan | | |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-kon, 471-8571 Japan | | |
| NAME OF SECOND INVENTOR: | | |
| Given Name (first and middle [if any]) Masahiro | Family Name or Surname | МЮ |
| Inventor's signature | Date | 8 |
| | | *************************************** |
| Residence: Fuji-shi, Shizuoka-ken, Japan | | |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan | | |
| NAME OF THIRD INVENTOR: | | |
| Given Name (first and middle [if any]) Masayuki | Family Name or Surname | OKUWA |
| 3 | | |
| Inventor's signature | Date | |
| No. of the State of the Same | | |
| Residence: Nagakute-shi, Aichi-ken, Japan | 157 167.263 | |
| c/o KABUSHIKI KAISHA TOYOTA CHUO KENK Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1192. | | |
| NAME OF FOURTH INVENTOR: | | |
| Given Name | | |
| (first and middle [if any]) Tsukasa | Family Name or Surname | SHIMIZU |
| | ec. • • • • • • • • • • • • • • • • • • • | |
| Inventor's signature | [Date | |
| Residence: Nagakute-shi, Aichi-ken, Japan | | |
| c/o KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1192, Japan | | |
| NAME OF FIFTH INVENTOR: | | |
| Given Name (first and middle [if any]) Minoru | Family Name or Surname | KAMATA |
| Inventor's signature 74. Kassa arta- | Date | 6:12 30 SB14 |
| HINGHOL 3 MEHARICK / TWY | 3. | |
| Residence: Kawasaki-shi, Kanagawa-ken, Japan | | |
| c/o The University of Tokyo | razon. | |
| Mailing Address: 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Ja | X (2 < 2 : 5 · · · · · · · · · · · · · · · · · · | |

| NAME OF SIXTH INVENTOR: | | | |
|---|---|--|--|
| Given Name | Family Name or Surname ITO | | |
| (first and middle [if any]) Takuma | Family Name or Surname ITO | | |
| Inventor's signature Jakuma Ito | Date May 20, 20/6 | | |
| Residence: Kashiwa-shi, Chiba-ken, Japan | | | |
| c/o The University of Tokyo Maifing Address: 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan | | | |
| NAME OF SEVENTH INVENTOR: | | | |
| Given Name (first and middle [if any]) Pongsathorn | Family Name or Surname RAKSINCHAROENSAK | | |
| Inventor's signature | Date | | |
| Residence: Fuchu-shi, Tokyo, Japan | | | |
| c/o National University Corporation Tokyo University of Agriculture and Technology Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | | |
| NAME OF EIGHTH INVENTOR: | | | |
| Given Name (first and middle [if any]) Masao | Family Name or Surname NAGAI | | |
| Inventor's signature | Date | | |
| Residence: Fuchu-shi, Tokyo, Japan | | | |
| c/o National University Corporation Tokyo University of Agriculture and Technology Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | | |

ASSIGNMENT WITH DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Whereas, I/We, the undersigned inventor(s) hereinafter called assignor(s), have invented certain improvements described in the application identified below; and

Whereas, TOYOTA JIDOSHA KABUSHIKI KAISHA of 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan, The University of Tokyo of 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan, and National University Corporation Tokyo University of Agriculture and Technology of 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan (assignee), desires to acquire the entire right, title, and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assigne, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including all divisions, and continuations thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues thereof, including the right to claim priority under 35 U.S.C. §119, and I/we request the Director of the U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States when called upon to do so by the assignee.

| (Legalization not required for recording | ig but | is prima facie evidence of execution under 35 U.S.C. §261) |
|--|---------|---|
| As the below named inventor, I hereby | y decla | re that: |
| This assignment with declaration is directed to: | | The attached application, or |
| directed to. | Ø | United States Application or PCT International Application Number 15/154,023 filed on May 13, 2016 (Confirmation No). |
| The application is entitled: | | |

VEHICLE CONTROL APPARATUS

The above identified application was made or was authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application for which this assignment with declaration is being submitted.

I am aware of the duty to disclose to the Office all information known to me to be material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this assignment with declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☑ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified patent application-as-filed, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application, and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Office.

| NAME OF SOLE OR FIRST INVENTOR: | | |
|---|--------------------------------|--|
| Given Name | | |
| (first and middle [if any]) Hideo | Family Name or Surname INOUE | |
| Inventor's signature | Date | |
| Residence: Ashigarakami-gun, Kanagawa-ken, Japan | | |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan | | |
| NAME OF SECOND INVENTOR: | | |
| Given Name | | |
| (first and middle (if any)) Masahiro | Family Name or Surname MIO | |
| Invantoria vinavina | Date | |
| Inventor's signature Late | | |
| Residence: Fuji-shii, Shizuoka-ken, Japan | | |
| c/o TOYOTA JIDOSHA KABUSHIKI KAISHA Mailing Address: 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan | | |
| NAME OF THIRD INVENTOR: | | |
| -Given Name | Family Name or Surname OKUWA | |
| (first and middle (if any)) Masayluki | Family Name or Surfame OKOWA | |
| Inventor's signature | Date | |
| | | |
| Residence: Nagakute-shi, Aichi-ken, Japan c/o KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO | | |
| Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1192, Japan | | |
| NAME OF FOURTH INVENTOR: | | |
| Given Name (first and middle [if any]) Tsukasa | Pamily Name or Surname SHIMIZU | |
| | | |
| Inventor's signature Date | | |
| Residence: Nagakute-shi, Aichi-kon, Japan | | |
| c/o KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO Mailing Address: 41-1, Yokomichi, Nagakute-shi, Aichi-ken 480-1192, Japan | | |
| NAME OF FIFTH INVENTOR: | | |
| Given Name | | |
| (first and middle [if any]) Minoru | Family Name or Surname KAMATA | |
| • Woodkies 20100 | Date | |
| Inventor's signature : Date | | |
| Residence: Kawasaki-shi, Kanagawa-ken, Japan | | |
| c/o The University of Tokyo | | |
| Mailing Address: 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan | | |

| NAME OF SIXTH INVENTOR: | | |
|---|---|--|
| Given Name (first and middle [if any]) Takuma | Family Name or Surname ITO | |
| Inventor's signature | Date | |
| Residence: Kashiwa-shi, Chiba-ken, Japan | | |
| c/o The University of Tokyo Mailing Address: 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo 113-8654 Japan | | |
| NAME OF SEVENTH INVENTOR: | | |
| Given Name (first and middle [if any]) Pongsathorn | Family Name or Surname RAKSINCHAROENSAK | |
| Inventor's signature P. Rakovin . | Date May 17, 2016 | |
| Residence: Fuchu-shi, Tokyo, Japan | | |
| c/o National University Corporation Tokyo University of Agriculture and Technology Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | |
| NAME OF EIGHTH INVENTOR: | | |
| Given Name (first and middle [if any]) Masao | Family Name or Surname NAGAI | |
| Inventor's signature | Date June 9, 20/6 | |
| Residence: Fuchu-shi, Tokyo, Japan | | |
| c/o National University Corporation Tokyo University of Agriculture and Technology Mailing Address: 3-8-1 Harumi-cho, Fuchu-shi, Tokyo 1838538 Japan | | |