To the Director of the U.S. Patent and Trademark Office: Please record the attached original document or copy thereof.

1. A. Name of conveying parties:
   Shigemasa HIROOKA
   Mamoru YOSHIOKA

   B. Additional name(s) of conveying party(ies) attached?
   ☐ Yes ☒ No

2. A. Name and address of receiving party:
   TOYOTA JIDOSHA KABUSHIKI KAISHA
   1, TOYOTA-CHO,
   TOYOTA-SHI, AICHI 471-8571 JAPAN

   B. Additional name(s) & address(es) attached?
   ☐ Yes ☒ No

3. A. Nature of conveyance:
   ☑ Assignment ☐ Merger
   ☐ Security Agreement ☐ Change of Name
   ☐ Other __________________

   B. Execution Date: November 12, 2002

4. A. If this document is being filed together with a new application, the execution date of the application is: November 12, 2002

   B. Patent Application No.(s) ______________
   C. Patent No.(s) ______________

   Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:
   Name: James A. Oliff
   Address: OLIFF & BERRIDGE, PLC
   P.O. Box 19928
   Alexandria, VA 22320

6. Total number of applications and patents involved: 1

7. A. Total fee (37 CFR 3.41)......... $40.00
   B. Enclosed (Check No. 136684) __

8. Credit any overpayment or charge any underpayment to deposit account number 15-0461.

   To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

   ____________________________
   James A. Oliff Registration No. 27,075
   Joel S. Armstrong Registration No. 36,430

   Date: November 27, 2002

   Total number of pages including cover sheet, attachments, and document: 2
ASSIGNMENT

Whereas, I/we,
Name

Address
c/o TOYOTA JIDOSHA KABUSHIKI KAISHA,

1) Shigemasa HIROOKA
1, Toyota-cho,
Toyota-shi, Aichi 471-8571 Japan

c/o TOYOTA JIDOSHA KABUSHIKI KAISHA,

2) Mamoru YOSHIOKA
1, Toyota-cho,
Toyota-shi, Aichi 471-8571 Japan

hereinafter called assignor(s), have invented certain improvements in
AUXILIARY AIR SUPPLYING SYSTEM, AND CONTROL METHODS AND FAILURE DIAGNOSTIC METHODS THEREOF

and executed an application for Letters Patent of the United States of America therefor on even date herewith unless otherwise indicated below:

filed on November 27, 2002 Serial No. __________________________: and

Whereas

TOYOTA JIDOSHA KABUSHIKI KAISHA
1, Toyota-cho,
Toyota-shi, Aichi 471-8571 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, be it known that, for good and valuable consideration from assignee, the receipt of which is hereby acknowledged, I/we, as assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the assignee, its lawful successors and assigns, MY/OUR entire right, title, and interest in and to this invention and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof, and I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States to issue all Letters Patent for this invention to assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I/we HEREBY further covenant and agree that I/we will, without further consideration, communicate with assignee, its successors and assigns, any facts known to ME/US respecting this invention and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver all papers that may be necessary or desirable to perfect the title to this invention in said assignee, its successors and assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in the United States, it being understood that any expense incident to the execution of such papers shall be borne by the assignee, its successors and assigns.

INVENTORS

1): Name: Shigemasa HIROOKA

Date Signed: 10/21/02

2): Name: Mamoru YOSHIOKA

Date Signed: 10/22/02

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