

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT3147627

|                                                                                                                                                                                                 |                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>SUBMISSION TYPE:</b>                                                                                                                                                                         | NEW ASSIGNMENT                     |
| <b>NATURE OF CONVEYANCE:</b>                                                                                                                                                                    | ASSIGNMENT                         |
| <b>CONVEYING PARTY DATA</b>                                                                                                                                                                     |                                    |
| <b>Name</b>                                                                                                                                                                                     | <b>Execution Date</b>              |
| MARY L. YEAGER                                                                                                                                                                                  | 12/15/2014                         |
| FRANCIS L. CLARK                                                                                                                                                                                | 12/12/2014                         |
| BRANDON GREGORY                                                                                                                                                                                 | 12/11/2014                         |
| PARAG MEHRESH                                                                                                                                                                                   | 12/11/2014                         |
| <b>RECEIVING PARTY DATA</b>                                                                                                                                                                     |                                    |
| <b>Name:</b>                                                                                                                                                                                    | CATERPILLAR INC.                   |
| <b>Street Address:</b>                                                                                                                                                                          | 100 N.E. ADAMS STREET              |
| <b>City:</b>                                                                                                                                                                                    | PEORIA                             |
| <b>State/Country:</b>                                                                                                                                                                           | ILLINOIS                           |
| <b>Postal Code:</b>                                                                                                                                                                             | 61629                              |
| <b>PROPERTY NUMBERS Total: 1</b>                                                                                                                                                                |                                    |
| <b>Property Type</b>                                                                                                                                                                            | <b>Number</b>                      |
| Application Number:                                                                                                                                                                             | 14570392                           |
| <b>CORRESPONDENCE DATA</b>                                                                                                                                                                      |                                    |
| <b>Fax Number:</b>                                                                                                                                                                              | (312)616-5700                      |
| <i>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.</i> |                                    |
| <b>Phone:</b>                                                                                                                                                                                   | (312) 616-5600                     |
| <b>Email:</b>                                                                                                                                                                                   | assignments@leydig.com             |
| <b>Correspondent Name:</b>                                                                                                                                                                      | ELIAS P. SOUPOS                    |
| <b>Address Line 1:</b>                                                                                                                                                                          | LEYDIG, VOIT & MAYER, LTD.         |
| <b>Address Line 2:</b>                                                                                                                                                                          | 180 NORTH STETSON AVE., SUITE 4900 |
| <b>Address Line 4:</b>                                                                                                                                                                          | CHICAGO, ILLINOIS 60601-6731       |
| <b>ATTORNEY DOCKET NUMBER:</b>                                                                                                                                                                  | 718874 (14-1445)                   |
| <b>NAME OF SUBMITTER:</b>                                                                                                                                                                       | ELIAS P. SOUPOS                    |
| <b>SIGNATURE:</b>                                                                                                                                                                               | /Elias P. Soupos/                  |
| <b>DATE SIGNED:</b>                                                                                                                                                                             | 12/15/2014                         |
| <b>Total Attachments: 5</b>                                                                                                                                                                     |                                    |
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## ASSIGNMENT

WHEREAS I/We, the below named inventor(s), [hereinafter referred to as Assignor(s)], have made an invention entitled:

### IN-RANGE SENSOR FAULT DIAGNOSTIC SYSTEM AND METHOD

for which I/We will or have filed a patent application; and

WHEREAS, Caterpillar Inc., a corporation of Delaware whose post office address is 100 N.E. Adams Street, Peoria, IL 61629 (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention, and in and to the patent application for this invention and any and all patents to be issued upon this application throughout the world;

NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee 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 patents which may be granted thereon, and all reissues thereof, as well as all rights to claim priority in any country or jurisdiction or patent office on the basis of this application, and all applications for patents which may hereafter be filed for this invention in any country or jurisdiction or patent office and all patents which may be granted on this invention in any country or jurisdiction or patent office, and all extensions, renewals, and reissues thereof; and I/We hereby authorize and request any official of any country or jurisdiction or patent office whose duty it is to issue patents on applications as described above, to issue all patents for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

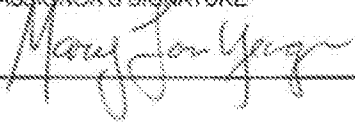
AND, I/WE HEREBY covenant that I/We have the full right to convey the interest assigned by this Assignment, and I/We have not executed and will not execute any agreement in conflict with this Assignment;

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 any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or 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 any country or jurisdiction or patent office, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, its successors and assigns;

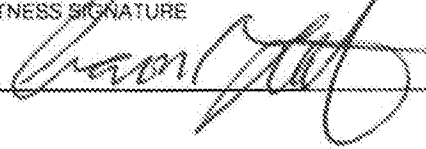
AND, I/WE HEREBY authorize Assignee or the attorneys/representatives of Assignee to insert here in parentheses the country, application number, and official filing date (U.S. Patent Application No. 14/570,392, filed December 15, 2014).

IN TESTIMONY WHEREOF, I/We have hereunto set our hands.

SOLE/JOINT INVENTION  
(Worldwide Rights)  
Attorney Docket No. 718874  
Client Ref. No. 14-1445

|                                                          |                                                                                                            |                     |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------|
| 1. FULL NAME OF SOLE OR FIRST ASSIGNOR<br>Mary L. Yeager | ASSIGNOR'S SIGNATURE<br> | DATE<br>15 DEC 2014 |
| ADDRESS<br>4624 Doe Path Lane                            |                                                                                                            | CITIZENSHIP<br>USA  |
| Lafayette, IN 47905                                      |                                                                                                            |                     |

|                                |                                                                                                        |                    |
|--------------------------------|--------------------------------------------------------------------------------------------------------|--------------------|
| 1. WITNESS NAME<br>James Cress | WITNESS SIGNATURE<br> | DATE<br>12/15/2014 |
| ADDRESS<br>621 Elijah St       |                                                                                                        | CITIZENSHIP<br>USA |
| West Lafayette, IN 47906       |                                                                                                        |                    |

|                                 |                                                                                                           |                     |
|---------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------|
| 2. WITNESS NAME<br>Aaron C Luft | WITNESS SIGNATURE<br> | DATE<br>15 Dec 2014 |
| ADDRESS<br>1292 West 650 South  |                                                                                                           | CITIZENSHIP<br>USA  |
| Frankfort, IN 46041             |                                                                                                           |                     |

|                                                             |                                                 |                    |
|-------------------------------------------------------------|-------------------------------------------------|--------------------|
| 1. FULL NAME OF SECOND ASSIGNOR, IF ANY<br>Francis L. Clark | ASSIGNOR'S SIGNATURE<br><i>Francis L. Clark</i> | DATE<br>12/12/2014 |
| ADDRESS<br>1504 S. 6th St.                                  |                                                 | CITIZENSHIP<br>USA |
| Pekin, IL 61554                                             |                                                 |                    |

|                                        |                                                 |                    |
|----------------------------------------|-------------------------------------------------|--------------------|
| 1. WITNESS NAME<br>Michael J. Grichnit | WITNESS SIGNATURE<br><i>Michael J. Grichnit</i> | DATE<br>12/12/14   |
| ADDRESS<br>1030 N Autumnview Ct        |                                                 | CITIZENSHIP<br>USA |
| Peoria, IL 61615                       |                                                 |                    |

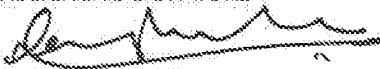
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|-------------------------------------|----------------------------------------------|--------------------|
| 2. WITNESS NAME<br>Donald G. Hummel | WITNESS SIGNATURE<br><i>Donald G. Hummel</i> | DATE<br>12/12/2014 |
| ADDRESS<br>1316 N. Logan St         |                                              | CITIZENSHIP<br>USA |
| Chillicothe, IL 61523               |                                              |                    |

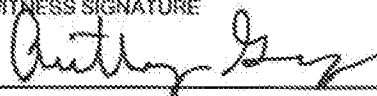
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|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------|
| 1. FULL NAME OF THIRD ASSIGNOR, IF ANY<br>Brandon Gregory | ASSIGNOR'S SIGNATURE<br> | DATE<br>12/11/14   |
| ADDRESS<br>1514 W. Kingsway Dr.                           |                                                                                                            | CITIZENSHIP<br>USA |
| Peoria, IL 61614                                          |                                                                                                            |                    |

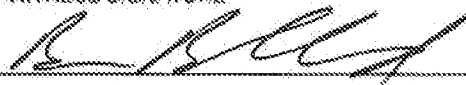
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| 1. WITNESS NAME<br>Mark Hartman    | WITNESS SIGNATURE<br> | DATE<br>12/11/14   |
| ADDRESS<br>6508 W. Willow Creek Ct |                                                                                                        | CITIZENSHIP<br>USA |
| Edwardsville IL 61528              |                                                                                                        |                    |

|                                  |                                                                                                          |                    |
|----------------------------------|----------------------------------------------------------------------------------------------------------|--------------------|
| 2. WITNESS NAME<br>Weston Taylor | WITNESS SIGNATURE<br> | DATE<br>12/11/14   |
| ADDRESS<br>17050 Springfield Rd. |                                                                                                          | CITIZENSHIP<br>USA |
| Groveland, IL 61535              |                                                                                                          |                    |

SOLE/JOINT INVENTION  
(Worldwide Rights)  
Attorney Docket No. 718874  
Client Ref. No. 14-1445

|                                                          |                                                                                                            |                      |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------|
| 1. FULL NAME OF FOURTH ASSIGNOR, IF ANY<br>Parag Mehresh | ASSIGNOR'S SIGNATURE<br> | DATE<br>12/11/14     |
| ADDRESS<br>3719 DARTMOUTH PL<br>WEST LAFAYETTE, IN 47906 |                                                                                                            | CITIZENSHIP<br>INDIA |

|                                                 |                                                                                                         |                     |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------|
| 1. WITNESS NAME<br>ANTHONY GOYER                | WITNESS SIGNATURE<br> | DATE<br>12/11/14    |
| ADDRESS<br>4732 W TOWPATH RD<br>DELPHI IN 46923 |                                                                                                         | CITIZENSHIP<br>U.S. |

|                                                        |                                                                                                           |                     |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------|
| 2. WITNESS NAME<br>Ben Ballard                         | WITNESS SIGNATURE<br> | DATE<br>12/11/14    |
| ADDRESS<br>4754 Santsbury Court<br>Lafayette, IN 47909 |                                                                                                           | CITIZENSHIP<br>U.S. |