12-24-2002 **FORM PTO-1595** U.S. Department of Commerce **Patent and Trademark Office** 1-31-92 Attorney Docket No. 8350.1740-00 Attorney Customer Number: 22,85 ro the Honorable Commissioner of Pater 102320664 Please record the attached original documents or copy thereof. ATTN. BOX ASSIGNMENTS Name of conveying party(ies): 2. Name and address of receiving party(ies): 12-17-02 Scott Shafer Alan Stockner Name: Caterpillar Inc. Ye Tian Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No Internal Address: 3. Nature of conveyance: Street Address: 100 N. E. Adams Street \boxtimes City: Peoria Assignment Merger State: IL Change of Name Zip Code: 61629-6490 Security Agreement Other: Additional name(s) & Address(es) attached? **Execution Date:** November 21, 2002; December 2, 2002; and ☐ Yes ☑ No November 22, 2002; respectively. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the 4, application: November 21, 2002; December 2, 2002; and November 22, 2002; respectively. Patent Number(s): A. Patent Application Number(s): 10320802 ☐ Yes ☑ No Additional numbers attached? Total number of applications and registrations Name and address of party to whom correspondence concerning 6. 5. involved: document should be mailed: One 7. Total fee (37 CFR 3.41): \$40 Christopher P. Isaac Name: \boxtimes Enclosed (Please charge deficiency to depos account) П Authorized to be charged to deposit account FINNEGAN, HENDERSON, FARABOW, GARRETT & Internal Address: DUNNER, L.L.P. 1300 I Street, N.W. Street Address: City: Washington, D.C. 8. Deposit Account No.: 06-0916 20005-3315 State: Zip: Statement and signature. 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. Joseph E. Palys 12 /17 /02 Date Signature Reg. No. 46,508 Total number of pages including cover sheet, attachments and documents: 10

12/23/2002 GTON11 00000121 10320802

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PATENT

REEL: 013593 FRAME: 0830

ASSIGNMENT

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

METHOD FOR PREDICTING THE QUALITY OF A PRODUCT	
for which I/We executed an application for United States Letters Patent concurrently herewith or fil United States Letters Patent on; and	ed an application for
WHEREAS, Caterpillar Inc., a corporation of Delaware whose post office address is Intelled Department 100 N.E. Adams Street, Peoria, IL 61629-6490 (hereinafter referred to as Assignee), the entire right, title, and interest in and to this invention in all countries throughout the world, and if for United States Letters Patent on this invention and the Letters Patent to be issued upon this approximation.	is desirous of securing in and to the application
NOW THEREFORE, be it known that for and in consideration of the sum of One Dollar (\$\frac{1}{2}\) other good and valuable consideration the receipt of which from Assignee is hereby acknowledged have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over a lawful successors and assigns, my/our entire right, title, and interest in and to this invention, provis No, filed (if any), and this application, and all divisions, and continuations thereof, at the United States which may be granted thereon, and all reissues thereof, and all rights to claim provisional application (if any), as well as all rights to claim priority on the basis of this applications for Letters Patent which may hereafter be filed for this invention in any foreign country, which may be granted on this invention in any foreign country, and all extensions, renewals, and relive hereby authorize and request the Commissioner of Patents and Trademarks of the United St any foreign country whose duty it is to issue patents on applications as described above, to issue invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment.	d, I/We, as Assignor(s), into the Assignee, its sional application Serial and all Letters Patent of riority on the basis of the cation, and all Letters Patent eissues thereof; and ates and any official of all Letters Patent for this
AND, I/WE HEREBY covenant that I/We have the full right to convey the interest assigned and I/We have not executed and will not execute any agreement in conflict with this Assignment;	d by this Assignment,
AND, I/WE HEREBY further covenant and agree that I/We will, without further considerating Assignee, its successors and assigns, any facts known to me/us respecting this invention, and test proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all paper necessary or desirable to perfect the title to this invention in said Assignee, its successors or assignative divisional, continuation, and reissue applications, make all rightful oaths and generally do everything Assignee, its successors and assigns, to obtain and enforce proper patent protection for this inventant any foreign country, it being understood that any expense incident to the execution of such patterns and assignee, its successors and assigns.	stify in any legal ers that may be gns, execute all ng possible to aid ntion in the United States
IN TESTIMONY WHEREOF, I/We have hereunto set our hands.	
1. FULL NAME OF SOLE OR FIRST ASSIGNOR Scott Shafer ASSIGNOR: SCOTT SHAFE SCO	DATE 11/02
ADDRESS 248 N. Kansas Ave., Morton II 61550	CITIZENSHIP United States

Listing of Inventors Continued on Page 2 hereof ★ Yes □ No

1. WITNESS NAME PICHAMA H. HOLT MAN ADDRESS 2030 W. BRITTLE HOLLOW RA	WITNESS SIGNATURE	DATE /21/02	
2030 W. BRITTHE HOWAY RD		CITIZENSHIP WA	
ANCA EL 61575 9378			
2. WITNESS NAME Thomas L Derry ADDRESS 9353 Timber Terrace Peoria, IL 61623	WITNESS SIGNATURE	DATE 11-21-2002	
ADDRESS 9353 Timber Terrace	<i>O</i>	CITIZENSHIP レム州	
Peoria IL 6162	8		
3. FULL NAME OF SECOND ASSIGNOR, IF ANY Alan Stockner	ASSIGNOR'S SIGNATURE	DATE	
ADDRESS 15 Woodford War, Metamora, IL 61548		CITIZENSHIP United States	
1. WITNESS NAME	WITNESS SIGNATURE	DATE	
ADDRESS		CITIZENSHIP	
2. WITNESS NAME	WITNESS SIGNATURE	DATE	
ADDRESS		CITIZENSHIP	

2. FULL NAME OF THIRD ASSIGNOR, IF ANY Ye Tian	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 25 Swan Lake, Bloomington, IL 61704		CITIZENSHIP PR China
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

ASSIGNMENT

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

for which I/We executed an application for United States Letters Patent concurrently herewith or filed an application for

METHOD FOR PREDICTING THE QUALITY OF A PRODUCT

United States Letters Patent on	; and		·	••
WHEREAS, Caterpillar Inc.	a corporatio	on of Delaware who	se post office address is I	ntellectual Property
Department 100 N F Adams Street	Peoria II 6	31629-6490 (berein:	after referred to as Assign	nee) is desirous of securing

WHEREAS, Caterpillar Inc., a corporation of Delaware whose post office address is Intellectual Property Department 100 N.E. Adams Street, Peoria, IL 61629-6490 (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

NOW THEREFORE, be it known that for and in consideration of the sum of One Dollar (\$1.00) in hand paid and other 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, provisional application Serial No. _____, filed _____ (if any), 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 all rights to claim priority on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and I/We hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, 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 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 the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, its successors and assigns.

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

FULL NAME OF SOLE OR FIRST ASSIGNOR Scott Shafer	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 248 N. Kansas Ave., Morton II 61550		CITIZENSHIP United States

Listing of Inventors Continued on Page 2 hereof ★ Yes □ No

1. WITNESS NAME	WITNESS SIGNATURE	DATE
T. WITNESS NAME	WINLSS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
-		
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
3. FULL NAME OF SECOND ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
3. FULL NAME OF SECOND ASSIGNOR, IF ANY Alan Stockner	ASSIGNOR'S SIGNATURE Stock	12/02/02
ADDRESS 15 Woodford War, Metamora, IL 61548	CITIZENSHIP United States	
15 Woodiord War, Metarriora, IL 01546		Office Otates
1. WITNESS NAME	WITNESS SIGNATURE	DATE
Amy M. Hess ADDRESS	Ang M. Mess	CITIZENSHIP
1292N. Woodland Knolls Lo	Water and TI CIEHO	USA
1272N. WOODIAND HADIS LO	ine Metamora IL 61378	454
		1.
2. WITNESS NAME	WITNERSSIGNATURE	DATE
2. WITNESS NAME Todd M. Wieland ADDRESS	Soll M. Wrel	12-2-02
ADDRESS		CITIZENSHIP
34 Paige Pl Bloomingto	in, 1L 61704	USA
0		

2. FULL NAME OF THIRD ASSIGNOR, IF ANY Ye Tian	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 25 Swan Lake, Bloomington, IL 61704		CITIZENSHIP PR China
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

ASSIGNMENT

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

METHOD FOR PREDICTING THE QUALITY OF A PRODUCT			
for which I/We executed an application for United S United States Letters Patent on; and	States Letters Patent concurrently herewith or file	d an application for	
WHEREAS, Caterpillar Inc., a corporation of Department 100 N.E. Adams Street, Peoria, IL 616 the entire right, title, and interest in and to this inverse for United States Letters Patent on this invention and	ntion in all countries throughout the world, and in	s desirous of securing a and to the application	
other good and valuable consideration the receipt of have sold, assigned, transferred, and set over, and lawful successors and assigns, my/our entire right, No, filed (if any), and this application the United States which may be granted thereon, a above provisional application (if any), as well as all applications for Letters Patent which may hereafter which may be granted on this invention in any foreign whose duty it is to issue patent invention to Assignee, its successors and assigns,	I do hereby sell, assign, transfer, and set over untitle, and interest in and to this invention, provision, and all divisions, and continuations thereof, and all reissues thereof, and all rights to claim prilarights to claim priority on the basis of this applicance to be filed for this invention in any foreign countrying country, and all extensions, renewals, and rener of Patents and Trademarks of the United States on applications as described above, to issue a in accordance with the terms of this Assignment have the full right to convey the interest assigned	, I/We, as Assignor(s), no the Assignee, its conal application Serial and all Letters Patent of cority on the basis of the cation, and all and all Letters Patent cissues thereof; and altes and any official of all Letters Patent for this t;	
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 the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, its successors and assigns.			
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FULL NAME OF SOLE OR FIRST ASSIGNOR Scott Shafer	ASSIGNOR'S SIGNATURE	DATE	
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Listing of Inventors Continued on Page 2 hereof ★ Yes □ No

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	CITIZENSHIP
WITNESS SIGNATURE	DATE
	CITIZENSHIP
ASSIGNOR'S SIGNATURE	DATE CITIZENSHIP
3. FULL NAME OF SECOND ASSIGNOR, IF ANY ASSIGNOR'S SIGNATURE ADDRESS 15 Woodford War, Metamora, IL 61548	
WITNESS SIGNATURE	DATE
	CITIZENSHIP
WITNESS SIGNATURE	DATE
	CITIZENSHIP
	WITNESS SIGNATURE ASSIGNOR'S SIGNATURE WITNESS SIGNATURE

2. FULL NAME OF THIRD ASSIGNOR, IF ANY Ye Tian	ASSIGNOR'S SIGNATURE	DATE 11/22/02
ADDRESS 25 Swan Lake, Bloomington, IL 61704	<i>). / (</i>	CITIZENSHIP PR China
1. WITNESS NAME WEN - CHIEH TANG	WITNESS SIGNATURE New Unit hos	DATE 11/22/02
ADDRESS 603 S. WEST ST. APT.	D-11	CITIZENSHIP TALWAN
PONTIAC , IL 61764	7	
2. WITNESS NAME LIFENG WANG	WITNESS SIGNATURE libenger	DATE 11/22/02
ADDRESS		CITIZENSHIP
1508 Killarney G.		PRC
Normal IL 61761		

RECORDED: 12/17/2002 RE