5-310	U.S. PTO
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• '	05/31/2007

06-11-2007



:T U.S. Department of Commerce Patent and Trademark Office Attorney Docket No. 08350.6959

L 103415243	Attorney Customer Number: 58,98
To the Director of the U.S. Patent and π rademark Onice: Please record the attached original documents or copy the	Mail Stop Assignment Recordation Service
Name of conveying parties: Mark Scaife (assignor 1) Trent Cleveland (assignor 2) Michael Lowe (assignor 3) Cornelius Opris (assignor 4) Evan Jacobson (assignor 5) Matthew R. Roth (assignor 6)	Name and address of receiving party: Name: Caterpillar Inc.
Additional names of conveying parties attached? Yes No	o Internal Address:
3. Nature of conveyance:	Street Address: 100 N.E. Adams Street
⊠ Assignment	City: Peoria
Security Change of Name Agreement	State: IL Zip Code: 61629-6490
Execution Date: assignor 1: May 25, 2007	Additional name & Address attached? Yes
Additional numbers attached	d? ☐ Yes ☑ No
Name and address of party to whom correspondence concerning document should be mailed:	Total number of applications and registrations involved: 1
Name: Christopher P. Isaac	7. Total fee (37 CFR 1.21(h) and 3.41): \$40.00
Internal FINNEGAN, HENDERSON, FARABOW, Address: GARRETT & DUNNER, L.L.P. Street Address: 901 New York Avenue, N.W. City: Washington, D.C.	Enclosed (Please charge deficiency to deposit account 06-0916) Authorized to be charged to deposit account
State: Zip: 20001-4413	8. / UED & AE COLLIST NEW 1980 1875-0 9886 359
9. Statement and signature. To the best of my knowledge and belief, the foregoing informat of the original document.	tion is true and correct and any attached copy is a true cop May 31, 2007
Clifford D. Crowder Registration No. 56,639 Total number of pages including cover sheet, attack	ignature Date

PATENT

SOLE/JOINT INVENTION (Worldwide Rights) Attorney Docket No. 08350.6959-00000

ASSIGNMENT

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

METHOD AND SYSTEM FOR MAINTAINING AFTERTREATMENT EFFICIENCY

for which I/We executed an application for United States Letters application for United States Letters Patent on		
WHEREAS, Caterpillar Inc., a corporation of Delaware Street, Peoria, IL 61629-6490 (hereinafter referred to as Assignatitle, and interest in and to this invention in all countries throughout United States Letters Patent on this invention and the Letters Patent	ee), is desirous of securing the ent out the world, and in and to the app	ire right, lication for
NOW THEREFORE, be it known that for and in consideration and other good and valuable consideration the receipt of whe I/We, as Assignor(s), have sold, assigned, transferred, and set of set over unto the Assignee, its lawful successors and assigns, must this invention, provisional application Serial No	nich from Assignee is hereby acknower, and do hereby sell, assign, transformer, and interest led (if any), are terrest Patent of the United States of the above as of this application, and all application, and all cetters Fextensions, renewals, and reissues tents and Trademarks of the United as on applications as described above as a possible as on applications as described above the control of the United as on applications as described above the control of the United as on applications as described above the control of the United as on applications as described above the control of the United as on applications as described above the control of the United as on applications as described above the control of the united as on applications as described above the control of the control of the united as on applications as described above the control of the control of the control of the united as on applications as described above the control of the control of the united as on applications as described above the control of the control of the united as on applications as described above the control of the united as on applications as described as on a possible as	owledged, ansfer, and a in and to ad this which may e provisional ications for Patent which thereof; d States and ove, to issue
AND, I/WE HEREBY covenant that I/We have the full righ	nt to convey the interest assigned b	y this

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.

Page 1 of 4

1. FULL NAME OF SOLE OR FIRST ASSIGNOR Mark Scaife	ASSIGNOR'S SIGNATURE	DATE 25 MAY 2007
ADDRESS 1306 Butternut Court, Metamora, IL 61548		CITIZENSHIP UK
1. WITNESS NAME Churles Menke	WITNESS SIGNATURE	DATE 25MAYU7
ADDRESS 525 5 Kelly Ct		CITIZENSHIP US
Dunlag, IL 61525	-	
2 WITNESS NAME MAYCTIN L WILL!	WITNESS SIGNATURE	DATE 8/25/07
2300 WEST BRUOKLYN	PLACE	CITIZENSHIP
DWLAP, IL 61525		
2. FULL NAME OF SECOND ASSIGNOR, IF ANY Trent Cleveland	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 323 Arbor Vitae Drive, Metamora, IL 61548		CITIZENSHIP US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS	·	CITIZENSHIP

Listing of Inventors Continued ☑ Yes ☐ No

Page 2 of 4

PATENT

3. FULL NAME OF THIRD ASSIGNOR, IF ANY Michael Lowe	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 304 Combs Cove, Metamora, IL 61548		CITIZENSHIP US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
·		
4. FULL NAME OF FOURTH ASSIGNOR, IF ANY Cornelius Opris	ASSIGNOR'S SIGNATURE	DATE
		DATE CITIZENSHIP Denmark
Cornelius Opris ADDRESS		CITIZENSHIP
Cornelius Opris ADDRESS		CITIZENSHIP
Cornelius Opris ADDRESS		CITIZENSHIP
Cornelius Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 6161	15	CITIZENSHIP Denmark
Cornelius Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 6161 1. WITNESS NAME	15	CITIZENSHIP Denmark DATE
Cornelius Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 6161 1. WITNESS NAME	15	CITIZENSHIP Denmark DATE
Cornelius Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 6161 1. WITNESS NAME	15	CITIZENSHIP Denmark DATE
Cornelius Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 6161 1. WITNESS NAME ADDRESS	WITNESS SIGNATURE	CITIZENSHIP Denmark DATE CITIZENSHIP

Listing of Inventors Continued ☑ Yes ☐ No

Page 3 of 4

PATENT

5. FULL NAME OF FIFTH ASSIGNOR, IF ANY Evan Jacobson	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1124 W. Orchard Lane, Peoria, IL 61615		CITIZENSHIP US
<u> </u>		<u> </u>
1. WITNESS NAME	WITNESS SIGNATURE	DATE
	VVII INEGG GIGIANI GINE	
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS	 	CITIZENSHIP
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6. FULL NAME OF FIFTH ASSIGNOR, IF ANY Matthew R. Roth	ASSIGNOR'S SIGNATURE	DATE
	ASSIGNOR'S SIGNATURE	DATE CITIZENSHIP US
Matthew R. Roth ADDRESS	ASSIGNOR'S SIGNATURE	CITIZENSHIP
Matthew R. Roth ADDRESS	ASSIGNOR'S SIGNATURE	CITIZENSHIP
Matthew R. Roth ADDRESS	ASSIGNOR'S SIGNATURE WITNESS SIGNATURE	CITIZENSHIP
Matthew R. Roth ADDRESS 1537 Deer Path, Metamora, IL 61548		CITIZENSHIP US
Matthew R. Roth ADDRESS 1537 Deer Path, Metamora, IL 61548 1. WITNESS NAME		CITIZENSHIP US DATE
Matthew R. Roth ADDRESS 1537 Deer Path, Metamora, IL 61548 1. WITNESS NAME		CITIZENSHIP US DATE
Matthew R. Roth ADDRESS 1537 Deer Path, Metamora, IL 61548 1. WITNESS NAME		CITIZENSHIP US DATE
Matthew R. Roth ADDRESS 1537 Deer Path, Metamora, IL 61548 1. WITNESS NAME ADDRESS	WITNESS SIGNATURE	CITIZENSHIP US DATE CITIZENSHIP

Listing of Inventors Continued ☐ Yes ⊠ No

Page 4 of 4

PATENT

ASSIGNMENT

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

METHOD AND SYSTEM FOR MAINTAINING AFTERTREATMENT EFFICIENCY

for which I/We executed an application for United States Lette	rs Patent concurrently herewith or	' filed an
application for United States Letters Patent on	(Application No); and
WHEREAS, Caterpillar Inc., a corporation of Delawar Street, Peoria, IL 61629-6490 (hereinafter referred to as Assi title, and interest in and to this invention in all countries throug United States Letters Patent on this invention and the Letters	gnee), is desirous of securing the shout the world, and in and to the a	entire right, application for
NOW THEREFORE, be it known that for and in consideration and other good and valuable consideration the receipt of I/We, as Assignor(s), have sold, assigned, transferred, and se set over unto the Assignee, its lawful successors and assigns this invention, provisional application Serial No. application, and all divisions, and continuations thereof, and a be granted thereon, and all reissues thereof, and all rights to capplication (if any), as well as all rights to claim priority on the Letters Patent which may hereafter be filed for this invention it may be granted on this invention in any foreign country, and and I/We hereby authorize and request the Commissioner of any official of any foreign country whose duty it is to issue pate all Letters Patent for this invention to Assignee, its successors this Assignment;	which from Assignee is hereby act over, and do hereby sell, assign, my/our entire right, title, and inter, filed (if any), il Letters Patent of the United State claim priority on the basis of the abbasis of this application, and all age any foreign country and all Letter all extensions, renewals, and reissupatents and Trademarks of the Unitents on applications as described as	knowledged, transfer, and rest in and to , and this es which may love provisional optications for rs Patent which ues thereof; ited States and above, to Issue
AND, I/WE HEREBY covenant that I/We have the full r	right to convey the interest assigne	•

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.

FULL NAME OF SOLE OR FIRST ASSIGNOR Mark Scalle	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1306 Butternut Court, Metamora, IL 6154	8	CITIZENSHIP UK
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADORESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. FULL NAME OF SECOND ASSIGNOR, IF ANY Trent Cleveland	ASSIBNOR'S SIGNATURE	DATE, 3730/07
ADDRESS 323 Arbor Vitae Drive, Metamora, IL 6154	8	CITIZENSHIP US
1. WITNESS NAME Sest Snoble	WITNESS SIGNATURE SCOTT	DATE 5/30/2007
ADDRESS 1934 Colifornia Ro		CITIZENSHIP US
Pekin, IL 6/3	554	
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS NAME ADDRESS ADDRESS	Com often taam	5/30/2007
MUNESS 14.7 BOAISS TIME		CITIZENSHIP U.S.
Hopenell IL 61565	•	

Listing of Inventors Continued ☒ Yes □ No

Page 2 of 4

PATENT

3. FULL NAME OF THIRD ASSIGNOR, IF ANY Michael Lowe	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 304 Combs Cove, Metamora, IL 61548		CITIZENSHIP US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
4. FULL NAME OF FOURTH ASSIGNOR, IF ANY Cornelius Opris	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 610	815	CITIZENSHIP Denmark
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

Listing of inventors Continued 🗵 Yes 📋 No

Page 3 of 4

PATENT

5. FULL NAME OF FIFTH ASSIGNOR, IF ANY EVAN JACOBSON	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1124 W. Orchard Lane, Peorla, IL 6161	5	CITIZENSHIP US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
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2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
6. FULL NAME OF FIFTH ASSIGNOR, IF ANY Matthew R. Roth	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1537 Deer Path, Metamora, IL 61548	·	CITIZENSHIP US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2, WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

Listing of Inventors Continued ☐ Yes 図 No

Page 4 of 4

ASSIGNMENT

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

METHOD AND SYSTEM FOR MAINTAINING AFTERTREATMENT EFFICIENCY

for which I/We executed an application for United States Le		
application for United States Letters Patent on	(Application No); and
WHEREAS, Caterpillar Inc., a corporation of Delay Street, Peoria, IL 61629-6490 (hereinafter referred to as A title, and interest in and to this invention in all countries that United States Letters Patent on this invention and the Letter	ssignee), is desirous of securing the e oughout the world, and in and to the a	entire right, pplication for
NOW THEREFORE, be it known that for and in conpaid and other good and valuable consideration the receipt I/We, as Assignor(s), have sold, assigned, transferred, and set over unto the Assignee, its lawful successors and assignthis invention, provisional application Serial No. application, and all divisions, and continuations thereof, and be granted thereon, and all reissues thereof, and all rights to application (if any), as well as all rights to claim priority on the Letters Patent which may hereafter be filled for this invention may be granted on this invention in any foreign country, and and I/We hereby authorize and request the Commissioner of any official of any foreign country whose duty it is to issue pall Letters Patent for this invention to Assignee, its successithis Assignment;	of which from Assignee is hereby act set over, and do hereby sell, assign, ins, my/our entire right, title, and intercomplishing, filed (if any), and all Letters Patent of the United States to claim priority on the basis of the about the basis of this application, and all applications and reissured all extensions, renewals, and reissured the transport of Patents and Trademarks of the United attents on applications as described a	knowledged, transfer, and est in and to and this as which may ove provisional plications for a Patent which es thereof; ted States and above, to issue
AND, I/WE HEREBY covenant that I/We have the fu	ill right to convey the interest assigner	d by this

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 mo/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.

Page 1 of 4

1. FULL NAME OF SOLE OR FIRST ASSIGNOR Mark Scalife	LEGAL REPRESENTATIVE SIGNATURE:	DATE
ADDRESS 1306 Butternut Court, Metamora, IL 6154	В	CITIZENSHIP UK
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2 FULL NAME OF SECOND ASSIGNOR, IF ANY Trent Cleveland	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 323 Arbor Vitae Drive, Metamora, IL 6154	8	CITIZENSHIP US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

Listing of Inventors Continued

✓ Yes.

✓ No.

Page 2 of 4

PATENT

A HILL MAKE OF THIRD ASSIGNOD IS ANY		
3. FULL NAME OF THIRD ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
Michael Lowe	Man MATTHERE	34MM107
ADDRESS	13 West Control	CITIZENSHIP
304 Combs Cove, Metamora, IL 61548	•	US
357 55(155 5575, 125221175.4, 12 57575		
1. WITNESS NAME	WITNESS SIGNATURE	DATE 1
Jessica Crompton	Desira Cumpton	5/24/07
ADDRESS	The second second	CITIZENSHIP
1312 Santa Fe Rd		USA I
1012 20119 15 15		00/1
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Washington IL 6157]		
		
2. WITNESS NAME	WITNESS SIGNATURE	DATÉ
	Akolman	5/24/07
ANTHONY RODINAN	1 WWW	CITIZENSHIP
II. ←	•	1
13707 WILD SPRULE CT	• .	USA
CHILLICOTHE IL 6152	<u> </u>	
4. FULL NAME OF FOURTH ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
Cornelius Opris		
ADDRESS	<u> </u>	CITIZENSHIP
		Ullizerionie
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5946 W. Ridgecrest Circle, Peoria, IL 6161	5	Denmark
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5946 W. Ridgecrest Circle, Peoria, IL 6161		Denmark
	WITNESS SIGNATURE	
5946 W. Ridgecrest Circle, Peoria, IL 6161		Denmark
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5946 W. Ridgecrest Circle, Peoria, IL 6161		Denmark
5946 W. Ridgecrest Circle, Peoria, IL 6161		Denmark
5946 W. Ridgecrest Circle, Peoria, IL 6161		Denmark
5946 W. Ridgecrest Circle, Peoria, IL 6161		Denmark
5946 W. Ridgecrest Circle, Peoria, IL 6161 1. WITNESS NAME ADDRESS		Denmark
5946 W. Ridgecrest Circle, Peoria, IL 6161	WITNESS SIGNATURE	Denmark DATE CITIZENSHIP
1. WITNESS NAME 2. WITNESS NAME	WITNESS SIGNATURE	DATE CITIZENSHIP DATE
5946 W. Ridgecrest Circle, Peoria, IL 6161 1. WITNESS NAME ADDRESS	WITNESS SIGNATURE	Denmark DATE CITIZENSHIP
1. WITNESS NAME 2. WITNESS NAME	WITNESS SIGNATURE	DATE CITIZENSHIP DATE

Listing of Inventors Continued 🖾 Yes 🛛 No

Page 3 of 4

PATENT

5. FULL NAME OF FIFTH ASSIGNOR, IF ANY Evan Jacobson	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1124 W. Orchard Lane, Peorla, IL 6161	5	CITIZENSHIP US
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1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
		·
9. FULL NAME OF FIFTH ASSIGNOR, IF ANY Matthew R. Roth	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1537 Deer Path, Metamora, IL 61548		CITIZENSHIP US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

Listing of Inventors Continued 🗆 Yes 🖾 No

Page 4 of 4

PATENT

SOLE/JOINT INVENTION (Worldwide Rights) Attorney Docket No. 08350.6959-00000

ASSIGNMENT

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METHOD AND SYSTEM FOR MAINTAINING AFTERTREATMENT EFFICIENCY

application for United States Letters Patent on		
WHEREAS, Caterpillar Inc., a corporation of Street, Peorla, IL 61629-6490 (hereinafter referred to title, and interest in and to this invention in all countricular United States Letters Patent on this invention and the	es throughout the world, and in and to the appl	ire right, lication for
NOW THEREFORE, be it known that for and paid and other good and valuable consideration the relive, as Assignor(s), have sold, assigned, transferred set over unto the Assignee, its lawful successors and this invention, provisional application Serial No. application, and all divisions, and continuations there be granted thereon, and all reissues thereof, and all rapplication (if any), as well as all rights to claim priorit Letters Patent which may hereafter be filed for this in may be granted on this invention in any foreign count and I/We hereby authorize and request the Commiss any official of any foreign country whose duty it is to it all Letters Patent for this invention to Assignee, its su this Assignment;	d, and set over, and do hereby sell, assign, tra I assigns, my/our entire right, title, and Interest, filed(if any), and of, and all Letters Patent of the United States of dights to claim priority on the basis of the above ty on the basis of this application, and all application in any foreign country and all Letters F try, and all extensions, renewals, and reissues sioner of Patents and Trademarks of the United ssue patents on applications as described above	owledged, insfer, and In and to ad this which may a provisional cations for Patent which thereof; d States and ove, to issue
AND, I/WE HEREBY covenant that I/We have Assignment, and I/We have not executed and will not	e the full right to convey the interest assigned be t execute any agreement in conflict with this As	y this ssignment;
AND, I/WE HEREBY further covenant and agreemmunicate with Assignee, its successors and assigned testify in any legal proceeding, sign all lawful papers.	ree that I/We will, without further consideration gns, any facts known to me/us respecting this pers when called upon to do so, execute and d	invention.

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 paths 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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1. FULL NAME OF SOLE OR FIRST ASSIGNOR Mark Scaife	LEGAL REPRESENTATIVE SIGNATURE:	DATE
ADDRESS 1306 Butternut Court, Metamora, IL 61548		CITIZENSHIP UK
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
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2. FULL NAME OF SECOND ASSIGNOR, IF ANY Trent Cleveland	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 323 Arbor Vitae Drive, Metamora, IL 61548	3	CITIZENSHIP US
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1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
	The second secon	
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS	<u> </u>	CITIZENSHIP
		1

Listing of Inventors Continued ☑ Yes ☐ No

Page 2 of 4

PATENT

3, FULL NAME OF THIRD ASSIGNOR, IF ANY Michael Lowe	ASSIGNOR'S SIGNATURE	DATE
ADDRESS		CITIZENSHIP
304 Combs Cove, Metamora, IL 61548		US
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
4. FULL NAME OF FOURTH ASSIGNOR, IF ANY Cornelius Opris	ASSIGNOR'S SIGNATURE	DATE 5-25-07
		DATE S-25-07 CITIZENSHIP Denmark
Cornellus Opris ADDRESS		CITIZENSHIP
Cornellus Opris ADDRESS		CITIZENSHIP
Cornellus Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 61	1615	CITIZENSHIP
Cornellus Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 61	1615	CITIZENSHIP Denmark
Cornellus Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 61	1615	DATE 5/25/207 CITIZENSHIP
Cornellus Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 61 1. WITNESS NAME	1615 TOTNESS SIGNATURE ACTUAL ACTUAL	DATE 5/25/207 CITIZENSHIP
Cornellus Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 61 1. WITNESS NAME Richard H. Crandell ADDRESS 7413 N. Piccadilly P) Peoria, IL 61614	WITNESS SIGNATURE WITNESS SIGNATURE	DATE 5/25/2007 CITIZENSHIP USA
Cornellus Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 61 Lichard H. Crandell ADDRESS 7413 N. Piccadilly P) Peoria, IL (61614 2. WITNESS NAME Matthew F Leastek	WITNESS SIGNATURE WITNESS SIGNATURE	DATE 5/25/2007 CITIZENSHIP ()SA

Listing of Inventors Continued ☑ Yes ☐ No

Page 3 of 4

PATENT

5. FULL NAME OF FIFTH ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
Evan Jacobson		OUTITE NOT US
ADDRESS	=	CITIZENSHIP
1124 W. Orchard Lane, Peoria, IL 6161		- 03
		·
1. WITNESS NAME	WITNESS SIGNATURE	DATE
1. WHILESO HAME		
ADDRESS		CITIZENSHIP
		·
2, WITNESS NAME	WITNESS SIGNATURE	DATE
ADDOGGG		CITIZENSHIP
ADDRESS		CITIZENSTIF
	•	
•		·
6. FULL NAME OF FIFTH ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
Matthew R. Roth	ASSIGNOR'S SIGNATURE	DAILE
ADDRESS		CITIZENSHIP
1537 Deer Path, Metamora, IL 61548		US
·		
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

Listing of Inventors Continued ☐ Yes 図 No

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METHOD AND SYSTEM FOR MAINTAINING AFTERTREATMENT EFFICIENCY

for which I/We executed an application for United States Lette application for United States Letters Patent on	rs Patent concurrently herewith or (Application No.	r filed an); and
WHEREAS, Caterpillar Inc., a corporation of Delawar Street, Peoria, IL 61629-6490 (hereinafter referred to as Assignitely, and interest in and to this invention in all countries through United States Letters Patent on this invention and the Letters I	e whose post office address is 10 gnee), is desirous of securing the hout the world, and in and to the a	0 N.E. Adams entire right, application for
NOW THEREFORE, be it known that for and in consideration and other good and valuable consideration the receipt of law, as Assignor(s), have sold, assigned, transferred, and set set over unto the Assignee, its lawful successors and assigns, this invention, provisional application Serial No. application, and all divisions, and continuations thereof, and all be granted thereon, and all reissues thereof, and all rights to clamplication (if any), as well as all rights to claim priority on the latters Patent which may hereafter be filed for this invention in may be granted on this invention in any foreign country, and all and I/We hereby authorize and request the Commissioner of Pany official of any foreign country whose duty it is to issue pate all Letters Patent for this invention to Assignee, its successors this Assignment;	which from Assignee is hereby act over, and do hereby sell, assign, my/our entire right, title, and interfiled (if any). I Letters Patent of the United State laim priority on the basis of the abbasis of this application, and all application and all Letter I extensions, renewals, and reissuratents and Trademarks of the United on applications as described and trademarks on applications as described.	knowledged, transfer, and est in and to , and this es which may ove provisional oplications for rs Patent which ues thereof; ited States and above, to issue
AND, I/WE HEREBY covenant that I/We have the full ri	ght to convey the interest assigne any agreement in conflict with this	d by this Assignment;
AND IME HEREBY further covenant and agree that M	Ma will without further considerate	

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.

Page 1 of 4

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Full name of sole or first assignor Mark Scaife	LEGAL REPRESENTATIVE SIGNATURE:	DATE
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Trent Cleveland	ASSIGNOR'S SIGNATURE	DATE
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Listing of Inventors Continued I Yes D No

Page 2 of 4

3. FULL NAME OF THIRD ASSIGNOR, IF ANY Michael Lowe	ASSIGNOR'S SIGNATURE	DATE
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Cornelius Opris ADDRESS		DATE
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Cornelius Opris ADDRESS 5946 W. Ridgecrest Circle, Peoria, IL 6161 1. WITNESS NAME	5	CITIZENSHIP Denmark DATE
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Listing of Inventors Continued ☒ Yes ☐ No

Page 3 of 4

PATENT

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Listing of Inventors Continued ☐ Yes ☑ No

Page 4 of 4

PATENT

SOLE/JOINT INVENTION (Worldwide Rights) Attorney Docket No. 08350.6959-00000

ASSIGNMENT

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

METHOD AND SYSTEM FOR MAINTAINING AFTERTREATMENT EFFICIENCY

for which I/We executed an application for United States Lett	ers Patent concurrently herewith or	filed an
application for United States Letters Patent on	(Application No); and
WHEREAS, Caterpillar Inc., a corporation of Delawa Street, Peoria, IL 61629-6490 (hereinafter referred to as Ass title, and interest in and to this invention in all countries throu United States Letters Patent on this invention and the Letters	signee), is desirous of securing the e ighout the world, and in and to the a	entire right, application for
NOW THEREFORE, be it known that for and in consipaid and other good and valuable consideration the receipt of I/We, as Assignor(s), have sold, assigned, transferred, and set over unto the Assignee, its lawful successors and assigns this invention, provisional application Serial No. application, and all divisions, and continuations thereof, and be granted thereon, and all reissues thereof, and all rights to application (if any), as well as all rights to claim priority on the Letters Patent which may hereafter be filed for this invention may be granted on this invention in any foreign country, and and I/We hereby authorize and request the Commissioner of any official of any foreign country whose duty it is to issue parall Letters Patent for this invention to Assignee, its successor this Assignment:	of which from Assignee is hereby act over, and do hereby sell, assign, s, my/our entire right, title, and intercept filed (if any), all Letters Patent of the United State claim priority on the basis of the able basis of this application, and all again any foreign country and all Letter all extensions, renewals, and reissurf Patents and Trademarks of the Unitents on applications as described a	knowledged, transfer, and est in and to , and this es which may ove provisional oplications for rs Patent which les thereof; ited States and above, to issue

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.

Page 1 of 4

1. FULL NAME OF SOLE OR FIRST ASSIGNOR Mark Scaife	LEGAL REPRESENTATIVE SIGNATURE:	DATE
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Listing of Inventors Continued \boxtimes Yes $\ \square$ No

Page 2 of 4

PATENT

3. FULL NAME OF THIRD ASSIGNOR, IF ANY Michael Lowe	ASSIGNOR'S SIGNATURE	DATE
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Listing of Inventors Continued
Yes
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Page 3 of 4

PATENT

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Listing of Inventors Continued □ Yes ☑ No

RECORDED: 05/31/2007

Page 4 of 4

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