501799615 01/26/2012

PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Timothy Joe FELTY	12/19/2011
James Robert Mason	12/23/2011
Stuart Paul Smith	12/23/2011
Anthony James Grichnik	01/24/2012
Gavin Peter Williams	01/10/2012

RECEIVING PARTY DATA

Name:	Caterpillar Inc.
Street Address:	100 N.E. Adams Street
City:	Peoria
State/Country:	ILLINOIS
Postal Code:	61629-9510

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13338646

CORRESPONDENCE DATA

Fax Number: (202)408-4400 Phone: 202-408-4000

Email: daniel.tucker@finnegan.com

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

via US Mail.

Correspondent Name: CATERPILLAR/FINNEGAN, HENDERSON, L.L.P.

Address Line 1: 901 New York Avenue, NW

Address Line 4: WASHINGTON, DISTRICT OF COLUMBIA 20001-4413

ATTORNEY DOCKET NUMBER:	08350.0392-00
NAME OF SUBMITTER:	Daniel C. Tucker

PATENT

REEL: 027601 FRAME: 0564

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Total Attachments: 20 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 source=Assignment#page13.tif source=Assignment#page14.tif source=Assignment#page15.tif source=Assignment#page16.tif source=Assignment#page17.tif source=Assignment#page18.tif source=Assignment#page19.tif source=Assignment#page20.tif

ASSIGNMENT

WHEREAS We, the below named inventors, hereinafter referred to as Assignors, have made an invention entitled:

SYSTEMS AND METHODS FOR EXTENDING PHYSICAL SENSOR RANGE USING VIRTUAL SENSORS

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

412 Arnold Road, East Peoria, IL 61611

WHEREAS, Caterpillar Inc., a corporation of Delaware whose post office address is Intellectual Property Department, 100 N.E. Adams Street, Peoria, Illinois 61629-9510 (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, We, as Assignors, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, our entire right, title, and interest in and to this ____, and this application, and all divisions, invention, provisional application Serial No. , filed _ 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 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, WE HEREBY covenant that We have the full right to convey the interest assigned by this Assignment, and We have not executed and will not execute any agreement in conflict with this Assignment; AND, WE HEREBY further covenant and agree that We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to 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, WE HEREBY authorize the attorneys/representatives that WE have empowered to prosecute this application to insert here in parentheses the country, application number, and official filing date (Application No. _____, filed _____). IN TESTIMONY WHEREOF, We have hereunto set our hands. DATE 1. FULL NAME OF SOLE OR FIRST ASSIGNOR Timothy Joe FELTY

Page 1 of 4

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ADDRESS 1290 HTCKON Hills Rd	tti ole	CITIZENSHIP USA
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2. WITNESS NAME	WITNESS SIGNATURE	DATE
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SBIO W. Woodbridge PI		CITIZENSHIP
Perna , IL 61615		
2. FULL NAME OF SECOND ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
James Robert MASON		
ADDRESS 424 W. Knoll Crest Drive, Peoria, IL 61614		CITIZENSHIP U.S.A.
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3. FULL NAME OF THIRD ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Stuart Paul SMITH		
ADDRESS 1 Farriers Mews, Scotgate, Stamford	, Lincs, UK PE9 2YQ	CITIZENSHIP U.K.
1. WITNESS NAME	WITNESS SIGNATURE	DATE:
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ADDRESS	Andrew Control of the	CITIZENSHIP
4. FULL NAME OF FOURTH ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Anthony James GRICHNIK		
759 N. Main Street, Eureka, IL, 61530		CITIZENSHIP U.S.A.
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Page 3 of 4

ADDRESS		CITIZENSHIP
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5. FULL NAME OF FIFTH ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Gavin Peter WILLIAMS		
ADDRESS 12 Foundry Rd, Ryhall, Lincolnshire,	England PE9 4JA	CITIZENSHIP U.K.
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for which We will or have filed a patent application; and

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NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, We, as Assignors, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, our entire right, title, and interest in and to this invention, provisional application Serial No, filed, 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 patents which may be granted on this invention in 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, WE HEREBY covenant that We have the full right to convey the interest assigned by this Assignment, and We have not executed and will not execute any agreement in conflict with this Assignment;			
AND, WE HEREBY further covenant and agree that We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to 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, WE HEREBY authorize the attorneys/representatives that WE have empowered to prosecute this application to insert here in parentheses the country, application number, and official filing date (
Application No, filed). IN TESTIMONY WHEREOF, We have hereunto set our hands.				
FULL NAME OF SOLE OR FIRST ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE		
Timothy Joe FELTY				
ADDRESS 412 Arnold Road, East Peoria, IL 616	11	CITIZENSHIP U.S.A.		

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Page 2 of 4

3. FULL NAME OF THIRD ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Stuart Paul SMITH		
ADDRESS 1 Farriers Mews, Scotgate, Stamford, Lincs, UK PE9 2YQ		CITIZENSHIP U.K.
1. WITNESS NAME	WITNESS SIGNATURE	DATE
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ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
4. FULL NAME OF FOURTH ASSIGNOR Anthony James GRICHNIK	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 759 N. Main Street, Eureka, IL, 61530	759 N. Main Street, Eureka, IL, 61530	
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1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE

Page 3 of 4

ADDRESS		CITIZENSHIP
5. FULL NAME OF FIFTH ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Gavin Peter WILLIAMS		
12 Foundry Rd, Ryhall, Lincolnshire, England PE9 4JA		CITIZENSHIP U.K.
1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
2. WITNESS NAME	WITNESS SIGNATURE	DATE
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NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, We, as Assignors, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, our entire right, title, and interest in and to this invention, provisional application Serial No, filed, 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 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, WE HEREBY covenant that We ha We have not executed and will not execute any a	ave the full right to convey the interest assigned bagreement in conflict with this Assignment;	y this Assignment, and	
AND, WE HEREBY further covenant and agree that We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to 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;			
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1. FULL NAME OF SOLE OR FIRST ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE	
Timothy Joe FELTY			
ADDRESS 412 Arnold Road, East Peoria, IL 61611		CITIZENSHIP U.S.A.	
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Page 1 of 4

1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP
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ADDRESS		CITIZENSHIP
2. FULL NAME OF SECOND ASSIGNOR James Robert MASON	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 424 W. Knoll Crest Drive, Peo	ADDRESS 424 W. Knoll Crest Drive, Peoria, IL 61614	
1. WITNESS NAME	WITNESS SIGNATURE	DATE
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2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

3. FULL NAME OF THIRD ASSIGNOR Stuart Paul SMITH	ASSIGNOR'S SIGNATURE	23-12-2011
ADDRESS 1 Farriers Mews, Scotgate, Stamford	CITIZENSHIP U.K.	
1. WITNESS NAME MICHAEL DAVID SMITH ADDRESS 4 GREEN WOOD CLOSE, BURY, HI	WITNESS SIGNATURE MDSmith. WTINGDON, CAMBS. PEZE 2NZ UK.	DATE 23 DEC 2011 CITIZENSHIP UK
2. WITNESS NAME PETER THOMAS LADLOW	WITNESSTSIGNATURE	23 Dec 2011
ADDRESS 71 WESTBOURNE PARK BOURI		CITIZENSHIP UK
4. FULL NAME OF FOURTH ASSIGNOR Anthony James GRICHNIK	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 759 N. Main Street, Eureka, IL, 61530		CITIZENSHIP U.S.A.
1. WITNESS NAME	WITNESS SIGNATURE	DATE
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2. WITNESS NAME	WITNESS SIGNATURE	DATE

Page 3 of 4

ADDRESS		CITIZENSHIP
5. FULL NAME OF FIFTH ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Gavin Peter WILLIAMS		
ADDRESS 12 Foundry Rd, Ryhall, Lincolnshire,	ADDRESS 12 Foundry Rd, Ryhall, Lincolnshire, England PE9 4JA	
1. WITNESS NAME	WITNESS SIGNATURE	DATE
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Page 1 of 4

1. WITNESS NAME	WITNESS SIGNATURE	DATE	
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2. WITNESS NAME	WITNESS SIGNATURE	DATE	
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2. FULL NAME OF SECOND ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE	
James Robert MASON			
		CITIZENSHIP U.S.A.	
1. WITNESS NAME	WITNESS SIGNATURE	DATE	
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2. WITNESS NAME	WITNESS SIGNATURE	DATE	
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3. FULL NAME OF THIRD ASSIGNOR Stuart Paul SMITH	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1 Farriers Mews, Scotgate, Stamfor	rd, Lincs, UK PE9 2YQ	CITIZENSHIP U.K.
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4. FULL NAME OF FOURTH ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
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Anthony James GRICHNIK ADDRESS 759 N. Main Street, Eureka, IL, 6153 1. WITNESS NAME NATHAN WEAVER ADDRESS	A Link	Z TOOM 12 CITIZENSHIP U.S.A. DATE 24 JAN 12 CITIZENSHIP
Anthony James GRICHNIK ADDRESS 759 N. Main Street, Eureka, IL, 6153 1. WITNESS NAME NATHAN WEAVER ADDRESS 3221 N. THELVE DAKS DR.	A Link	Z TOOM 12 CITIZENSHIP U.S.A. DATE 24 JAN 12
Anthony James GRICHNIK ADDRESS 759 N. Main Street, Eureka, IL, 6153 1. WITNESS NAME NATHAN WEAVER ADDRESS	A Link	Z TOOM 12 CITIZENSHIP U.S.A. DATE 24 JAN 12 CITIZENSHIP
Anthony James GRICHNIK ADDRESS 759 N. Main Street, Eureka, IL, 6153 1. WITNESS NAME NATHAN WEAVER ADDRESS 3221 N. THELVE DAKS DR.	A Link	Z TOOM 12 CITIZENSHIP U.S.A. DATE 24 JAN 12 CITIZENSHIP
Anthony James GRICHNIK ADDRESS 759 N. Main Street, Eureka, IL, 6153 1. WITNESS NAME NATHAN WEAVER ADDRESS 3221 N. TUELVE OHKS DR. PEORIA, IL 61604	WITNESS SIGNATURE	DATE Q4 JAN B CITIZENSHIP U.S.A.

PATENT

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ADDRESS 300 S 4th Str , Apt E Dunlap IL 6/525		CITIZENSHIP USA
Dunlap IL 6/525		
5. FULL NAME OF FIFTH ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Gavin Peter WILLIAMS		
ADDRESS 12 Foundry Rd, Ryhall, Lincolnshire,	England PE9 4JA	CITIZENSHIP U.K.
1. WITNESS NAME	WITNESS SIGNATURE	DATE
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IN TESTIMONY WHEREOF, We have he	ereunto set our hands.		
1. FULL NAME OF SOLE OR FIRST ASSIGNOR	ASSIGNOR'S SIGNATURE		DATE
Timothy Joe FELTY			
ADDRESS 412 Arnold Road, East Peoria, IL 616	11		CITIZENSHIP U.S.A.

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1. WITNESS NAME	WITNESS SIGNATURE	DATE
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2. WITNESS NAME	WITNESS SIGNATURE	DATE
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James Robert MASON		
ADDRESS 424 W. Knoll Crest Drive, Peoria, IL 6	1614	CITIZENSHIP U.S.A.
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Anthony James GRICHNIK		
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5. FULL NAME OF FIFTH ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Gavin Peter WILLIAMS	Sein Williams	10 Jan 2012
ADDRESS 12 Foundry Rd, Ryhall, Lincolnshire,	England PE9 4JA	CITIZENSHIP U.K.
1. WITNESS NAME	WITNESS SIGNATURE	DATE
RIDWAN KUREEMUN	The second secon	10/01/2012
RIDWAN KUREEMUN ADDRESS 66 KENT ROAD, LUTC	IN, LUI ITL, UK.	CITIZENSHIP BUIUN
2. WITNESS NAME	WITNESS SIGNATURE	DATE
ROSS COLLINS	Rich	10/01/2012
ADDRESS + ASHBURN CLOS	E, GLINTON,	CITIZENSHIP BRITISH
DETERBOROUGH PE	6744	

RECORDED: 01/26/2012