PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

SUBMISSION TYPE:		NEW ASSIGNMENT		
NATURE OF CONVEY	ANCE:	ASSIGNMENT		
CONVEYING PARTY D	ATA			
		Name	Execution Date	
David G. Bowling			08/09/2013	
John M. Stuart			08/09/2013	
Jerry A. Culp			08/12/2013	
Donald W. Malackowsk	ci		08/14/2013	
Jose Luis Moctezuma d	de la Barrera		09/18/2013	
Patrick Roessler			08/13/2013	
Joel N. Beer			08/09/2013	
John Ketchel			08/09/2013	
RECEIVING PARTY DA	ATA Stryker Corpora	tion]	
Street Address:	2825 Airview Boulevard			
City:	Kalamazoo			
State/Country:	MICHIGAN			
Postal Code:	49002			
PROPERTY NUMBERS	S Total: 3			
Property Type Number		per		
Application Number:		13958070		
Application Number: 13958834				
· #P				
PCT Number:		S1353451		

CORRESPONDENCE DATA

Fax Number:	2486451568				
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.					
Phone:	(248) 645-1483				
Email:	IPDocket@H2Law.com				
Correspondent Name:	HOWARD & HOWARD ATTORNEYS PLLC				
Address Line 1:	450 West Fourth Street				

PATENT REEL: 031294 FRAME: 0709

502511800

Address Line 4: Royal Oak, MICHIGAN 48067-2557			
ATTORNEY DOCKET NUMBER: 060939.00066, 67 AND 68			
NAME OF SUBMITTER:	Trent K. English		
Signature:	/Trent K. English/		
Date:	09/27/2013		
Total Attachments: 18 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#page9.tif source=Assignment#page10.tif source=Assignment#page10.tif source=Assignment#page12.tif source=Assignment#page13.tif source=Assignment#page13.tif source=Assignment#page15.tif source=Assignment#page15.tif source=Assignment#page15.tif source=Assignment#page16.tif source=Assignment#page17.tif source=Assignment#page18.tif			

WHEREAS WE, David G. Bowling of 6712 Elwood Drive NW, Los Ranchos de Albuquerque, New Mexico 87107; John M. Stuart of 5200 Teton Avenue NE, Rio Rancho, New Mexico 87144; Jerry A. Culp of 5476 Rocky Mountain Street, Kalamazoo, Michigan 49009; Donald W. Malackowski of 16055 Prairie Ronde, Schoolcraft, Michigan 49087; Jose Luis Moctezuma de la Barrera of Vordere Poche 11, Freiburg, 79104 DE; Patrick Roessler of Im Laimacker 42, Merzhausen 79249 DE; Joel N. Beer of 312 Fontana Place NE, Albuquerque, New Mexico 87108-1167 and John Ketchel of 127 West Kalamazoo Avenue, Kalamazoo, Michigan 49007 (hereinafter, "ASSIGNORS") collectively, declare that we have invented certain new and useful improvement s in inventions entitled:

A Navigation System for use with a Surgical Manipulator Operable in Manual or Semi-Autonomous Modes

which is set forth in United States Patent Application No. 13/958,834 filed on August 5, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Surgical Manipulator Capable of Controlling a Surgical Instrument in Multiple Modes

which is set forth in United States Patent Application No. 13/958,070 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Systems and Methods for Robotic Surgery

which is set forth in International Patent Application No. PCT/US13/53451 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

WHEREAS, Stryker Corporation, (hereinafter, "ASSIGNEE"), a corporation organized and existing under and by virtue of the laws of the State of Michigan having a place of business at 2825 Airview Boulevard, Kalamazoo, Michigan 49002, is desirous of acquiring said inventions, said patent applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore or thereupon;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for and in consideration of the sum of One United States Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, said ASSIGNORS do hereby sell, assign, transfer and set over unto said ASSIGNEE, its successors, assigns, or other legal representatives, the full and entire right, title and interest in and to said inventions and said patent applications, including the right of said ASSIGNEE, its successors, assigns

H&H File Nos. 060939.00066, 00067 and 00068 Page 2 of 3

or other legal representatives to file any and all United States patent applications on said inventions, including but not limited to the right to file any United States patent applications claiming priority to said patent applications including divisional applications, continuation applications, and continuation-in-part applications, and the right to seek reissues, reexaminations, or extensions of any patent in the United States, with the same to be held and enjoyed by said ASSIGNEE as fully and entirely as the same would have been held by said ASSIGNORS had this Assignment and sale not been made;

ASSIGNORS HEREBY FURTHER ASSIGN unto said ASSIGNEE, its successors, assigns, or other legal representatives, the whole right, title and interest in and to said inventions throughout all countries foreign to the United States, including the right to file any foreign patent applications for said inventions, including the right to file any foreign patent applications claiming priority to said patent applications including PCT national phase applications, and otherwise seek any patent in any foreign country, and including but not limited to the right to file any foreign divisional applications, continuation applications, and continuation-in-part applications claiming priority to said patent applications of any patents in any foreign country, and said ASSIGNORS do hereby ratify any acts of said ASSIGNEE in applying for a patent in said ASSIGNEE'S own name in any foreign country where such procedure is proper and do hereby agree to execute said foreign patent applications in the several countries where it is necessary that the same be executed by the inventor, and to execute assignments of said foreign patent applications and any patent to be obtained therefore to said ASSIGNEE;

ASSIGNORS HEREBY AUTHORIZE and request the Commissioner of Patents and Trademarks of the United States and any official of any country foreign to the United States whose duty it is to issue patents, to issue any patents and any reissues and extensions thereof to said ASSIGNEE in accordance with this Assignment;

ASSIGNORS HEREBY GRANT to said ASSIGNEE the full right to sue for and recover all profits and damages recoverable for past infringement of said inventions, said applications, and any U.S. and/or foreign patent or patents that may be obtained therefore, for ASSIGNEE'S use and behalf and for the use and behalf of ASSIGNEE'S successors, assigns and other legal representatives;

EACH ASSIGNOR HEREBY AGREES that they, their successors, assigns or other legal representatives will at any time upon the request and at the expense of said ASSIGNEE, its successors, assigns, or other legal representatives, without undue delay, execute and deliver any and all papers and do all lawful acts that may be necessary or desirable to perfect the title to said inventions, said applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore; and

EACH ASSIGNOR HEREBY REPRESENTS and warrants that they have the full right to convey the entire interest of said inventions and said applications herein assigned and have not granted any rights inconsistent with the rights granted herein.

H&H File Nos. 060939.00066, 00067 and 00068 Page 3 of 3

authorize and request any attorney or agent designated in any Power of Attorney executed with respect to these inventions, to insert above the filing dates and application numbers of the above identified patent applications when they become known if not already provided. 4/9/2013 By: <u>Jel Pr</u> David G. Bowling Dated: Dated: 09 Ang 2013 By: AM John M. Stuari By: ______ Jerry A, Culp Dated: _____ Dated: By: _____ Donald W. Malackowski Dated: By: _____ Jose Luis Moctezuma de la Barrera By: _ Dated: Patrick Roessler Dated: 8/9/2013 By: Joel N. Beer _____ By: Dated: John Ketchel 2349936

To comply with 37 C.F.R. § 3.21 for recordal of this Assignment, we hereby

WHEREAS WE, David G. Bowling of 6712 Elwood Drive NW, Los Ranchos de Albuquerque, New Mexico 87107; John M. Stuart of 5200 Teton Avenue NE, Rio Rancho, New Mexico 87144; Jerry A. Culp of 5476 Rocky Mountain Street, Kalamazoo, Michigan 49009; Donald W. Malackowski of 16055 Prairie Ronde, Schoolcraft, Michigan 49087; Jose Luis Moctezuma de la Barrera of Vordere Poche 11, Freiburg, 79104 DE; Patrick Roessler of Im Laimacker 42, Merzhausen 79249 DE; Joel N. Beer of 312 Fontana Place NE, Albuquerque, New Mexico 87108-1167 and John Ketchel of 127 West Kalamazoo Avenue, Kalamazoo, Michigan 49007 (hereinafter, "ASSIGNORS") collectively, declare that we have invented certain new and useful improvement s in inventions entitled:

A Navigation System for use with a Surgical Manipulator Operable in Manual or Semi-Autonomous Modes

which is set forth in United States Patent Application No. 13/958,834 filed on August 5, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Surgical Manipulator Capable of Controlling a Surgical Instrument in Multiple Modes

which is set forth in United States Patent Application No. 13/958,070 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Systems and Methods for Robotic Surgery

which is set forth in **International Patent Application No. PCT/US13/53451** filed on **August 2, 2013**, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

WHEREAS, Stryker Corporation, (hereinafter, "ASSIGNEE"), a corporation organized and existing under and by virtue of the laws of the State of Michigan having a place of business at 2825 Airview Boulevard, Kalamazoo, Michigan 49002, is desirous of acquiring said inventions, said patent applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore or thereupon;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for and in consideration of the sum of One United States Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, said ASSIGNORS do hereby sell, assign, transfer and set over unto said ASSIGNEE, its successors, assigns, or other legal representatives, the full and entire right, title and interest in and to said inventions and said patent applications, including the right of said ASSIGNEE, its successors, assigns

ASSIGNORS HEREBY FURTHER ASSIGN unto said ASSIGNEE, its successors, assigns, or other legal representatives, the whole right, title and interest in and to said inventions throughout all countries foreign to the United States, including the right to file any foreign patent applications for said inventions, including the right to file any foreign patent applications claiming priority to said patent applications including PCT national phase applications, and otherwise seek any patent in any foreign country, and including but not limited to the right to file any foreign divisional applications, continuation applications, and continuation-in-part applications claiming priority to said patent applications of any patents in any foreign country, and said ASSIGNORS do hereby ratify any acts of said ASSIGNEE in applying for a patent in said ASSIGNEE'S own name in any foreign country where such procedure is proper and do hereby agree to execute said foreign patent applications in the several countries where it is necessary that the same be executed by the inventor, and to execute assignments of said foreign patent applications and any patent to be obtained therefore to said ASSIGNEE;

ASSIGNORS HEREBY AUTHORIZE and request the Commissioner of Patents and Trademarks of the United States and any official of any country foreign to the United States whose duty it is to issue patents, to issue any patents and any reissues and extensions thereof to said ASSIGNEE in accordance with this Assignment;

ASSIGNORS HEREBY GRANT to said ASSIGNEE the full right to sue for and recover all profits and damages recoverable for past infringement of said inventions, said applications, and any U.S. and/or foreign patent or patents that may be obtained therefore, for ASSIGNEE'S use and behalf and for the use and behalf of ASSIGNEE'S successors, assigns and other legal representatives;

EACH ASSIGNOR HEREBY AGREES that they, their successors, assigns or other legal representatives will at any time upon the request and at the expense of said ASSIGNEE, its successors, assigns, or other legal representatives, without undue delay, execute and deliver any and all papers and do all lawful acts that may be necessary or desirable to perfect the title to said inventions, said applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore; and

EACH ASSIGNOR HEREBY REPRESENTS and warrants that they have the full right to convey the entire interest of said inventions and said applications herein assigned and have not granted any rights inconsistent with the rights granted herein.

To comply with 37 C.F.R. § 3.21 for recordal of this Assignment, we hereby authorize and request any attorney or agent designated in any Power of Attorney executed with respect to these inventions, to insert above the filing dates and application numbers of the above identified patent applications when they become known if not already provided.

Dated:		By:
		David G. Bowling
Dated:		By: John M. Stuart
Dated:	8-12-2013	By: A. Culp
Dated:		By: Donald W. Malackowski
Dated:		By: Jose Luis Moctezuma de la Barrera
Dated:		By: Patrick Roessler
Dated:		By: Joel N. Beer
Dated: _		By: John Ketchel

WHEREAS WE, David G. Bowling of 6712 Elwood Drive NW, Los Ranchos de Albuquerque, New Mexico 87107; John M. Stuart of 5200 Teton Avenue NE, Rio Rancho, New Mexico 87144; Jerry A. Culp of 5476 Rocky Mountain Street, Kalamazoo, Michigan 49009; Donald W. Malackowski of 16055 Prairie Ronde, Schoolcraft, Michigan 49087; Jose Luis Moctezuma de la Barrera of Vordere Poche 11, Freiburg, 79104 DE; Patrick Roessler of Im Laimacker 42, Merzhausen 79249 DE; Joel N. Beer of 312 Fontana Place NE, Albuquerque, New Mexico 87108-1167 and John Ketchel of 127 West Kalamazoo Avenue, Kalamazoo, Michigan 49007 (hereinafter, "ASSIGNORS") collectively, declare that we have invented certain new and useful improvement s in inventions entitled:

A Navigation System for use with a Surgical Manipulator Operable in Manual or Semi-Autonomous Modes

which is set forth in United States Patent Application No. 13/958,834 filed on August 5, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Surgical Manipulator Capable of Controlling a Surgical Instrument in Multiple Modes

which is set forth in United States Patent Application No. 13/958,070 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Systems and Methods for Robotic Surgery

which is set forth in **International Patent Application No. PCT/US13/53451** filed on **August 2**, **2013**, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

WHEREAS, Stryker Corporation, (hereinafter, "ASSIGNEE"), a corporation organized and existing under and by virtue of the laws of the State of Michigan having a place of business at 2825 Airview Boulevard, Kalamazoo, Michigan 49002, is desirous of acquiring said inventions, said patent applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore or thereupon;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for and in consideration of the sum of One United States Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, said ASSIGNORS do hereby sell, assign, transfer and set over unto said ASSIGNEE, its successors, assigns, or other legal representatives, the full and entire right, title and interest in and to said inventions and said patent applications, including the right of said ASSIGNEE, its successors, assigns

ASSIGNORS HEREBY FURTHER ASSIGN unto said ASSIGNEE, its successors, assigns, or other legal representatives, the whole right, title and interest in and to said inventions throughout all countries foreign to the United States, including the right to file any foreign patent applications for said inventions, including the right to file any foreign patent applications claiming priority to said patent applications including PCT national phase applications, and otherwise seek any patent in any foreign country, and including but not limited to the right to file any foreign divisional applications, continuation applications, and continuation-in-part applications claiming priority to said patent applications where such procedure is proper, and the right to seek reissues or extensions of any patents in any foreign country, and said ASSIGNEE'S own name in any foreign country where such procedure is proper and do hereby agree to execute said foreign patent applications in the several countries where it is necessary that the same be executed by the inventor, and to execute assignments of said foreign patent applications and any patent to be obtained therefore to said ASSIGNEE;

ASSIGNORS HEREBY AUTHORIZE and request the Commissioner of Patents and Trademarks of the United States and any official of any country foreign to the United States whose duty it is to issue patents, to issue any patents and any reissues and extensions thereof to said ASSIGNEE in accordance with this Assignment;

ASSIGNORS HEREBY GRANT to said ASSIGNEE the full right to sue for and recover all profits and damages recoverable for past infringement of said inventions, said applications, and any U.S. and/or foreign patent or patents that may be obtained therefore, for ASSIGNEE'S use and behalf and for the use and behalf of ASSIGNEE'S successors, assigns and other legal representatives;

EACH ASSIGNOR HEREBY AGREES that they, their successors, assigns or other legal representatives will at any time upon the request and at the expense of said ASSIGNEE, its successors, assigns, or other legal representatives, without undue delay, execute and deliver any and all papers and do all lawful acts that may be necessary or desirable to perfect the title to said inventions, said applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore; and

EACH ASSIGNOR HEREBY REPRESENTS and warrants that they have the full right to convey the entire interest of said inventions and said applications herein assigned and have not granted any rights inconsistent with the rights granted herein.

To comply with 37 C.F.R. § 3.21 for recordal of this Assignment, we hereby authorize and request any attorney or agent designated in any Power of Attorney executed with respect to these inventions, to insert above the filing dates and application numbers of the above identified patent applications when they become known if not already provided.

Dated:		By:	David G. Bowling
Dated:			John M. Stuart
Dated:		Вy:	Jerry A. Culp
Dated:e	\$/14/2013		D-CV MC
Dated:		•	Jose Luis Moctezuma de la Barrera
Dated:		-	Patrick Roessler
Dated:			Joel N. Beer
Dated:		-	John Ketchel

WHEREAS WE, David G. Bowling of 6712 Elwood Drive NW, Los Ranchos de Albuquerque, New Mexico 87107; John M. Stuart of 5200 Teton Avenue NE, Rio Rancho, New Mexico 87144; Jerry A. Culp of 5476 Rocky Mountain Street, Kalamazoo, Michigan 49009; Donald W. Małackowski of 16055 Prairie Ronde, Schoolcraft, Michigan 49087; Jose Luis Moctezuma de la Barrera of Vordere Poche 11, Freiburg, 79104 DE; Patrick Roessler of Im Laimacker 42, Merzhausen 79249 DE; Joel N. Beer of 312 Fontana Place NE, Albuquerque, New Mexico 87108-1167 and John Ketchel of 127 West Kalamazoo Avenue, Kalamazoo, Michigan 49007 (hereinafter, "ASSIGNORS") collectively, declare that we have invented certain new and useful improvement s in inventions entitled:

A Navigation System for use with a Surgical Manipulator Operable in Manual or Semi-Autonomous Modes

which is set forth in United States Patent Application No. 13/958,834 filed on August 5, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Surgical Manipulator Capable of Controlling a Surgical Instrument in Multiple Modes

which is set forth in United States Patent Application No. 13/958,070 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Systems and Methods for Robotic Surgery

which is set forth in International Patent Application No. PCT/US13/53451 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

WHEREAS, Stryker Corporation, (hereinafter, "ASSIGNEE"), a corporation organized and existing under and by virtue of the laws of the State of Michigan having a place of business at 2825 Airview Boulevard, Kalamazoo, Michigan 49002, is desirous of acquiring said inventions, said patent applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore or thereupon;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for and in consideration of the sum of One United States Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, said ASSIGNORS do hereby sell, assign, transfer and set over unto said ASSIGNEE, its successors, assigns, or other legal representatives, the full and entire right, title and interest in and to said inventions and said patent applications, including the right of said ASSIGNEE, its successors, assigns

ASSIGNORS HEREBY FURTHER ASSIGN unto said ASSIGNEE, its successors, assigns, or other legal representatives, the whole right, title and interest in and to said inventions throughout all countries foreign to the United States, including the right to file any foreign patent applications for said inventions, including the right to file any foreign patent applications, and otherwise seek any patent in any foreign country, and including but not limited to the right to file any foreign divisional applications, continuation applications, and continuation-in-part applications claiming priority to said patent applications where such procedure is proper, and the right to seek reissues or extensions of any patents in any foreign country, and said ASSIGNORS do hereby ratify any acts of said ASSIGNEE in applying for a patent in said ASSIGNEE'S own name in any foreign country where such procedure is proper and do hereby agree to execute said foreign patent applications in the several countries where it is necessary that the same be executed by the inventor, and to execute assignments of said foreign patent applications and any patent to be obtained therefore to said ASSIGNEE;

ASSIGNORS HEREBY AUTHORIZE and request the Commissioner of Patents and Trademarks of the United States and any official of any country foreign to the United States whose duty it is to issue patents, to issue any patents and any reissues and extensions thereof to said ASSIGNEE in accordance with this Assignment;

ASSIGNORS HEREBY GRANT to said ASSIGNEE the full right to sue for and recover all profits and damages recoverable for past infringement of said inventions, said applications, and any U.S. and/or foreign patent or patents that may be obtained therefore, for ASSIGNEE'S use and behalf and for the use and behalf of ASSIGNEE'S successors, assigns and other legal representatives;

EACH ASSIGNOR HEREBY AGREES that they, their successors, assigns or other legal representatives will at any time upon the request and at the expense of said ASSIGNEE, its successors, assigns, or other legal representatives, without undue delay, execute and deliver any and all papers and do all lawful acts that may be necessary or desirable to perfect the title to said inventions, said applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore; and

EACH ASSIGNOR HEREBY REPRESENTS and warrants that they have the full right to convey the entire interest of said inventions and said applications herein assigned and have not granted any rights inconsistent with the rights granted herein.

H&H File Nos. 060939.00066, 00067 and 00068 Page 3 of 3

To comply with 37 C.F.R. § 3.21 for recordal of this Assignment, we hereby authorize and request any attorney or agent designated in any Power of Attorney executed with respect to these inventions, to insert above the filing dates and application numbers of the above identified patent applications when they become known if not already provided.

Dated:	Ву;
	David G. Bowling
Dated:	By: John M. Stuart
Dated;	By: Jerry A. Culp
Dated:	By: Donald W. Malackowski
Dated: <u>18. Sep 2013</u>	By: <u>Muy</u> Jose Luis Módiczuma de la Barreira
Dated:	By: Patrick Roessler
Dated:	By: Joel N. Beer
Dated:	By: John Ketchel
2349936	

WHEREAS WE, David G. Bowling of 6712 Elwood Drive NW, Los Ranchos de Albuquerque, New Mexico 87107; John M. Stuart of 5200 Teton Avenue NE, Rio Rancho, New Mexico 87144; Jerry A. Culp of 5476 Rocky Mountain Street, Kalamazoo, Michigan 49009; Donald W. Malackowski of 16055 Prairie Ronde, Schoolcraft, Michigan 49087; Jose Luis Moctezuma de la Barrera of Vordere Poche 11, Freiburg, 79104 DE; Patrick Roessler of Im Laimacker 42, Merzhausen 79249 DE; Joel N. Beer of 312 Fontana Place NE, Albuquerque, New Mexico 87108-1167 and John Ketchel of 127 West Kalamazoo Avenue, Kalamazoo, Michigan 49007 (hereinafter, "ASSIGNORS") collectively, declare that we have invented certain new and useful improvement s in inventions entitled:

A Navigation System for use with a Surgical Manipulator Operable in Manual or Semi-Autonomous Modes

which is set forth in United States Patent Application No. 13/958,834 filed on August 5, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Surgical Manipulator Capable of Controlling a Surgical Instrument in Multiple Modes

which is set forth in **United States Patent Application No. 13/958,070** filed on **August 2, 2013**, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Systems and Methods for Robotic Surgery

which is set forth in International Patent Application No. PCT/US13/53451 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

WHEREAS, Stryker Corporation, (hereinafter, "ASSIGNEE"), a corporation organized and existing under and by virtue of the laws of the State of Michigan having a place of business at 2825 Airview Boulevard, Kalamazoo, Michigan 49002, is desirous of acquiring said inventions, said patent applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore or thereupon;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for and in consideration of the sum of One United States Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, said ASSIGNORS do hereby sell, assign, transfer and set over unto said ASSIGNEE, its successors, assigns, or other legal representatives, the full and entire right, title and interest in and to said inventions and said patent applications, including the right of said ASSIGNEE, its successors, assigns

ASSIGNORS HEREBY FURTHER ASSIGN unto said ASSIGNEE, its successors, assigns, or other legal representatives, the whole right, title and interest in and to said inventions throughout all countries foreign to the United States, including the right to file any foreign patent applications for said inventions, including the right to file any foreign patent applications, and otherwise seek any patent in any foreign country, and including but not limited to the right to file any foreign divisional applications, continuation applications, and continuation-in-part applications claiming priority to said patent applications where such procedure is proper, and the right to seek reissues or extensions of any patents in any foreign country, and said ASSIGNEE'S own name in any foreign country where such procedure is proper and do hereby agree to execute said foreign patent applications in the several countries where it is necessary that the same be executed by the inventor, and to execute assignments of said foreign patent applications and any patent to be obtained therefore to said ASSIGNEE;

ASSIGNORS HEREBY AUTHORIZE and request the Commissioner of Patents and Trademarks of the United States and any official of any country foreign to the United States whose duty it is to issue patents, to issue any patents and any reissues and extensions thereof to said ASSIGNEE in accordance with this Assignment;

ASSIGNORS HEREBY GRANT to said ASSIGNEE the full right to sue for and recover all profits and damages recoverable for past infringement of said inventions, said applications, and any U.S. and/or foreign patent or patents that may be obtained therefore, for ASSIGNEE'S use and behalf and for the use and behalf of ASSIGNEE'S successors, assigns and other legal representatives;

EACH ASSIGNOR HEREBY AGREES that they, their successors, assigns or other legal representatives will at any time upon the request and at the expense of said ASSIGNEE, its successors, assigns, or other legal representatives, without undue delay, execute and deliver any and all papers and do all lawful acts that may be necessary or desirable to perfect the title to said inventions, said applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore; and

EACH ASSIGNOR HEREBY REPRESENTS and warrants that they have the full right to convey the entire interest of said inventions and said applications herein assigned and have not granted any rights inconsistent with the rights granted herein.

H&H File Nos. 060939.00066, 00067 and 00068 Page 3 of 3

To comply with 37 C.F.R. § 3.21 for recordal of this Assignment, we hereby authorize and request any attorney or agent designated in any Power of Attorney executed with respect to these inventions, to insert above the filing dates and application numbers of the above identified patent applications when they become known if not already provided.

Dated:	· · · · · · · · · · · · · · · · · · ·	By:
		•
Dated:		John M. Stuart
Dated:		By: Donald W. Malackowski
Dated:	<u> </u>	By: Jose Luis Moctezuma de la Barrera
Dated:	08/13/13	By: Patrick Roessler
Dated:		By: Joel N. Beer
Dated: 2349936	<u> </u>	By: John Ketchel

WHEREAS WE, David G. Bowling of 6712 Elwood Drive NW, Los Ranchos de Albuquerque, New Mexico 87107; John M. Stuart of 5200 Teton Avenue NE, Rio Rancho, New Mexico 87144; Jerry A. Culp of 5476 Rocky Mountain Street, Kalamazoo, Michigan 49009; Donald W. Małackowski of 16055 Prairie Ronde, Schoolcraft, Michigan 49087; Jose Luis Moctezuma de la Barrera of Vordere Poche 11, Freiburg, 79104 DE; Patrick Roessler of Im Laimacker 42, Merzhausen 79249 DE; Joel N. Beer of 312 Fontana Place NE, Albuquerque, New Mexico 87108-1167 and John Ketchel of 127 West Kalamazoo Avenue, Kalamazoo, Michigan 49007 (hereinafter, "ASSIGNORS") collectively, declare that we have invented certain new and useful improvement s in inventions entitled:

A Navigation System for use with a Surgical Manipulator Operable in Manual or Semi-Autonomous Modes

which is set forth in United States Patent Application No. 13/958,834 filed on August 5, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Surgical Manipulator Capable of Controlling a Surgical Instrument in Multiple Modes

which is set forth in United States Patent Application No. 13/958,070 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

Systems and Methods for Robotic Surgery

which is set forth in International Patent Application No. PCT/US13/53451 filed on August 2, 2013, which claims priority to and benefit of United States Provisional Patent Application No. 61/679,258 filed on August 3, 2012 and United States Provisional Patent Application No. 61/792,251 filed on March 15, 2013; and

WHEREAS, Stryker Corporation, (hereinafter, "ASSIGNEE"), a corporation organized and existing under and by virtue of the laws of the State of Michigan having a place of business at 2825 Airview Boulevard, Kalamazoo, Michigan 49002, is desirous of acquiring said inventions, said patent applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore or thereupon;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for and in consideration of the sum of One United States Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, said ASSIGNORS do hereby sell, assign, transfer and set over unto said ASSIGNEE, its successors, assigns, or other legal representatives, the full and entire right, title and interest in and to said inventions and said patent applications, including the right of said ASSIGNEE, its successors, assigns

H&H File Nos. 060939.00066, 00067 and 00068 Page 2 of 3

or other legal representatives to file any and all United States patent applications on said inventions, including but not limited to the right to file any United States patent applications claiming priority to said patent applications including divisional applications, continuation applications, and continuation-in-part applications, and the right to seek reissues, reexaminations, or extensions of any patent in the United States, with the same to be held and enjoyed by said ASSIGNEE as fully and entirely as the same would have been held by said ASSIGNORS had this Assignment and sale not been made;

ASSIGNORS HEREBY FURTHER ASSIGN unto said ASSIGNEE, its successors, assigns, or other legal representatives, the whole right, title and interest in and to said inventions throughout all countries foreign to the United States, including the right to file any foreign patent applications for said inventions, including the right to file any foreign patent applications claiming priority to said patent applications including PCT national phase applications, and otherwise seek any patent in any foreign country, and including but not limited to the right to file any foreign divisional applications, continuation applications, and continuation-in-part applications claiming priority to said patent applications where such procedure is proper, and the right to seek reissues or extensions of any patents in any foreign country, and said ASSIGNEE'S own name in any foreign country where such procedure is proper and do hereby agree to execute said foreign patent applications in the several countries where it is necessary that the same be executed by the inventor, and to execute assignments of said foreign patent applications and any patent to be obtained therefore to said ASSIGNEE;

ASSIGNORS HEREBY AUTHORIZE and request the Commissioner of Patents and Trademarks of the United States and any official of any country foreign to the United States whose duty it is to issue patents, to issue any patents and any reissues and extensions thereof to said ASSIGNEE in accordance with this Assignment;

ASSIGNORS HEREBY GRANT to said ASSIGNEE the full right to sue for and recover all profits and damages recoverable for past infringement of said inventions, said applications, and any U.S. and/or foreign patent or patents that may be obtained therefore, for ASSIGNEE'S use and behalf and for the use and behalf of ASSIGNEE'S successors, assigns and other legal representatives;

EACH ASSIGNOR HEREBY AGREES that they, their successors, assigns or other legal representatives will at any time upon the request and at the expense of said ASSIGNEE, its successors, assigns, or other legal representatives, without undue delay, execute and deliver any and all papers and do all lawful acts that may be necessary or desirable to perfect the title to said inventions, said applications, and any U.S. and/or foreign patent applications and/or patents that may be obtained therefore; and

EACH ASSIGNOR HEREBY REPRESENTS and warrants that they have the full right to convey the entire interest of said inventions and said applications herein assigned and have not granted any rights inconsistent with the rights granted herein.

To comply with 37 C.F.R. § 3.21 for recordal of this Assignment, we hereby authorize and request any attorney or agent designated in any Power of Attorney executed with respect to these inventions, to insert above the filing dates and application numbers of the above identified patent applications when they become known if not already provided.

Dated:		By:	
			David G. Bowling
Dated:			John M. Stuart
Dated:		Ву:	Jerry A. Culp
Dated:			Donald W. Malackowski
Dated:			Jose Luis Moctezuma de la Barrera
Dated:			Patrick Roessler
Dated:			Joel N. Beer
Dated:	Aug. 9,2013		John Ketchel
2349936			

RECORDED: 09/27/2013