

PATENT ASSIGNMENT

Electronic Version v1.1  
Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT														
NATURE OF CONVEYANCE:	ASSIGNMENT														
CONVEYING PARTY DATA															
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Joshua Handley</td><td>01/27/2000</td></tr><tr><td>Marc Midura</td><td>01/27/2000</td></tr><tr><td>Bradley Payne</td><td>01/27/2000</td></tr><tr><td>Walter A. Aviles</td><td>01/20/2000</td></tr><tr><td>Thomas H. Massie</td><td>01/27/2000</td></tr><tr><td>Walter C. Shannon III</td><td>01/27/2000</td></tr></tbody></table>		Name	Execution Date	Joshua Handley	01/27/2000	Marc Midura	01/27/2000	Bradley Payne	01/27/2000	Walter A. Aviles	01/20/2000	Thomas H. Massie	01/27/2000	Walter C. Shannon III	01/27/2000
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RECEIVING PARTY DATA															
<table border="1"><tr><td>Name:</td><td>SensAble Technologies, Inc.</td></tr><tr><td>Street Address:</td><td>215 First Street</td></tr><tr><td>City:</td><td>Cambridge</td></tr><tr><td>State/Country:</td><td>MASSACHUSETTS</td></tr><tr><td>Postal Code:</td><td>02142</td></tr></table>		Name:	SensAble Technologies, Inc.	Street Address:	215 First Street	City:	Cambridge	State/Country:	MASSACHUSETTS	Postal Code:	02142				
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PROPERTY NUMBERS Total: 1															
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Application Number:	12983553														
CORRESPONDENCE DATA															
Fax Number: (617)523-1231 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>															
Phone: 617-570-1000															
Email: dracicot@goodwinprocter.com															
Correspondent Name: Diane Racicot															
Address Line 1: 53 State Street															
Address Line 4: Boston, MASSACHUSETTS 02109															
ATTORNEY DOCKET NUMBER:	SNS-006C4														
NAME OF SUBMITTER:	Jeffrey R. Rummler														

OP \$40.00 12983553

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PATENT  
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**Total Attachments: 24**

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ASSIGNMENT

WHEREAS, We, Joshua Handley, Marc Midura, Bradley Payne, Walter A. Aviles, Thomas H. Massie, and Walter C. Shannon III have invented one or more improvements in:

SYSTEMS AND METHODS FOR CREATING VIRTUAL OBJECTS IN A SKETCH MODE IN A  
HAPTIC VIRTUAL REALITY ENVIRONMENT

described in an application (or provisional application) for Letters Patent of the United States:

☐ identified by Attorney Docket No. SNS-006CP2, and/or executed by us of even date herewith and about to be filed in the United States Patent Office;

☒ Serial No. 09/352,066 filed in the United States Patent Office on July 14, 1999; and

WHEREAS, SensAble Technologies, Inc. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at 215 First Street, Cambridge, MA 02142 desires to acquire an interest therein, in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, our entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the inventions described in said application, together with our entire right, title and interest in and to said application and such Letters Patent as may issue thereon or claim priority under international convention, including but not limited to continuations, divisionals, reissues, and reexaminations of said application of such Letters Patent; said inventions, applications and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all of our rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said inventions, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all Letters Patent to ASSIGNEE for its own name as assignee of our entire right, title and interest therein.

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including: the execution of applications for patents in foreign countries; the execution of substitution, reissue, divisional or continuation applications; and preliminary or other statements or the giving of testimony in any interference or other proceeding in which said inventions or any application or patent directed thereto may be involved; and we further

Joint Assignment  
Page 2

hereby authorize ASSIGNEE or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on that date of our execution of this assignment;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

*IN TESTIMONY WHEREOF*, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor:

  
Joshua Handley

Commonwealth of Massachusetts     )  
County of Middlesex                     ) ss

Subscribed and sworn to before me, by the above-named Joshua Handley this 27<sup>th</sup> day of January, ~~1999~~ 2000

Bernice M. Andrews  
Notary Public  
My Commission Expires: June 11, 2004

Inventor:

Marc Midura  
Marc Midura

Commonwealth of Massachusetts     )  
County of                                     ) ss

Subscribed and sworn to before me, by the above-named Marc Midura this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Bradley Payne

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Bradley Payne this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Walter A. Aviles

State of California                     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Walter A. Aviles this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Thomas H. Massie

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Thomas H. Massie this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor:

\_\_\_\_\_  
Walter C. Shannon, III

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Walter C. Shannon, III this \_\_\_\_\_ day  
of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

450JSS7268/10.843500-1

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Inventor: \_\_\_\_\_  
Joshua Handley

Commonwealth of Massachusetts )  
County of \_\_\_\_\_ ) ss

Subscribed and sworn to before me, by the above-named Joshua Handley this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Marc Midura

Commonwealth of Massachusetts )  
County of *Middlesex* ) ss

Subscribed and sworn to before me, by the above-named Marc Midura this 27<sup>th</sup> day of January, ~~1999~~ 2000

Bernice M. Andrews  
Notary Public  
My Commission Expires: June 11, 2004



Inventor: \_\_\_\_\_

Bradley Payne

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Bradley Payne this \_\_\_\_ day of  
\_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_

Walter A. Aviles

State of California                     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Walter A. Aviles this \_\_\_\_ day of  
\_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_

Thomas H. Massie

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Thomas H. Massie this \_\_\_\_ day of  
\_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

Inventor:

\_\_\_\_\_  
Walter C. Shannon, III

Commonwealth of Massachusetts     )  
County of                                 ) ss

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of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

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Inventor: \_\_\_\_\_  
Joshua Handley

Commonwealth of Massachusetts     )  
County of                                 ) ss

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\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Marc Midura

Commonwealth of Massachusetts     )  
County of                                 ) ss

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\_\_\_\_\_  
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My Commission Expires: \_\_\_\_\_

Inventor:

Bradley Payne  
Bradley Payne

Commonwealth of Massachusetts )  
County of Middlesex ) ss

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January, ~~1999~~. 2000

Bernice M. Andrews  
Notary Public  
My Commission Expires: June 11, 2004

Inventor:

Walter A. Aviles

State of California )  
County of ) ss

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\_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor:

Thomas H. Massie

Commonwealth of Massachusetts )  
County of ) ss

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\_\_\_\_\_, 1999.

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Notary Public  
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Inventor: \_\_\_\_\_

Walter C. Shannon, III

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County of                                 ) ss

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Inventor: \_\_\_\_\_  
Joshua Handley

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Joshua Handley this \_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Marc Midura

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Marc Midura this \_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_



Inventor: Bradley Payne

Commonwealth of Massachusetts )  
County of ) ss

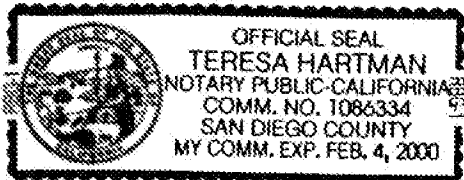
Subscribed and sworn to before me, by the above-named Bradley Payne this \_\_\_\_ day of  
\_\_\_\_\_, 1999.

Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor:   
Walter A. Aviles

State of California )  
County of San Diego ) ss

Subscribed and sworn to before me, by the above-named Walter A. Aviles this 20 day of  
January 2000



Notary Public  
My Commission Expires: Feb 4, 2000

Inventor: \_\_\_\_\_  
Thomas H. Massie

Commonwealth of Massachusetts )  
County of ) ss

Subscribed and sworn to before me, by the above-named Thomas H. Massie this \_\_\_\_ day of  
\_\_\_\_\_, 1999.

Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_

Walter C. Shannon, III

Commonwealth of Massachusetts     )  
County of                                 ) ss

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AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including: the execution of applications for patents in foreign countries; the execution of substitution, reissue, divisional or continuation applications; and preliminary or other statements or the giving of testimony in any interference or other proceeding in which said inventions or any application or patent directed thereto may be involved; and we further

hereby authorize ASSIGNEE or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on that date of our execution of this assignment;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

*IN TESTIMONY WHEREOF*, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor: \_\_\_\_\_  
Joshua Handley

Commonwealth of Massachusetts     )  
County of                                     ) ss

Subscribed and sworn to before me, by the above-named Joshua Handley this \_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Marc Midura

Commonwealth of Massachusetts     )  
County of                                     ) ss

Subscribed and sworn to before me, by the above-named Marc Midura this \_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Bradley Payne

Commonwealth of Massachusetts )  
County of \_\_\_\_\_ ) ss

Subscribed and sworn to before me, by the above-named Bradley Payne this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Walter A. Aviles

State of California )  
County of \_\_\_\_\_ ) ss

Subscribed and sworn to before me, by the above-named Walter A. Aviles this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

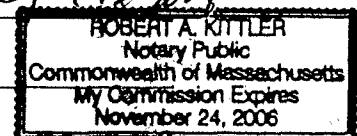
\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: Thomas H. Massie  
Thomas H. Massie

Commonwealth of Massachusetts )  
County of MIDDLESEX ) ss

Subscribed and sworn to before me, by the above-named Thomas H. Massie this 17<sup>th</sup> day of JANUARY, 1999. 2000

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_



Inventor:

\_\_\_\_\_  
Walter C. Shannon, III

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Walter C. Shannon, III this \_\_\_\_\_ day  
of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

450JSS7268/10.843500-1

ASSIGNMENT

WHEREAS, We, Joshua Handley, Marc Midura, Bradley Payne, Walter A. Aviles, Thomas H. Massie, and Walter C. Shannon III have invented one or more improvements in:

SYSTEMS AND METHODS FOR CREATING VIRTUAL OBJECTS IN A SKETCH MODE IN A  
HAPTIC VIRTUAL REALITY ENVIRONMENT

described in an application (or provisional application) for Letters Patent of the United States:

☐ identified by Attorney Docket No. SNS-006CP2, and/or executed by us of even date herewith and about to be filed in the United States Patent Office;

☒ Serial No. 09/352,066 filed in the United States Patent Office on July 14, 1999; and

WHEREAS, SensAble Technologies, Inc. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at 215 First Street, Cambridge, MA 02142 desires to acquire an interest therein, in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, our entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the inventions described in said application, together with our entire right, title and interest in and to said application and such Letters Patent as may issue thereon or claim priority under international convention, including but not limited to continuations, divisionals, reissues, and reexaminations of said application of such Letters Patent; said inventions, applications and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all of our rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said inventions, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all Letters Patent to ASSIGNEE for its own name as assignee of our entire right, title and interest therein.

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns, and legal representatives, but at its or their expense and charges, including: the execution of applications for patents in foreign countries; the execution of substitution, reissue, divisional or continuation applications; and preliminary or other statements or the giving of testimony in any interference or other proceeding in which said inventions or any application or patent directed thereto may be involved; and we further

hereby authorize ASSIGNEE or its attorneys or agents to insert the correct serial number and filing date into this assignment, if none is indicated on that date of our execution of this assignment;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

*IN TESTIMONY WHEREOF*, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor: \_\_\_\_\_  
Joshua Handley

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Joshua Handley this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_  
Marc Midura

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Marc Midura this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_



Inventor: \_\_\_\_\_

Bradley Payne

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Bradley Payne this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_

Walter A. Aviles

State of California                     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Walter A. Aviles this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

Inventor: \_\_\_\_\_

Thomas H. Massie

Commonwealth of Massachusetts     )  
County of                                 ) ss

Subscribed and sworn to before me, by the above-named Thomas H. Massie this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

Inventor:

Walter C. Shannon, III  
Walter C. Shannon, III

Commonwealth of Massachusetts     )  
County of Middlesex                     ) ss

Subscribed and sworn to before me, by the above-named Walter C. Shannon, III this 27<sup>th</sup> day  
of January, ~~1999~~ 2000

Bernard M. Andrews  
Notary Public  
My Commission Expires: June 11, 2004

450JSS7268/10.843500-1