

12-23-2002

Form PTO-1595  
(Rev. 03/01)U.S. DEPARTMENT OF COMMERCE  
U.S. Patent and Trademark Office

OMB No. 0651-0027 (exp. 5/31/2002)

102319632

Tab settings ⇌ ⇌ ⇌ ▼

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

## 1. Name of conveying party(ies):

MANHATTAN SCIENTIFICS, INC. 12/17/02  
TAMARACK STORAGE DEVICES, INC.

## 2. Name and address of receiving party(ies)

Name: APRILIS, INC.

Internal Address: Attention: David Waldman

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

## 3. Nature of conveyance:

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Other \_\_\_\_\_

Street Address: 5 Clock Tower Place, Suite 200

City: Maynard State: MA Zip: 01754

Execution Date: \_\_\_\_\_

Additional name(s) & address(es) attached? ☐ Yes ☒ No

## 4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s) \_\_\_\_\_  
(see attached)B. Patent No.(s) \_\_\_\_\_  
(see attached)Additional numbers attached? ☒ Yes ☐ No

## 5. Name and address of party to whom correspondence concerning document should be mailed:

Name: APRILIS, INC.

Internal Address: Attention: David Waldman

Street Address: 5 Clock Tower Place, Suite 200

City: Maynard State: MA Zip: 01754

## 6. Total number of applications and patents involved: 22

7. Total fee (37 CFR 3.41).....\$ 880

☒ Enclosed☐ Authorized to be charged to deposit account

## 8. Deposit account number:

DO NOT USE THIS SPACE

## 9. Signature.

David Waldman

Name of Person Signing

David Waldman

Signature

12/02/02

Date

Total number of pages including cover sheet, attachments, and documents: 9

12/20/2002 LMUELLER 00000188 5377176

Mail documents to be recorded with required cover sheet information to:  
Commissioner of Patents & Trademarks, Box Assignments  
Washington, D.C. 20231

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PATENT  
REEL: 013578 FRAME: 0956

**Patent Recordation Form**  
**Continuation of Item 4**

	<u>Patent No.</u>	<u>Date of Issue</u>
1.	5,377,176	12/27/94
2.	5,377,179	12/27/94
3.	5,477,347	12/19/95
4.	5,481,523	1/02/95
5.	5,488,494	1/30/96
6.	5,511,058	4/23/96
7.	5,519,517	5/21/96
8.	5,519,651	5/21/96
9.	5,526,337	6/11/96
10.	5,529,861	6/25/96
11.	5,566,387	10/15/96
12.	5,621,549	4/15/97
13.	5,627,664	5/6/97
14.	5,638,193	6/10/97
15.	5,665,791	9/9/97
16.	5,694,488	12/2/97
17.	5,696,613	12/9/97
18.	5,756,648	5/26/98
19.	5,883,880	3/16/99
20.	5,896,210	4/20/99
21.	5,940,537	8/17/99
22.	08/376,820	1/20/95

## PATENT ASSIGNMENT AGREEMENT

This Patent Assignment Agreement ("Assignment") is executed as of the 25th day of September, 2002 by Manhattan Scientifics, Inc., a Delaware corporation, having a place of business at 641 Fifth Avenue, Suite 36F, New York, New York 10022 ("MSI"), and its wholly owned subsidiary, Tamarack Storage Devices, Inc., a Texas corporation ("Subsidiary", together with Parent, "MSI TAMA"), on the one hand, and Aprilis, Inc., a Delaware corporation, having a place of business at 5 Clock Tower Place, Suite 200, Maynard, Massachusetts 01754 ("Aprilis").

### Background

MSI TAMA is the owner of the patents (the "Patents") and patent applications (the "Applications") as identified on Exhibit A attached hereto and the inventions disclosed and claimed in such Applications (the "Technology", together with the Patents and Applications, the "MSI TAMA Intellectual Property"). MSI TAMA desires to assign the MSI TAMA Intellectual Property to Aprilis and Aprilis is desirous of acquiring the MSI TAMA Intellectual Property.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, MSI TAMA agrees as follows:

### **1. ASSIGNMENT.**

**1.1 Assignment of Intellectual Property.** Each of MSI and Subsidiary hereby sells, transfers, assigns and conveys to Aprilis, effective as of the date hereof, free and clear of all liens, all of its rights, title and interest in and to the MSI TAMA Intellectual Property owned by it as indicated in Exhibit A attached hereto, together with the right to sue and recover for, and the right to profits or damages due or accrued, arising out of or in connection with, any and all past, present or future infringements of the MSI TAMA Intellectual Property.

### **2. AUTHORIZATION.**

**2.1 USPTO.** MSI TAMA hereby authorizes and requests the Commissioner of Patents and Trademarks to issue each Application and any resulting United States patent to Aprilis, including the entire right, title, and interest in and to the same, for Aprilis' sole use and profit; and for the use and profit of Aprilis' legal representatives, to the full end of the term for which such patent may be granted, as fully and entirely as the same would have been held by MSI TAMA had this assignment and sale not been made.

**2.2 Recordation.** In order to record this Assignment with the United States Patent and Trademark Office (the "PTO"), the parties hereto shall execute this Assignment, and MSI TAMA shall execute the Recordation Form Cover Sheet required by the PTO in order to record the assignment effected hereby. Thereafter, Aprilis shall record the executed Recordation Form Cover Sheet with the PTO, together with any Schedules and Exhibits thereto, including, but not limited to, this Assignment and Exhibit A hereto.

### **3. MISCELLANEOUS.**

**3.1 Further Assurances.** MSI TAMA covenants and agrees that, subsequent to the execution and delivery of this assignment and without any additional consideration, it will, at Aprilis' expense, execute and deliver any further legal instruments and perform any acts which are or may become reasonably necessary to effectuate the purposes of this assignment, including, without limitation, the execution of any documents of assignment as reasonably requested by Aprilis.

**3.2 Notices.** Any notice, demand, request or other communication hereunder to any party shall be deemed to be sufficient if contained in a written instrument delivered in person or duly sent by first class registered, certified or overnight mail, postage prepaid, or sent by fax with a confirmation copy by regular, certified or overnight mail, postage prepaid, or sent by electronic mail with a confirmation copy by regular, certified or overnight mail, postage prepaid, to such party at the address, fax number or email address, as the case may be, set forth below or such other address, fax number, or email address, as the case may be, as may hereafter be designated in writing by the addressee to the addressor listing all parties:

If to MSI, to:

Manhattan Scientifics, Inc.  
641 Fifth Ave., Suite 36F  
New York, NY 10022  
Attention: Marvin Maslow  
Facsimile: 212-752-0077  
Email: maslow@ix.netcom.com

If to Subsidiary, to:

Tamarack Storage Devices, Inc.  
c/o Manhattan Scientifics, Inc.  
641 Fifth Ave., Suite 36F  
New York, NY 10022  
Attention: Marvin Maslow  
Facsimile: 212-752-0077  
Email: maslow@ix.netcom.com

In each case, with a copy to:

Bach and Associates  
1 Rockefeller Plaza, Suite 210 New York, NY 10022  
Attention: Scott Bach  
Facsimile: 973-697-8454  
Email: bach@bachassoc.com

If to Aprilis, to:

Aprilis, Inc.  
5 Clock Tower Place, Suite 200  
Maynard, MA 01754  
Attention: David Waldman  
Facsimile: 978-450-1020  
Email: waldman@aprilisinc.com

With a copy to:

Bingham McCutchen LLP  
150 Federal Street  
Boston, Massachusetts 02110  
Attention: Julio E. Vega, Esq.

All such notices, requests and other communications shall be deemed to have been received: (i) in the case of personal delivery, on the date of such delivery; (ii) in the case of mail, on the fifth day following deposit into the mail; (iii) in the case of facsimile transmission, when confirmed by facsimile machine report, and (iv) in the case of electronic mail, upon receipt of an electronic message confirming delivery.

**3.3. Entire Agreement.** This Assignment contains the entire understanding of the parties, supersedes all prior agreements and understandings relating to the subject matter hereof and shall not be amended except by a written instrument hereafter signed by all of the parties hereto.

**3.4. Governing Law.** The validity and construction of this Assignment shall be governed by the internal laws (and not the conflicts rules) of the Commonwealth of Massachusetts.

**3.5. Sections and Section Headings.** The headings of sections and subsections are for reference only and shall not limit or control the meaning thereof.

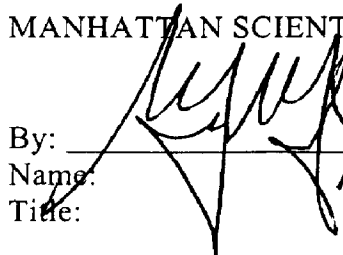
**3.6. Severability.** In the event that any covenant, condition, or other provision herein contained is held to be invalid, void, or illegal by any court of competent jurisdiction, the same shall be deemed to be severable from the remainder of this Assignment and shall in no way affect, impair, or invalidate any other covenant, condition, or other provision contained herein.

**3.7. Counterparts.** This Assignment may be executed in multiple counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

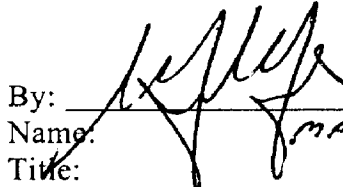
*[Remainder of page intentionally left blank.]*

IN WITNESS WHEREOF, MSI TAMA has executed this Patent Assignment Agreement, as an instrument under seal on this 25 day of September, 2002.

MANHATTAN SCIENTIFICS, INC.


By:   
Name: Marvin Maslow  
Title: CEO

TAMARACK STORAGE DEVICES, INC.

By:   
Name: Marvin Maslow  
Title: president

The foregoing Patent Assignment Agreement is hereby accepted as of September 26 2002.

APRILIS, INC.

By:   
Name: David Waldman  
Title: VP

STATE OF NEW YORK

COUNTY OF New York

)  
)ss.

The foregoing instrument was acknowledged before me this 25 day of Sept.,  
2002 by Marvin Maslow, the CEO of Manhattan Scientifics, Inc., a Delaware  
corporation, for and on behalf of said corporation.

Laura J. Byerson  
Notary Public

My Commission Expires 6-5-06 kg

**EXHIBIT A****First Closing Patents**

	<u>Patent No.</u>	<u>Descriptions</u>	<u>Date of Issue</u>	<u>Record Owner</u>
1.	5,377,176	Method and apparatus for isolating data storage regions in a thick holographic storage media.	12/27/94	Tamarack
2.	5,377,179	Method and apparatus for enhancing the utility of photopolymer recording media for holographic data recording.	12/27/94	Tamarack
3.	5,477,347	Method and apparatus for isolating data storage regions in a thin holographic storage media.	12/19/95	Tamarack
4.	5,481,523	A gantry for positioning a read/write head of a holographic information storage system.	1/02/95	Tamarack
5.	5,488,494	Packaging system for holographic storage media.	1/30/96	Tamarack
6.	5,511,058	Distortion correction of a reconstructed holographic data image.	4/23/96	Tamarack
7.	5,519,517	Method and apparatus for holographically recording and reproducing images.	5/21/96	Tamarack
8.	5,519,651	High capacity holographic storage system.	5/21/96	Tamarack
9.	5,526,337	Holographic storage media package.	6/11/96	Tamarack
10.	5,529,861	Method for enhancing the utility of a photopolymer recording media for holographic data recording.	6/25/96	Tamarack
11.	5,566,387	Diamond shaped holographic storage regions oriented along a common radial column line for higher storage capacity.	10/15/96	Tamarack
12.	5,621,549	Method and apparatus for positioning a light beam on a holographic media.	4/15/97	Tamarack
13.	5,627,664	Holographic storage with combined orthogonal phase codes and random phase codes.	5/6/97	Tamarack
14.	5,638,193	Method and apparatus for azimuthal multiplexing of holograms.	6/10/97	Tamarack
15.	5,665,791	Photosensitive polymer films and their method of production.	9/9/97	Tamarack
16.	5,694,488	Method and apparatus for processing of reconstructed holographic images of digital data patterns.	12/2/97	Tamarack
17.	5,696,613	Method and apparatus for multiplexing data in different planes of incidence of a	12/9/97	Tamarack

Aprilis, Inc. Confidential Information



		thin holographic storage media.		
18.	5,756,648	Photosensitive polyimide materials for electronic packaging applications.	5/26/98	Tamarack
19.	5,883,880	Disk positioning device for defining precise radial location.	3/16/99	Tamarack
20.	5,896,210	Molded block optical system for volume holographic storage.	4/20/99	Tamarack
21.	5,940,537	Method and system for compensating for geometric distortion of images.	8/17/99	Tamarack
22.	08/376,820	Random phase mask / spatial light modulator	1/20/95	Tamarack

Aprilis, Inc. Confidential Information

RECORDED: 12/17/2002

PATENT  
REEL: 013578 FRAME: 0964