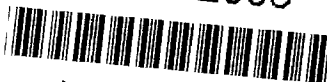


Form PTO-1595  
(Rev. 06/04)  
OMB No. 0651-0027 (exp. 6/30/2005)

04-29-2005



U.S. DEPARTMENT OF COMMERCE  
U.S. Patent and Trademark Office

Docket No.: HTA-104

To the U.S. Patents and Trademarks: Please refer to **102991526**

Address(es) below.

1. Name of conveying party(ies)/Execution Date(s):

Yoshiki KANO

Execution Date(s) April 21, 2005

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

2. Name and address of receiving party(ies)

Name: Hitachi, Ltd.

Internal  
Address:

Street Address:  
6, 6 Marunouchi 1-chome  
Chiyoda-ku, Tokyo, Japan

City: State: Zip:

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

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3. Nature of conveyance:

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☐ Other .

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

A. Patent Application No.(s)

☒ This document is being filed together with a new application.

B. Patent Registration No.(s)

Additional number(s) attached ☐ Yes ☒ No

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

Name: MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

Internal Address: 1800 Diagonal Road - Suite 370

City Alexandria State: VA Zip 22314

6. Total number of applications and patents involved: **one**

7. Total fee (37 CFR 3.41)..... \$40.00

☒ Enclosed

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*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*

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**April 21, 2005**

Date

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PATENT  
REEL: 016496 FRAME: 0054

# ASSIGNMENT

ATTY. DOCKET NO.:  
HTA-104

WHEREAS the below named inventor (if only one inventor is named below) or inventors (if plural inventors are named below) hereinafter referred to as the ASSIGNOR invented a certain improvement relating to

## SYSTEM AND METHOD FOR MANAGING DISK SPACE IN A THIN-PROVISIONED STORAGE SUBSYSTEM

For which an application for Letters Patent to be filed in the United States Patent and Trademark Office was executed on even date,

AND WHEREAS **HITACH, LTD.**  
**6-6, Marunouchi 1-chome, Chiyoda-ku**  
**Tokyo, JAPAN**

hereinafter referred to as the ASSIGNEE, is desirous of acquiring the entire right, title, and interest in and to said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues, reexaminations and extensions thereof.

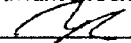
NOW, WITNESSETH that for good and valuable consideration, the receipt whereof is hereby acknowledged, ASSIGNOR hereby assigns, sells, and transfers to ASSIGNEE, its assigns and legal representatives, the entire and exclusive right, title and interest in and to said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, and in and to any and all priority and/or convention rights or benefits accruing or to accrue with respect to the filing or securing of patents in the United States and/or any countries foreign thereto, SAID ASSIGNEE, its assigns and legal representatives to have, hold, exercise, and enjoy said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, with all the rights, powers, privileges and advantages in anywise arising from or appertaining thereto, for and during the term or terms of any and all such Letters Patent when granted, including any and all renewals, reissues, reexaminations and extensions thereof, for the use and benefit of ASSIGNEE and its assigns and legal representatives, in as ample and beneficial a manner to all intents and purposes as the ASSIGNOR might or could have held and enjoyed the same, if the assignment had not been made.

AND ASSIGNOR hereby agrees to execute all papers that may be necessary to file applications in the United States and foreign countries for said invention and to assign the same to said ASSIGNEE, its assigns and legal representatives and to execute any other papers that may be needed in connection with filing said applications and securing Letters Patents thereon.

AND ASSIGNOR authorizes and requests the Commissioner of Patents and Trademarks to issue a Letters Patent on said application, and on any and all divisions and continuations thereof, to ASSIGNEE, its assigns and legal representatives, in accordance herewith.

The undersigned hereby grant(s) the law firm of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. , the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

IN TESTIMONY WHEREOF this assignment is executed by ASSIGNOR.

|     |  |   |                        |
|-----|--|---|------------------------|
| 201 | FULL NAME OF SOLE OR FIRST NAMED INVENTOR<br><b>Yoshiki KANO</b> | INVENTOR'S SIGNATURE<br> | DATE<br><b>8/21/05</b> |
| 202 | FULL NAME OF SECOND JOINT INVENTOR                               | INVENTOR'S SIGNATURE  | DATE                   |
| 203 | FULL NAME OF THIRD JOINT INVENTOR                                | INVENTOR'S SIGNATURE  | DATE                   |
| 204 | FULL NAME OF FOURTH JOINT INVENTOR                               | INVENTOR'S SIGNATURE  | DATE                   |
| 205 | FULL NAME OF FIFTH JOINT INVENTOR                                | INVENTOR'S SIGNATURE  | DATE                   |
| 206 | FULL NAME OF SIXTH JOINT INVENTOR                                | INVENTOR'S SIGNATURE  | DATE                   |
| 207 | FULL NAME OF TWELFTH JOINT INVENTOR                              | INVENTOR'S SIGNATURE  | DATE                   |