To the Honorable Commissioner of Patents and Trademarks, or copy thereof.

1. Name of conveying party(ies):  
   Nobuya Matsubara  
   Fuminori Sai  
   Yuzo Nakagawa

2. Name and address of receiving party(ies):  
   Name: International Business Machines Corporation  
   Street Address: New Orchard Road  
   City: Armonk  
   State: NY  
   ZIP: 10504

   Additional name(s) of conveying party(ies) attached  
   Additional name(s) & address(es) attached?  

3. Nature of conveyance:  
   XX Assignment  
   Execution Date: 08/17/98; 08/17/98; 08/17/98

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)  
      09/100,496
   B. Patent No.(s)  
   Additional numbers attached?  

5. Name and address of party to whom correspondence concerning document should be mailed:  
   Name: IBM Corporation  
   Internal Address: Intellectual Property Law  
   Street Address: 5600 Cottle Road (L2PA/0142)  
   San Jose, CA 95193
   09/10/1998 JSHR0462 000000037 090466 09100496

6. Total Number of applications and patents involved:  
   One

7. Total fee (37 CFR 3.41) ...........
   Enclosed  
   XX Authorized to be charged to deposit account

8. Deposit Account Number:  
   09-0466

   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.

   Monica D. Lee  
   Date: August 31, 1998
   Total number of pages including cover sheet, attachments, and document: 2 /
INVENTOR AND CITY
(1) Nobuya Matsubara of Fujisawa-shi, of Kanagawa-ken, and State of Japan,
County of Kanagawa-ken, and State of Japan,
and (2) Fuminori Sai of Yokohama-shi, and State of Japan,
County of Kanagawa-ken, and State of Japan,
and (3) Yuzo Nakagawa of Hiratsuka-shi, and State of Japan,
County of Kanagawa-ken, and State of Japan,

Whereas, we have invented certain improvements in

METHOD AND APPARATUS FOR CONTROLLING READ AND WRITE OPERATIONS IN A STORAGE DEVICE

and executed, respectively, a United States patent application therefor on


Whereas, INTERNATIONAL BUSINESS MACHINES CORPORATION, a corporation of New York,
having a place of business at Armonk, New York 10504, (hereinafter called IBM), desires
to acquire the entire right, title and interest in the said application and invention,
and to any United States and foreign patents to be obtained therefor;

Now therefore, for a valuable consideration, receipt whereof is hereby
acknowledged, we, the above named, hereby sell, assign, and transfer to IBM, its
successors and assigns, the entire right, title and interest in the said application and
invention therein disclosed for the United States and foreign countries, and all rights
of priority resulting from the filing of said United States application, and we request
the Commissioner of Patents to issue any Letters Patent granted upon the inventions set
forth in said application to IBM, its successors and assigns; and we hereby agree that
IBM may apply for foreign Letters Patent on said invention and we will execute all
papers necessary in connection with the United States and foreign applications when
called upon to do so by IBM.

Signed and sealed

CITY DATE
(1) at Fujisawa on Aug. 17, 1998,

Nobuya Matsubara
INVENTOR

Fuminori Sai
INVENTOR

Yuzo Nakagawa
INVENTOR

CITY DATE
(2) at Fujisawa on Aug. 17, 1998,

CITY DATE
(3) at Fujisawa on August 17, 1998,