Docket No.: FIS920030058US1 06-06-2003 FORM PTO-1595 (Modified) U.S. DEPARTMENT OF COMMERCE (Rev. 03-01) Patent and Trademark Office OMB No. 0651-0027 (exp.5/31/2002) P08/REV03 102466332 Tab settings → → To the Honorable Director of the United States Patent and Trademark Office: Please record the attached original documents or copy thereof. Name and address of receiving party(ies): 1. Name of conveying party(ies): 5:19:03 John W. Golz David R. Hanson Name: International Business Machines Corporation Hoki Kim Internal Address: ☐ Yes ☒ No Additional names(s) of conveying party(ies) 3. Nature of conveyance: Street Address: New Orchard Road Merger Assignment Change of Name ☐ Security Agreement _____ State: NY ZIP: 10504 City: Armonk ☐ Other Execution Date: 5/28/03, 5/28/03, 5/28/03 Application number(s) or patent numbers(s): If this document is being filed together with a new application, the execution date of the application is: 5/28/03,5/28/03,5/28/03 B. Patent No.(s) A. Patent Application No.(s) EXPRESS MAIL NO .: EU 70258936 US I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE AS EXPRESS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER OF PATENTS AND TRADEMARKS, WASHINGTON, D.C. 20231 APPLICANT AND/OR ATTORNEY REQUESTS THE DATE OF DEPOSIT AS THE FILE DATE. DATE OF DEPOSIT:
Additional numbers attached -Yes-- 🗵 No BY SIGNATURE & DATE: 1-mars 5/29/03 5. Name and address of party to whom correspondence 6. Total number of applications and patents involved: concerning document should be mailed: Name: International Business Machines Corporation 7. Total fee (37 CFR 3.41):....\$ 40.00 Internal Address: H. Daniel Schnurmann ☐ Enclosed - Any excess or insufficiency should be credited or debited to deposit account Authorized to be charged to deposit account 8. Deposit account number: Street Address: New Orchard Road 00000175 090458 10448776 09-0458, FI- 200 05/2003 DBYRNE 40.00 CH FC:8021 ZIP: 10504 City: Armonk State: NY DO NOT USE THIS SPACE 9. Statement and signature. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy

Total number of pages including cover sheet, attachments, and document:

of the original document.

H. Daniel Schnurmann, Reg. No. 35,791

Name of Person Signing

May 29, 2003

Date

PATENT ASSIGNMENT FORM

For and in consideration of good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned inventor acknowledges his/her prior and ongoing obligation to sell, assign, and transfer, and agrees to sell, assign, and transfer the entire world wide right, title and interest for the United States and all foreign countries, in and to any and all inventions and improvements conceived during and within the scope of his/her employment, and further acknowledges that he/she has sold, assigned, and transferred, and hereby sells, assigns, and transfers, unto:

INTERNATIONAL BUSINESS MACHINES CORPORATION ("IBM"), Armonk, New York 10504

a corporation of New York, and IBM desires to acquire all right, title, and interest, in and to the certain inventions (identified below), applications, and any United States and foreign patents to be obtained therefor relating to:

as set forth in United States Patent Application executed by each undersigned inventor on the date indicated by

Title of Invention for United States Patent

BI-DIRECTIONAL READ WRITE DATA STRUCTURE AND METHOD FOR MEMORY

	below, and further identified by		ber FIS920030058US1	;
(select one): $\sqrt{}$ executed	d concurrently herewith or 🗌 Se	rial N o	_ Filed on	
any and all Letters Paten	ates Patent Application including at of the United States and foreign	n patents and all rights	of priority to be obtained	d therefor
which may issue on any :	such application or for said inven	ition therein disclosed, i	ncluding any and all re	issues or
extensions thereof, to be	held and enjoyed by, its success	sors, legal representativ	es and assigns to the f	ull end of the

term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held

Each undersigned inventor hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all such Letters Patent to IBM, its successors and assigns, in accordance herewith:

Each undersigned inventor warrants and covenants that he/she has the full and unencumbered right to sell and assign the interests hereby sold and assigned and that he/she has not executed and will not execute any document or instrument in conflict herewith;

Each undersigned inventor further covenants and agrees that he/she, upon the request and at the expense of IBM, will execute and deliver any papers, make all rightful oaths, testify in any legal proceeding relating to said inventions and improvements, communicate to IBM all facts known to the undersigned relating to such inventions and improvements and the history thereof; and perform all other lawful acts deemed necessary or desirable by IBM, and its legal representatives, to secure, maintain, and enforce patent protection for such inventions and improvements and for vesting title to such inventions and improvements in IBM, and in particular to perfect title to said above-identified certain inventions, and applications including divisions and continuations thereof, and any and all Letters Patent which may be granted therefor or thereon, including reissues, extensions, or counterparts;

Each undersigned inventor hereby grants to IBM the power to insert in this Assignment any further identification which may be necessary or desirable for recordation of this Assignment.

This assignment is governed by the substantive laws of the state of New York.

and enjoyed by the undersigned had this Assignment not been made;

Page 1 of 2

Executed by Inventor 1 of 3	
Signature: John W. Golz	
Executed by Inventor 2 of 3	
Signature: David R. Hanson	
Executed by Inventor 3 of 3	
Signature: Hoki Kim	Date:

RECORDED: 05/29/2003