

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number  
WO 2004/092921 A3

(51) International Patent Classification<sup>7</sup>: G06F 15/16

35094 (US). SANDERS, David, Allen [US/US]; 1045 Dalton Drive, Kimberly, AL 35091 (US). RHODES, Michael, Douglas [US/US]; 1000 Broken Bow Trail, Alabaster, AL 35007 (US).

(21) International Application Number:  
PCT/US2004/009674

(22) International Filing Date: 30 March 2004 (30.03.2004)

(74) Agent: GACHE, Russell, Carter; Sirote & Permutt, P.C., P.O. Box 55727, Birmingham, AL 35255-5727 (US).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/460,443 4 April 2003 (04.04.2003) US  
10/434,824 9 May 2003 (09.05.2003) US

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): TEK-SOUTH CORPORATION [US/US]; 1420 Northbrook Drive, Suite 220, Gardendale, AL 35071 (US).

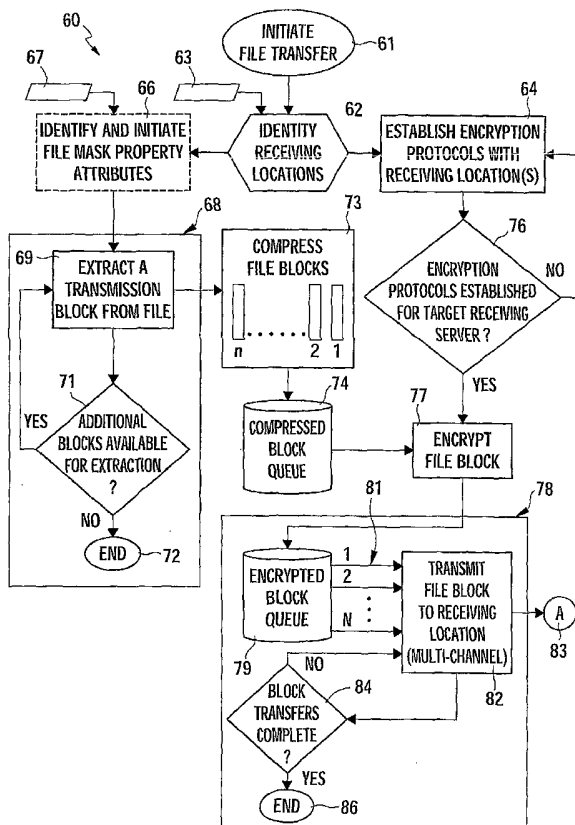
(72) Inventors; and

(75) Inventors/Applicants (for US only): RIGGS, Nicholas, Dale [US/US]; 102 Cameron Cove Circle, Leeds, AL

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR EFFICIENTLY AND SECURELY TRANSFERRING FILES OVER A COMMUNICATIONS NETWORK



(57) Abstract: A system and method to reduce the time to transfer files from one computer to another over a communications network, such as the Internet, by avoiding the synchronous timing limitations of current transfer methods. A file that is intended to be transferred from a transmitting computer to a receiving computer is partitioned into multiple synchronous block portions of the existing file, prior to transfer. Each block subportion of original file is compressed and queued for transmission to a target receiving computer. The compressed blocks are kept in a cue, encrypted, and transmitted asynchronously to a target receiving computer over a selected communications network. Upon receipt at the receiving computer of any of the transmitted blocks, blocks are decrypted, decompressed, and asynchronously reconstructed into the original file. Since the transmission of blocks to the receiving computer occurs asynchronously, as well as the transmission preparation steps, overall transmission times are improved.

WO 2004/092921 A3



GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

**(88) Date of publication of the international search report:**  
3 February 2005

**Published:**

— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US04/09674

<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(7) : G06F 15/16                  US CL : 709/232; 382/232; 375/240.25                  According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p><b>B. FIELDS SEARCHED</b></p> <p>Minimum documentation searched (classification system followed by classification symbols)                  U.S. : 709/232; 382/232; 375/240.25</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched                  NONE</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  EAST</p>														
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 6,085,253 A (BLACKWELL et. al.) 04 July 2000, column 2, lines 5-8, column 2, line 60-column 3, line 4, 10-11, 42-48, column 4, lines 40-62, column 5, lines 19-28, column 6, lines 26-33, 41-53.</td> <td>1-4, and 8-42</td> </tr> <tr> <td>Y</td> <td>US 4,074,232 A (OTOMO et.al.) 14 February 1978, abstract and column 8, lines 26-40.</td> <td>1-4 and 8-42</td> </tr> <tr> <td>Y</td> <td>US 5,426,645 A (HASKIN) 20 June 1995, (abstract, column 2, lines 15-18, 35-41, column 1, lines 55-64, column 18-22, 45-64, column 4, lines 13-15, 30-35, 45-59, column 5, lines 5-21, 44-50, column 6, lines 1-24 and column 8, line 63-column 9, line 31.</td> <td>5-7</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 6,085,253 A (BLACKWELL et. al.) 04 July 2000, column 2, lines 5-8, column 2, line 60-column 3, line 4, 10-11, 42-48, column 4, lines 40-62, column 5, lines 19-28, column 6, lines 26-33, 41-53.	1-4, and 8-42	Y	US 4,074,232 A (OTOMO et.al.) 14 February 1978, abstract and column 8, lines 26-40.	1-4 and 8-42	Y	US 5,426,645 A (HASKIN) 20 June 1995, (abstract, column 2, lines 15-18, 35-41, column 1, lines 55-64, column 18-22, 45-64, column 4, lines 13-15, 30-35, 45-59, column 5, lines 5-21, 44-50, column 6, lines 1-24 and column 8, line 63-column 9, line 31.	5-7
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.												
Y	US 6,085,253 A (BLACKWELL et. al.) 04 July 2000, column 2, lines 5-8, column 2, line 60-column 3, line 4, 10-11, 42-48, column 4, lines 40-62, column 5, lines 19-28, column 6, lines 26-33, 41-53.	1-4, and 8-42												
Y	US 4,074,232 A (OTOMO et.al.) 14 February 1978, abstract and column 8, lines 26-40.	1-4 and 8-42												
Y	US 5,426,645 A (HASKIN) 20 June 1995, (abstract, column 2, lines 15-18, 35-41, column 1, lines 55-64, column 18-22, 45-64, column 4, lines 13-15, 30-35, 45-59, column 5, lines 5-21, 44-50, column 6, lines 1-24 and column 8, line 63-column 9, line 31.	5-7												
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C.      <input type="checkbox"/> See patent family annex.</p>														
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&amp;" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed			
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention													
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone													
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art													
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family													
"P" document published prior to the international filing date but later than the priority date claimed														
<p>Date of the actual completion of the international search                  20 October 2004 (20.10.2004)</p>		<p>Date of mailing of the international search report                  06 DEC 2004</p>												
<p>Name and mailing address of the ISA/US                  Mail Stop PCT, Attn: ISA/US                  Commissioner for Patents                  P.O. Box 1450                  Alexandria, Virginia 22313-1450                  Facsimile No. (703) 305-3230</p>		<p>Authorized officer                  BEATRIZ PRIETO <i>for James R. Matthews</i>                  Telephone No. 703 306-9000</p>												