

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 May 2002 (23.05.2002)

PCT

(10) International Publication Number
WO 02/041554 A3

(51) International Patent Classification⁷: **G06F 15/16**,
15/173

D. [CA/US]; 833 East University #2, Ann Arbor, MI (US).
HUDSON, Jonathan, C. [US/US]; 38 Lakecrest Lane,
Grosse Pointe Farms, MI 48236 (US).

(21) International Application Number: PCT/US01/43289

(74) Agent: **MELLO, David, M.**; McDermott, Will & Emery,
28 State Street, Boston, MA 02109 (US).

(22) International Filing Date:
20 November 2001 (20.11.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/717,474 20 November 2000 (20.11.2000) US

(71) Applicant (for all designated States except US): **AEREOUS, INC.** [US/US]; 323 North First, Ann Arbor, MI
48103 (US).

(81) Designated States (*national*): AE, AL, AM, AT, AU, AZ,
BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE,
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, MD,
MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,
SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ,
VN, YU, ZA, ZW.

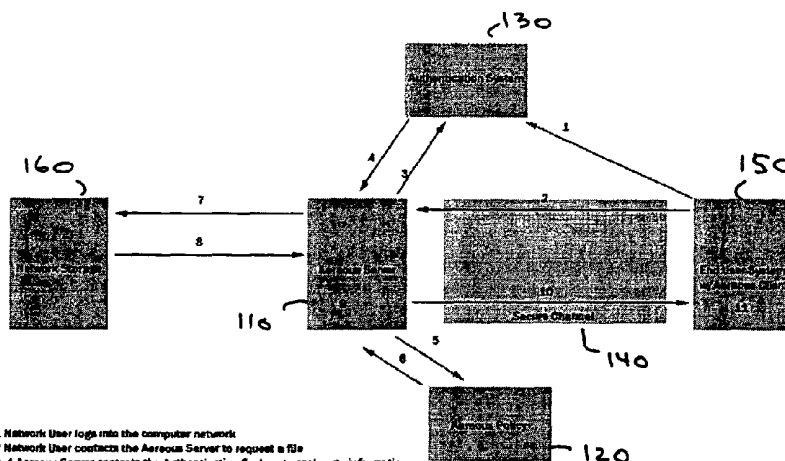
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GRAHAM, Todd**,

[Continued on next page]

(54) Title: DYNAMIC FILE ACCESS CONTROL AND MANAGEMENT



1. Network User logs into the computer network
2. Network User contacts the Aereous Server to request a file
3. Aereous Server contacts the Authentication System to exchange information about the end user
4. Aereous Server contacts the Aereous Policy System and executes the access policy to determine if the user has the privileges to access the file. If the answer is yes, then the usage policy is sent to the Aereous Server, if no then the file is not sent to the end user
5. Aereous Server requests the file from the network storage device
6. Network storage device delivers the file to the Aereous Server
7. Aereous Server applies usage rights to, and encrypts, the file
8. The file is securely delivered to the End User System
9. Usage rights and auditing is enforced on the End User System by the Aereous Client

(57) Abstract: A dynamic file access control and management system and method in accordance with the present invention may be a proxy file management system that includes one or more file system proxy servers (110) that provide selective access and usage management to files available from one or more file systems (160) or sources. The present invention may embody a secure transport protocol that tunnels distributed file systems, application independent usage controls connected to files on end-user computers, dynamically merging secondary content to a requested file, and applying bandwidth management to any of the foregoing. Embodied in the various implementations of the present invention is enhanced file security. Preferably, the proxy file management system is transparent to an end-user. A dynamic content management system may also be included that selectively adds content to requested files.



WO 02/041554 A3



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.

(88) Date of publication of the international search report:

29 August 2002

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/43289

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 15/16, 15/173

US CL : 709/217,218; 707/9

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 709/217,218; 707/9; 713/200,201

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,006,332 B1 (RABNE et al) 21 December 1999 (21.12.1999) column 10, lines 23 - 33.	1 - 7, 9 - 17
Y	US 5,920,861 A (HALL et al) July 1999 (6.7.1999), column 1, line 47 - column 2, line 12; column 7, lines 50 - 58.	1 - 7, 9 - 17
Y	US 5,765,152 A (ERICKSON) 9 June 1998 (9.6.1998), column 4, line 61 - column 5, line 4.	1 - 7, 9 - 17
Y, P	US 6,199,104 B1 (DELPH) 6 March 2001 (6.3.2001), column 3, lines 3 - 16.	1 - 7, 9 - 17



Further documents are listed in the continuation of Box C.



See patent family annex.

*** Special categories of cited documents:**

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&"

document member of the same patent family

Date of the actual completion of the international search

04 April 2002 (04.04.2002)

Date of mailing of the international search report

15 MAY 2002

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks

Box PCT

Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Gregory Clinton

Telephone No. 703-305-3900

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/43289

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1 - 7, 9 - 17

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/43289

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

Group I, claim(s) 1 - 7, 9 - 17, drawn to a file access and control management system.

Group II, claim(s) 8, drawn to a method for changing from one data transmission rate to a second transmission rate.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the method of Group II does not involve the control of usage or access rights, nor does the method of Group II involve an intermediate or proxy server.

Continuation of B. FIELDS SEARCHED Item 3:

EAST

rights management content management proxy server intermediate server