(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification⁷: G06F 9/46, 9/445, 9/44

(21) International Application Number:
PCT/US2001/014149

(22) International Filing Date: 2 May 2001 (02.05.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/564,974 4 May 2000 (04.05.2000) US
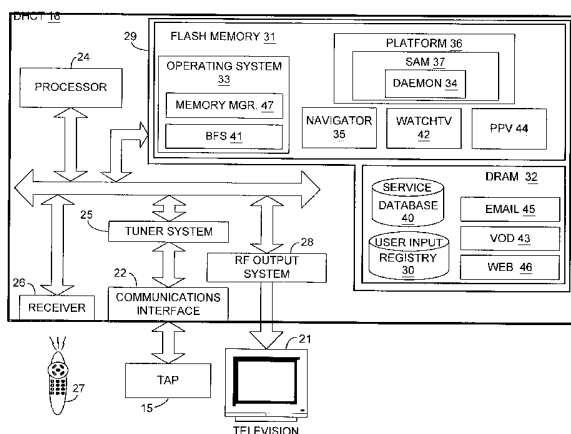
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(81) Designated States (national): BR, CA, JP.

(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

Published:
— with international search report

(88) Date of publication of the international search report:
8 January 2004

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.

(54) Title: SYSTEM AND METHOD FOR A COMMUNICATION TERMINAL TO MANAGE MEMORY AND MAINTAIN A CURRENT APPLICATION VERSION FOR MULTIPLE APPLICATIONS

(57) Abstract: A system and method for a communication terminal to manage memory and maintain a current application version for multiple applications are provided. The system and method provide for managing memory in a communication terminal coupled to a server device enabling the communication terminal to provide memory capacity for storing in a memory and executing on the communication terminal a plurality of applications downloaded from the server device. Prior to downloading an application, the communication terminal determines an amount of memory capacity required by an application client to be downloaded from the server device. The communication terminal then attempts to allocate the memory capacity. If memory cannot be allocated from the system heap, the communication terminal purges data contained in the memory according to a dynamic list of priorities to create memory capacity in the memory for the application client. Once sufficient memory capacity has been created, it is allocated to the application client, and the application client is downloaded to the communication terminal.

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7   G06F9/46   G06F9/445   G06F9/44

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)
IPC 7   G06F

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 811 911 A (SUN MICROSYSTEMS INC) 10 December 1997 (1997-12-10)	1,2,7,8, 10,14, 23, 28-30, 34,43-50
A	column 7, line 10 -column 12, line 12; claims 1,8,9	3-6,9, 11-13, 15-17, 24-27, 31-33, 35-37
A	--- WO 99 53401 A (NASSOR AZAD ;BULL CP8 (FR)) 21 October 1999 (1999-10-21) page 11, line 20 -page 21, line 11 ---	1-17, 23-37, 43-50
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X	Further documents are listed in the continuation of box C.		X	Patent family members are listed in 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 document but 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	Date of mailing of the international search report
28 August 2003	08. 09. 2003

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Michel, T

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	"FAIL-SAFE MESSAGE FOR INSUFFICIENT DISK SPACE" IBM TECHNICAL DISCLOSURE BULLETIN, IBM CORP. NEW YORK, US, vol. 37, no. 4A, 1 April 1994 (1994-04-01), page 513 XP000446759 ISSN: 0018-8689 the whole document	1-17, 23-37, 43-50
X	EP 0 489 204 A (HEWLETT PACKARD LTD) 10 June 1992 (1992-06-10) the whole document	45-47
A	WO 99 15964 A (MICROSOFT CORP) 1 April 1999 (1999-04-01) page 11, line 30 -page 12, line 29	
A	WO 95 16958 A (CRAY RESEARCH INC) 22 June 1995 (1995-06-22) page 6, line 25 -page 7, line 30	3-6, 11-13, 15-17, 24-27, 31-33, 35-37
X Y	US 5 742 829 A (BEN-NATAN OR ET AL) 21 April 1998 (1998-04-21) column 13, line 39 -column 14, line 28; figures 2,5A	18,20, 22,38, 40,42 19,39
X	EP 0 841 615 A (INT COMPUTERS LTD) 13 May 1998 (1998-05-13) column 6, line 30 -column 7, line 54	18,20, 22,38, 40,42
X	US 5 809 287 A (SHAFFER DAVID SCOTT ET AL) 15 September 1998 (1998-09-15) column 3, line 53 -column 4, line 37 column 9, line F -column 11, line 7	18,20, 22,38, 40,42
Y	SIMONSON J ET AL: "Version augmented URIs for reference permanencevia an Apache module design" COMPUTER NETWORKS AND ISDN SYSTEMS, NORTH HOLLAND PUBLISHING. AMSTERDAM, NL, vol. 30, no. 1-7, 1 April 1998 (1998-04-01), pages 337-345, XP004121413 ISSN: 0169-7552 page 339, right-hand column, line 6 - line 28	19,39

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INTERNATIONAL SEARCH REPORT

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 945 792 A (SUN MICROSYSTEMS INC) 29 September 1999 (1999-09-29) column 6, line 31 -column 10, line 10 ---	18,21, 38,41
A	US 5 764 992 A (TITUS DIANE ET AL) 9 June 1998 (1998-06-09) column 4, line 19 - line 56 -----	20,40

INTERNATIONAL SEARCH REPORT

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

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

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims 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. ☐ Claims 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:

see additional 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.:

Remark on Protest   ☐ The additional search fees were accompanied by the applicant's protest.

                              ☒ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (1)) (July 1998)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of)
inventions in this international application, as follows:

1. Claims: 1-17, 23-37, 43-50

   Method and system for managing memory allocated to
   applications in a terminal

2. Claims: 18-22, 38-42

   Method and system for maintaining current version of an
   application

INTERNATIONAL SEARCH REPORT

Information on patent family members

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
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