

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 December 2004 (23.12.2004)

PCT

(10) International Publication Number
WO 2004/111841 A3

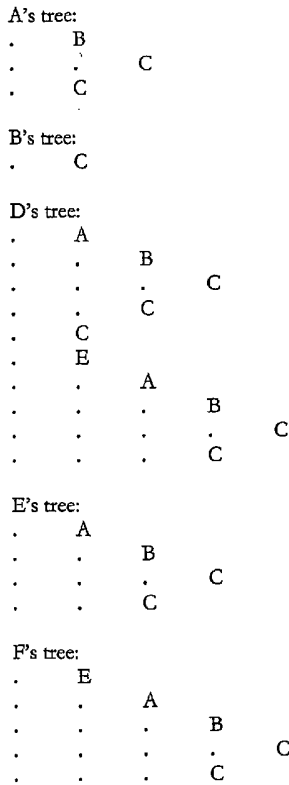
- (51) International Patent Classification:
G06F 9/44 (2006.01)
- (21) International Application Number:
PCT/GB2004/002475
- (22) International Filing Date: 10 June 2004 (10.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0313619.9 12 June 2003 (12.06.2003) GB
- (71) Applicant (for all designated States except US): **SYMBIAN SOFTWARE LIMITED** [GB/GB]; 2-6 Boundary Row, London SE1 8HP (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **PRICE, Howard** [GB/GB]; 270 Tring Road, Aylesbury, Buckinghamshire HP20 1JT (GB).
- (74) Agent: **ORIGIN LIMITED**; 52 Muswell Hill Road, London N10 3JR (GB).

- (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.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, 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).

Published:
— with international search report

[Continued on next page]

(54) Title: A METHOD OF AUTOMATICALLY ANALYSING THE STRUCTURE OF A SOFTWARE SYSTEM



(57) Abstract: The invention automatically produces a structural analysis of a software system's executables, separated into levels based on 'dependency depth'. Given a simple list of executables' dependencies, the tool automatically produces a dependency table sorted by level, with the least dependent executables listed at the bottom and with the most dependent at the top. This organises the executables in a rational and repeatable manner that clarifies the high-level view of the inter-dependencies between the many executables. It can also be used to decide the order in which executables need to be built where the least dependent executable is built first.

WO 2004/111841 A3



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

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:

6 April 2006

INTERNATIONAL SEARCH REPORT

PCT/GB2004/002475

<p>A. CLASSIFICATION OF SUBJECT MATTER G06F9/44</p> <p>According to International Patent Classification (IPC) or to both national classification and IPC</p>												
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) G06F</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, INSPEC, IBM-TDB</p>												
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</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 2002/147903 A1 (HUBERT PATRICK ET AL) 10 October 2002 (2002-10-10) the whole document -----</td> <td>1-8</td> </tr> <tr> <td>Y</td> <td>WALDIN R: "Re: Dependency Sorting, first of kind" XSL-LIST MAILING LIST, 2 November 1999 (1999-11-02), pages 1-2, XP002364621 Retrieved from the Internet: URL: http://www.stylusstudio.com/xsllist/199911/post90030.html the whole document ----- -/--</td> <td>1-8</td> </tr> </tbody> </table>			Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2002/147903 A1 (HUBERT PATRICK ET AL) 10 October 2002 (2002-10-10) the whole document -----	1-8	Y	WALDIN R: "Re: Dependency Sorting, first of kind" XSL-LIST MAILING LIST, 2 November 1999 (1999-11-02), pages 1-2, XP002364621 Retrieved from the Internet: URL: http://www.stylusstudio.com/xsllist/199911/post90030.html the whole document ----- -/--	1-8	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
Y	US 2002/147903 A1 (HUBERT PATRICK ET AL) 10 October 2002 (2002-10-10) the whole document -----	1-8										
Y	WALDIN R: "Re: Dependency Sorting, first of kind" XSL-LIST MAILING LIST, 2 November 1999 (1999-11-02), pages 1-2, XP002364621 Retrieved from the Internet: URL: http://www.stylusstudio.com/xsllist/199911/post90030.html the whole document ----- -/--	1-8										
<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in 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 document but 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>*G* 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 document but 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	*G* 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 document but 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	*G* 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 26 January 2006</p>		<p>Date of mailing of the international search report 08/02/2006</p>										
<p>Name and mailing address of the ISA 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</p>		<p>Authorized officer Kielhöfer, P</p>										

INTERNATIONAL SEARCH REPORT

PCT/GB2004/002475

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/46798 A (HEADWAY RESEARCH LIMITED; O'REILLY, BRENDAN; CHEDGEY, CHRISTOPHER) 28 June 2001 (2001-06-28)	1,2,7,8
A	abstract page 5, line 5 - page 23, last line figure 2 figure 4 figure 6 figure 7 figure 8 figure 10 figure 11 figure 12	3-6
X	----- EP 0 543 588 A (INTERNATIONAL BUSINESS MACHINES CORPORATION) 26 May 1993 (1993-05-26)	1,2,7,8
A	the whole document -----	3

INTERNATIONAL SEARCH REPORT

PCT/GB2004/002475

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002147903 A1	10-10-2002	CA 2380962 A1 GB 2377283 A	10-10-2002 08-01-2003
WO 0146798 A	28-06-2001	AU 2215201 A IE 20010131 A2 US 2004205726 A1	03-07-2001 30-05-2001 14-10-2004
EP 0543588 A	26-05-1993	JP 1964124 C JP 5224948 A JP 6095312 B US 5428780 A	25-08-1995 03-09-1993 24-11-1994 27-06-1995