

(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
26 May 2006 (26.05.2006)

PCT

(10) International Publication Number  
**WO 2006/053945 A3**(51) International Patent Classification:  
**G06F 9/445** (2006.01)

(21) International Application Number:

PCT/FI2005/050411

(22) International Filing Date:

15 November 2005 (15.11.2005)

(25) Filing Language:

Finnish

(26) Publication Language:

English

(30) Priority Data:

20045440 16 November 2004 (16.11.2004) FI

(71) Applicant (for all designated States except US): **ABB OY**  
[FI/FI]; Strömbergintie 1, FI-00380 Helsinki (FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **HINDSBERG, Anders** [FI/FI]; Pyhän Sigfridintie 35, FI-04130 Sipoo (FI).(74) Agent: **KOLSTER OY AB**; Iso Roobertinkatu 23, P.O. Box 148, FI-00121 Helsinki (FI).

(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, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

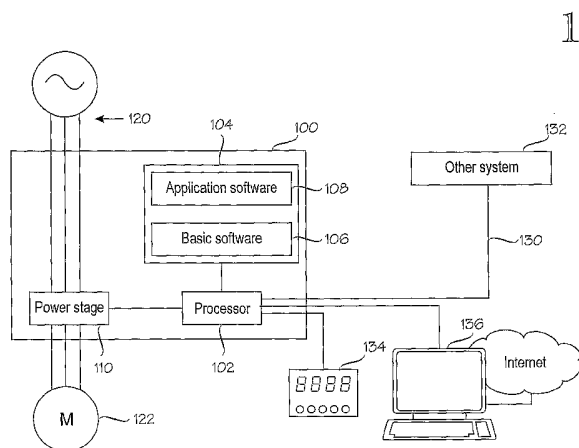
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, 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).

**Declarations under Rule 4.17:**

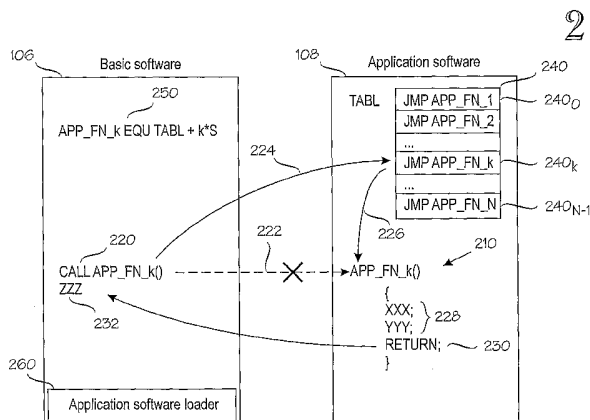
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: CUSTOMIZABLE FREQUENCY CONVERTER



**(57) Abstract:** A frequency converter (100) comprises a processor (102), memory (104) and basic software (106) in the memory, the execution of which software implements the basic functionality of the frequency converter. For application-specific customization, the memory of the frequency converter is arranged to include application software (108) that contains callable functions (210) and is installable separately from the basic software. The frequency converter is arranged to execute the basic software (106) and the application software (108) with the same processor (102). The basic software (106) calls a function of the application software and/or provides functions of its own to be called by the application software indirectly via a link (240<sub>k</sub>) in a call table (240), the location of the link in the call table being independent of the location of the function (210) corresponding to the link in the memory.





**Published:**

- with international search report
- 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:**

29 June 2006

## INTERNATIONAL SEARCH REPORT

International application No

PCT/FI2005/050411

## A. CLASSIFICATION OF SUBJECT MATTER

INV. G06F9/445

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)

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

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 738 966 A (PITNEY BOWES INC) 23 October 1996 (1996-10-23) page 2, line 46 - page 3, line 5 page 3, line 16 - page 5, line 22	1-8
X	US 6 154 878 A (SABOFF ET AL) 28 November 2000 (2000-11-28) column 2, line 40 - column 3, line 53 column 4, line 39 - column 7, line 35 column 14, line 22 - line 53 ----- -/--	1-8



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 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

26 April 2006

Date of mailing of the international search report

17/05/2006

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

Authorized officer

Kusnierczak, P

## INTERNATIONAL SEARCH REPORT

International application No

PCT/FI2005/050411

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	"DYNAMIC LOADING USING AN EXTENDED ROUTER LINKAGE MECHANISM" IBM TECHNICAL DISCLOSURE BULLETIN, IBM CORP. NEW YORK, US, vol. 30, no. 9, 1 February 1988 (1988-02-01), pages 373-374, XP000022398 ISSN: 0018-8689 the whole document	1-8
A	EP 0 813 131 A (DANFOSS A/S) 17 December 1997 (1997-12-17) column 3, line 14 - column 5, line 27	1
A	US 5 175 828 A (HALL ET AL) 29 December 1992 (1992-12-29) column 2, line 13 - line 56 column 5, line 10 - column 7, line 2	1-8

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/FI2005/050411

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0738966	A	23-10-1996	CA 2174168 A1 US 5797015 A	19-10-1996 18-08-1998
US 6154878	A	28-11-2000	NONE	
EP 0813131	A	17-12-1997	DE 69705999 D1 DE 69705999 T2 DK 813131 T3 US 5909372 A	13-09-2001 20-12-2001 08-10-2001 01-06-1999
US 5175828	A	29-12-1992	NONE	