

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
18 August 2011 (18.08.2011)

(10) International Publication Number  
**WO 2011/100623 A3**

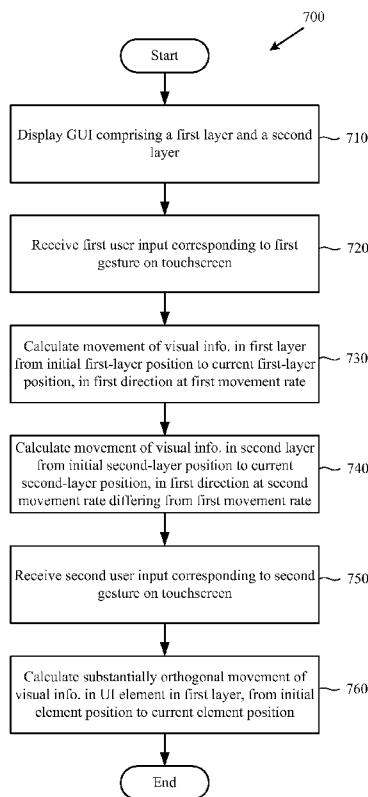
- (51) **International Patent Classification:**  
*G06F 3/048* (2006.01)     *G06F 3/03* (2006.01)
- (21) **International Application Number:**  
PCT/US2011/024639
- (22) **International Filing Date:**  
11 February 2011 (11.02.2011)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
61/304,004     12 February 2010 (12.02.2010)     US  
12/824,049     25 June 2010 (25.06.2010)     US
- (71) **Applicant (for all designated States except US):** MICROSOFT CORPORATION [US/US]; One Microsoft Way, Redmond, Washington 98052-6399 (US).
- (72) **Inventors:** FONG, Jeffrey Cheng-Yao; c/o Microsoft Corporation, LCA - International Patents, One Microsoft

Way, Redmond, Washington 98052-6399 (US). **HULL, Eric J.**; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US). **CHUB, Sergey**; c/o Microsoft Corporation, LCA - International Patents, One Microsoft Way, Redmond, Washington 98052-6399 (US).

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

[Continued on next page]

(54) **Title:** MULTI-LAYER USER INTERFACE WITH FLEXIBLE PARALLEL AND ORTHOGONAL MOVEMENT



(57) **Abstract:** A user interface (UI) system calculates movements in a multi-layer graphical user interface. The UI system receives user input corresponding to gestures on a touchscreen. The UI system calculates a movement of a first layer in a first direction (e.g., a horizontal direction) at a first movement rate. The UI system calculates a movement of a second layer substantially parallel to the movement of the first layer, at a second movement rate that differs from the first movement rate. The UI system calculates a movement (e.g., a vertical movement) in a direction substantially orthogonal to the first direction, in a UI element of one of the layers.

Figure 7

WO 2011/100623 A3



GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

**Published:**

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**Declarations under Rule 4.17:**

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

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

10 November 2011

**A. CLASSIFICATION OF SUBJECT MATTER****G06F 3/048(2006.01)i, G06F 3/03(2006.01)i**

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 3/048; G06F 3/14; H04N 13/00; G06F 3/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: "user interface, gesture, scroll, movement, rate, direction, layer, hierarchy, and similar terms"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 05874961A A (BATES CARY LEE et al.) 23 February 1999 See summary of the invention; Figures 5,9,10; Column 5 Line 35 - Column 6 Line 48	1-15
A	WO 2007-017784 A2 (KONINKLIJKE PHILIPS ELECTRON. N.V. ) 15 February 2007 See summary of the invention; Figures 2,4,5; Claims 1-4	1-15
A	US 06157381A A (BATES; CARY L. et al.) 05 December 2000 See summary of the invention; Figures 5,6,11-13; Column 13 Line 33 - Column 14 Line 18	1-15
A	KR 10-1998-0031876 A (SAMSUNG ELECTRON. CO.) 25 July 1998 See summary of the invention; Figures 1-3; Claims 1-7	1-15
A	US 2010-0175027 A1 (YOUNG ANTHONY et al.) 08 July 2010 See summary of the invention; Figures 1,3-8; Paragraphs [0014]-[0020]	1-15

 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 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

15 SEPTEMBER 2011 (15.09.2011)

Date of mailing of the international search report

**16 SEPTEMBER 2011 (16.09.2011)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, 189 Cheongsa-ro,  
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

JEONG, Jae Woo

Telephone No. 82-42-481-5718



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2011/024639**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 05874961A A	23.02.1999	KR 10-0267489 B1	16.10.2000
WO 2007-017784 A2	15.02.2007	WO 2007-017784 A3	15.02.2007
US 06157381A A	05.12.2000	None	
KR 10-1998-0031876 A	25.07.1998	None	
US 2010-0175027 A1	08.07.2010	None	