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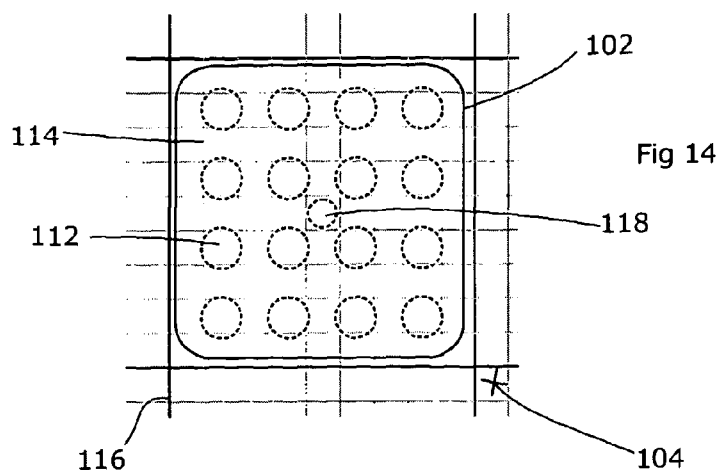
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, 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, QA, 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.

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Declarations under Rule 4.17:

[Continued on next page]

(54) Title: INTERACTION WITH TOUCH SCREEN DEVICES



(57) Abstract: Contact-sensitive displays allow for easy interaction between a user and a computing device. They do however enable a much wider range of interaction with an application than simply detection of a human finger. We propose that one or more pads be placed on the underside of an object in order to allow an application running on the computing device to determine information about the object such as location and/or orientation of the object, identification data and/or internal state information. The combination is therefore disclosed of a computing device having a contact-sensitive display panel capable of resolving a plurality of contact points on the display panel, a software application loaded onto the computing device, adapted to receive location information as to the plurality of contact points; and an object having a face placeable against the display panel on which is defined a plurality of contact pads adapted to be recognisable by the display panel, wherein the application is adapted to determine details of the object based on the relative positions of the pads. The pads can be selectably conductive for more complex operation. The object preferably has a lower face that is substantially planar, thereby enabling it to stand in a stable and unsupported manner on the display. An object for placing on a contact-sensitive display panel is also disclosed, comprising at least one pad adapted to be recognisable by the display panel. Such an object is ideally stable standing in an upright state on the panel.



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

— *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))*

Published:

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

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

12 April 2012

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2011/001169

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G06F3/03 A63F3/02
 ADD.

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 A63F

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.
A	WO 2006/033037 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]; CORTENRAAD HUBERTUS M R [NL]; OUW) 30 March 2006 (2006-03-30) page 2, line 19 - page 3, line 29 page 5, line 20 - page 7, line 15; figures -----	1-24,29
X	WO 2006/082547 A2 (KONINKL PHILIPS ELECTRONICS NV [NL]; DECRE MICHEL M J [NL]; BERGMAN AN) 10 August 2006 (2006-08-10) page 2, line 7 - page 3, line 25 page 4, line 15 - line 25 page 5, line 18 - page 6, line 6 page 6, line 19 - line 32 page 7, line 9 - page 8, line 4 page 8, line 25 - page 9, line 14; figures ----- -/--	1-24,29



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

7 December 2011

Date of mailing of the international search report

24/02/2012

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2011/001169

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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.: 30
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:
see FURTHER INFORMATION sheet PCT/ISA/210
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 No. III Observations where unity of invention is lacking (Continuation of item 3 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 fees, this Authority did not invite payment of additional fees.
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.:
1-24(completely); 29(partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-24(completely); 29(partially)

The combination of a computing device having a contact-sensitive display panel capable of resolving a plurality of contact points on the display panel, a software application loaded onto the computing device, adapted to receive location information as to the plurality of contact points and an object having a face placeable against the display panel,
wherein a plurality of contact pads adapted to be recognisable by the display panel are defined on the contacting face of the object and the application is adapted to receive data from the object encoded in the location information as to the plurality of contact points.
An object for placing on a contact-sensitive display panel, comprising at least one pad adapted to be recognisable by the display panel.

2. claims: 25-28(completely); 29(partially)

The combination of a computing device having a display panel, a software application loaded onto the computing device, and an object having a face placeable against the display panel,
wherein the application is adapted to send data to the object by encoding the data as a digital signal, and selectively illuminating a part of the display panel in accordance with the digital signal; and
the object is adapted to receive the data from the application by sensing the illumination via a light-sensitive element provided on the object face placed against the display panel.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 30

The wording of claim 30 presently on file renders it impossible to determine the matter for which protection is sought. The present application fails to comply with the clarity and conciseness requirements of Article 6 PCT (see also Rule 6.2(a) PCT) to such an extent that a meaningful search is impossible. Consequently, the search has been limited, irrespectively of any further limitation due to lack of unity of invention, for those parts of the application which do appear to be clear and concise, namely claims 1-29.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2011/001169

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/062852 A1 (ZACHUT RAFI [IL] ET AL) 22 March 2007 (2007-03-22) paragraphs [0009] - [0014], [0022] - [0031], [0061], [0062], [0093] - [0101], [0106], [0107], [0111] - [0124], [0137], [0138]; figures -----	1-24,29

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2011/001169

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006033037 A1	30-03-2006	CN 101022859 A EP 1804939 A1 JP 2008513081 A US 2008004110 A1 WO 2006033037 A1	22-08-2007 11-07-2007 01-05-2008 03-01-2008 30-03-2006
WO 2006082547 A2	10-08-2006	CN 101111295 A EP 1850928 A2 JP 2008528226 A US 2008161086 A1 WO 2006082547 A2	23-01-2008 07-11-2007 31-07-2008 03-07-2008 10-08-2006
US 2007062852 A1	22-03-2007	US 2007062852 A1 US 2009322352 A1	22-03-2007 31-12-2009