



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

<p>(51) International Patent Classification <sup>6</sup> : <b>G06F 1/00, G06K 9/00, 11/18, 11/08</b></p>	<p><b>A3</b></p>	<p>(11) International Publication Number: <b>WO 99/27485</b></p> <p>(43) International Publication Date: 3 June 1999 (03.06.99)</p>
<p>(21) International Application Number: PCT/US98/24923</p> <p>(22) International Filing Date: 25 November 1998 (25.11.98)</p> <p>(30) Priority Data: 60/066,814 25 November 1997 (25.11.97) US 09/066,625 24 April 1998 (24.04.98) US</p> <p>(71) Applicant: XL VISION, INC. [US/US]; 10305 102nd Terrace, Sebastian, FL 32958 (US).</p> <p>(72) Inventors: DICKINSON, Alexander; 466 Monterey Drive, Laguna Beach, CA 92651 (US). COLE, Andrew; Apartment 1, 732 Cleveland Street, Sebastian, FL 32958 (US). MC-MORRIS, John, A., III; 418 Rio Casa Drive N., Indialantic, FL 32903 (US). HADJIABADI, Shahin; 9556 Seagrape Drive, Vero Beach, FL 32963 (US). DERWITSCH, Frederic, F.; 1816 Oakwood Trail, Melbourne, FL 32934 (US). VACHRIS, Paul, F.; 501 Coconut Street S.E., Palm Bay, FL 32909 (US). MARTENEY, Steven, J.; 2230 St. Theresa's Way, Melbourne, FL 32935 (US). SMITH, Ronald, S.; 2275 Ladner Road N.E., Palm Bay, FL 32907 (US). MULLINS, Gregory, A.; 3521 Samuel Place, Melbourne, FL 32934 (US).</p>		<p>(74) Agents: LOCKMAN, David, M. et al.; Morris, Manning &amp; Martin, L.L.P., 1600 Atlanta Financial Center, 3343 Peachtree Road N.E., Atlanta, GA 30326 (US).</p> <p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 18 November 1999 (18.11.99)</p>
<p>(54) Title: METHOD AND SYSTEM FOR COMPUTER ACCESS AND CURSOR CONTROL USING A RELIEF OBJECT IMAGE GENERATOR</p>		
<div style="text-align: center;"> </div>		
<p>(57) Abstract</p> <p>A system and method for using a relief object image generator for cursor control, computer access control, and operational parameter control is disclosed. The system includes a relief object image generator (10), a sensor array (72), an image processor, and a memory. The relief object image generator (10) generates images of relief objects, such as fingerprints, brought in proximity of the exposed surface of the image generator (10). The image processor receives the image from the sensor array (72), processes the image, and compares the resulting descriptive information to stored information corresponding to authorized users. If a match is found, the user is granted access to the computer. The image processor may also process the image to determine image movement or the image's presence or absence. Detected movement is used to generate directional signals while the presence and absence of the image is used to generate highlight and select signals. These signals conform to those generated by known mouse devices so the system of the present invention can replace a position variable device in the keyboard of a laptop or other portable computer without sacrificing functionality for the system. Other uses of the system disclosed herein include control of operational parameters for a device such as brightness and contrast for a monitor and the transmission of relief object images to remote sites for authentication of a user.</p>		

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

**INTERNATIONAL SEARCH REPORT**

International Application No

PCT/US 98/24923

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 6 G06F1/00 G06K9/00 G06K11/18 G06K11/08

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 6 G06F G06K A61B

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 97 29477 A (SCOTT JOHN DOUGLAS ; IDENTIX INC (US)) 14 August 1997 (1997-08-14)</p> <p>abstract                      page 2, line 30 - page 4, line 7                      page 4, line 17 - line 25                      page 5, line 6 - line 22                      page 10, line 1 - page 12, line 32;                      figure 1                      page 13, line 6 - line 13                      page 14, line 7 - line 30</p> <p align="right">-/--</p>	<p>28-30,                      32,                      34-42,                      80-93,                      102-104,                      107,                      109-119,                      127, 128,                      130-133,                      135,                      137-141</p>

Further documents are listed in the continuation of box C.

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.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

9 September 1999

Date of mailing of the international search report

24. 09. 1999

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

Bravo, P

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/24923

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>page 18, line 30 - page 19, line 4; figure 6 page 19, line 8 - page 20, line 15</p>	<p>1,2,6, 8-20,43, 44, 52-54, 58, 60-73, 101,129</p>
Y	<p>----- PATENT ABSTRACTS OF JAPAN vol. 014, no. 352 (P-1085), 30 July 1990 (1990-07-30) &amp; JP 02 126381 A (NEC KANSAI LTD), 15 May 1990 (1990-05-15)  abstract</p>	<p>1,2,6, 8-20,43, 52-54, 58, 60-73, 101,129</p>
Y	<p>----- US 5 325 442 A (KNAPP ALAN G) 28 June 1994 (1994-06-28) cited in the application abstract</p>	<p>44</p>
A	<p>----- DATABASE WPI Section Ch, Week 8320 Derwent Publications Ltd., London, GB; Class L03, AN 83-48904K XP002080114 &amp; SU 942 684 A (AS AZERB PHYSICS), 15 July 1982 (1982-07-15) abstract</p>	<p>1,2,53, 54</p>
A	<p>----- DATABASE WPI Section Ch, Week 8141 Derwent Publications Ltd., London, GB; Class J04, AN 81-75251D XP002080115 &amp; SU 797 657 B (AS AZERB PHYSICS), 28 January 1981 (1981-01-28) abstract</p>	<p>1,2,53, 54</p>
A	<p>----- WO 97 16834 A (GRE INC) 9 May 1997 (1997-05-09)  abstract page 5, line 1 - line 12; figure 1 page 6, line 10 - line 31 page 7, line 22 - line 31 ----- -/--</p>	<p>1,2,9, 52-54, 62,101, 129</p>

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/24923

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 406 261 A (GLENN JAMES T) 11 April 1995 (1995-04-11)  abstract column 2, line 47 - line 66 column 4, line 9 - line 25 column 5, line 22 - column 6, line 53; figures 1-6,9B  ----	3,4,55, 56,105, 106
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 058 (P-1481), 4 February 1993 (1993-02-04) & JP 04 268937 A (TOSHIBA CORP), 24 September 1992 (1992-09-24) abstract  ----	3,4,55, 56,105, 106
A	US 5 229 764 A (MATCHETT NOEL D ET AL) 20 July 1993 (1993-07-20)  abstract column 2, line 4 - line 21  ----	16,42, 60,83, 104,133
A	US 5 578 817 A (ARREGUIT JAVIER ET AL) 26 November 1996 (1996-11-26)  abstract column 25, line 33 - column 26, line 42; figure 22  ----	28-30, 32, 34-42, 80-93, 102-104, 107, 109-119, 127-133, 135, 137-141
A	EP 0 326 751 A (SPERRY MARINE INC) 9 August 1989 (1989-08-09)  abstract  ----	17,18, 28,34, 36-39, 52,69, 70,80, 89-93, 116,117, 127,137, 140,141
	---- -/--	

INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 98/24923

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 0 374 912 A (HEESEMANN KARL MASCH) 27 June 1990 (1990-06-27)  abstract	17, 18, 28, 34, 36-39, 52, 69, 70, 80, 89-93, 116, 117, 127, 137, 140, 141
E	WO 99 00761 A (FRENIERE JON E ; ROWLEY STEPHEN H (US)) 7 January 1999 (1999-01-07) the whole document	1, 53, 102
A	US 5 469 506 A (BERSON WILLIAM ET AL) 21 November 1995 (1995-11-21)  the whole document	21-27, 45-51, 74-79, 94-100, 120-126, 142-148
A	US 5 243 332 A (JACOBSON JOSEPH M) 7 September 1993 (1993-09-07)  the whole document	21-27, 45-51, 74-79, 94-100, 120-126, 142-148
A	US 5 003 167 A (ARQUES MARC) 26 March 1991 (1991-03-26)  the whole document	21-27, 45-51, 74-79, 94-100, 120-126, 142-148
A	BRUYNE DE P: "DYNAMIC SIGNATURE VERIFICATION USING YOUR OWN PEN" PROCEEDINGS OF THE INTERNATIONAL CARNAHAN CONFERENCE ON SECURITY TECHNOLOGY: CRIME COUNTERMEASURES, VENUE NOT SHOWN, OCT. 5 - 7, 1988, 5 October 1988 (1988-10-05), pages 5-8, XP000092872 JACKSON J S abstract; figure 1 pages 5 and 6, paragraph 'The hardware'	25, 26, 49, 50, 77, 78, 124, 125, 146, 147

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 98/24923

## 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.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

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

1. Claims: 1-20, 28-44, 52-73, 80-93, 101-119, 127-141

Method and system for identifying a user prior to computer activation using a relief object image generator

2. Claims: 21-24, 45-48, 74-76, 94-97, 120-123, 142-145

Method and system to obtain an image of an object positioned in the proximity of a platen interposed between the electroluminescent device and the sensor array of a relief object image generator

3. Claims: 25-27, 49-51, 77-79, 98-100, 124-126, 146-148

Method and system for pen input using a relief object image generator



## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/24923

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9729477	A	14-08-1997	AU 2121997 A	28-08-1997
JP 02126381	A	15-05-1990	NONE	
US 5325442	A	28-06-1994	GB 2244164 A DE 69115558 D DE 69115558 T EP 0457398 A JP 4231803 A	20-11-1991 01-02-1996 01-08-1996 21-11-1991 20-08-1992
SU 942684	A	15-07-1982	NONE	
SU 797657	B		NONE	
WO 9716834	A	09-05-1997	AU 7478096 A	22-05-1997
US 5406261	A	11-04-1995	NONE	
JP 04268937	A	24-09-1992	NONE	
US 5229764	A	20-07-1993	NONE	
US 5578817	A	26-11-1996	US 5703356 A US 5288993 A DE 19615568 A US 5729009 A US 5854482 A US 5907152 A AU 4881993 A CA 2107743 A DE 4333992 A ES 2079288 A FR 2696566 A GB 2271847 A, B IT 1262566 B JP 6195168 A NL 9301709 A	30-12-1997 22-02-1994 14-11-1996 17-03-1998 29-12-1997 25-05-1999 21-04-1994 06-04-1994 19-05-1994 01-01-1996 08-04-1994 27-04-1994 04-07-1996 15-07-1994 02-05-1994
EP 0326751	A	09-08-1989	DE 3851322 D DE 3851322 T DK 21589 A JP 1226020 A JP 6023946 B KR 9610927 B US 5053758 A	06-10-1994 04-05-1995 02-08-1989 08-09-1989 30-03-1994 13-08-1996 01-10-1991
EP 0374912	A	27-06-1990	DE 3843454 C	13-06-1990
WO 9900761	A	07-01-1999	AU 7965798 A EP 0927402 A	19-01-1999 07-07-1999
US 5469506	A	21-11-1995	WO 9600473 A	04-01-1996
US 5243332	A	07-09-1993	NONE	
US 5003167	A	26-03-1991	FR 2629932 A EP 0362352 A WO 8909959 A	13-10-1989 11-04-1990 19-10-1989

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/24923

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5003167 A		JP 2504325 T	06-12-1990