



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

<b>(51) International Patent Classification<sup>6</sup> :</b>  <b>G06T 15/10</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 98/43208</b>  <b>(43) International Publication Date:</b> 1 October 1998 (01.10.98)
<b>(21) International Application Number:</b> PCT/US98/05694 <b>(22) International Filing Date:</b> 23 March 1998 (23.03.98)  <b>(30) Priority Data:</b> 08/822,998                      21 March 1997 (21.03.97)                      US  <b>(71) Applicant (for all designated States except US):</b> NEWFIRE, INC. [US/US]; 12901 Saratoga Avenue #4, Saratoga, CA 95070-4162 (US).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> WOOTTON, Alan, T. [US/US]; 1368 Poe Lane, San Jose, CA 95130 (US). LLOYD, James, E. [US/US]; 806 Castro Street, San Francisco, CA 94114 (US). VASILYEV, Konstantin [RU/US]; 4543 20th Street, San Francisco, CA 94114 (US). SUBRAMANIAM, Srikanth [IN/US]; 237 Arriba Drive #2, Sunnyvale, CA 94086 (US). HAWLEY, Stephen [US/US]; 56 Centre Street #12, Mountain View, CA 94041 (US). WHITTENSTEIN, W., Andreas [US/US]; P.O. Box 604, San Geronimo, CA 94963 (US).  <b>(74) Agents:</b> DURANT, Stephen, C. et al.; Morrison & Foerster LLP, 755 Page Mill Road, Palo Alto, CA 94304-1018 (US).	<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, 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, US, 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, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <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>  <b>(88) Date of publication of the international search report:</b> 14 January 1999 (14.01.99)	
<b>(54) Title:</b> METHOD AND APPARATUS FOR GRAPHICS PROCESSING		
<b>(57) Abstract</b>  <p>The invention is a method and apparatus for graphics processing. One embodiment of the invention is a dynamic visible surface determination process that reduces the number of geometric entities for rendering, by dynamically determining the visibility of node's in a binary space partitioning (BSP) tree. Another embodiment of the invention generates bounding boxes for the node's of a BSP tree. Yet another embodiment of the invention performs a poly differencing process. This process receives information relating to overlapping polys, and generates data structures representing non-overlapping polys. Still another embodiment of the invention performs an abstract rendering process. For each scanline of a display device, one embodiment of the rendering process generates commands to represent each static and non-static data structure on that scanline, and stores these commands in a command buffer for the scanline.</p>		

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/05694

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 G06T15/10

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 G06T

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	US 4 658 247 A (GHARACHORLOO NADER) 14 April 1987 see abstract see column 4, line 9 - line 43 see column 5, line 67 - column 6, line 22 see column 6, line 47 - line 64; figure 1 ---	1-7
X	EP 0 694 880 A (CANON KK ;CANON INFORMATION SYST RES (AU)) 31 January 1996 see abstract see page 4, line 20 - line 30 see page 11, line 40 - page 12, line 44 ---	8,9
A	WO 95 04331 A (APPLE COMPUTER ;CHEN SHENCHANG ERIC (US); WILLIAMS LANCE (US)) 9 February 1995 see abstract ---	12
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

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Date of the actual completion of the international search

17 July 1998

Date of mailing of the international search report

24. 11. 98

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/05694

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 5 572 634 A (DULUK JR JEROME F) 5 November 1996 see abstract see column 6, line 11 - line 27 -----	10,11

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 98/05694

## 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.:

1-12

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**

1. Claims: 1-12

Computer system for rendering 3D graphic primitives including hidden surface removal, colision detection and interpolation.

2. Claim : 13

Access control management of initialization and program execution for restricted service functions