

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 November 2006 (02.11.2006)

PCT

(10) International Publication Number
WO 2006/116154 A3

(51) International Patent Classification:
G09G 5/00 (2006.01)

(21) International Application Number:
PCT/US2006/015197

(22) International Filing Date: 21 April 2006 (21.04.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/675,932 21 April 2005 (21.04.2005) US

(71) Applicant (for all designated States except US): **PIXAR**
[US/US]; 1200 Park Avenue, Emeryville, CA 94608 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **COOK, Robert L.**
[US/US]; 380 Oak Crest Road, San Anselmo, CA 94960 (US). **DEROSE, Anthony David** [US/US]; 428 Riviera Drive, San Rafael, CA 94901 (US).

(74) Agents: **HOLLANDER, Jonathan, M.** et al.; Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, CA 94111-3834 (US).

(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).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

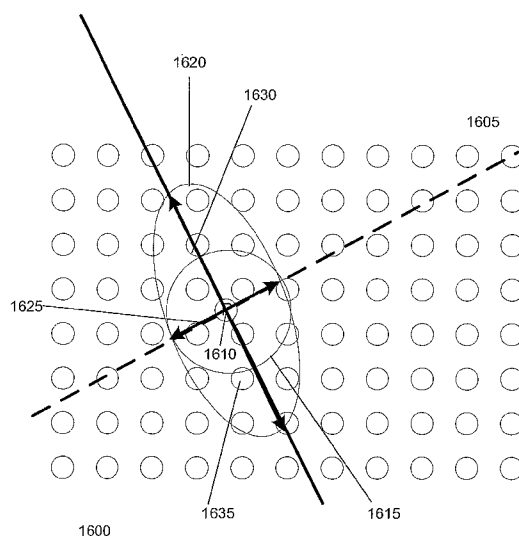
— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
13 December 2007

[Continued on next page]

(54) Title: BANDLIMITED TEXTURE SLICING FOR COMPUTER GRAPHICS



(57) Abstract: Slices of N dimensions can be extracted from bandlimited data sets of M dimensions. N is any arbitrary value less than M. A value of a slice is defined by an evaluation of an integral of the bandlimited data set weighted by a filter scaling function orientated along the normal of the slice. Due to the properties of the bandlimited data set, the slice is bandlimited in M dimensions as well. The filter scaling function diminishes at substantially the same rate as the aliasing frequency of the bandlimited data set in the normal direction. The convolution of a scaling basis function used to construct the bandlimited data with itself defines the filter scaling function. A scaling basis function widened in the direction of the normal can approximate the filter scaling function in some cases. Quadrature can approximate the value of the integral. Slices may or may not be axis aligned.



WO 2006/116154 A3



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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/15197

A. CLASSIFICATION OF SUBJECT MATTER IPC: G09G 5/00(2006.01) USPC: 345/581-592,619-634 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) U.S. : 345/581-592, 619-634 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 practicable, search terms used)								
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Category *</th> <th style="width: 70%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width: 20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top;">X</td> <td style="vertical-align: top;">US 2003/0182246 A1 (JOHNSON et al) 25 September 2003, Figs.1-9; Paragraph 0616-0623, 0882-10170.</td> <td style="text-align: center; vertical-align: top;">1-49</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 2003/0182246 A1 (JOHNSON et al) 25 September 2003, Figs.1-9; Paragraph 0616-0623, 0882-10170.	1-49
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.						
X	US 2003/0182246 A1 (JOHNSON et al) 25 September 2003, Figs.1-9; Paragraph 0616-0623, 0882-10170.	1-49						
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.								
<table style="width: 100%;"> <tr> <td colspan="2" style="padding: 5px;"> * Special categories of cited documents: </td> </tr> <tr> <td style="width: 50%; padding: 5px; vertical-align: top;"> "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent 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 </td> <td style="width: 50%; padding: 5px; vertical-align: top;"> "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 </td> </tr> </table>			* 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 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		
* 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 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 12 September 2007 (12.09.2007)		Date of mailing of the international search report <div style="font-size: 1.5em; font-weight: bold;">22 OCT 2007</div>						
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer VIJAY SHANKAR Telephone No. 571-272-7682 Jacqueline A. Whitfield Special Project Asst.						