

# Exhibit C



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**Gutierrez Novelo**

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(54) **3D VIDEOGAME SYSTEM**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS  
4,559,555 A 12/1985 Schoolman  
(Continued)

FOREIGN PATENT DOCUMENTS  
DE 198 06 547 A 11/1998  
(Continued)

**OTHER PUBLICATIONS**

Akutsu, et al., Stereoscopic Display Which Shows 3D Natural Scenes Without Contradiction of Accommodation and Convergence, SPIE, 2005, vol. 5664, pp. 480-487.

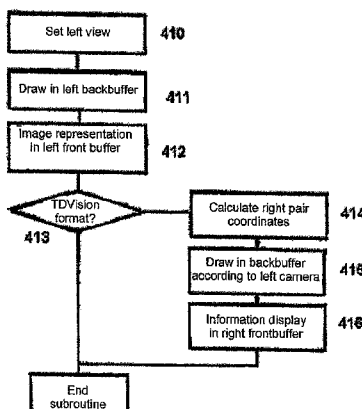
(Continued)

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(57) **ABSTRACT**

A 3D videogame system capable of displaying a left-right sequences through a different, independent VGA or video channel, with a display device sharing a memory in an immerse manner. The system has a videogame engine controlling and validating the image perspectives, assigning textures, lighting, positions, movements and aspects associated with each object participating in the game; creates left and right backbuffers, creates images and presents the information in the frontbuffers. The system allows handling the information of data associated to the xyz coordinates of the object's image in real-time, increases the RAM for the left-right backbuffer, with the possibility to discriminate and take the corresponding backbuffer, whose information is sent to the frontbuffer or additional independent display device sharing a memory in an immerse manner.

**19 Claims, 13 Drawing Sheets**



## US 8,206,218 B2

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## U.S. PATENT DOCUMENTS

4,825,393	A *	4/1989	Nishiya .....	702/152
4,870,600	A	9/1989	Hiraoka	
4,925,294	A	5/1990	Geshwind et al.	
4,962,422	A	10/1990	Ohtomo et al.	
5,355,181	A	10/1994	Ashizaki et al.	
5,430,474	A	7/1995	Hines	
5,467,104	A	11/1995	Furness, III et al.	
5,510,832	A	4/1996	Garcia	
5,523,886	A	6/1996	Johnson-Williams et al.	
5,594,843	A	1/1997	O'Neill	
5,694,530	A *	12/1997	Goto .....	345/419
5,717,415	A *	2/1998	Iue et al. ....	345/8
5,734,807	A	3/1998	Sumi	
5,745,126	A	4/1998	Jain et al.	
5,751,927	A	5/1998	Wason	
5,801,705	A *	9/1998	Kato et al. ....	345/419
5,801,717	A	9/1998	Engstrom et al.	
5,867,210	A	2/1999	Rod	
5,872,590	A	2/1999	Aritake et al.	
5,877,840	A *	3/1999	Yamada et al. ....	351/201
5,905,499	A	5/1999	McDowall et al.	
5,929,859	A	7/1999	Meijers	
5,973,704	A	10/1999	Nishiumi et al.	
5,976,017	A	11/1999	Omori et al.	
5,982,375	A *	11/1999	Nelson et al. ....	345/419
5,986,667	A	11/1999	Jevans	
6,005,607	A	12/1999	Uomori et al.	
6,031,564	A	2/2000	Ma et al.	
6,104,402	A *	8/2000	Goddard et al. ....	345/419
6,108,029	A	8/2000	Lo	
6,151,060	A	11/2000	Tabata	
6,175,371	B1 *	1/2001	Schoulz et al. ....	345/630
6,352,476	B2	3/2002	Miyamoto et al.	
6,384,859	B1	5/2002	Matsumoto et al.	
6,388,666	B1	5/2002	Murray	
6,466,206	B1	10/2002	Deering	
6,466,208	B1	10/2002	Yet et al.	
6,496,183	B1	12/2002	Bar-Nahum	
6,496,187	B1	12/2002	Deering et al.	
6,496,598	B1	12/2002	Harman	
6,501,468	B1 *	12/2002	Kaji .....	345/419
6,515,662	B1	2/2003	Garland	
6,556,195	B1	4/2003	Totsuka et al.	
6,559,844	B1	5/2003	Alamparambil	
6,573,928	B1	6/2003	Jones et al.	
6,583,793	B1	6/2003	Gould et al.	
6,614,927	B1	9/2003	Tabata	
6,753,828	B2 *	6/2004	Tuceryan et al. ....	345/8
6,760,020	B1 *	7/2004	Uchiyama et al. ....	345/419
6,760,034	B2	7/2004	Prache	
6,765,568	B2	7/2004	Swift et al.	
6,816,158	B1	11/2004	Lemelson et al.	
6,985,162	B1	1/2006	Schinnerer et al.	
7,219,352	B2	5/2007	Estrop	
7,254,265	B2	8/2007	Naske et al.	
2002/0075286	A1	6/2002	Yonezawa et al.	
2002/0154214	A1	10/2002	Scallie et al.	
2003/0112327	A1	6/2003	Jeong et al.	
2003/0152264	A1	8/2003	Perkins	
2003/0179198	A1	9/2003	Uchiyama	

## FOREIGN PATENT DOCUMENTS

JP	2-109493	A	4/1990
JP	07-296185		11/1995
JP	8-149519	A	6/1996
JP	09-139957		5/1997
JP	09-237353		9/1997
JP	11-509998		8/1999
JP	2000-020757		1/2000
JP	2002-519792		7/2002
JP	2003-067784		3/2003

## OTHER PUBLICATIONS

Ames, et al., Development of a Miniaturized System for Monitoring

Eichenlaub, Passive Method of Eliminating Accommodation/Convergence Disparity in Stereoscopic Head Mounted Displays, SPIE, 2005, vol. 5665, pp. 517-529.

Fehn, Depth-Image-Based Rendering (DIBR), Compression and Transmission for a New Approach on 3D-TV, SPIE, 2004, vol. 5291, pp. 93-104.

Hendriks, et al., Real Time Synthesis of Digital Multi Viewpoint Stereoscopic Images, SPIE, 1999, vol. 3639, pp. 266-276.

Holliman, Mapping Perceived Depth to Regions of Interest in Stereoscopic Images, SPIE, 2004, vol. 5291, pp. 117-128.

Hur, et al., A Software-Based Minimum-Time Vergence Control Scheme for a Parallel-Axis Stereoscopic Camera, SPIE, 2004, vol. 5599, pp. 32-40.

Jin, et al., Creating a Comfortable Stereoscopic Viewing Experience: Effects of Viewing Distance and Field of View on Fusional Range, SPIE, 2005, vol. 5665, pp. 10-21.

Kwon, et al., Automatic control of parallel stereoscopic camera by disparity compensation, SPIE, 2003, vol. 5006, pp. 417-423.

Kwon, Automatic Vergence and Focus Control of Parallel Stereoscopic Camera by Cepstral Filter, Journal of Electronic Imaging, 2004, vol. 13(2), pp. 376-383.

Lee, et al., Parallel-Axis Stereoscopic Camera with Vergence Control and Multiplexing Functions, SPIE, 2003, vol. 5006, pp. 389-398.

Lee, et al., Adaptive Stereoscopic Image Conversion of 2D Image, SPIE, 2001, vol. 4471, pp. 66-72.

Lemmer, et al., Enhancement of Stereoscopic Comfort by Fast Control of Frequency Content with Wavelet Transformation, SPIE, 2003, pp. 283-291.

Nam, et al., Development of the Real-Time Stereoscopic Error Corrector and Convergence Controller, SPIE, 2006, vol. 60550H-1-9.

Park, Stereoscopic Imaging Camera with Simultaneous Vergence and Focus Control, Opt. Eng., 2004, 43(12) 3130-3137.

Schowengerdt, et al., Stereoscopic Retinal Scanning Laser Display with Integrated Focus Cues for Ocular Accommodation, SPIE, 2004, vol. 5291, pp. 366-376.

Schowengerdt, et al., True 3-D Scanned Voxel Displays Using Single or Multiple Light Sources, Journal of the SID, 2006, Journal of the SID, 2006, 14/2, pp. 135-143.

Shibata, et al., Examination of Asthenopia Recovery Using Stereoscopic 3-D display with Dynamic Optical Correction, SPIE, 2006, vol. 6055, pp. 60550E-1-8.

Shibata, et al., Stereoscopic 3-D Display with Dynamic Optical Correction for Recovering from Asthenopia, SPIE, 2005, vol. 5664, pp. 1-9.

Sun, et al., Evaluating Methods for Controlling Depth Perception in Stereoscopic Cinematography, SPIE, 2009, vol. 7237 pp. 723701-1-12.

Tam, et al., Depth Image Based Rendering for Multiview Stereoscopic Displays: Role of Information at Object Boundaries, SPIE, 2005, vol. 6016, pp. 601609-1-11.

Tzovaras, et al., Object-Based Coding of Stereo Image Sequences using Joint 3-D Motion/Disparity Segmentation, 1995, SPIE, vol. 2501, pp. 1678-1689.

Um, et al., Investigation of the Effect of Disparity-Based Asymmetrical Filtering on Stereoscopic Video, SPIE, 2004, vol. 5150, pp. 110-118.

Ware, et al., Algorithm for Dynamic Disparity Adjustment, SPIE, 1995, vol. 2409, pp. 150-156.

Watt, et al., Achieving near-correct focus cues in a 3-D display using multiple image planes, SPIE, 2005, vol. 5666, pp. 393-401.

Gotoh, H. "Gotoh Hiroshige's Monthly Report," DOS/V Power Report, Japan, Impress Corporation, Jul. 1, 2003, vol. 13, No. 7, pp. 125-126.

Scribner, et al., The Effect of Stereoscopic and Wide Field of View Conditions on Teleoperator Performance, Army Research Laboratory, Mar. 1998, pp. 1-40.

Heath, Jenny, Virtual Reality Resource Guide, AI Expert, May 1994, vol. 9, pp. 1-45.

Rodriguez, et al., Full Window Stereo, J. Mol. Graphics Mod., 1999, vol. 17, pp. 319-314.

Liao, et al., The Design and Application of High-Resolution 3D

**US 8,206,218 B2**

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---

interactive Digital Media 2000, Plzen (Pilsen), Czech Republic, Feb. 7-11, 2000, pp. 1-7 [retrieved from [http://wscg.zcu.cz/wscg2000/Papers\\_2000/R5.pdf](http://wscg.zcu.cz/wscg2000/Papers_2000/R5.pdf)].

Bourke, Paul, 3D Stereo Rendering Using OpenGL (and GLUT), Nov. 1999 (7 pages).

Microsoft DirectX 8.1 (C++), Programmers Guide, available from [www.sc.ehu.es/ccwgamao/docencia/Material/hoy/Direct3D](http://www.sc.ehu.es/ccwgamao/docencia/Material/hoy/Direct3D), Jun. 17, 2002 (406 pages).

\* cited by examiner

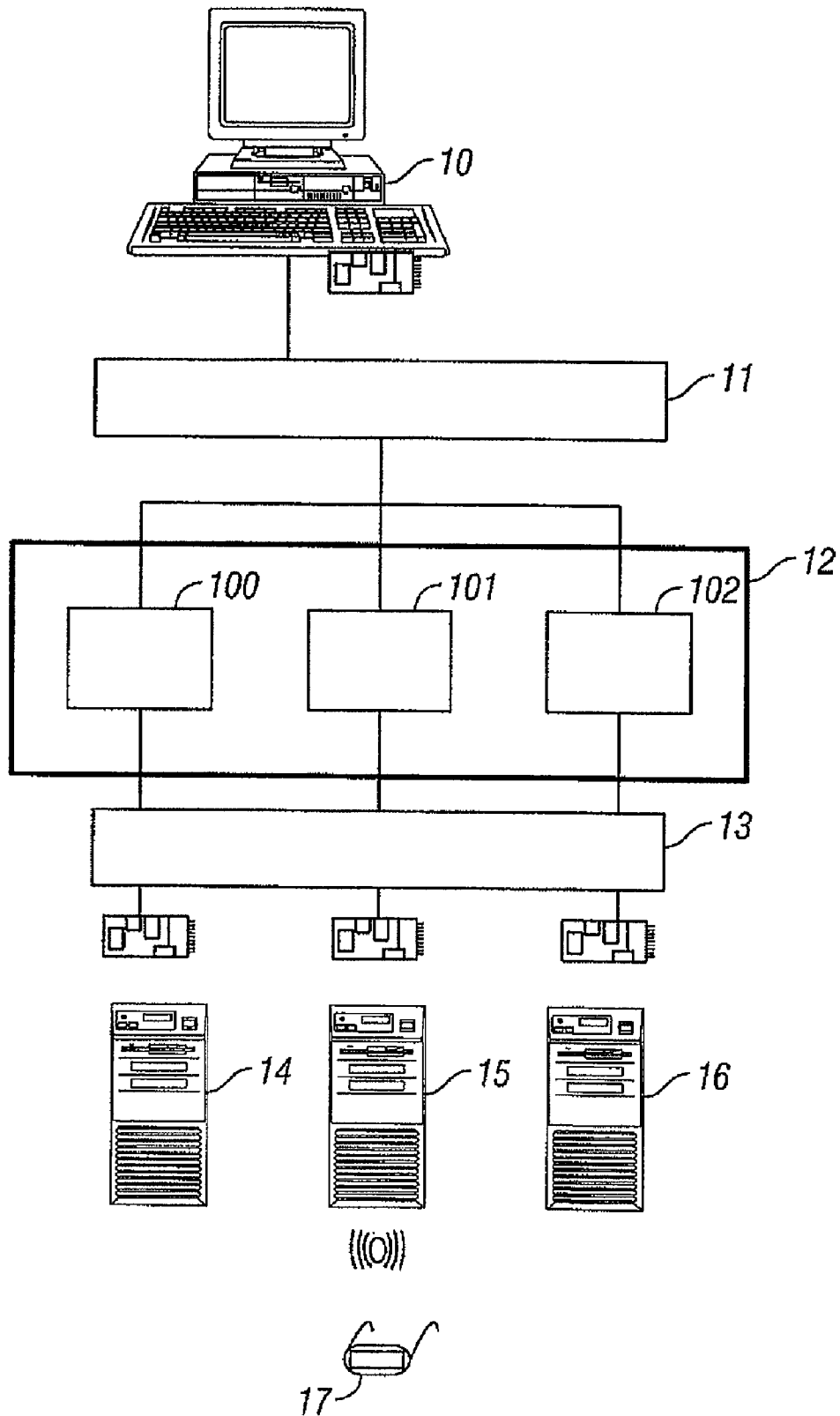


FIG. 1

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