Title (en)

Graphical image intensity rescaling mechanism

Title (de)

Mechanismus zur Neu-Skalierung der Intensität von graphischen Bildern

Title (fr)

Mécanisme pour changer l'échelonnement de l'intensité d'images graphiques

Publication

EP 0817159 A1 19980107 (EN)

Application

EP 97110793 A 19970701

Priority

US 67441896 A 19960701

Abstract (en)

In a computer graphics system which includes a frame buffer which in turn performs a depth cue display, a graphical image is displayed by (i) representing the graphical image in a Z buffer of the frame buffer such that the display intensity corresponding to a numerical value of each pixel is represented as the Z coordinate of the pixel and (ii) invoking the depth cue display. Thus, by operation of the depth cue mechanism, pixels associated with a particularly high numerical value have a particularly high Z coordinate and are therefore represented with a particularly high intensity. Similarly, pixels associated with a particularly low numerical value have a particularly low Z coordinate and are therefore represented with a particularly low intensity. As a result, the graphical image is represented as a greyscale graphical image. In addition, the relationship between specific Z coordinate values and respective display intensities is controlled by the frame buffer according to data stored within the frame buffer, e.g., in a number of registers of the frame buffer. To change the scaling of the greyscale graphical image as displayed, new data are written to the frame buffer and the frame buffer is directed to redisplay the graphical image from the Z buffer according to the new relationship represented by the new data stored in the frame buffer. Accordingly, the general-purpose processor of such a computer system has very little involvement in the rescaling of the graphical image. Instead, the frame buffer retrieves pixel records from the Z buffer, processes the pixel records according to the new data, and writes colors determined by processing the pixels records to a refresh buffer for display in a computer display device. As a result, the general purpose processor is free to handle other tasks with minimal interruption. In addition, the frame buffer typically includes a video processor which is specifically designed to process pixel records of a Z buffer in a particularly efficient manner and therefore rescales the graphical image very efficiently and quickly. <IMAGE>

IPC 1-7

G09G 1/16; G09G 5/10

IPC 8 full level

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CPC (source: EP)

G09G 5/10 (2013.01); **G09G 5/393** (2013.01); G09G 3/2007 (2013.01)

Citation (search report)

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DOCDB simple family (application)

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