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Horowitz et al.

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- [54] **COOPERATIVE FILTER AND RASTER OPERATION EVALUATION MODEL**
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- [52] **U.S. Cl.** **345/431**
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[57] **ABSTRACT**

A method and apparatus for handling transparency operations simultaneously with raster operations in a graphics environment. This is achieved by introducing filter operations to obtain the effect of transparency. Filter operations work cooperatively with grayscale and continuous-tone color raster operations. The introduction of filter operations, and their cooperation with raster operations allows this otherwise computationally complex problem to be served by a single hardware circuit for use in real-time applications such as monochrome and color laser printing. The solution is also applicable to displaying complex graphics on a video display device. A suitable apparatus receives graphics language commands which define the image to be displayed and generates a set of graphics orders from the graphics language commands representing the image to be displayed. The apparatus includes an image generator for generating a bitmap image from the graphics orders. A raster operation model is used for processing multiple-bit pixels in a source, in a pattern and in a destination, and a filter operation model is used for processing multiple-bit pixels in the source, pattern and destination. The raster operation model and the filter operation model operate cooperatively to modify the destination.

- [56] **References Cited**
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