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ON DEVELOPING A GKS DRIVER ARCHITECTURE FOR RASTER WORKSTATIONS

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The use of raster graphics devices needs adapting to graphics applications. The first graphics standard, the Graphics Kernel System GKS, defines a logical interface on an application and device independent level. The workstation driver maps the logical GKS functions to device functions. First some special raster device facilities are outlined and then it is shown how to use them within the driver. To reduce the amount of driver implementations a common driver concept is sought here, especially for raster devices.

1. INTRODUCTION

Experience with raster graphics is still growing and with this development more and more applications will take advantage of the raster device technology. For this technology, a device driver is needed, which supports the application using the raster facilities.

The driver implementation is the connection between the application program and the physical devices for graphical output and input. Because of the variety of ways of adapting a device to each different application, the graphics standard GKS was defined /1/.

The Graphics Kernel System describes the logical interface to graphical workstations. The kernel system includes a set of functions independent of the devices and the application programs. In GKS the functionality of each connected graphical device is described in the appropriate workstation description table. Depending on this description the workstation functions of GKS are sent directly to the device interface, or they are evaluated within the workstation driver and mapped to existing device functions /2/.

As is shown in figure 1 each device needs a driver for its special hardware facilities. To reduce the amount of driver implementations, it will be necessary to design a driver conception common to all devices, including a general structure and format.