

SCANLINES

A Scanning Systems Division Newsletter for the Intergraph Scanner User

Vol. 3, No. 1

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Resolution and Resampling

The cover article for this issue describes the relationship between resolution and resampling on the Eagle 3640 scanner.



I/RAS B and MGE

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Utilities Scripts

You can now build scripts to process multiple raster utilities. See the article on page 5.



I/RAS Engineer

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Dear Raster Masters ...

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The "Tech" Corner

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New SRIF Features

New SRIF features are described on page 14.



Resolution and Resampling with the Eagle 3640

by Justin Rockwell, Scanning Systems Consultant, Intergraph

In the last issue of *ScanLines*, the article entitled *Resolution and the ANA Tech Eagle Scanners* discussed which resolutions to use for the majority of engineering drawings. This article continues the discussion of resolution and describes how resampling affects resolution during the scanning process.

Resolution is primarily influenced by the effective pixel size and aperture. Aperture is the focus of the lens in relation to pixel density which affects how accurately data is scanned. At the same pixel density, a scanner with a small aperture, such as the Eagle 3640, successfully resolves lines that a scanner with a larger aperture may fail to resolve.

"...a scanner with a small aperture, such as the Eagle 3640, successfully resolves the lines that a scanner with a larger aperture may fail to resolve."

As shown in Figure 1, a small aperture decreases the possibility of aperture circles overlapping two lines. Also, you can see that a larger aperture circle overlaps the lines and eliminates the distinction between the two lines. (Resolution and Resampling, continued on page 2.)



Running I/RAS B Inside MGE — Problem Solved

by Edson A. R. Barros, Earth Sciences Group, Intergraph Brazil

In versions of I/RAS B previous to 04.00.05.15, you could not run I/RAS B inside MGE due to a conflict between environment variables defined by the two products. The 04.00.05.15 version of I/RAS B fixes this problem, and an upgrade to this version is encouraged. However, if you plan to remain on an older version of I/RAS B, you must complete one of the following configuration procedures in order to run I/RAS B inside MGE.

Configuration 1:

1. Append the I/RAS B `uconfigure.dat` file to the MGE `graphics.env` file.

```
$ cat /usr#ip32/irasb/cfg/uconfigure.dat >> /usr#ip32/mge/cfg/graphics.env
```

2. Comment out the `UM_CMDS`, `UM_DIR`, and `MS_DIR` variables in the I/RAS B portion of the new configuration file.

3. Comment out the `MS_DGNAPPS` variable in the MGE portion of the configuration file.

4. Comment out the `MS_USERPREF` variable in the MGE or I/RAS B portion of the configuration file.

5. At the `MS_MDL` variable, insert the following in the configuration file:

```
if ["$MS_MDL" = ""]
then
  MS_MDL=$IRASB_DIR/bin/$MS_DIR/mdlapps/$MS_DBASE
else
  echo $MS_MDL | grep irasb > /dev/null
  if [ $? != 0 ]
  then
    MS_MDL=$MS_MDL$IRASB_DIR/bin/
  fi
fi
export MS_MDL
```

Configuration 2:

1. In superuser mode, change directories to the MicroStation `mdlapps` directory.

```
# cd /usr#ip32/mstation/mdlapps
```

2. Symbolically link `irasb.ma` to `mdlapps`.

```
# ln -s /usr#ip32/irasb/bin/irasb.ma .
```



Resolution and Resampling concluded

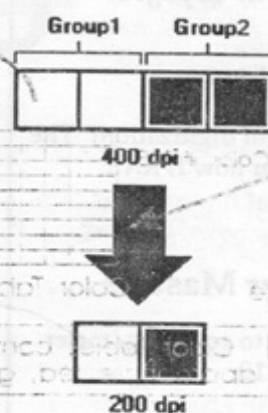


Figure 7

5. An "Or" function algorithm is applied to the 400 dpi data. Any pixel found in groups of two pixels is determined to be significant data and is written to disk (400/2=200 dpi). (Refer to Figure 7)

In Example 2, the data was resampled at a lower resolution, reducing the processing time to one minute.

As you can see in these examples, the higher resolution results in a greater amount of data that has to be resampled. Turning the Throughput Optimization option on to reduce the resolution of the data being processed decreases the amount of data resampled and the processing time. ■

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SCAN LINES

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Huntsville, AL 35894-0001

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Mail: Service Ext. 4229
Jan 29, 1993

SCAN LINES NEWSLETTER