NAME

maskdata - mask definition file for a process

DESCRIPTION

The mask data file "**maskdata**" contains the layer information of a process. A considerable number of tools consult this file, e.g. the layout-editor *dali*(1ICD), the design rule checkers *autocheck*(1ICD) and *dim-check*(1ICD), and the layout to circuit extractor *space*(1ICD).

On the first line that is not a comment line, between quotes, the process name (or type) and second a short description (comment) of the process. Note that the process name (and its identification number) is also specified in the "processlist" file.

All other lines (which are not comment lines) contain a mask specification for the process. Each line contains exact 11 columns. The first column contains a mask name (Layer), and column 2 contains the mask type (normal=0, interconnect=1 or symbolic=2).

The columns 3/4 are used for PG-tape (Pattern Generator) generation. They specify a PG-tape job number and PG-tape mask type (negative=0 or positive=1).

Columns 5 through 10 specify colors and fill styles on various types of graphics hardware. Devices that are supported in the "maskdata" file are ColorMask(CMask) terminals (obsolete), Xwindow(Dali) devices, and plotters(Plot). The most important entries are those for graphical programs that use the standard color table such as *dali* (columns 7/8), and the *preplot* programs (columns 9/10). The columns 5/6 are reserved for ColorMask devices.

The columns 7/8 are used for the *dali* layout editor. The following color numbers may be used for the Dali color column (the 7th column): 0=black, 1=red, 2=green, 3=yellow, 4=blue, 5=magenta, 6=cyan, 7=white, 15=grey. Note that for the *dali* program color numbers 0 and 15 are used for the contact hole layers (which are displayed in dominant mode). The following fill style numbers may be used for the Dali fill-style column (the 8th column): 0=hashed(12.5%), 1=solid, 2=hollow, 3-5=hashed+outline(12.5,25,50%), 6-8=hashed(12.5,25,50%).

The columns 9/10 are used for the plotter program. For the Plot color column (the 9th column) the color numbers are the plotter pen numbers 1 to 8.

EXAMPLE

As an example, we show the "maskdata" file for the "c5th" CMOS process:

```
"c5th" "TUD single metal cmos process derived from Philips C500"
#--------+--------+-------+-------+-------+--------------------
# Layer  | PG-Tape| CMask | Dali  | Plot  | Comment
#--------+--------+-------+-------+-------+--------------------
# name   | job    | color | color | pen   |
# | type | |  type| | fill| | fill| | fill|
# | |    | | |    | | |   | | |   | | |   | |
# 1  2   | 3  4   | 5  6  | 7  8  | 9  10 | 11
#-v--v---+-v--v---+-v--v--+-v--v--+-v--v--+--------------------
ps   1     1  1     1  1     1  1     1  0   "polysilicon"
od   1     2  1     2  1     2  1     2  0   "active area"
in   1     3  1     3  1     4  1     4  0   "metal"
nw   0     4  1     4  1     5  0     5  0   "n-well"
sn   0     5  1     5  1     6  0     6  0   "shallow n implant"
sp   0     6  1     6  1     3  0     3  0   "shallow p implant"
con  0     7  1     7  1    15  1     8  0   "contact metal/n+area"
cop  0     8  1     7  1    15  1     8  0   "contact metal/p+area"
cps  0     9  1     7  1    15  1     8  0   "contact metal/poly"
cb   0    10  1     7  1    15  1     8  0   "contact to bondpads"
cx   0     0  1     7  1    15  1     8  0   ""
bb   2     0  1     0  0     7  0     8  0   "bounding box"
```

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FILES

`ICDPATH/share/lib/process/processlist`

`ICDPATH/share/lib/process/`*name*`/maskdata`

LIMITATIONS

To share the process technology information with other users, a new process directory must be added to the technology database by the system manager. And the new "maskdata" file must be placed there. There after *mkpr*(1ICD) can use it to create new projects.

The appropriate "maskdata" file for the process in use is automatically selected when a tool is invoked. For this to happen, the "maskdata" file must be present in the techno-logy directory "ICDPATH/share/lib/process/*name*" and the name of the process (e.g. *name*=c5th) must be present in the processlist file "ICD-PATH/share/lib/process/processlist".

SEE ALSO

A.A.J. de Lange, "Process Mask Data File: User's Manual", Nelsis Documentation, Delft University of Technology.
dali(1ICD), getproc(1ICD), spock(1ICD).