

## Description of the format of files GIBI

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### Summary:

The first part of the document describes the way in which the file of grid produced by GIBI by the operator is indicated `TO SAVE`, option `FORMAT`. It corresponds to version 2000 of GIBI (located by level 11 in the output file).

On a simple example of a grid, one describes the lines of the file one by one.

## 1 File grid

### 1.1 Example used

The description of the file of grid produced by GIBI is made starting from the following example:

```
opti tithe 2 elem qua4;  
Pa = 0 0; Pb = 1 0; liab = Pa droi 3 Pb;  
known = trans liab 2 (0 1);  
ens= liab and known;  
opti sauv format 'mon.fic';  
sauv format liab ens;  
end;
```

In the file result, one inserts comments to explain what contain them **lines of the file** just afterwards.

### 1.2 Description of each line

Beginning of the file 'mon.fic'

First package of which the number of lines does not vary. One finds there indications general.

```
RECORDING OF THE TYPE 4  
LEVEL 11 LEVEL ERROR 0 DIMENSION 2  
DENSITY .00000E+00  
RECORDING OF THE TYPE 7  
NUMBER INFORMATION CASTEM2000 8  
IFOUR -1 NIFOUR 0 IFOMOD -1 IECHO 1 IIMPI 0 IOSPI 0 ISOTYP 1  
NSDPGE 0
```

Second package which defines all the piles (a pile by type of object and certain piles in more).

A recording of the type 2 prevents writing of a new pile, that of type 5 prevents end.

```
RECORDING OF THE TYPE 2  
PILE NUMBER 1NBRE OBJECTS NAME 3NBRE OBJECTS 6
```

The pile number 1 is that of the objects of type grid. The following line gives the name of saved the grids objects.

```
LIAB KNOWN ENS
```

The following line gives the sequence numbers, in the pile, of the named objects quoted previously. In our case LIAB is the first, KNOWN is the third and ENS is the second.

(valid for all the lines which follows to the next pile)

```
1 3 2
```

Passage à la description of the objects ones after the others.

Description of the first object:

The first recording of each object is composed of 5 numbers representing:

ITYPEL: type of the element 1=point, 2=segment with two nodes?

NBSOUS: number of under parts in this object, under part by type of elements the component.

NBREF: number of under references. A reference is for example contour

NBNOEL: many nodes per element

NBEL: many elements

If ITYPEL=0 then NBSOUS different from zero. In this case one will read the list of the positions, in the pile of the objects, of under parts the component.

If NBSOUS=0, NBNOEL and NBEL are different from zero, one finds, if need be, the list of the references, the numbers of the colors then connectivities.

Here 3 elements with 2 nodes of segment to 2 nodes

```
2 0 0 2 3
```

As NBREF=0 one passes to the recording giving the number of the color of the elements.

0 0 0

Table of connectivities. Description of the first element then second...

ATTENTION it does not act of true classification, it is necessary to make it pass by the filter of the last table of the pile number 32. Thus element 1 is formed by nodes 1 and, 3 element 2 is made of 3 and 4 and element 3 is formed by nodes 4 and 2.

1 2 2 3 3 4

Description of the second grid object

ITYPEL=0 thus grid complexes made up of 2 pennies left

0 2 0 0 0

These under-parts are represented by the objects grid 1 and 3 of this pile

1 3

Description of the third object of the pile

ITYPEL=8 NBSOUS=0 thus grid of 6 element with 4 nodes. There are 4 references (here sides of the KNOWN rectangle).

8 0 4 4 6

The list of the grids objects follows representing the references

1 4 5 6

The list of the numbers of the colors follows

0 0 0 0 0 0

Follows the list of connectivities (numbers of nodes per element) not to forget to pass it to the filter of the last list of pile 32.

1 2 5 6 2 3 7 5 3 4  
8 7 6 5 9 10 5 7 11 9  
7 8 12 11

Description of the fourth object: It is the second reference of the third object of the pile

2 0 0 2 2

0 0

4 8 8 12

Fifth object

2 0 0 2 3

0 0 0

12 11 11 9 9 10

Sixth object

2 0 0 2 2

0 0

10 6 6 1

End of the pile number 1 and beginning of pile 32 (that of the points)

RECORDING OF THE TYPE 2

PILE NUMBER 32NBRE OBJECTS NAME 2NBRE OBJECTS 12

List of the names of points

Pa PB

The list of the numbers of the named points Pa follows = 1 PB = 4

1 4

the number of nodes follows

12

The following table gives the filter to have the true number of the nodes belonging to the described elements. For example, if an element, described in pile 1, refers to a number of node equal to 5 it should be put equal to 12

1 3 4 2 12 10 13 11 7 6  
8 9

End of pile 32, beginning of pile 33 (that of the configurations (coordinated))

RECORDING OF THE TYPE 2

PILE NUMBER 33NBRE OBJECTS NAME 0NBRE OBJECTS 1

The number of points follows which one gives the coordinates

39

The coordinates are given by nodes. Initially the first then the second...  
For each nodes, one gives the 2 or 3 coordinates plus the current density to the moment of his creation  
thus here 3 values per node.

```
0.000000000000000E+00 0.000000000000000E+00 0.000000000000000E+00
1.000000000000000E+00 0.000000000000000E+00 0.000000000000000E+00
3.333333333333333E-01 0.000000000000000E+00 3.333333333333333E-01
6.666666666666667E-01 0.000000000000000E+00 3.333333333333333E-01
0.000000000000000E+00 1.000000000000000E+00 0.000000000000000E+00
0.000000000000000E+00 1.000000000000000E+00 0.000000000000000E+00
3.333333333333333E-01 1.000000000000000E+00 3.333333333333333E-01
6.666666666666667E-01 1.000000000000000E+00 3.333333333333333E-01
1.000000000000000E+00 1.000000000000000E+00 0.000000000000000E+00
0.000000000000000E+00 5.000000000000000E-01 5.000000000000000E-01
1.000000000000000E+00 5.000000000000000E-01 5.000000000000000E-01
3.333333333333333E-01 5.000000000000000E-01 5.000000000000000E-01
6.666666666666667E-01 5.000000000000000E-01 5.000000000000000E-01
RECORDING OF THE TYPE      5
AUTOMATIC LABEL:      1
End of the file.
```