Operator LIRE_MAILLAGE (FORMAT='MED')

1 Goal

Lire a mesh in a file with format MED. The key words are extracted from command LIRE_MAILLAGE [U4.21.01]. As well as in a file with format “ASTER”, the reading of a mesh in a file with format MED, makes it possible to constitute a concept of type mesh.

MED (Modelization and Echanges de Données) is a neutral format of data developed by EDF R & D and the French atomic energy agency for the data exchanges between computer codes. The data which one can exchange according to this format are the meshes and the fields of results: fields at the nodes, fields by element. Files MED are binary and portable files (lean on the library HDF, Hierarchical Data Format). The reading of a file MED by LIRE_MAILLAGE, makes it possible to recover a mesh produced by any other code able to create a file MED.

2 Syntax

```
my  [mesh] = LIRE_MAILLAGE (

                    ◊UNITE=                /  20,
[DEFAUT]
                                          /i ,                          [I]

                    ◊FORMAT=               /  "MED",

                    ◊NOM_MED=nomamd                ,                    [TXM]

                    ◊INFO_MED=             /  1,
[DEFAUT]
                                          /2 ,

                    ◊RENOMME=               (_F (
                          ♦NOM_MED=nom-gr-med       ,                   [TXM]
                          ♦NOM=nom-gr               ,                       [TXM]
                             ),),

                    ◊INFO=                 /  1,                         [DEFAUT]
                                          /2 ,

                              )
```

3 Operands

3.1 Opérande UNITE

◊UNITE=i

logical Numéro of unit of the file mesh to the format med. The value by default is 20 which is used for the Aster *format*.

Caution:

Astk positions to 21 the number associated with a mesh file MED (mmed type). It is necessary to take care of coherence.

3.2 Operand FORMAT

◊FORMAT= / "MED"

operand FORMAT makes it possible to specify the format of the file to reading. Format "MED" means with procedure LIRE_MAILLAGE that the mesh with reading is in a file with format MED.

As well as for a file with format ASTER, the data read are:

- the list of the nodes number, name, coordinated,
- the list of the meshes number, name, type, name of the nodes,
- the list of the number nodes groups, name, many nodes, names of the nodes,
- the list of the number mesh groups, name, number of meshes, names of the meshes.

Note:

In a file MED, there is partition of the nodes and the meshes according to the groups. A partition corresponds to a family MED. In a file MED, the groups are distributed within the families: families of nodes and families of meshes are thus found there. During the reading of a file MED, the lists of the nodes groups and meshes are made up with the flight by decomposition of the families.

3.3 Operand NOM_MED

◊NOM_MED=nomamd

a file MED can contain several meshes. Each mesh is identified by its name. To read a mesh in particular, it is necessary to provide its name in argument of this key word NOM_MED. In the absence of key word, the first mesh found in the file will be read. It is the comfortable solution when it is known that the file contains only one mesh.

3.4 Operand INFO_MED

◊INFO_MED= / 1 [DEFAUT]
/2

Level of printing in file "MESSAGE". This operand supplements operand INFO of command LIRE_MAILLAGE and provides information specific to format MED.

INFO_MED: 1 no printing
INFO_MED: 2 printing in file "MESSAGE" :

correspondence enters the families of file MED and the nodes groups and meshes.

Note:

Does it frequently happen that the name of the mesh printed by the library med comprises a nonASCII character what can corrupt the diagnosis displayed by the follow-up of the jobs of astk (diagnosis "? ").

3.5 Operand RENOMME

With format MED, the names of groups of mesh groups or nodes can contain up to 32 characters. However, with format "ASTER", the names of the groups are restricted with 8 characters.

The key word FAMOUS factor makes it possible to avoid the potential conflicts if one notes oneself to truncate the names with 8 characters:

- NOM_MED is the name of group MED to re-elect
- NOM is the name (maximum 8 characters) which it will have in mesh ASTER.

3.6 Operand INFO

Niveau of printing.

If: INFO : 2 :

- titrate mesh,
- many nodes,
- number of meshes of each type,
- many nodes groups, names of the groups,
- many mesh groups, names of the groups,
- printing of all the elements of each list:

list nodes	number, name, coordinates,
list of the meshes	number, name, type, name of the nodes,
lists nodes groups	number, name, many nodes, names of the nodes,
lists mesh groups	number, name, number of meshes, names of the meshes.

4 Is MESH

```
example = LIRE_MAILLAGE
    (
       FORMAT=        "MED",
       UNITE=         21,
       NOM_MED=       "MAILLAGE_COMMUN",
       INFO_MED=      2
    )
```

5 Quel the interest of format MED?

MED is a format of file for the data exchanges between codes. Any computer code having an interface MED is able to exchange information with any other code having this same interface.

The reading of a file MED by LIRE_MAILLAGE makes it possible to recover a mesh produced by another code interfaced with MED. This format of data is in particular used for the exchanges of mesh files and results between ASTER and platform SALOME (for the pre one/postprocessing) or tools of refinement of mesh HOMARD.

One can find documentation on the format of data MED on the site code-aster.org, Produit page.