GiD-SAFIR Interface

• Introduction

GiD is a general purpose pre and postprocessor for finite element analysis programs.

GiD provides an interactive graphical user interface similar to a CAD system to define the problem geometry. All conditions, materials, loads and other general solution parameters can be defined on the geometry. When GiD generates the mesh for the finite element program all this information is automatically transferred to the mesh. The advantage of this concept is, that using this associative data structures, modifications can be made on the geometry and the mesh density and when generating the mesh again, all other information will automatically be updated and ready for the analysis run.
GiD can also be customized to run the finite analysis program from within GiD and to visualize the results of the analysis. GiD can be down loaded from the web: **http://gid.cimne.upc.es** Here you will also find more information about GiD. For test purposes the academic version, which is limited to 700 surface and linear elements, can be used.

• GiD – SAFIR Interface

The GiD – SAFIR Interface is implemented for the following problem types :

1.) Safir_Thermal_2d
2.) Safir_Thermal_3d
3.) Safir_Structural_2d
4.) Safir_Structural_3d
5.) Safir_Thermal_tsh

Each oft this interfaces provide pre and postprocessing as well as to run SAFIR directly from inside of GiD.
Safir_Thermal_2d allows basically to generate meshes for any cross section. Quadrilateral and Triangular elements are possible.
Safir_Thermal_3d is limited to hexahedral (8-node) elements.
Safir_Structural_2d supports beam and truss elements.
Safir_Structural_3d supports beam, shell and truss elements.

• Installation

To install the GiD-SAFIR interface first download and install GiD.
On your CD, a folder called GID contains the following 3 directories:

1.) docs
GID_SAFIR_2D_Thermal_Analysis.pdf
GID_SAFIR_2D_Structural_Analysis.pdf
GIR_SAFIR_3D_Structural_Analysis.pdf
GID_SAFIR_tsh_Thermal_Analysis.pdf

2.) examples
contains various verification examples

3.) SAFIR2011
Safir_Thermal_2d.gid
Safir_Thermal_3d.gid
Safir_Structural_2d.gid
Safir_Structural_3d.gid
Safir_Thermal_tsh.gid

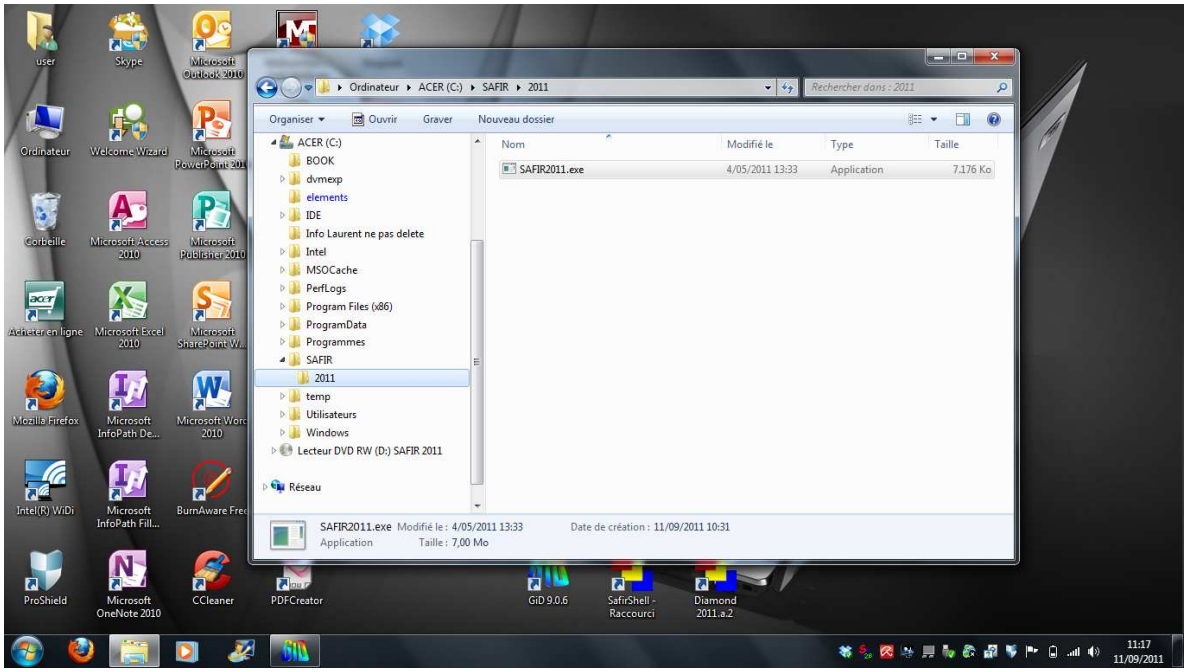
Copy or move the SAFIR2011 directory to the problemtypes directory within the GiD-Istallation directory. (in general C:\programme\GID\problemtypes).

Each of the problemtype directories contain a **.bat file**, which is executed when SAFIR starts the analysis. The .bat file uses the **environment variable SAFIR_DIR** to find the executable of SAFIR with the name **safir2011.exe.** If the executable has an other name you must edit the bat file. How to set a environment variable is described here below. Alternatively you can edit the .bat file and set the variable SAFIR_DIR within the .bat file.

- **How to set the environmental variable to link GID and SAFIR**

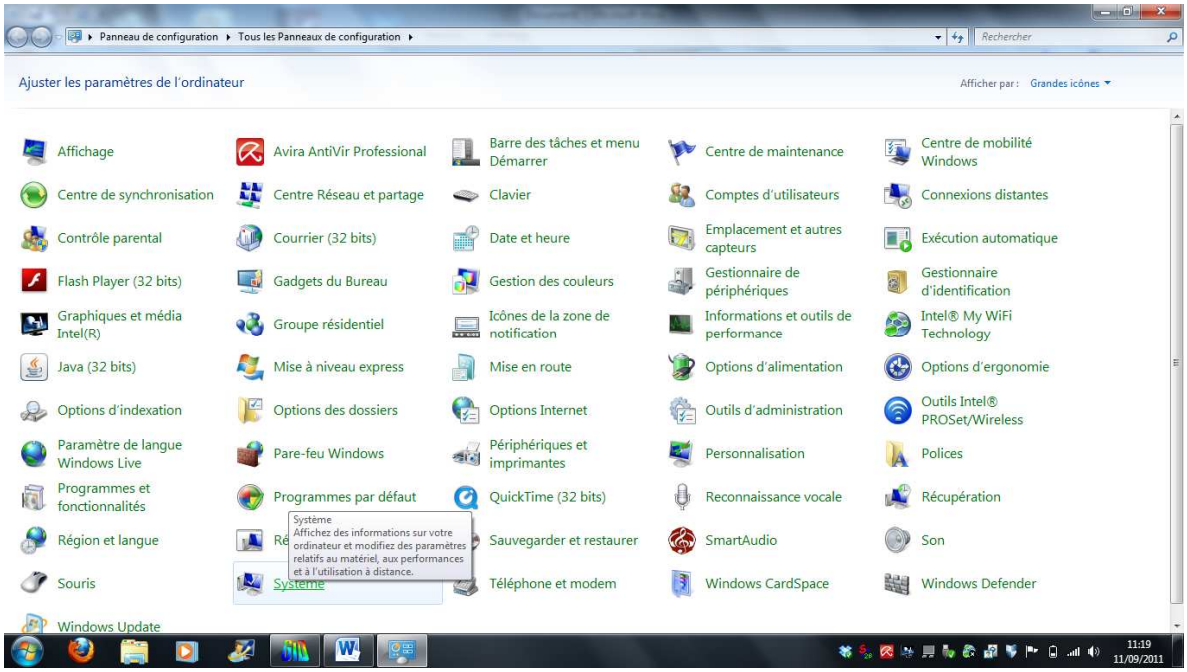
It is explained here below, by screenshots (taken from a System in French), how to set the environmental variable to link GID and SAFIR.

Step 1: The file “SAFIR2011.EXE” has been put in the folder c:\SAFIR\2011\

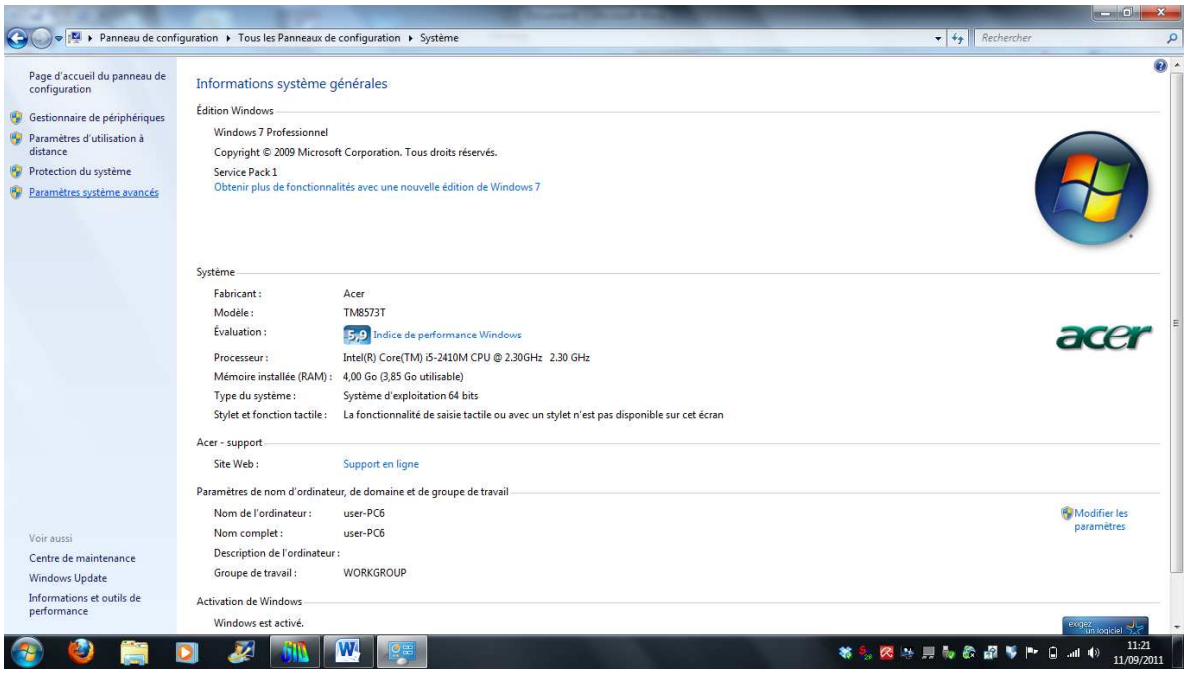


Step 2. Click on the “Windows” symbol located on the bottom left of the screen to open the scrolldown menu and click on “Panneau de configuration/ Control Panel”

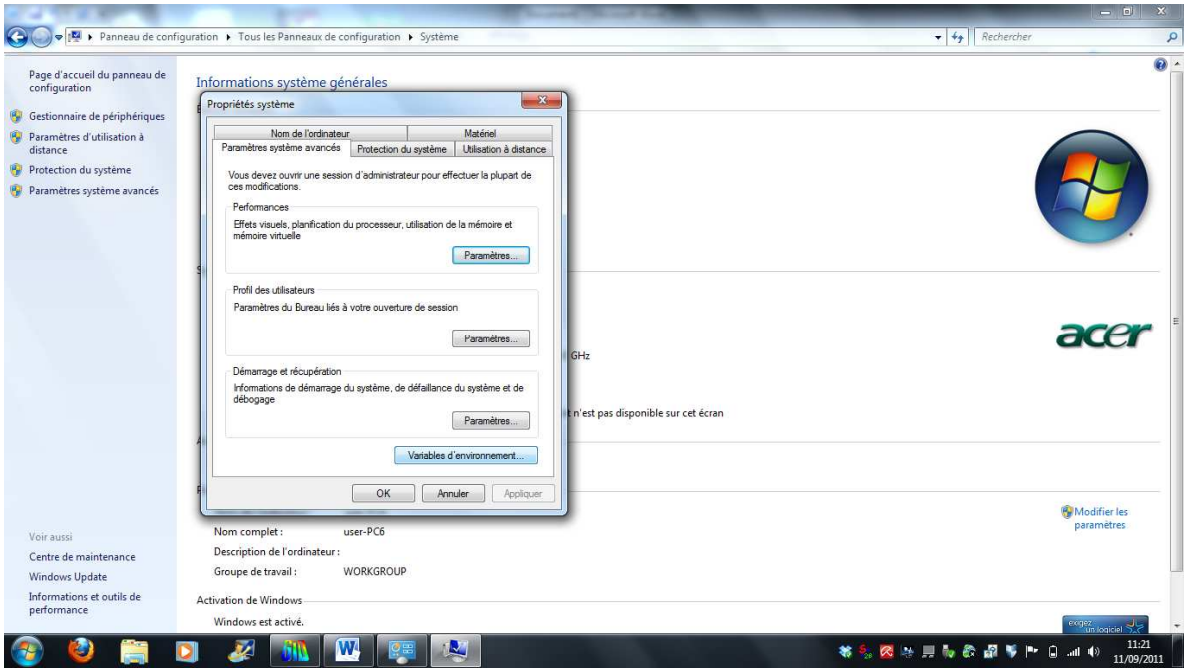
Step 3. In the windows « Panneau de configuration / Control Panel», click on “Système/System”.



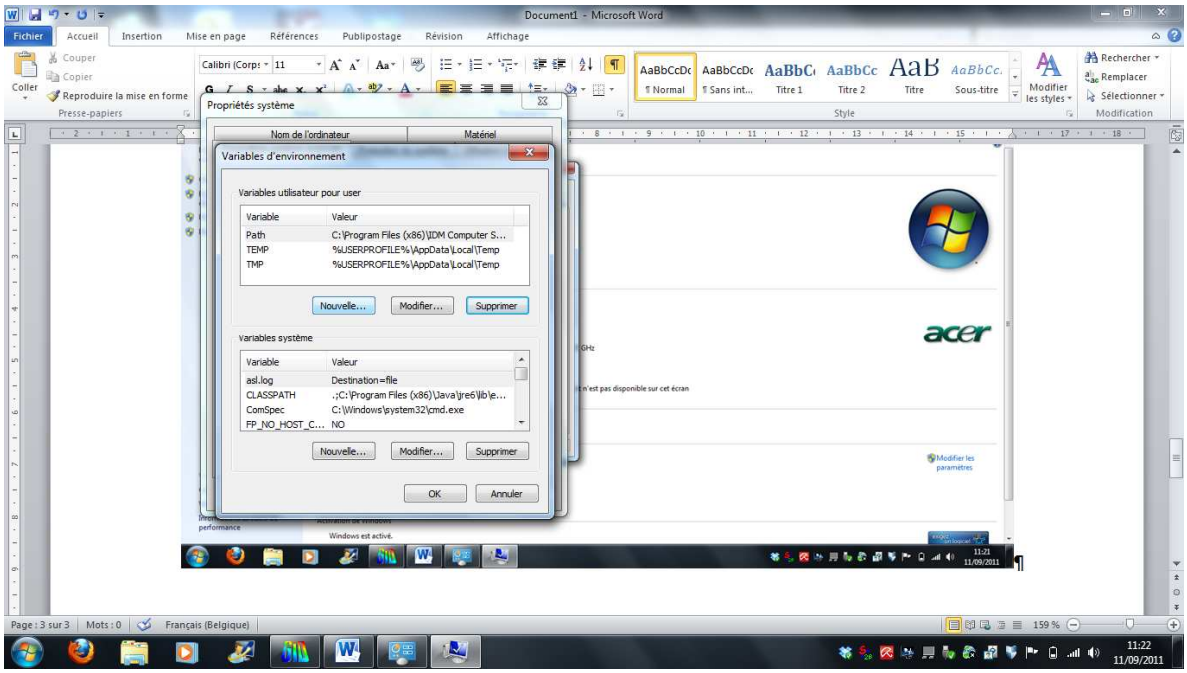
Step 4. Click on « Paramètres systèmes avancés / Advanced»



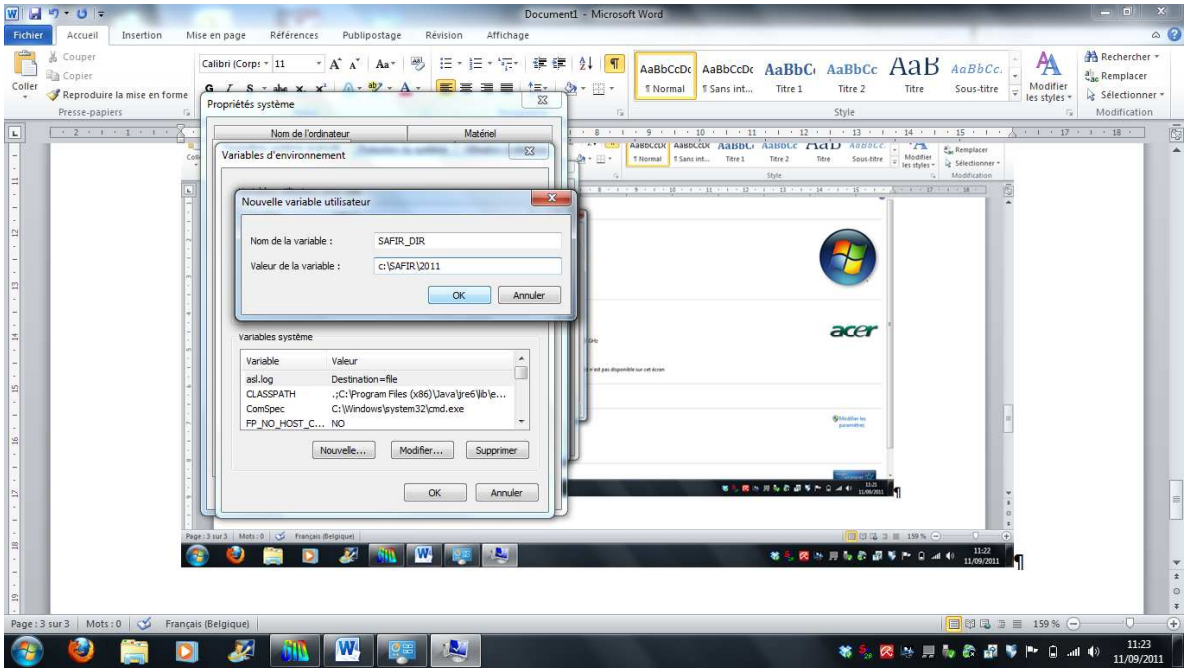
Step 5. In the Windows « Propriétés système / System properties», click on “Variables d’environnements/ Environment variables”



Step 6. Under the window « Variables utilisateur pour xxxx / User variables for xxxx», where xxxx is the user name of the session that is currently running, click on “Nouvelle / New”.



Step 7. In the window « Nouvelle variable utilisateur /New User Variable», enter the string « SAFIR_DIR » and «c:\SAFIR\2011» with the latter being the folder in which the file “SAFIR2011.exe” has been placed.



Step 8. The steps 6 and 7 may have to be repeated in the window “Variables système/System Variables”, which will make the environment varaible available for all sessions on this computer.

Step 9: Click on OK twice and close the window “Panneau de configuration/ Control Panel”.

Step 10. Restart the computer.