



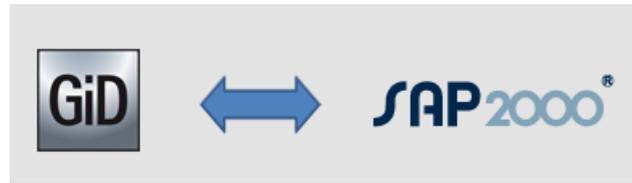
**SAP2000 Interface**  
Customization of GiD for SAP2000

**SAP2000 Interface**

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## 1 SAP2000



GiD SAP2000 Interface

Developed by:

Francisco Muñoz (UPC)

Fernando Peña

Miguel Meza

Updated by:

Enrique Escolano (CIMNE)

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## 1.1 Introduction

GiD SAP2000 problemtype is an interface between GiD and the SAP2000 structural solver.

This interface let the software GiD users make the process for creating complex geometry numerical models, after of doing this it will be possible export the model to Sap2000 software for analyzing. The users have the decision for revising the results into Sap200 or come back to GiD, but it will be necessary to use the interface for visualizing the results. Moreover, this interface has an additional option that allows the users to create a reality virtual file (VRML) with a result of GiD postprocess.

**Note:** The calculation program SAP2000 itself is not included in this problemtype. The interface was tested with SAP2000 v 15.0.0

The interface customize GiD to allow:

- The import of meshes of SAP2000 in .s2k text format (menu: SAP2000->Import SAP2000 mesh...)
- The creation of the .s2k ASCII input file required to run SAP2000, using the GUI of GiD that is powerful that the standard SAP2000 one.

Could handle:

- 3D shell models of triangles or quadrilaterals
- 3d solid models: hexahedra or tetrahedra (that are supported by SAP2000 as degenerated hexahedra with repeated nodes)
- The execution of SAP2000, and show its log file (althought it is not possible to run it without any window)
- The conversion of .s2k ASCII results file of SAP2000 to the GiD postprocess .post.res format, to visualize them in GiD postprocess mode.
- Export some result in VRML format, to be visualized for example on a Internet browser

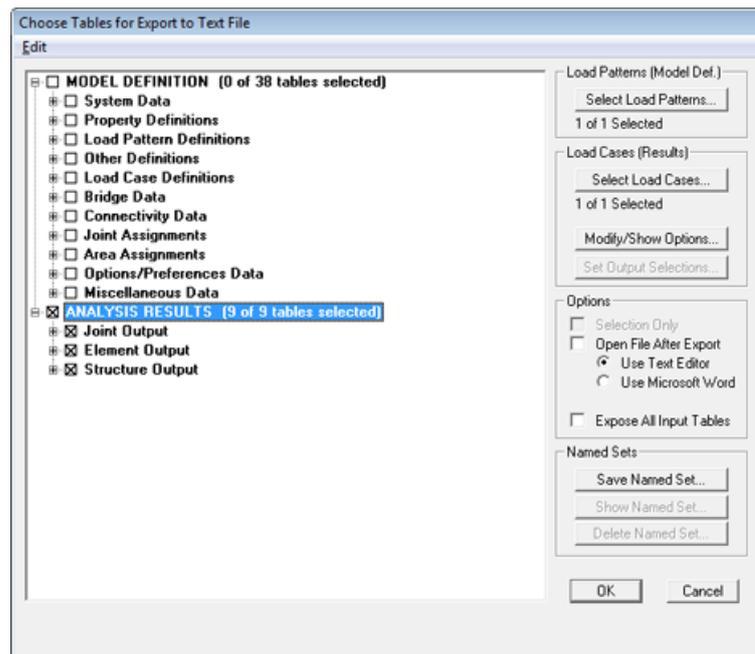
## 1.2 How to use

How to use the program:

- Start GiD and load the SAP2000 problemtype from the menu Data->Problemtype->SAP2000, then conditions and material fields are defined, and a new SAP2000 menu appear.
- Create or import the geometry, apply the boundary conditions, loads, materials and generate the mesh. (is it possible to import a SAP2000 mesh, but this is not usual)
- Press calculate to write the .s2k input file of SAP2000 and automatically start this program with the related file as input.

(to start SAP2000 its path must be set in the file .win.bat instead the default one "C:\Program Files\Computers and Structures\SAP2000 15\SAP2000.exe")

- Once started SAP2000 is necessary calculate and write its results in text .s2k format (unfortunatelly now is not possible to automatic it in bach mode)
  - menu: Analyze->Run analysis- Run now
  - menu: File->Export->SAP2000 .s2k Text file (select all analysis results to be written)



- Exit SAP2000 and go back to GiD to visualize these results:
- It is suggested to use as filename <modelname>\_res.s2k, then when exiting SAP2000 this file is automatically converted into <modelname>.post.res  
(it is possible to invoke the conversion from the GiD menu: SAP2000->Convert SAP2000 results...)
- Go to GiD postprocess and the results will be automatically read and are able to be visualized with all GiD features.
- It is possible to export a scalar result as a VRML (Virtual Reality Modelling Language) file in postprocess from the menu SAP2000->Export VRML file...)