

autoSIM-200 quick start guide



INTERNATIONAL TRAINING



1. Index

1. Index.....	2
2. Installation and registration	3
3. Circuit design.....	5
4. Running an application on a PC	8
5. Programming design	9
6. 2D application design.....	13
7. Import 3D drawings.....	17
8. 3D application design.....	19

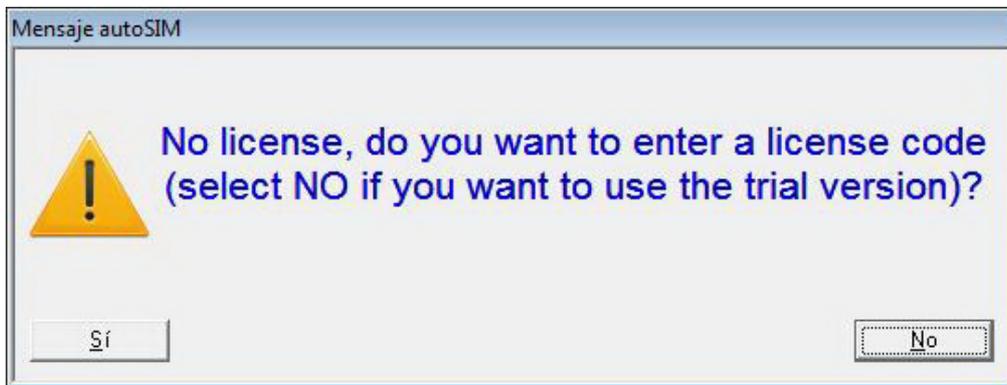


2. Installation and registration

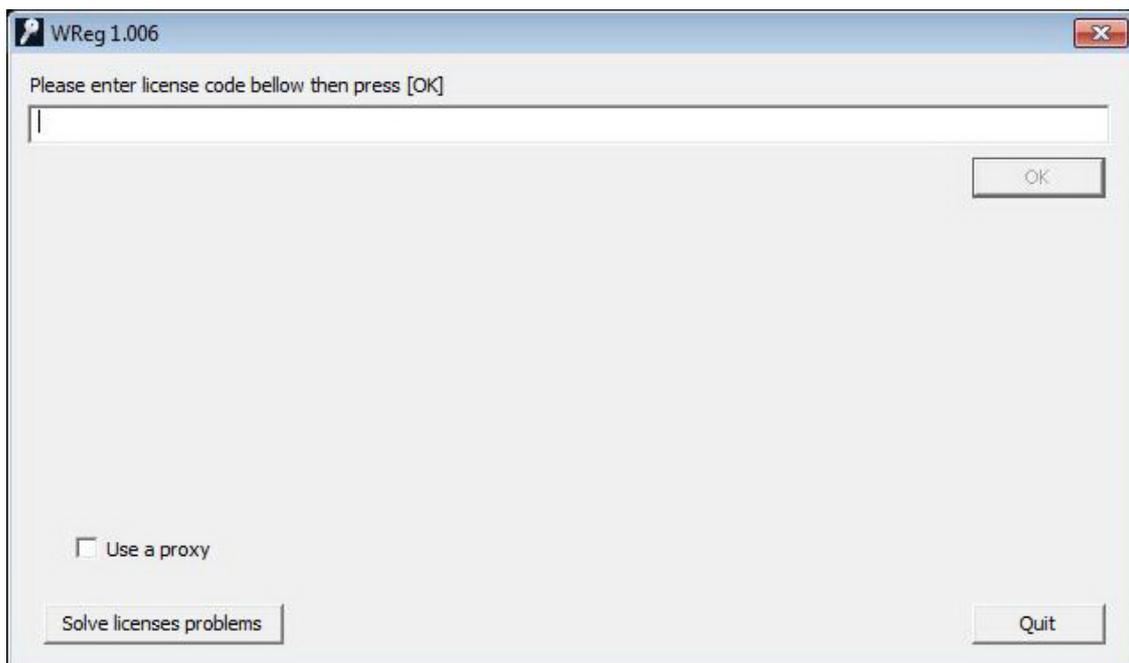


If the installation procedure is not launched automatically, launch the executable file **Setup.exe**.

After installing the software, the licence must be registered. So, go to *Start\All programs\SMC\AUTOSIM\Licence*. The screen below appears:



If you press on **Yes** button, a dialog box appears where you have to enter the licence number (register or connection number) given by SMC International Training and, then, press on **OK** button.





The licence code with the letter **R.**, is used in case to register a licence definitely in the PC (standalone license). The software autoSIM works without Internet connection.

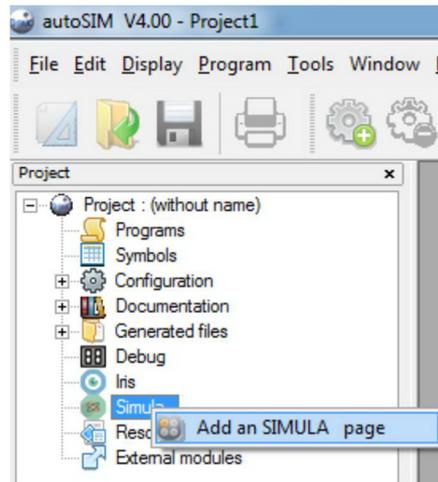
The licence code with the letter **C.**, is used when you want to connect to a licence (network license). The software autoSIM only works if the PC is connected to Internet.

For any questions or problems during the installation and registration process, contact to SMC International Training by email: support-IT@smctraining.com



3. Circuit design

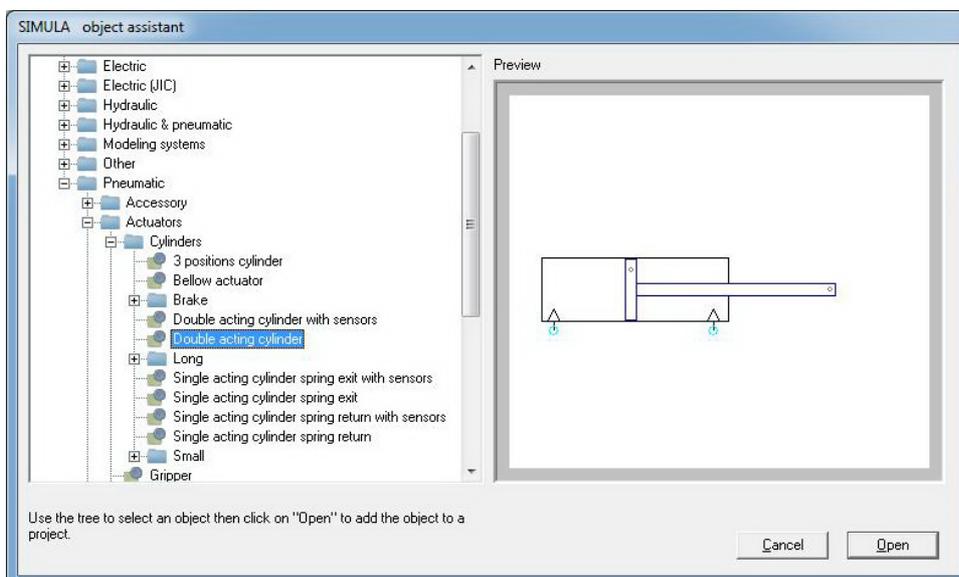
1. Open the software autoSIM-200.
2. Click with the right button of the mouse over **Simula** and select *Add SIMULA page*.



3. A page of **Simula** is opened where you can create pneumatic, hydraulic, electric, electronic and differential equation circuits.
4. Open the library of **Simula** by pressing on the library button.

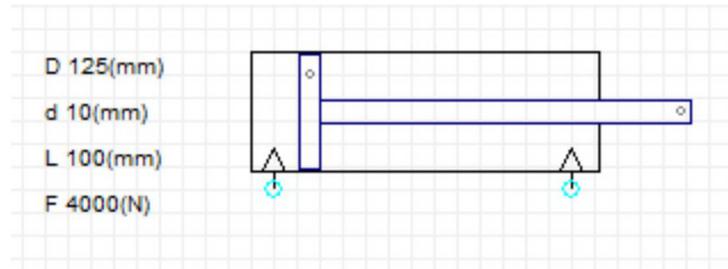


5. The library is opened where the user can select the technology that he wants to use. In this guide, a pneumatic circuit will be done.

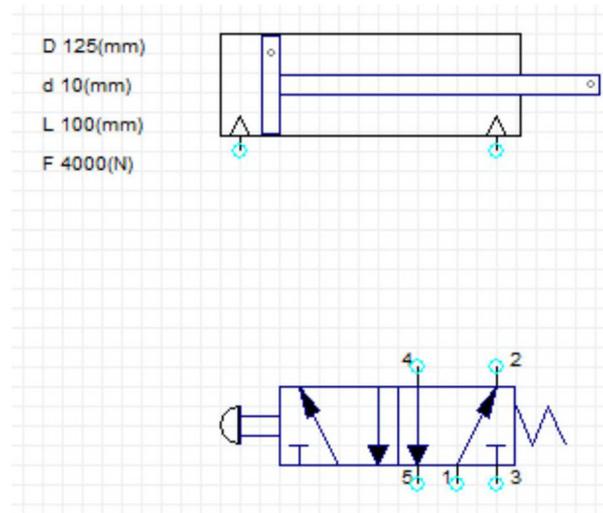




6. Select the object **Double acting cylinder** inside the directory *Preset objects\Pneumatic\Actuators\Cylinders\Double acting cylinder*.
7. Press on the button **Open**.
8. Paste the object in the **Simula** page created previously.



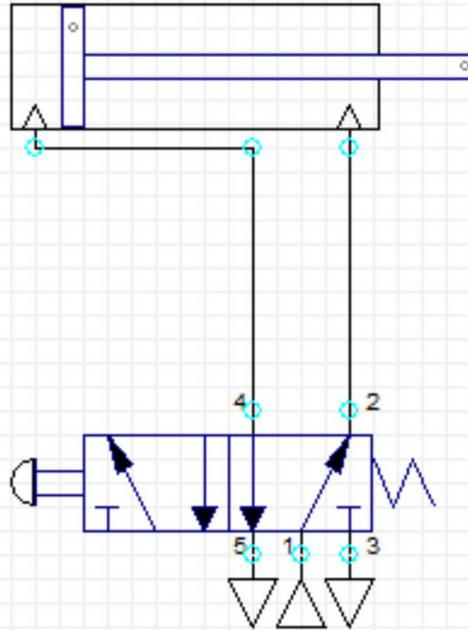
9. Select the object **Push buttons** inside the directory *Preset objetcs\Pneumatic\Directional valves\Directional Valves 5/2\Push buttons*.
10. Press on the button **Open**.
11. Paste the object in the **Simula** page created previously.



12. Add the objects **Pressure source** and **Exhaust** located in the directory *Preset objects\Pneumatic\Flow lines*.
13. Connect the valve to the cylinder. To do that, click once with the left button of the mouse over the initial connection and click once again with the left button of the mouse over the final connection.
14. The final result should be as the picture in the next page.



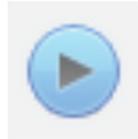
D 125(mm)
d 10(mm)
L 100(mm)
F 4000(N)





4. Running an application on a PC

1. The simulation **starts up** by pressing on **Go!** button, located inside the menu *Programs\Go!*. You can also start up the simulation by pressing on **Go!** button located in the tools bar.

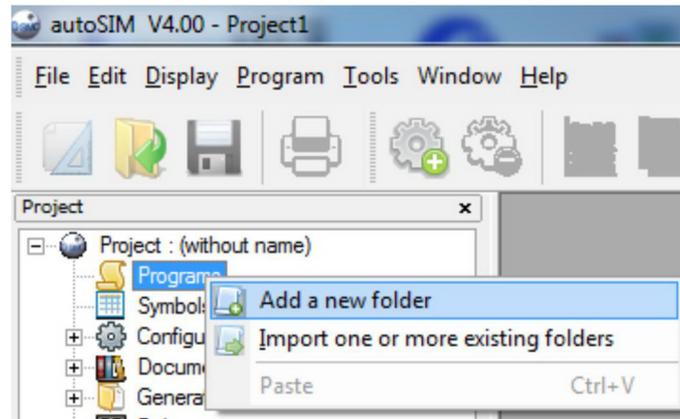


2. If you want to **stop** the simulation, you have to press again the **Go!** button.

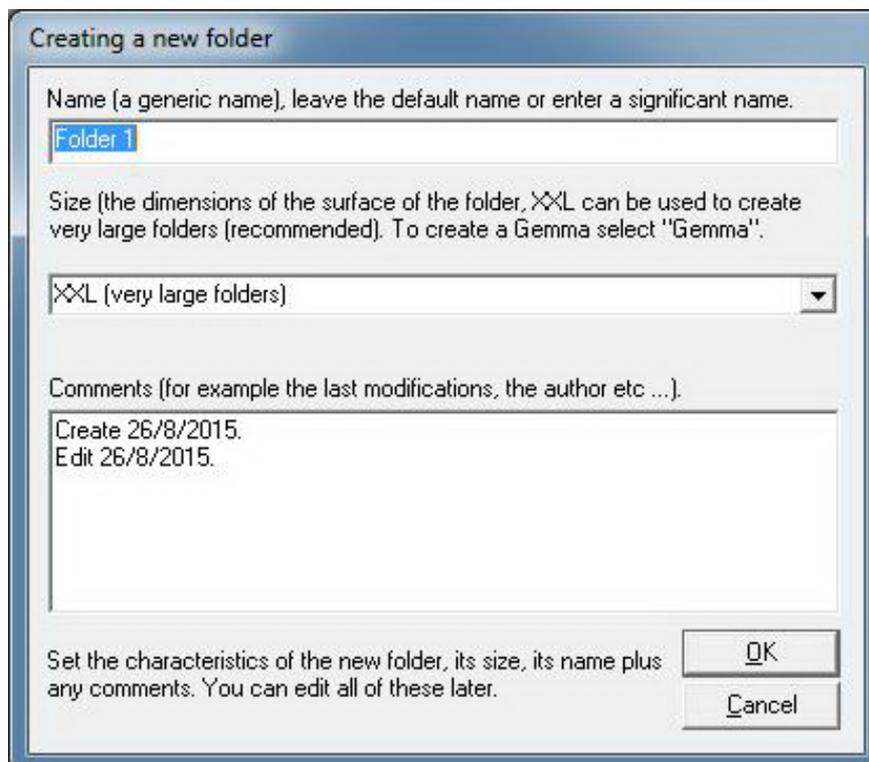


5. Programming design

1. Open the software autoSIM-200.
2. Click with the right button of the mouse over **Programs** and select *Add a new folder*.



3. The screen below is opened. Write a name for the program and click over **Ok** button.



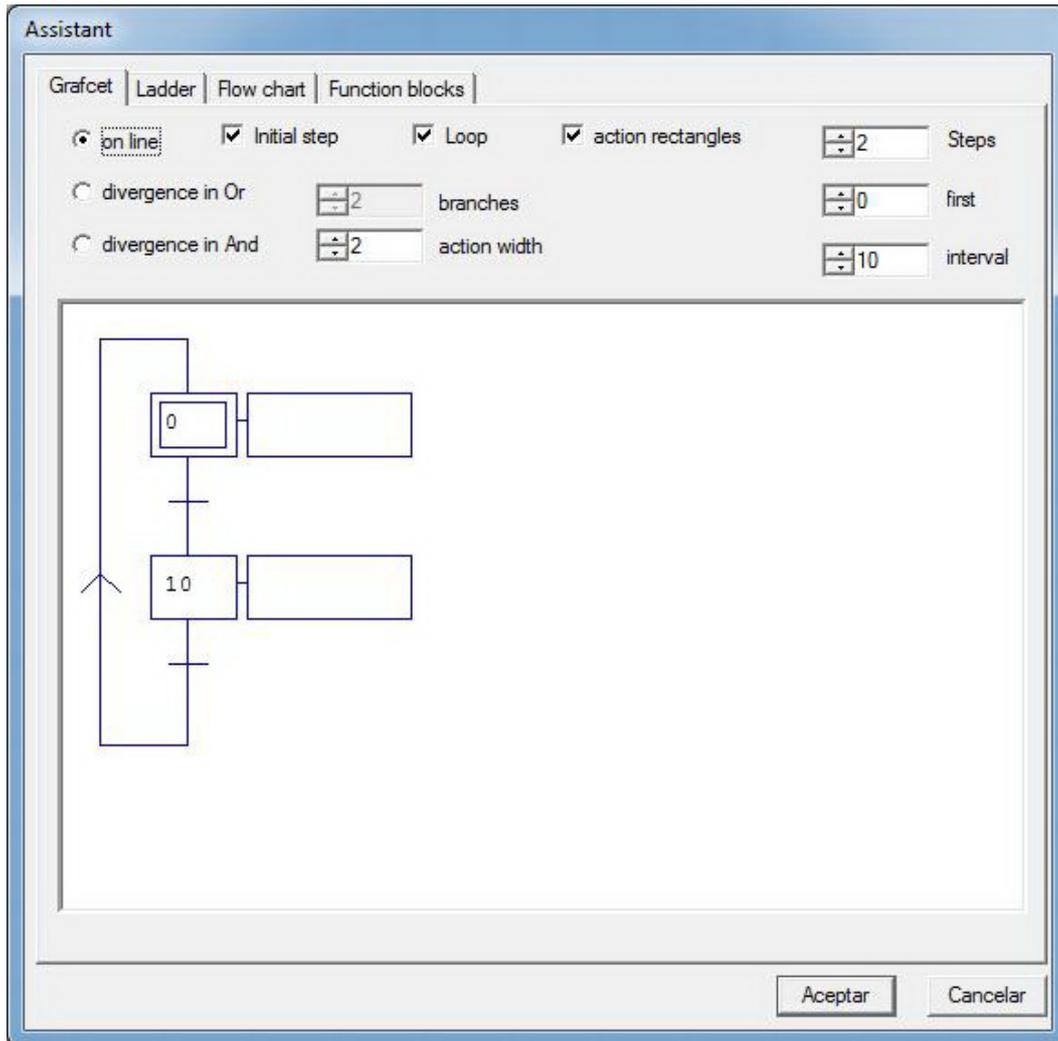
4. A new page of **Programs** is opened where you can create the program in different languages: *Grafcet*, *Ladder*, *Flow chart* and *functional blocks* (you have to edit them in structured text).



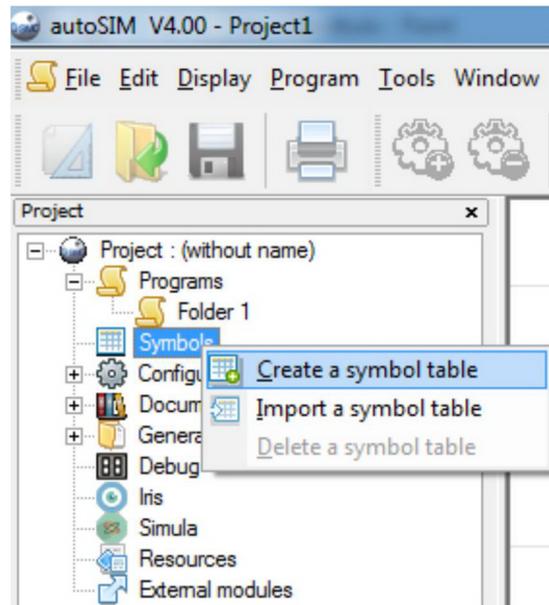
5. Open the library of **Programs** by clicking over the icon showed below.



6. The wizard of **Programs** is opened where the user can select the programming language and write the first lines of code.



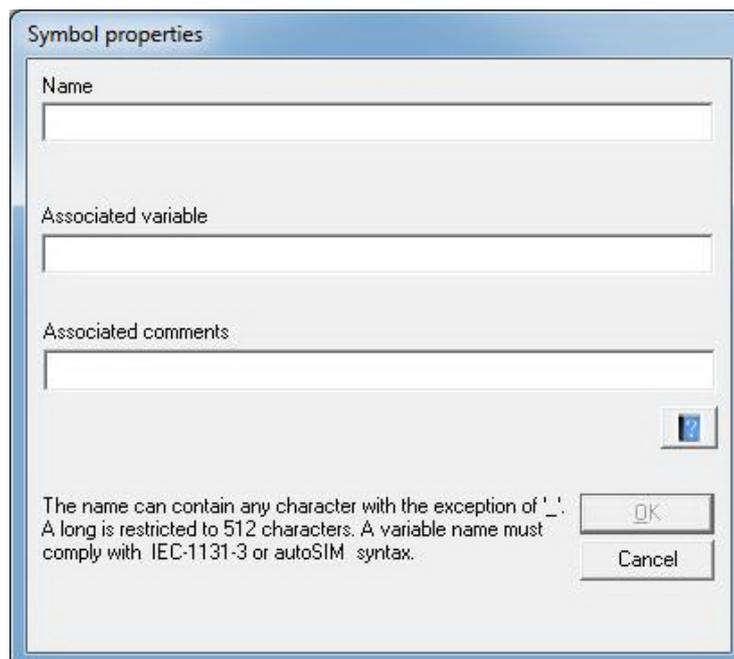
7. You have to generate the **Symbol table** to link the memory addresses with the symbols selected by the user. To do this, click with the right button of the mouse over **Symbols** and select *Create a symbol table*.



- 8. The page of **Symbol table** is opened where the user can enter the symbols that he needs by pressing over the button *New symbol*.

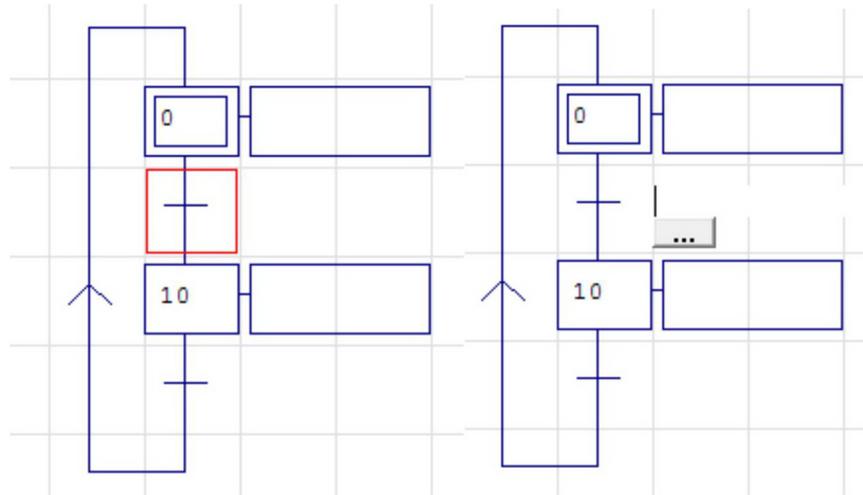


- 9. The next screen appears where the user have to enter the name of the symbol, the memory address and a comment for the symbol (the comment is optional).

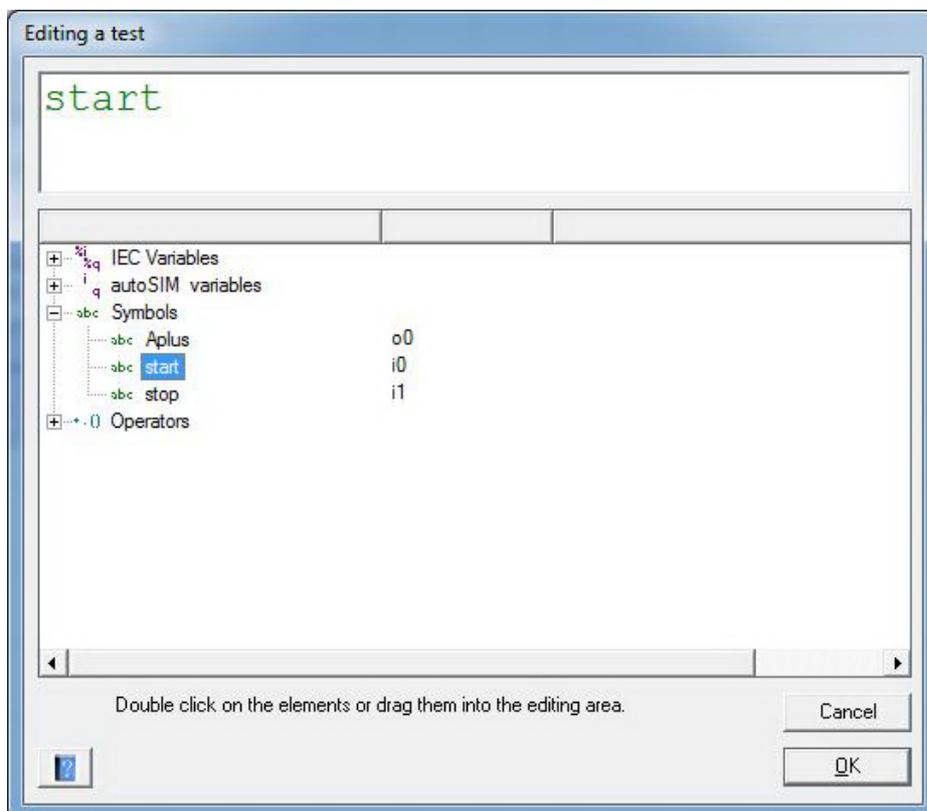




10. Now, you can start to write the code of the program. So, click with the left button of the mouse over the red square (see the picture). This square must be positioned over the action or transition that you want to create (this example has been generated with *Grafcet* language).



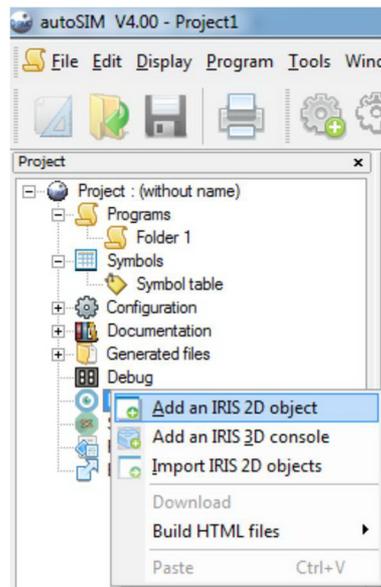
11. When you press over the 3 points button, a new screen with all symbols generated by the user appears. Click twice over the symbol (the symbol must appear in the upper gap) and press on *Ok* button.



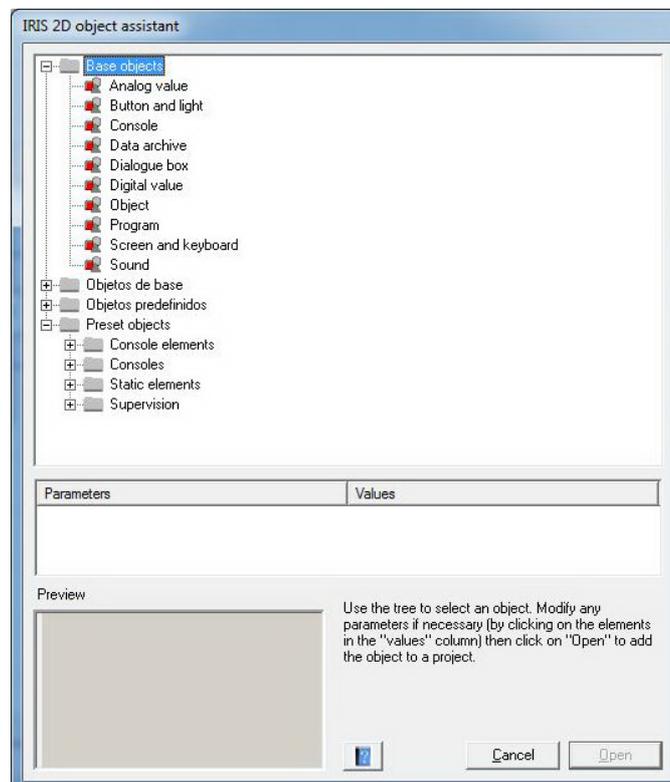


6. 2D application design

1. Open the software autoSIM-200.
2. Click with the right button of the mouse over **Iris** and select *Add an IRIS 2D object*.

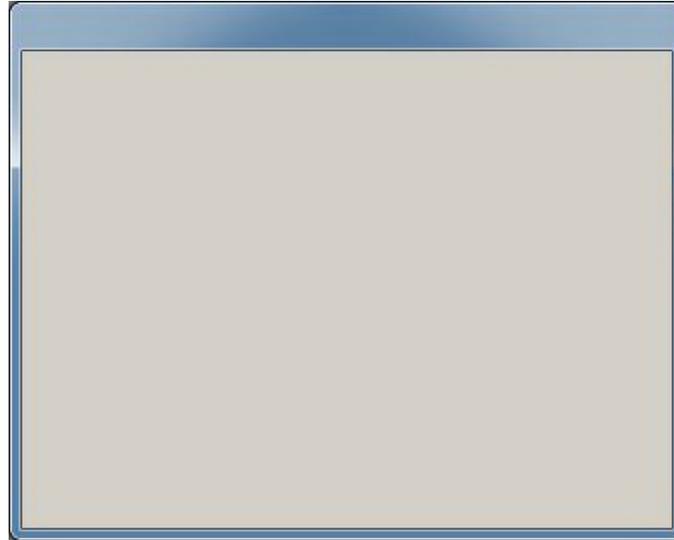


3. The library of 2D object is opened where the user can select the object for the application: pushbuttons, switches, displays, etc.

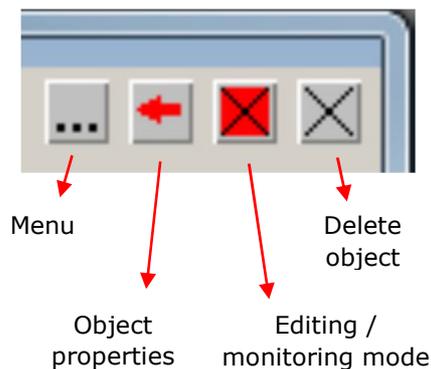
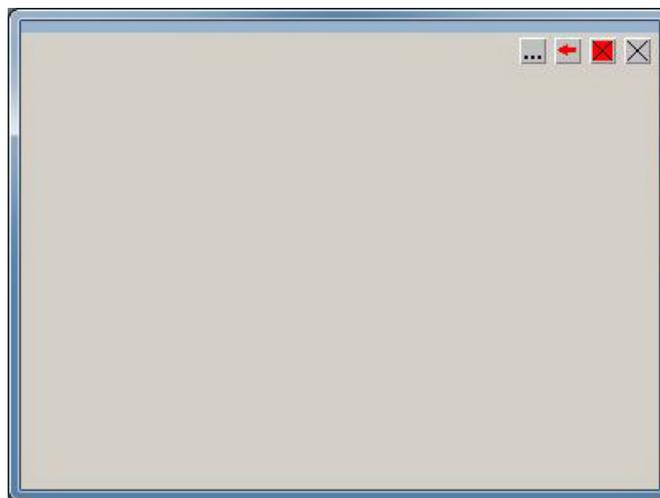




4. It is recommended to select the object **desktop** or **console** firstly, because it is the main screen where the user can insert the rest of the 2D objects.

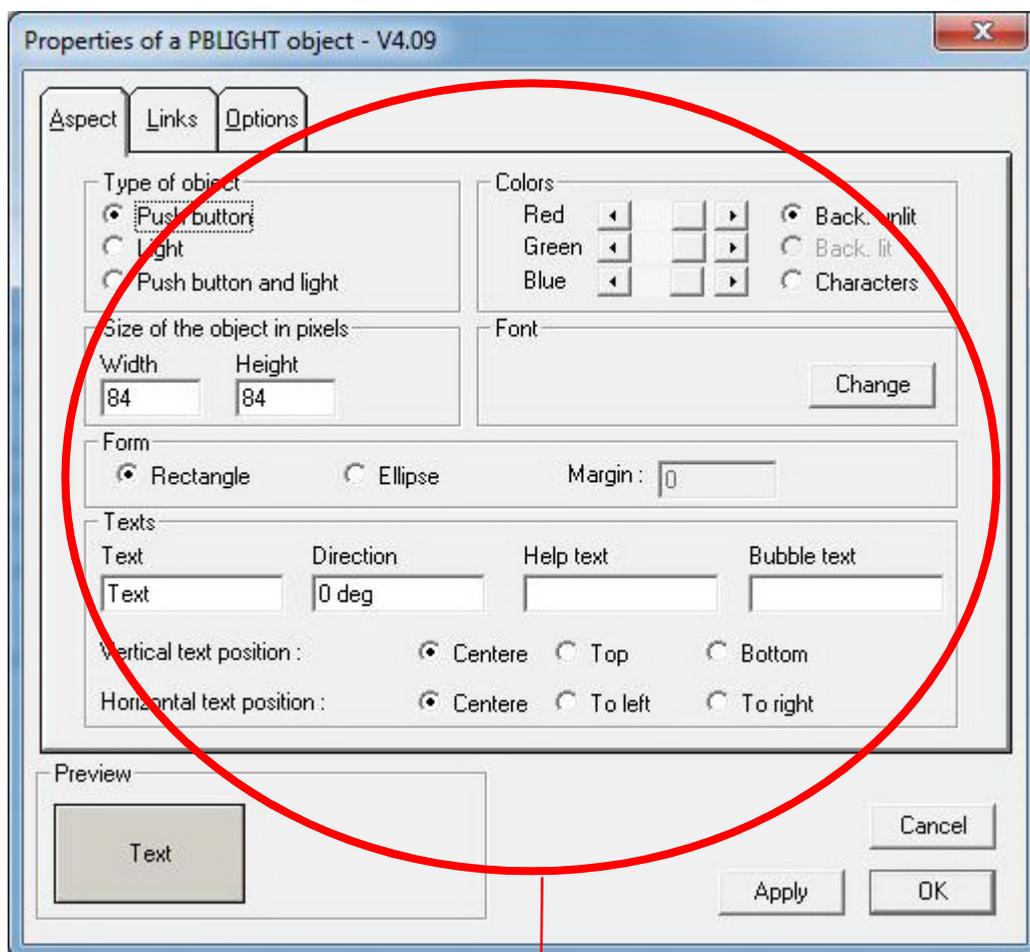


5. If you click with the right button of the mouse over this window, the object changes between editing and monitoring mode. In editing mode, some buttons appear in the right top side, whose meaning is explained below:

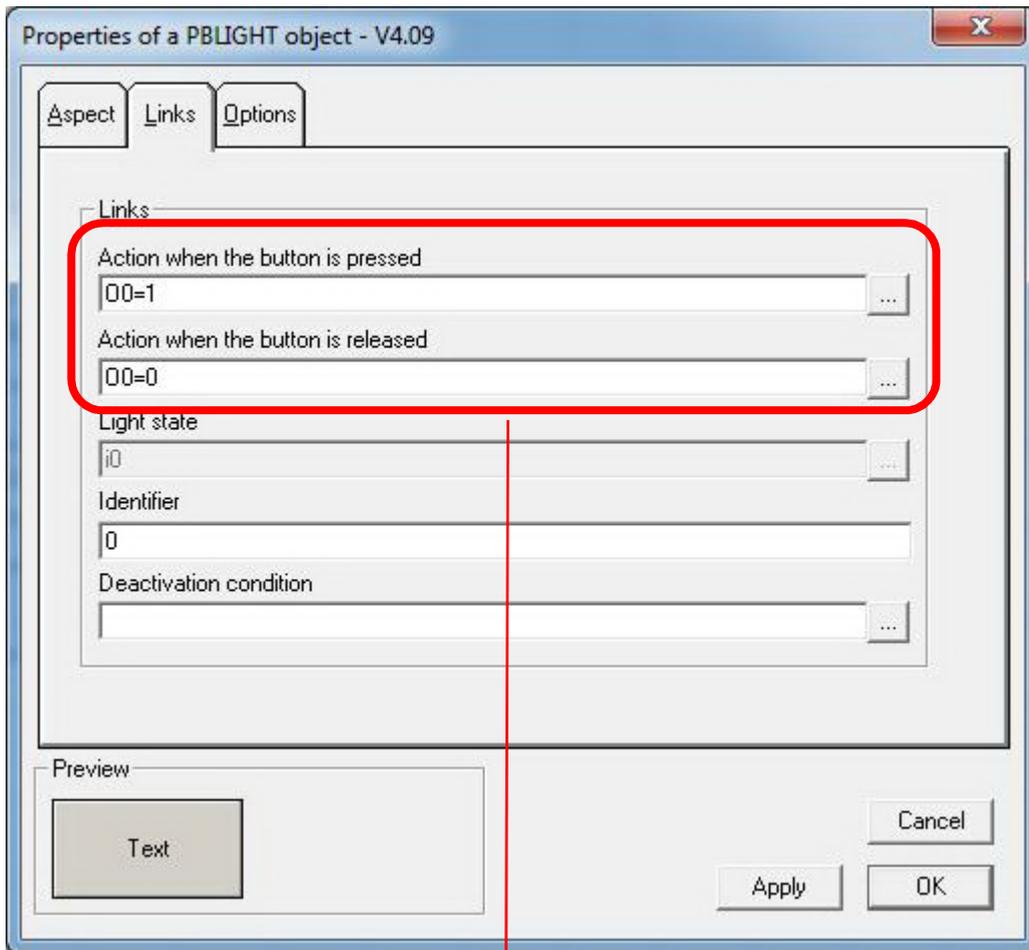




6. If the **Menu** button is pressed, the user can insert more object to the desktop. To do that, select the option *Add an object*. Then, the 2D objects library is opened where the user can select the object that he wants to insert.
7. Every 2D object has the buttons mentioned previously, except the **Menu** button, located only in the object called desktop or console.
8. If the **Properties** button is pressed, the user can modify the appearance of the objects and link the objects to the symbols.



In the tab **Aspect**, the user can modify the appearance of the object: add text, select the shape and size of the object, the colour,...



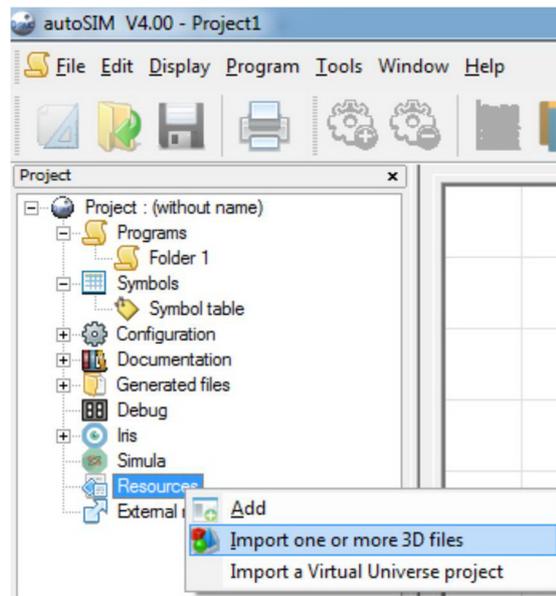
In the tab **Links**, the user can link this object to the memory address or symbol. To do this, the user must fill in both gaps as follows:

- Action when the button is pressed → *<memory address>=1*
- Action when the button is released → *<memory address>=0*

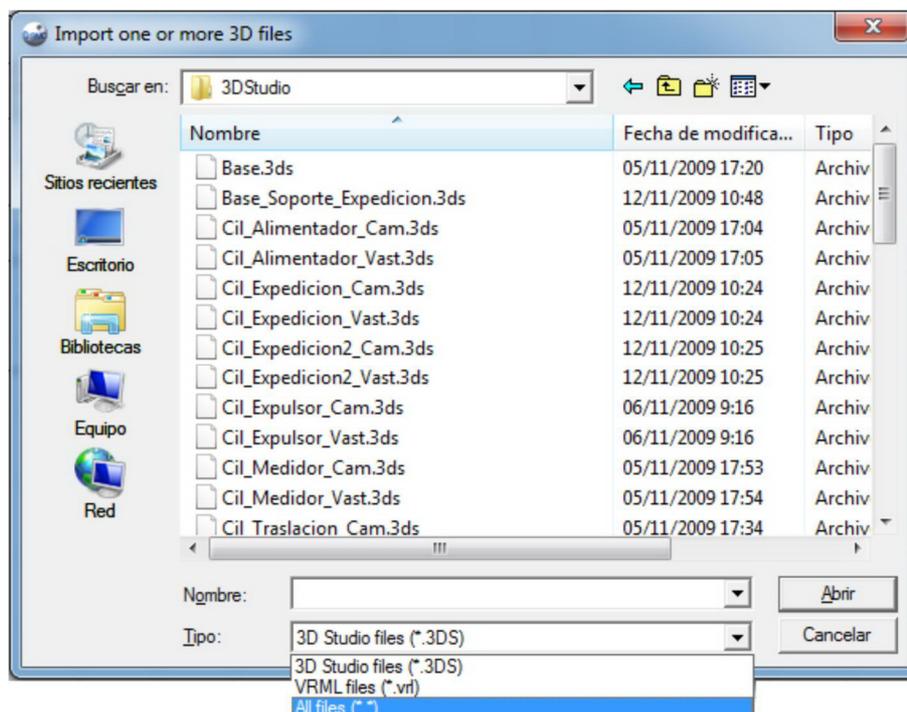


7. Import 3D drawings

1. Open the software autoSIM-200.
2. Click with the right button of the mouse over **Resources** and select *Import one or more 3D files*.

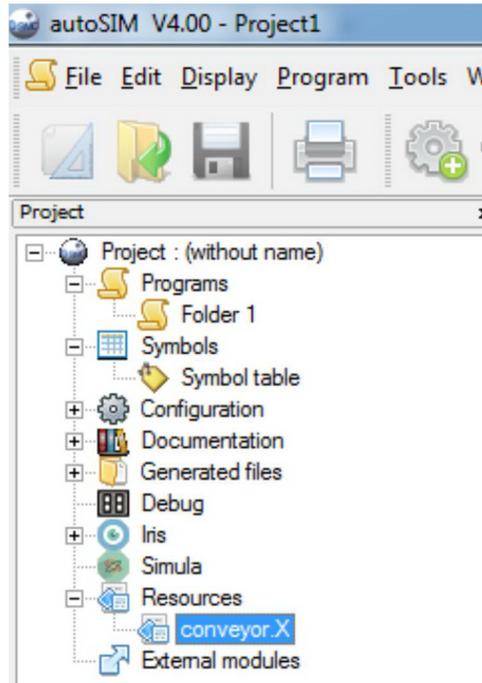


3. Select the 3D drawing that you want to import to the project (autoSIM accepts these drawing formats **3DStudio** and **SolidWorks**).





4. When the user opens the file, autoSIM converts it automatically into the format used by **Iris 3D** (DirectX format).

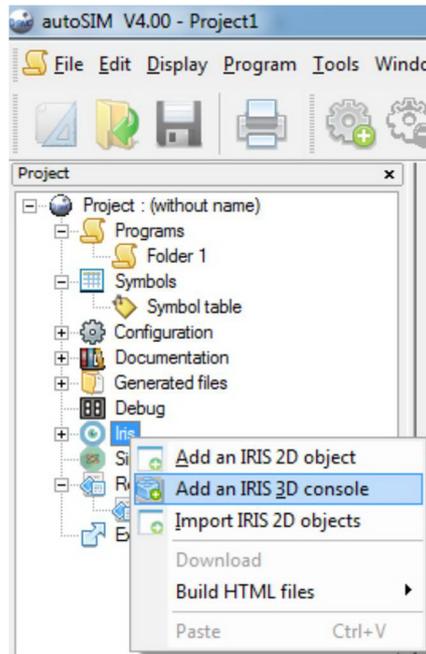


5. Now, the 3D drawing is available to be used in the project.

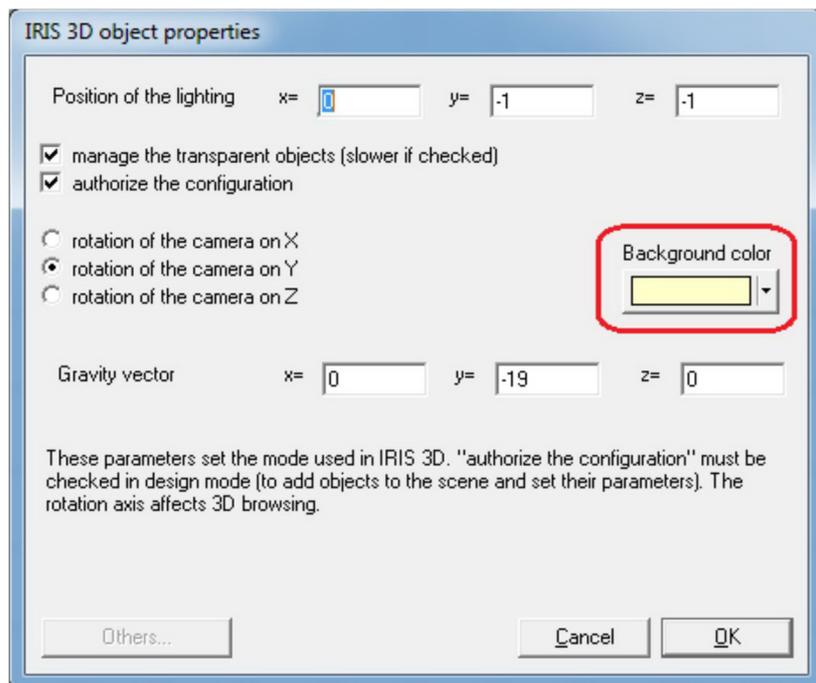


8. 3D application design

1. Open the software autoSIM-200.
2. Click with the right button of the mouse over **Iris** and select *Add an IRIS 3D console*.

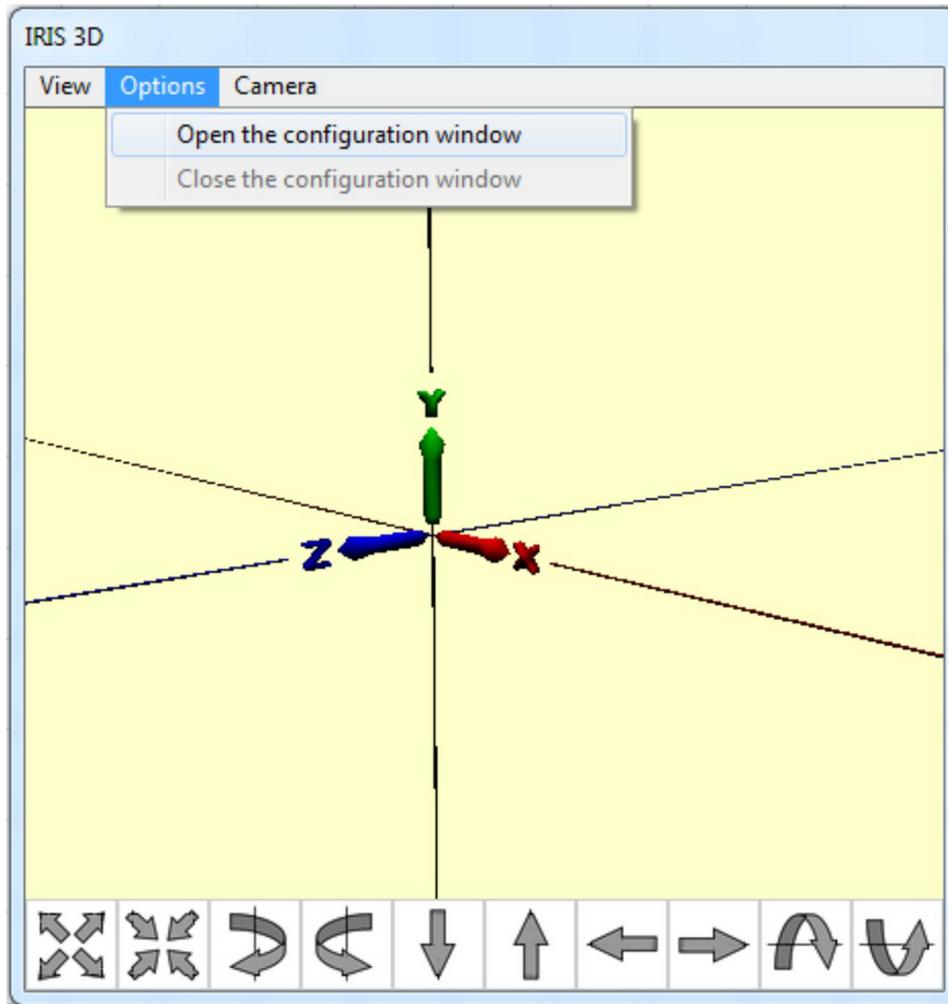


3. The 3D desktop is opened, where the user can select the background colour of the virtual universe (leave the other fields as they appear by default).

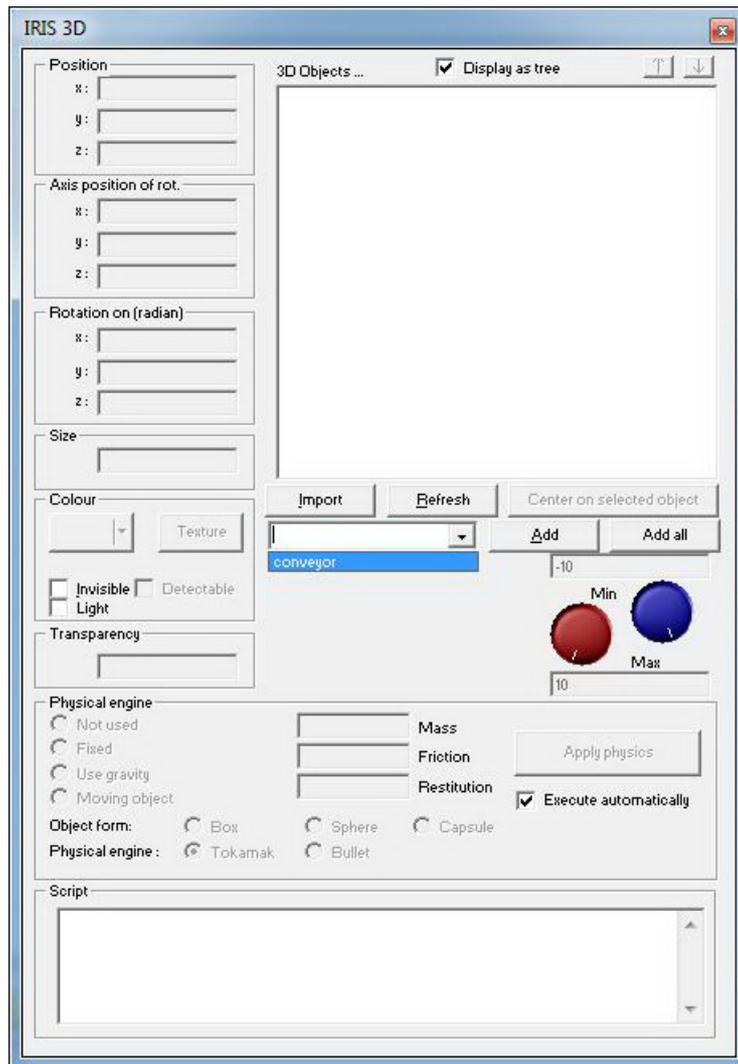




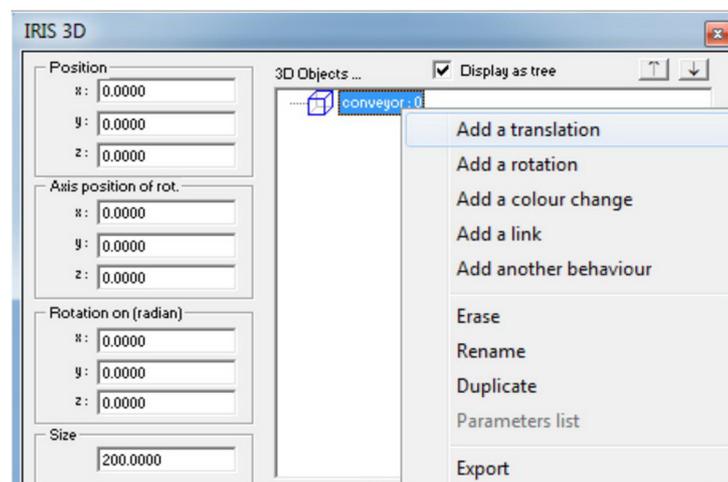
4. Press on **Ok** button.
5. Now, the next window is opened, where the user can start to insert the 3D drawings imported previously. To do this, press on **Options** button and select *Open the configuration window*.



6. Select the 3D object that you want to import to the virtual universe and press on **Add** button.



7. When the 3D object has been inserted in the virtual universe (**apply the size 200**), the user can add different actions: translation movement, rotation movement, colour change, link and another behaviour.





8. In the case of adding a translation movement, the user must fill in the following fields:

- a. **Axis.** Direction of the movement.
- b. **Position.** Type of piloting. Enter a physical output address to do the movement (no enter the symbol). When this address is activated, the movement will be done.
- c. **Mini.** Initial position of the movement.
- d. **Maxi.** Final position of the movement.
- e. **Time to run in ms.** Time that the object needs to go from "mini" to "maxi". If the second gap is 0, the object takes the same time to go from "mini" to "maxi" and from "maxi" to "mini".
- f. **Detection.**
 - i. **Mini sensor.** Detection of the initial position. Introduce a physical input address (no enter a symbol). This memory address will be activated when the object reaches the position.
 - ii. **Maxi sensor.** Detection of final position. Introduce a physical input address (no enter the symbol). This memory address will be activated when the object reaches the position.