LOGICLAB

IEC 61131-3 PLC Integrated Development Environment

Getting Started Guide

Getting Started Guide REV.1 of November 22, 2007

TABLE OF CONTENTS

1 INTRODUCTION

1.1 WELCOME

LogicLab is a multi platform PLC integrated development environment compliant with the IEC 61131-3 standard. It allows to create PLC applications for a wide variety of targets, from embedded systems to industrial PCs.

LogicLab supports all the 5 programming languages (IL, ST, LD, FBD, SFC) defined by the IEC 61131-3 standard.

Easy-to-use textual and graphic editors, extended drag & drop functions applying to all contexts of the framework, various integrated textual and graphic debugger make LogicLab an efficient development environment and a particularly user-friendly program.

Thank you for purchasing **LogicLab**. Feel free to contact us for any hint an assistance.

1.2 PURPOSE OF THE DOCUMENT

The present document is a basic guide that introduces you to the use of the **LogicLab** development environment.

The guide itself will show the basic steps (from program installation to a running PLC program directly on your machine) that has to be performed to reach a very basic knowledge of the tool.

The programming examples of the guide will be executed on a virtual target, named SoftPanel, that will be automatically installed with the setup.

Note: *more detailed informations about LogicLab, the IEC 61131-3 standard, etc. are beyond the scope of this document. Please refer to the LogicLab User Guide.*

2 INSTALLATION

2.1 SYSTEM REQUIREMENTS

The minimum system requirements for running LogicLab are:

- PC with 266, Pentium processor or higher
- Windows 98, Windows NT/2000/XP
- Free disk space: 20 MByte
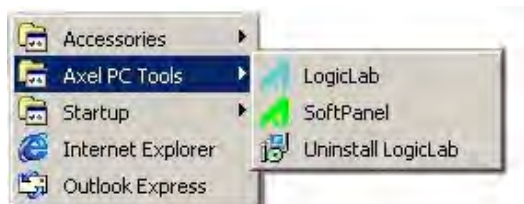- RAM: 64 MByte.

2.2 SETUP PROCEDURE

To install LogicLab perform the following steps:

1.   Close all application programs running on the system.

2.   Insert the CD in the local CD ROM drive and run the SETUP.EXE file on the CD.
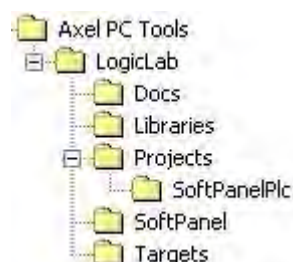
Note: O*n Windows NT/2000/XP systems, administrator privileges are required for installation*

3.   The setup procedure will add the following Start menu.

4.   The LogicLab folder in the system program directory will have the following structure.

3   STARTING LOGICLAB

3.1   CREATING A NEW PROJECT

The following steps show how to create, run and debug a simple LogicLab PLC program. The program will be written in the ST language and will be executed directly on your machine.
A virtual PLC target, named SoftPanel, has been installed by the setup procedure. SoftPanel will simulate a simple PLC provided with digital and analog I/O.

1.   Launch LogicLab from the Start menu
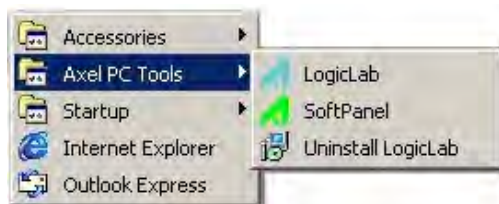
Until LogicLab has not been registered, a dialog-box showing the LogicLab evaluation period will appear each time the program is started. During the 30 days evaluation period LogicLab will be active in all its functions.
If you have a serial number, press "Register" to start the product registration, else press "Continue" (for the complete registration procedure refer to § 5).

2.   When LogicLab is started for the first time, not all windows and toolbars are shown. You can customize your LogicLab workspace through View menu.
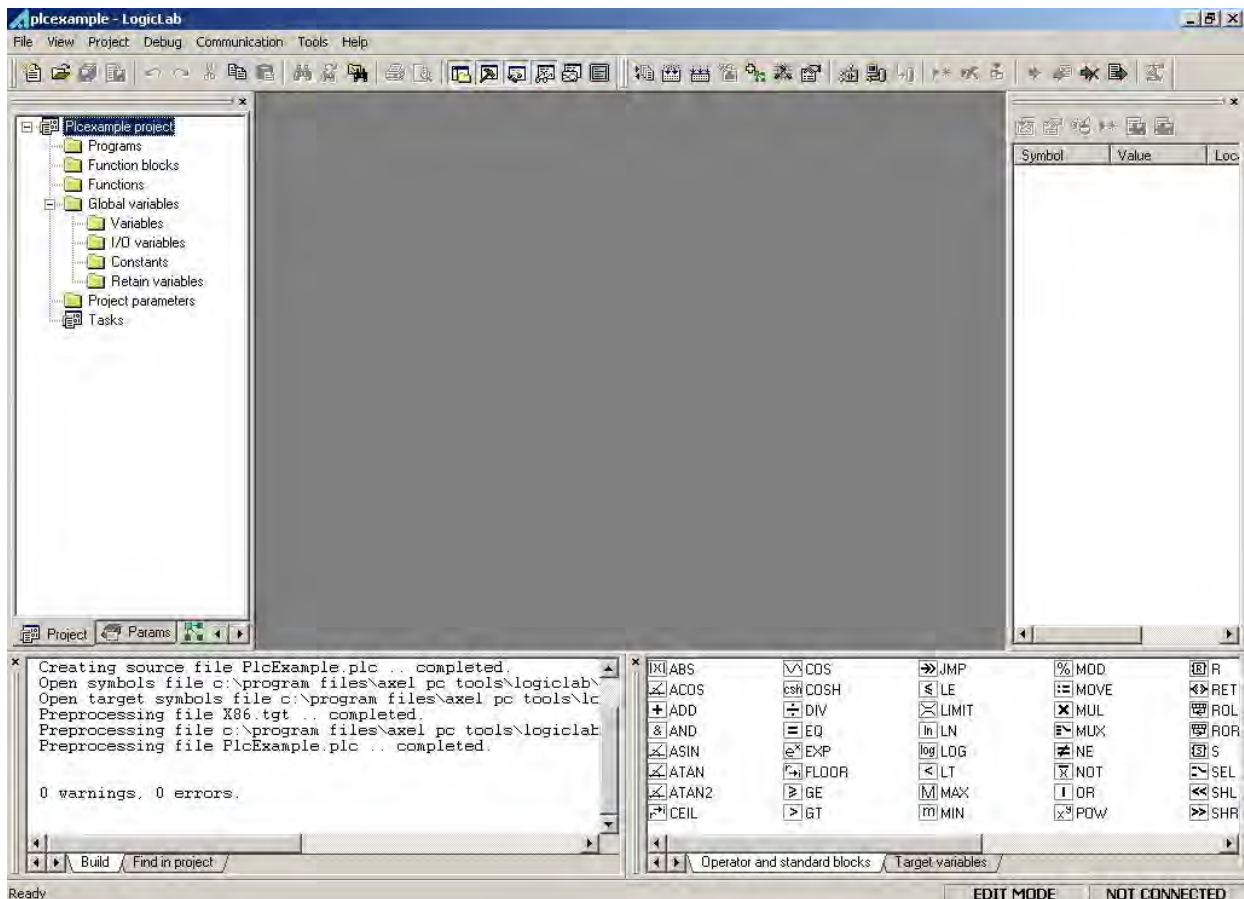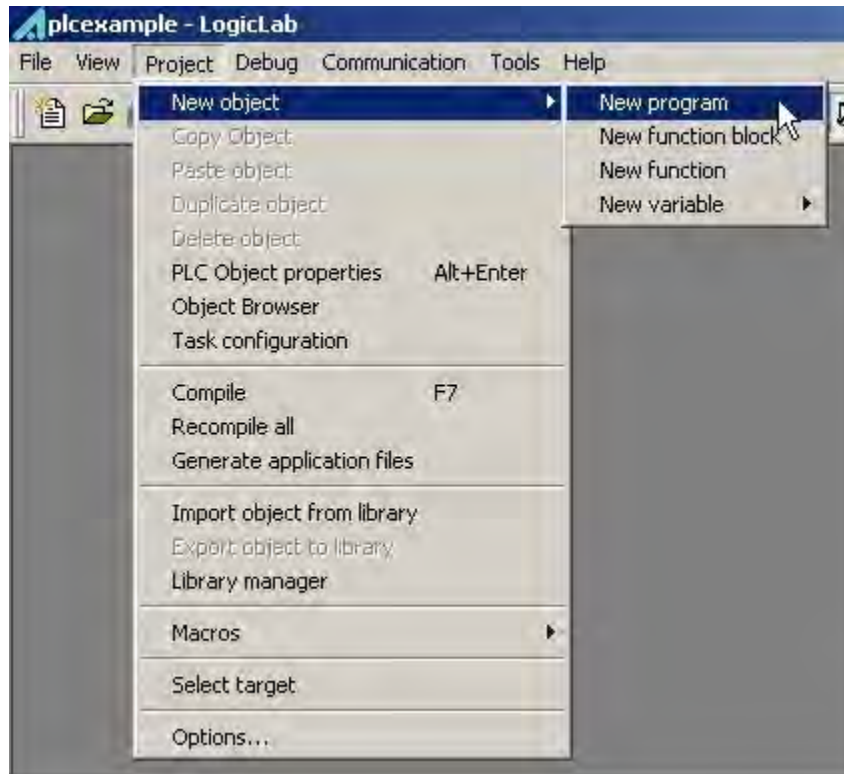
3. Create a "New project" for the virtual target SoftPanel.
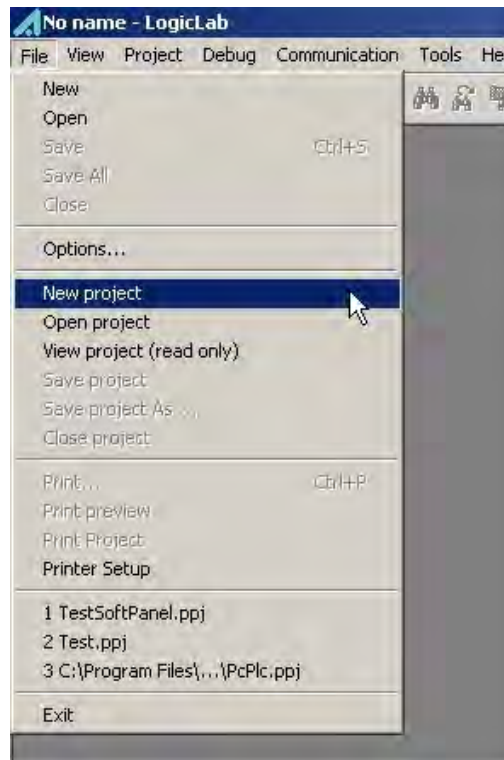
4. Insert the name (for example PlcExample) and the directory path of the new project then press OK. The LogicLab environment will change like picture shown at the step 2 (e.g.: all operators and target variables are shown, preprocessing status log has been printed in the output window).
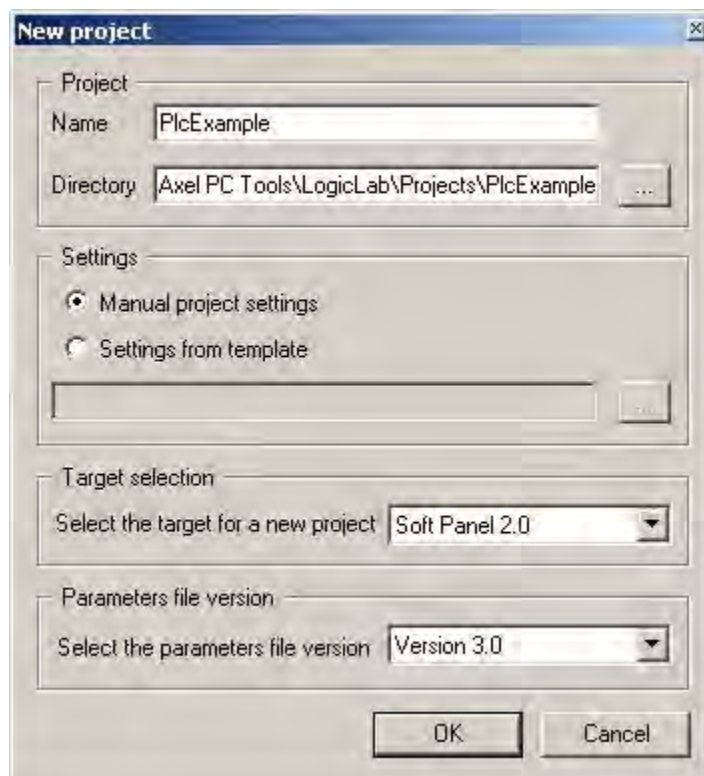
5. Create a new PROGRAM object,

select the ST language and insert the new program name (for example Main) and press OK.
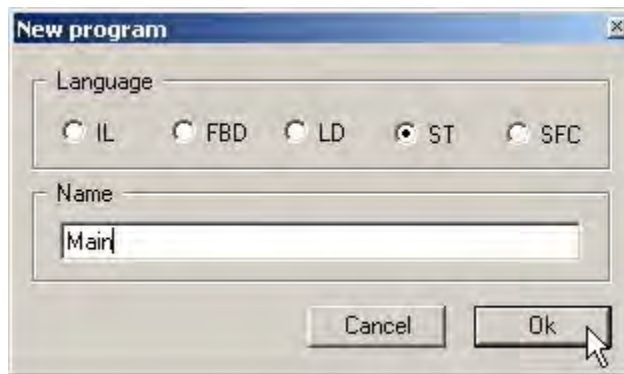
Then LogicLab will show the editor window of the Main PROGRAM object.

On the top of the window there is the local variables editor. The variables editor allows to add, remove, copy and paste variable definitions.
Each record has fields relative to data type, address, initial value, descriptions.
Columns sorting is available for most of the fields.
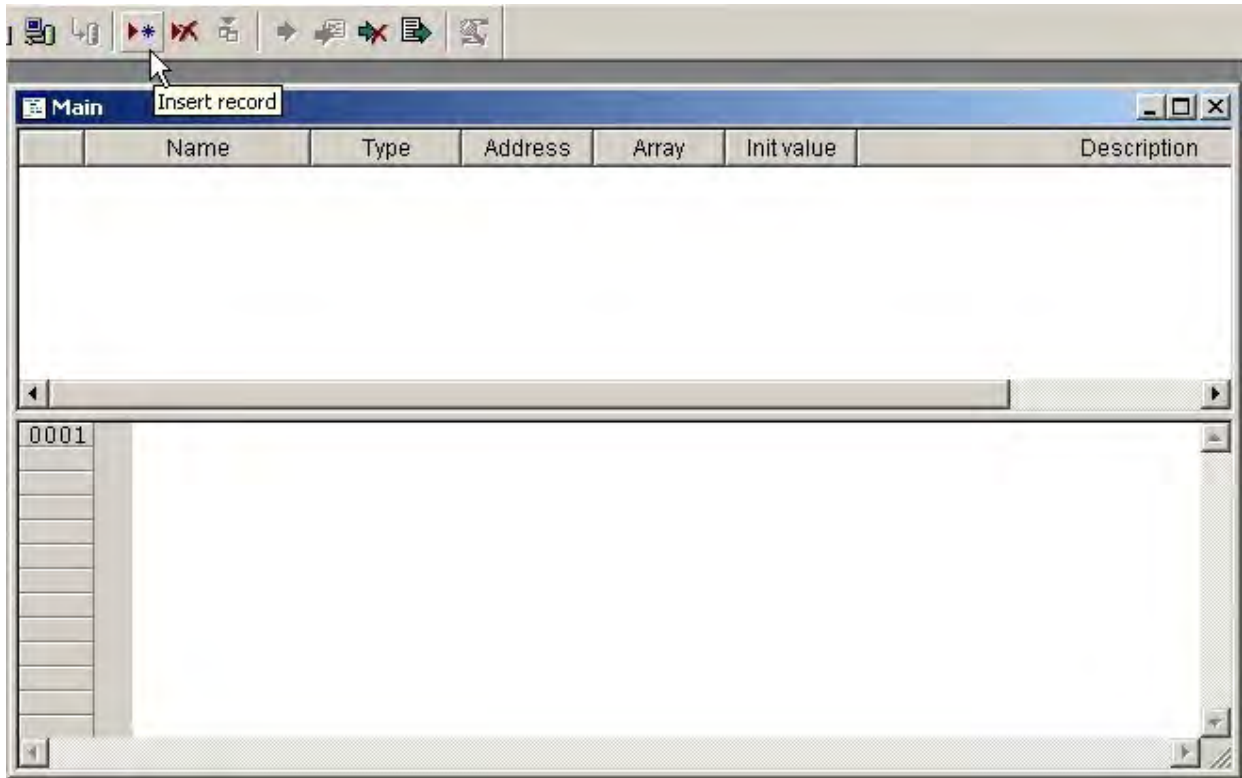
The textual code editor window is placed in the bottom part of the windows.

5.   Insert a new local variable. The operation can be performed by pressing the "Insert record" button in the project toolbar or by using the "Insert" option of the "Variables " menu.


6.   Edit the name (for example 'counter') and the type of the variable. A double click in the type field will open the type selection dialog.
Choose the INT data type.

7. Implement a simple counter in ST language.
    The editor window should appear like to one shown below
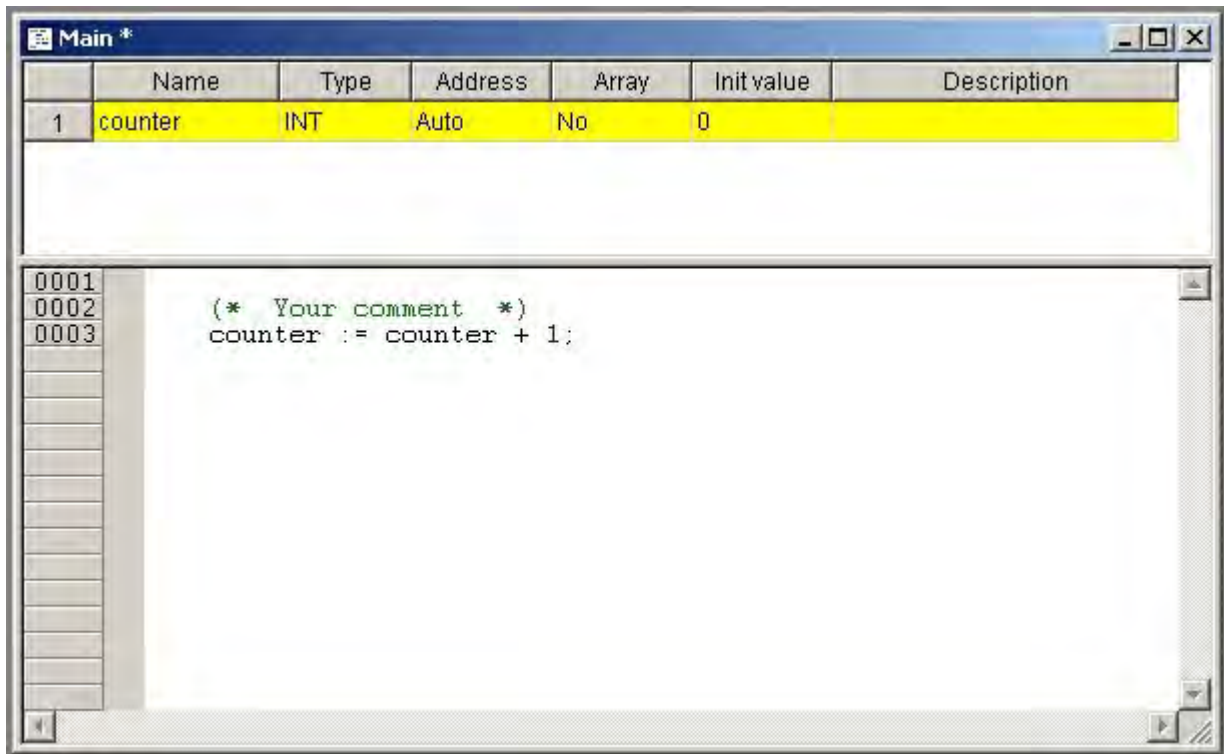
8. Assign the 'Main' program to a task of the target. In the "Project" menu, select "Task Configuration", the task configuration dialog-box will appear.
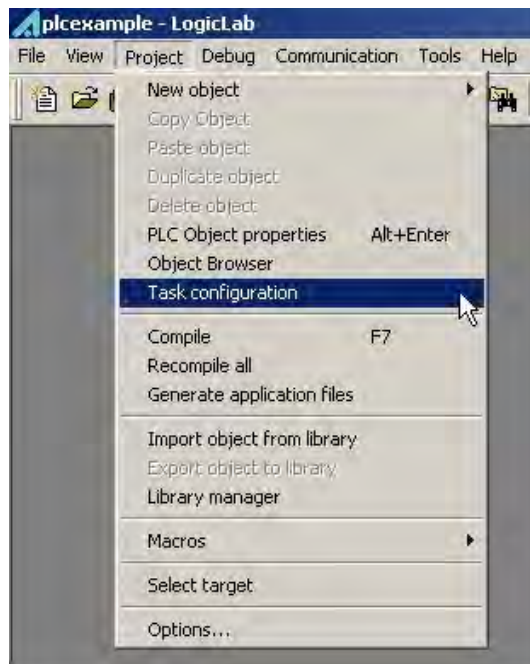
9. Double click in the "Program name" field, in the row corresponding to the task 'Slow'. The "Object browser" window will be opened.

10. Select the 'Main' program object in the "Object browser". The picture below shows the "Task configuration" window after the correct program selection.
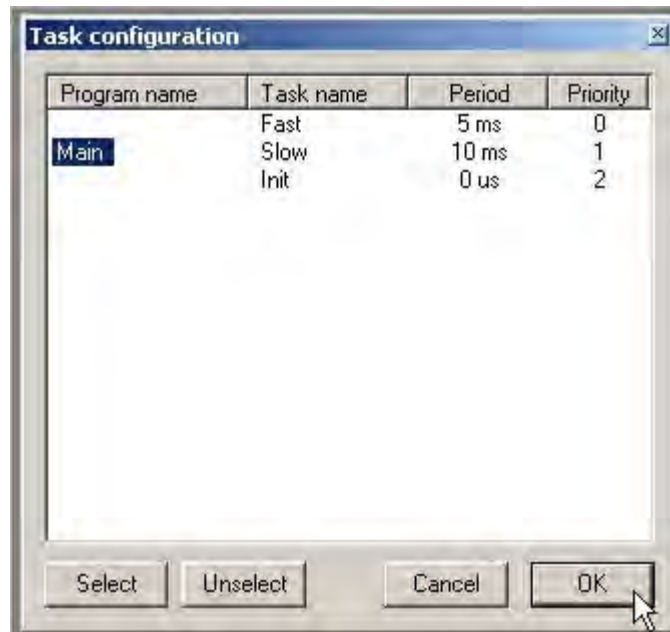
11. Launch SoftPanel PLC target through the Windows Start menu

12. SoftPanel is an application program that simulates a PLC target with digital and analog I/O.
    Digital I/O is represented by means of buttons and leds, analog I/O by means of sliders an progress bars. Also general purpose values are available in the form of edit boxes in the lower part of the panel.
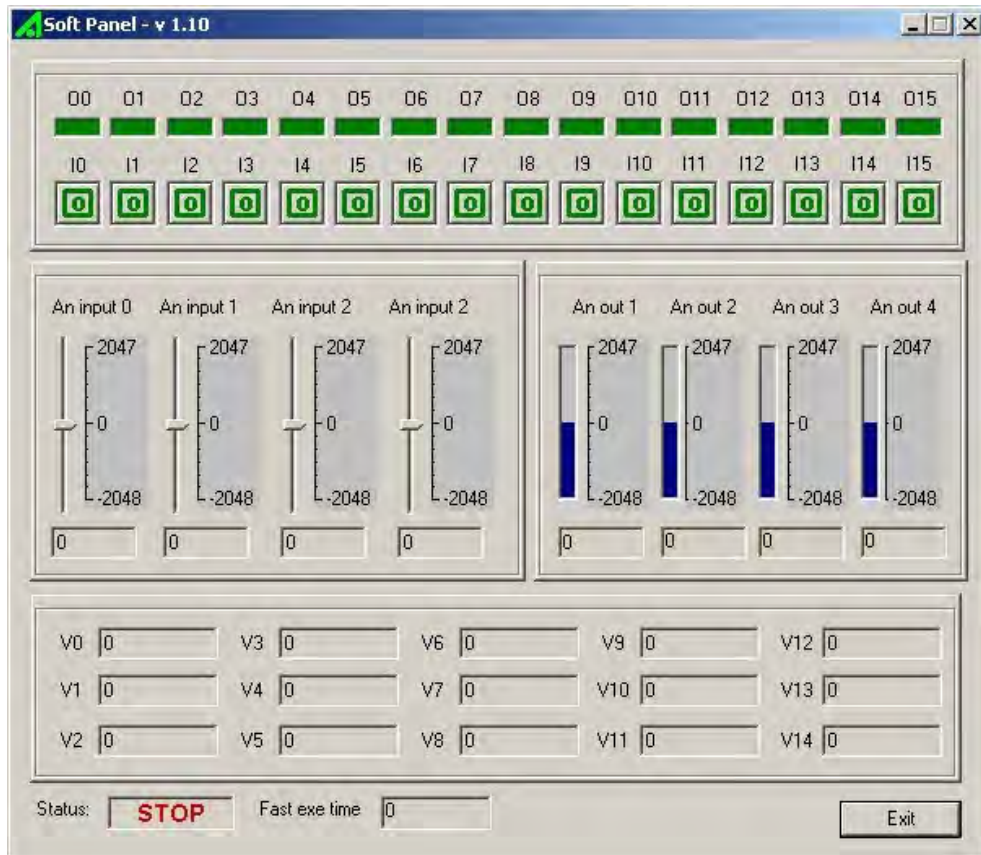
The status of the SoftPanel I/O is represented by the "Target variables" listed in the lower part of the LogicLab environment (see the picture of th step).

13. Go back to LogicLab and connected to the SoftPanel PLC target through the apposite button on the toolbar,


14. Press F7 (or the menu option "Project" - "Compile") to compile the code. Verify that the compilation process ends with "0 warning – 0 errors", otherwise correct the errors an compile again until a correct result has been reached.

15. Download the code by means of the appropriate toolbar command.

The status of the SoftPanel should go into the RUN state (check the status indicator on the bottom).

16. Open the "Watch" window through "View" menu, then select the variable in the text editor with a double click and drag and drop it into the watch window.
The "Watch" window should display the 'COUNTER' variable the value of which should increment continuously.
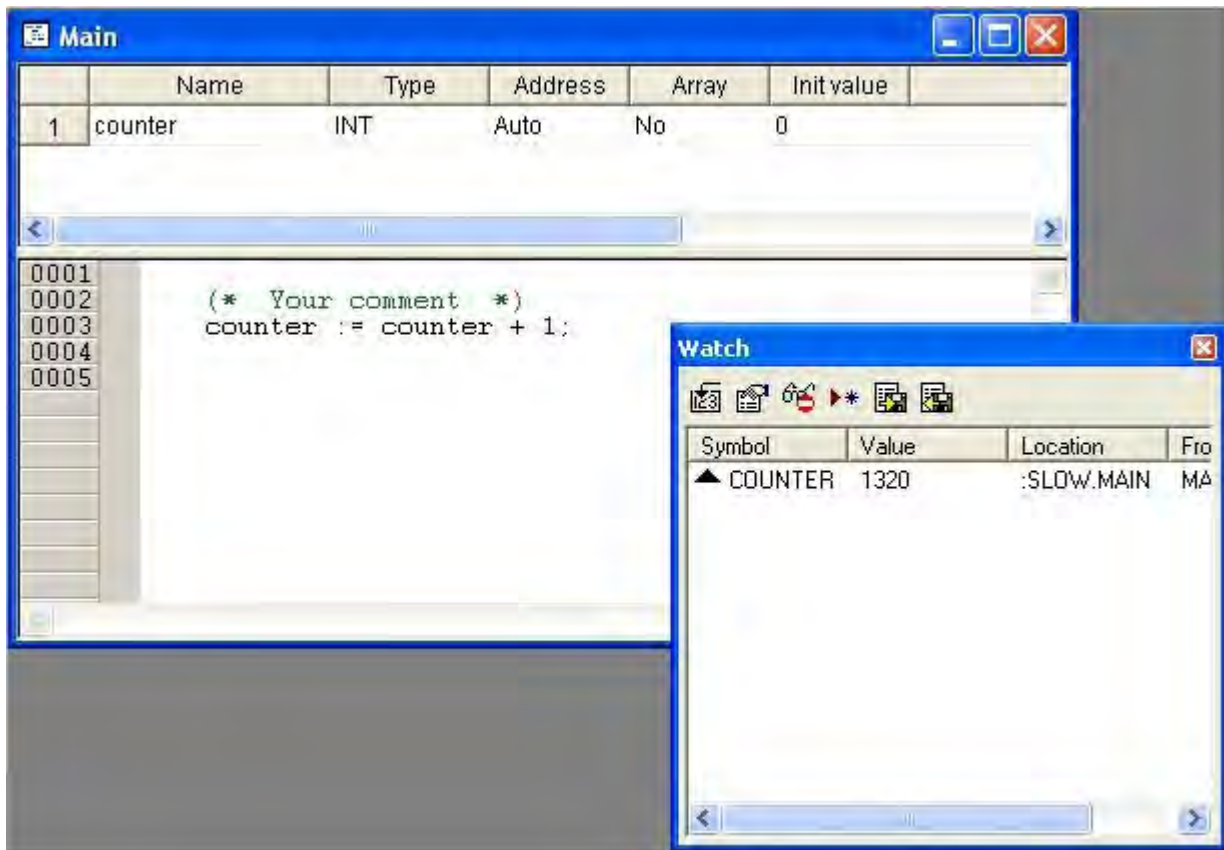
17. You are at the end of this very simple but complete (edit-compile-download-debug) work session with LogicLab. Subsequent steps in LogicLab knowledge can be the use of the other languages, function, function blocks, global variables, libraries, real time debugging and so on. Refer to the on-line help the get the necessary informations.

3.2 OPENING AN EXISTING PROJECT

In the *Projects\SoftPanelPlc* subdirectory of your LogicLab installation directory is placed a SoftPanel PLC example. This project offers a complete overview of all five IEC 61131-3 languages.
To open the sample project use the "File" - "Open project" menu option.

4   HELP SYSTEM

For more informations about **LogicLab**, refer to the help system that is installed with the setup. The help system can be accessed through the "Help" menu or by pressing the F1 button.

Additionally, you can access the documents placed in the *Docs* subdirectory of your LogicLab installation directory.

On our web site, *www.axelsw.it,* free downloads are available about LogicLab and documentations. Also free program updates are available.

To obtain support for LogicLab, contact by e-mail at *info@axelsw.it,*by phone at *+39 0332 949600* or by fax at *+39 0332 969315.*