

2 Configure the LON Parameter for the PCD

The PCD is able to get data from any LON node on the network. To be so, the PCD needs to know which are the NV (Network Variable) available in the node or generally on the network. For this, the declaration of the NV desired to be use inside the PCD is necessary.

The declaration of the NV for the PCD is done with the software SNET32 for PCDxx7, the version should be at least the V2.1.200.

Once the declarations made, the SNET32 compiles it and generate a source file (AWL) for the SIMATIC S7. This file contains the source of 4 Data Blocks. Those Data Blocks contains all the information about the needed NV for the application.

When the initialization of the LON module is made, information contained in the Data Blocks are transfer to the module. Then output NV will be available on the network side. The last phase, which is the binding of the NV between nodes is then possible.

2.1 SNET32

The purpose of the SNET32 software is to declare the LON NV, which will be use inside the PCD.

2.1.1 Installation

The software is delivered in 3 install files, which are :

SETUP_SNET.EXE	(1 . 4 Mb)
SETUP_SNET.W02	(1 . 4 Mb)
SETUP_SNET.W03	(400 Kb)

Execute the SETUP_SNET.exe file and a setup procedure will guide you through the install process.

At the end you should have a new icon in the desktop office.



Figure 1.

Be sure to use the SNET32 dedicated for the PCDxx7 product.
This product is licensed to: **xx7 customer**

The software version should be at least: Version 2.1.200

Those information can be found in the window “About SNET32”, from the menu help.

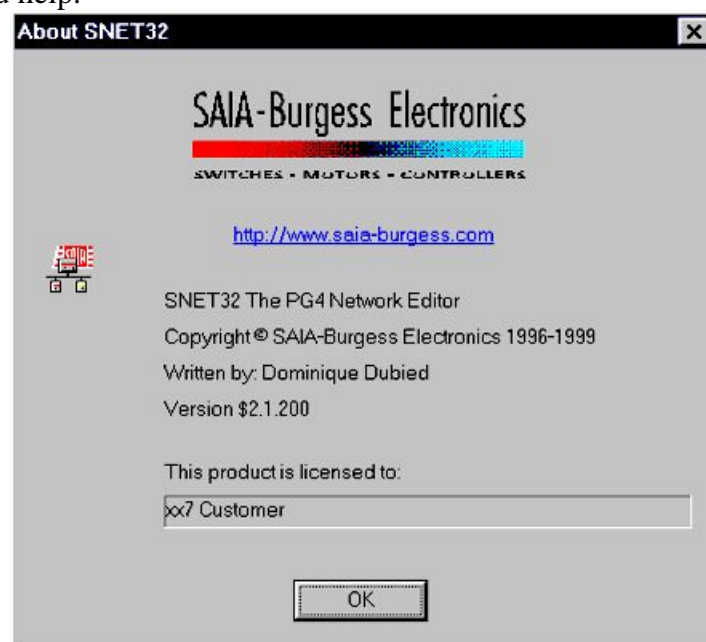


Figure 2.

2.1.2 Starting a configuration

Start the SNET32.

To create a new configuration you have to create a network.

In the menu **N**etwork -> **N**ew .

Now, that you have a network, you need to install a PLC on the network. Click on the desired PCD and then click on the transfer button (signed [1] on the above figure) .

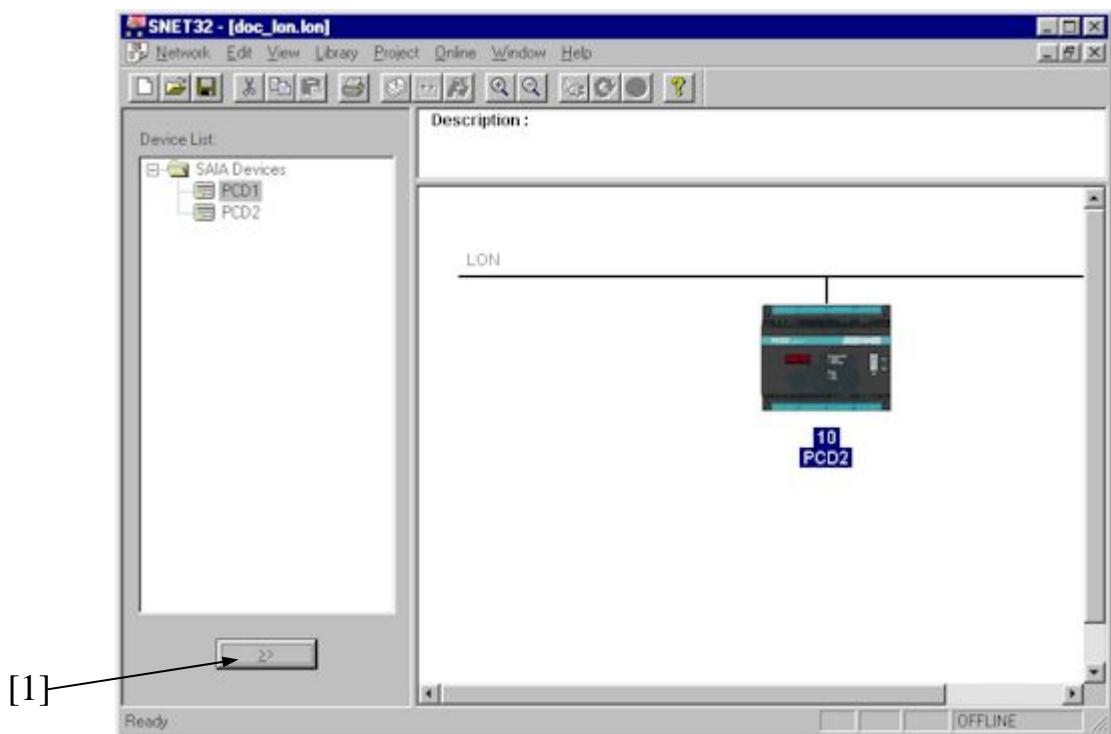


Figure 3.

The Snet32 does not support more than one PCD in the network, if your project has more than one PCD on the LON network, you will have to create a SNET32 project for each PCD.

2.1.3 Configure the PCD station

Now, it's possible to configure the station.

Select in the menu “**Edit**” -> “**Station Parameters...**” or directly double Click on the PCD station picture and the following windows will appear.

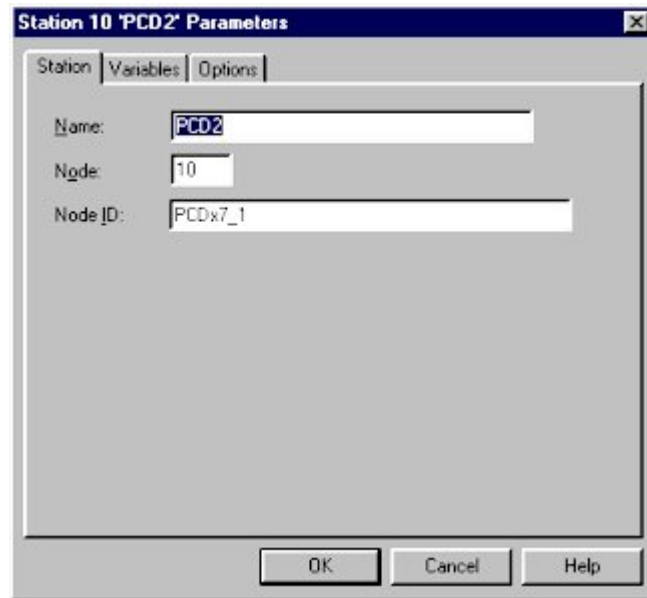


Figure 4.

On this windows there is a menu with 3 Tabs.

- Station:** You can define the station name, node number and also node ID.
- Variables:** Menu where you define the NV (Network Variable). Details in the chapter 2.2
- Options:** Menu where you can set the export options for the station configuration. Details in the chapter 2.3

2.2 Define the NV (Network Variable)

Before to define any Network Variable you need to know which are the Variables available in the Network Node and also which are their SNVT (Standard Network Variable Type). This can be found on the node supplier documentation or there are also some Binding tools which allow you to find this information On-line.

Then make a list of the variable you will need inside the PCD.

2.2.1 Variable list

In the menu “Edit”, select “Station Parameters...”.
Select the Tab “Variables”

This window with the variable list will appear.
By default no variable are declared.

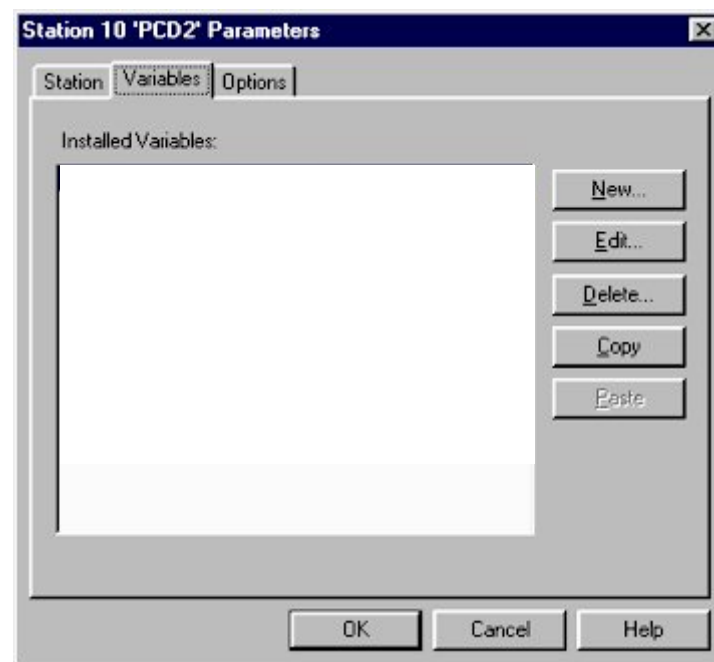


Figure 5.

To create a new variable, click on the **New...** button.

2.2.2 New Variable

When creating a new variable, the list of all the possible SNVT (Standard Network Variable Types) is displayed (as shown in the figure below).

Select the exact SNVT required for the variable and click on the button “Add...”

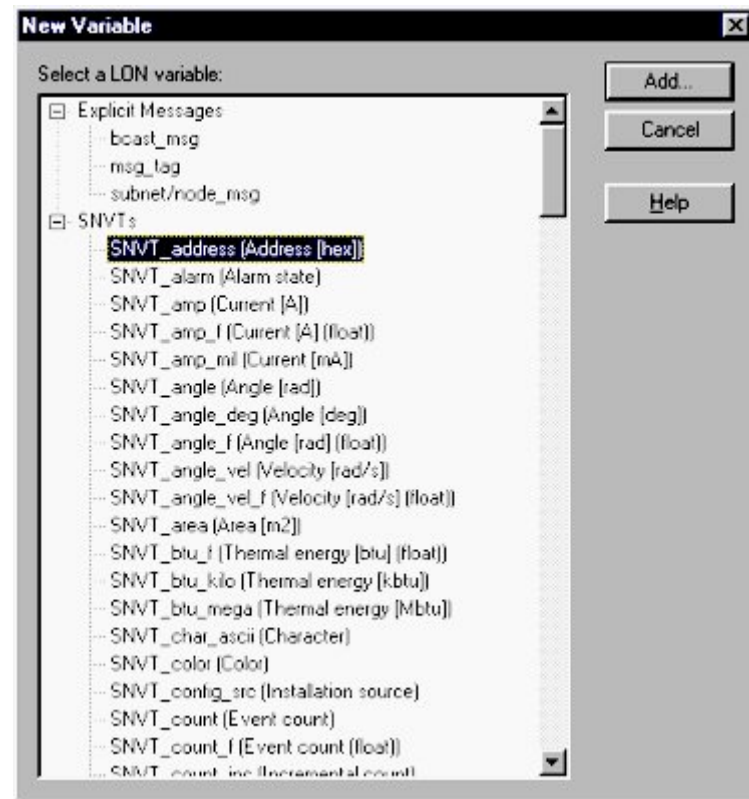


Figure 6.

SNVT selected and Add... button pressed, the following window appears.

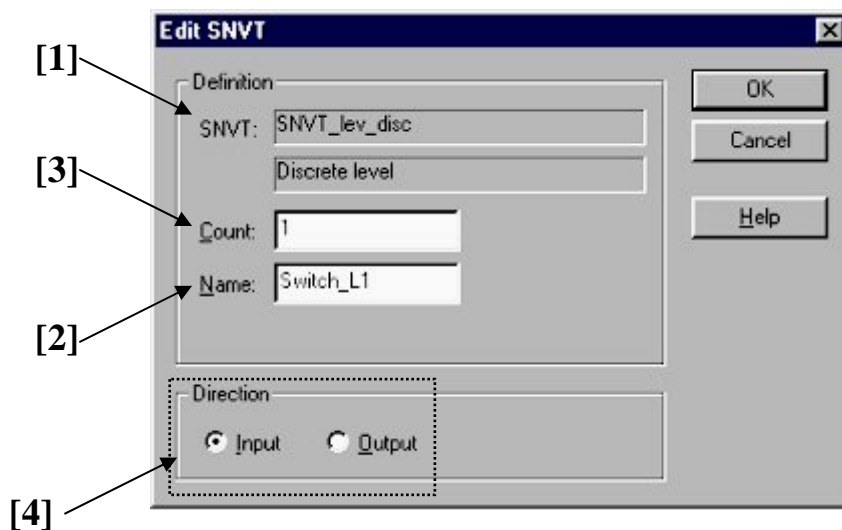
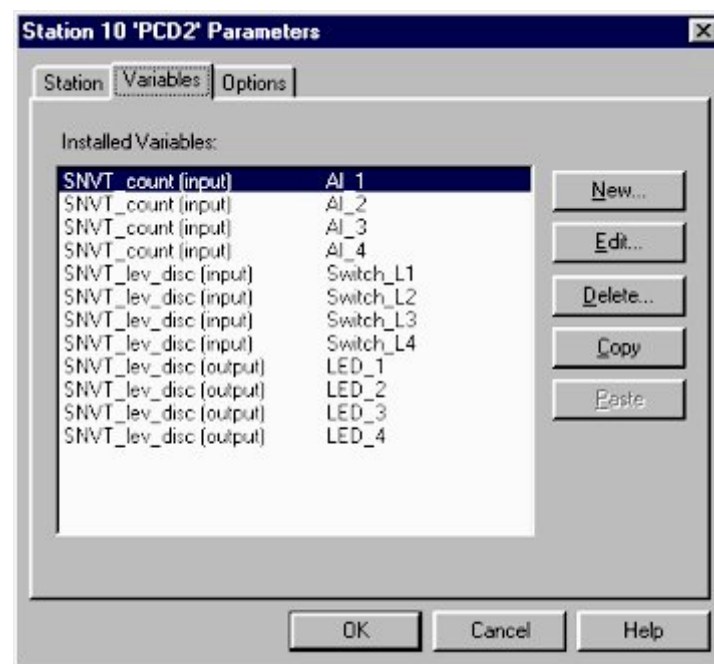


Figure 7.

The figure 7, show the Network Variable Properties. Where are:

- [1] The SNVT you selected in creating the variable.
- [2] The Network Variable **name**.
This name will be use later in the S7 software with symbolic programming.
- [3] This **Count** is use in case of having few variables of the same type and same variable name and just a different index. Like :
The name is: Switch_Light Count = 3
Switch_Light00
Switch_Light01
Switch_Light02
- [4] The **Direction** specifies if the variable is an Input Data or an Output Data of the PCD.

Declare all the needed variables and then your variable window will contain the list of all the variables, which will be available for the S7 program.



Press OK and it's all for the Network Variable.

2.3 Exporting the LON configuration

The SNET32 will export the LON configuration by writing them in a file, this file has the extension “**.awl**“, it’s a source file for the S7 program.

This source file will be compile in the S7 software (see chapter 2.4). The source code of the file is in fact the source of few Data Blocks (DB) and User Define Type(UDT), which are use in the Data Block. Those Data Block contain all the LON data.

But before to export the LON data few option can be set.

2.3.1 Export options

In the menu “Edit”, select “Station Parameters...”.
Select the Tab “Options”

This window with the export options appear.

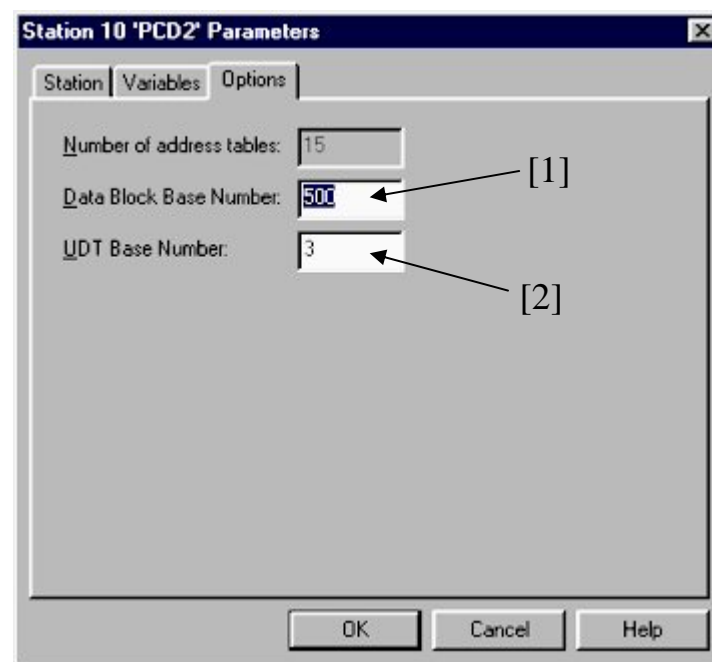


Figure 9.

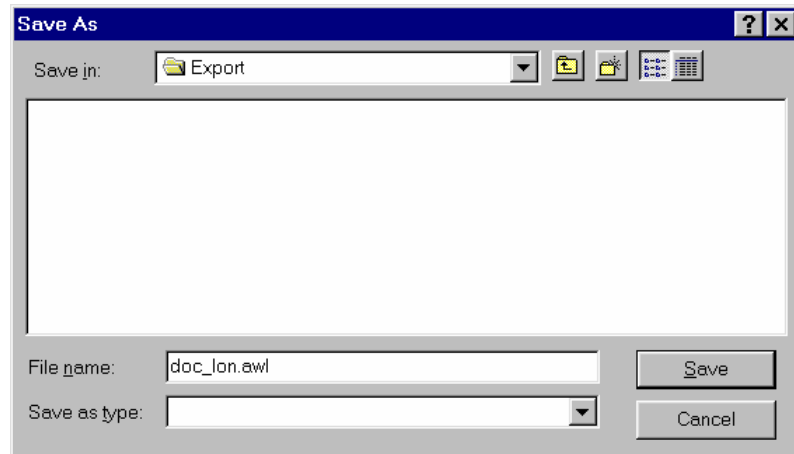
- [1] The LON data are divided in few Data Block (3 or 4), this number specifies which is the base address for the Data Block. In this example value, the Data Block will be numbered DB500..DB503. The default value is 500, in case you have already a DB numbered between 500..503 in your project, you can change this value.
- [2] The LON data blocks contain field, which are base on User Define Type (UDT), this parameter is use to define the base address of the UDT generated. This in the case you have already UDT in your S7 project, you can choose a different number to not overwrite the other UDT.

2.3.2 Generate and export the configuration

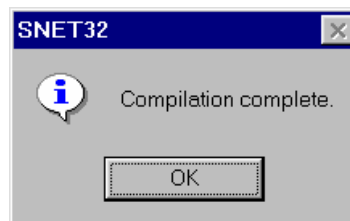
Once the export options have been chosen (see chapter 2.3.1), generate the export file.

In the menu “**Project**” -> select **Compile file**

The following window appears, it give you the possibility to select the name and the file destination.



Press the “**SAVE**” button.



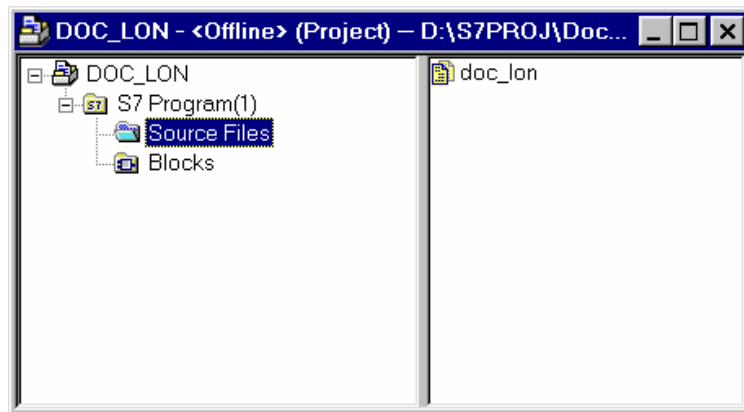
The compilation is done, you should have a file with the extension “**.awl**” in the chosen destination folder.

2.4 Import configuration under SIMATIC® S7

We will show the procedure to import the LON configuration under the SIMATIC S7 project. We suppose that a S7 project is already existing.

2.4.1 Import the file source

In the SIMATIC Manager open your project on select the sub-folder “**Source Files**”.



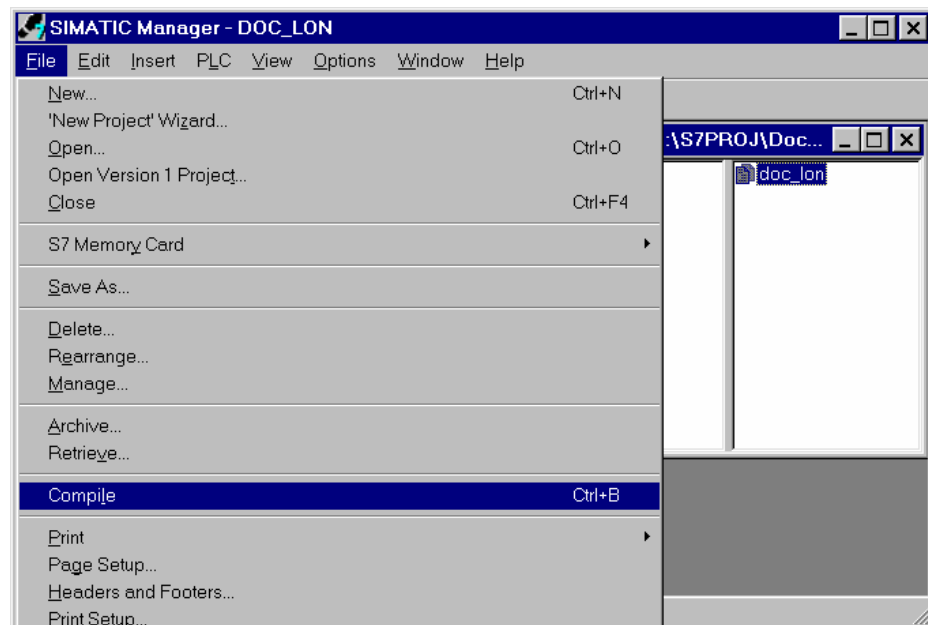
Then in the “**Insert**” menu, select the function “**External Source File...**”, a file browser will appear.

Select the file with the extension “**awl**”, which contains the LON configuration data (see chapter 2.3), and Load it.

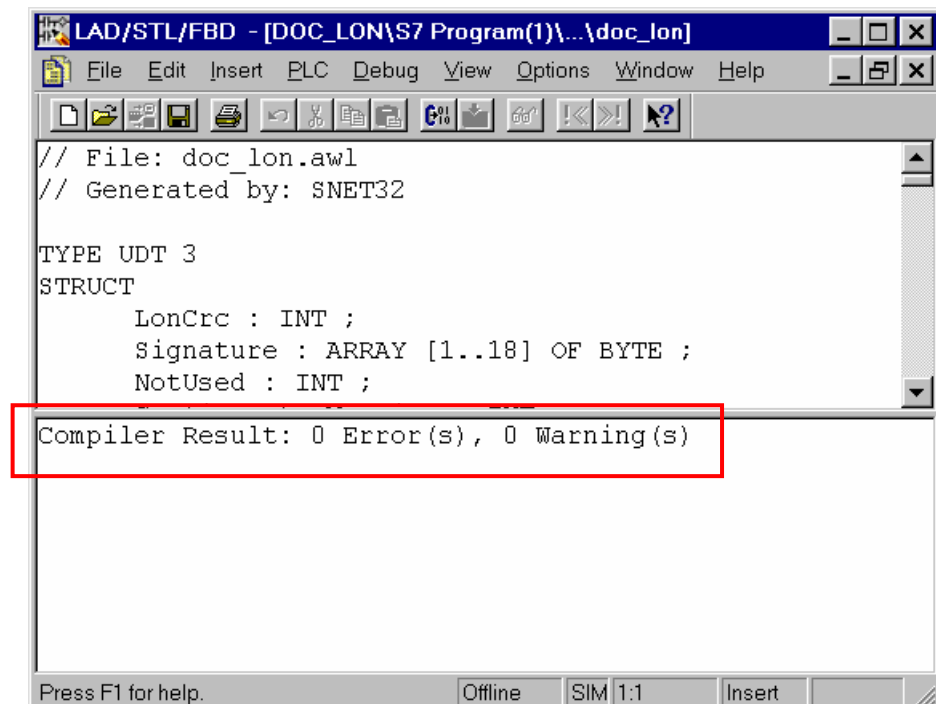
The source file should be now in the sub-directory **Source file...**

2.4.2 Compile the source file

To compile the source file, select the source file by clicking on it and then in the menu “ **File** ” of the SIMATIC Manager, choose the function “ **Compile** ”.



At the end of the compilation a windows will inform you on the result. No error should be displayed.



In the SIMATIC Manager, the sub-directory “**Blocks**” contains now the Data Block and the UDT.