

# Simatic S7 MPI Driver for JMobile

This Technical Note contains the information needed to connect the system to Siemens Simatic S7 controllers using the MPI port.

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## Simatic S7 MPI Driver

The MPI communication protocol can be used directly from the panel integrated serial ports without the need of adding any additional module. The driver supports the standard communication rate at 187Kbit/s.

The MPI driver is supported starting from runtime version 1.60.00.00.

The units must be also loaded with a minimum version of the operating system (BSP version). See in the software user manual for more information about how to read the BSP version from the panel System Settings menu.

For units based on the UN20 platform the minimum version of the BSP is V2.59.

For units based on the UN31 platform the minimum version of the BSP is 1.38.

## Settings

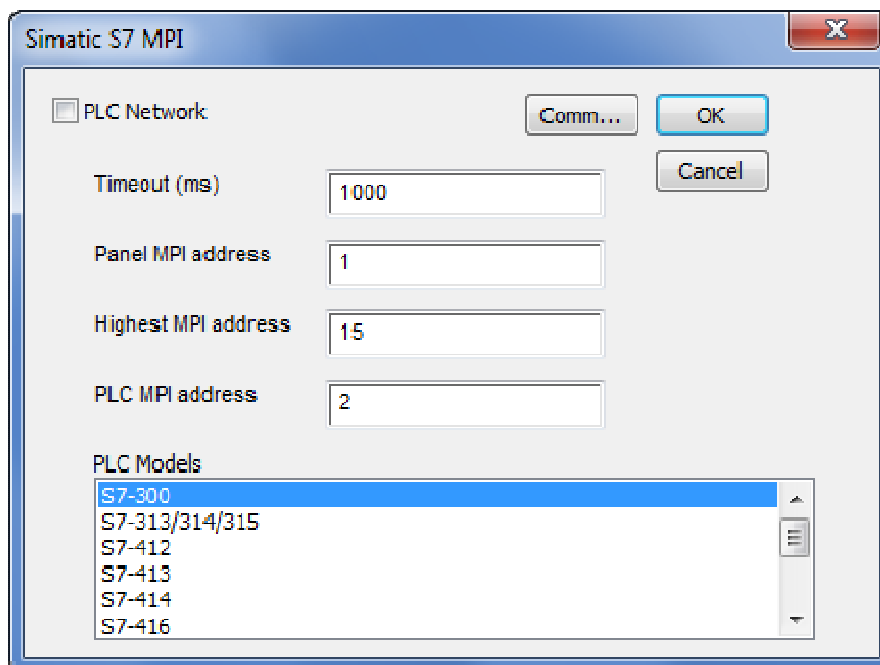


Figure 1

**Panel MPI Address**

The MPI node assigned to the panel

**Highest MPI Address**

The highest node number in the MPI network where the panel is operating and communicating.

**PLC MPI Address**

The MPI address of the controller to which the panel will communicate.

**Timeout**

The time the protocol wait the answer from the controller before issuing a new retry.

**Comm...**

Click on this button to configure the serial port on the panel to be used as MPI port (see example in the following figure)

Communication parameters for the S7 MPI are fixed at:

Baud rate	187500
Parity	Even
Data bits	8
Stop bit	1

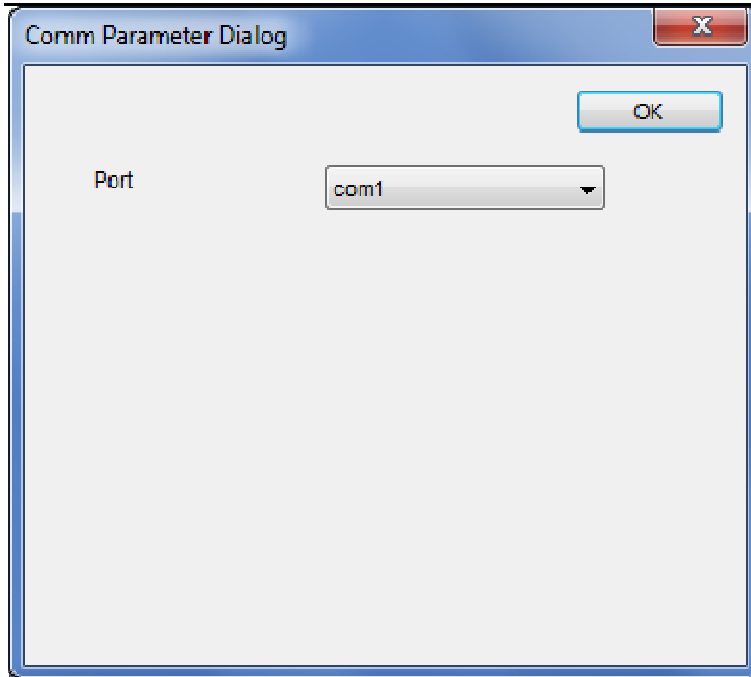


Figure 2

The protocol supports connection to multiple controllers.

To enable this, check the "PLC Network" check box and provide the configuration per each node.

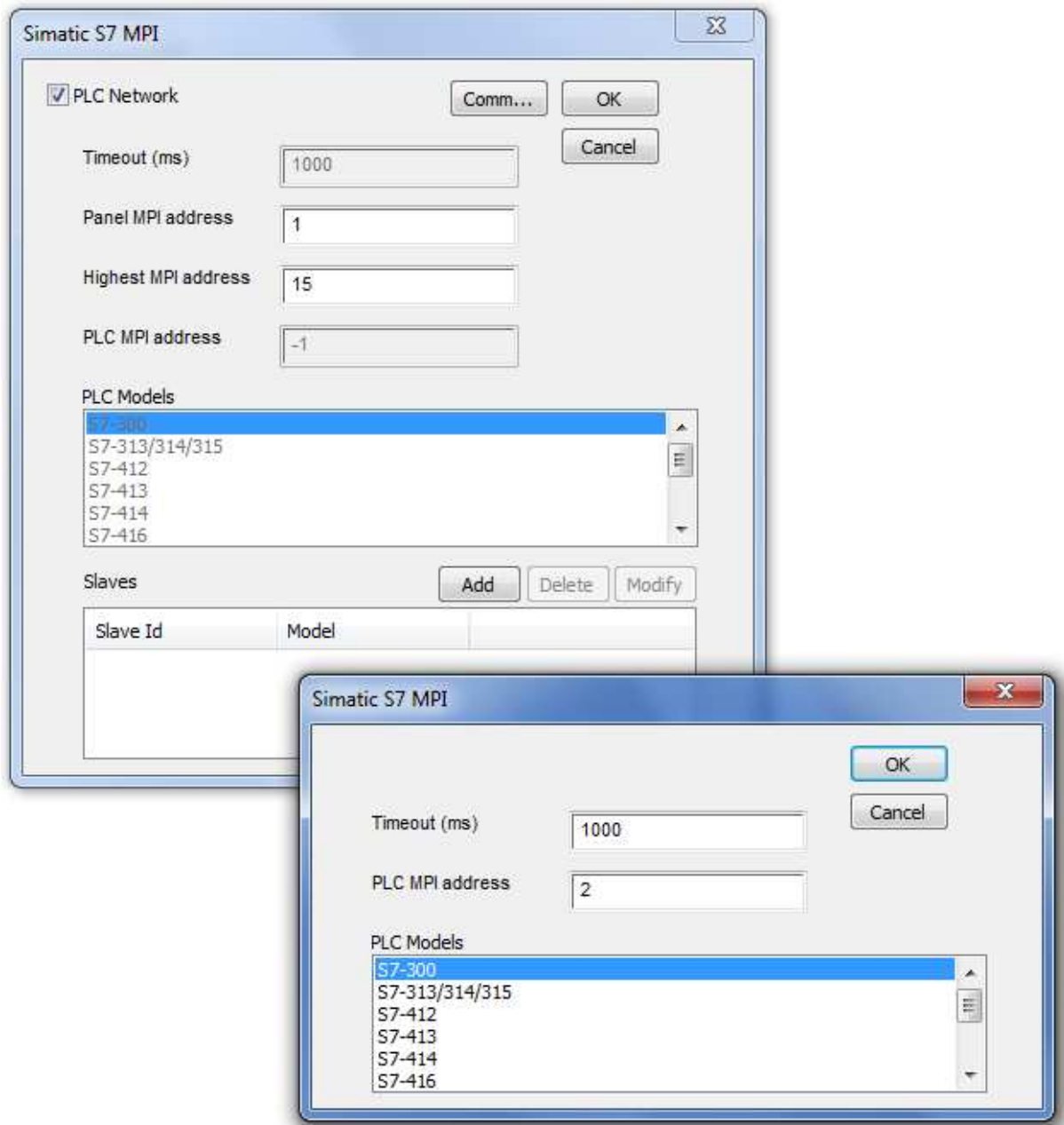


Figure 3

## Tag Editor and Tag Import

The Simatic S7 MPI driver supports the Tag import facility.

The import filter accepts symbol files with extension “.asc” and “.awl” provided by the Simatic Step7 programming tool.

The Tag import can be launched from the icon indicated in the following figure. The import wizard will ask in sequence to locate the “.asc” and “.awl” files. They are both required to have the full information about all the data types used.

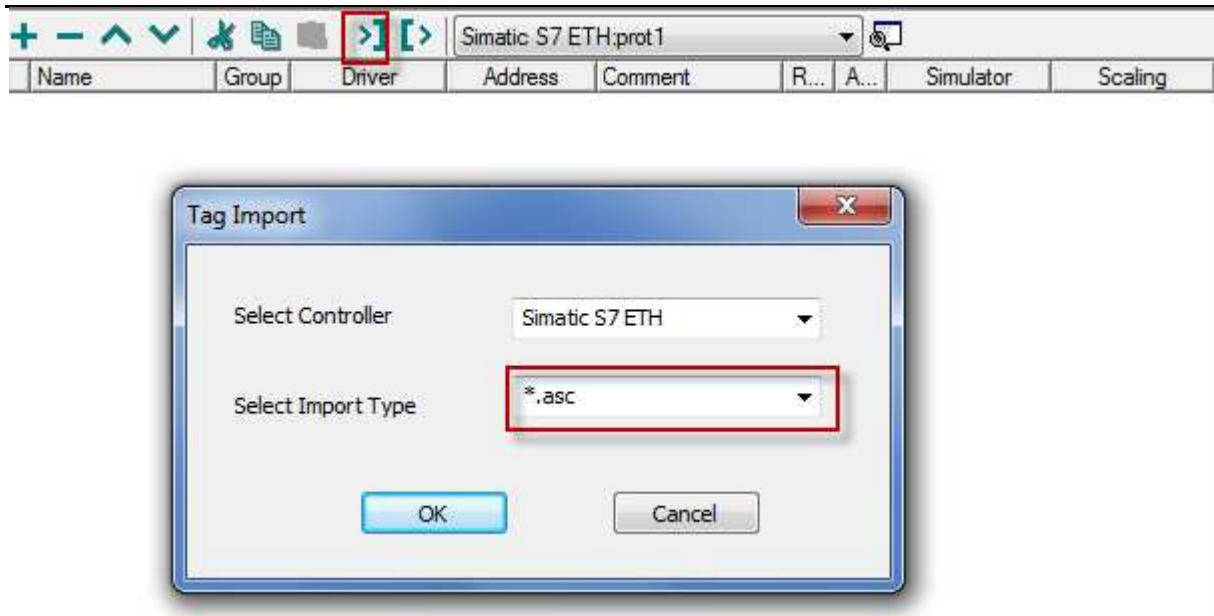


Figure 4

The “.asc” files can be exported from the symbol table utility.  
See in the following figure how to access the Symbol Table (if configured) from the Step7 Programming software.

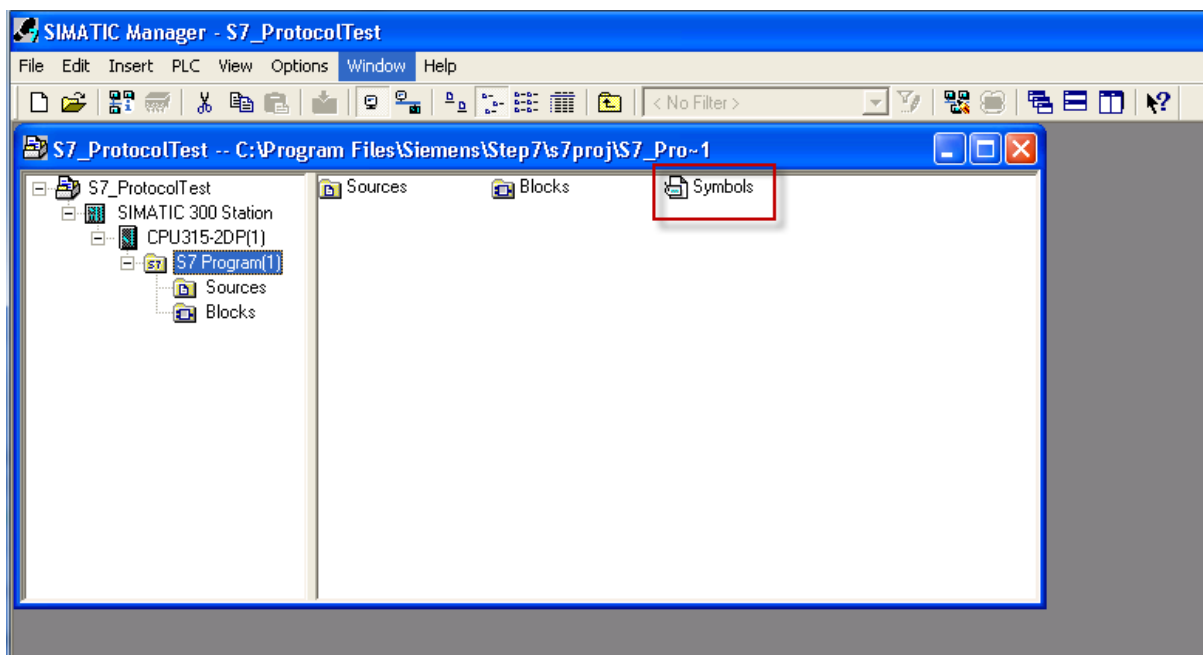


Figure 5

From the “Symbol Editor”, click then on the “Symbol Table” menu and select “Export...”.  
Give a name and save the ASCII file as shown in the following figure.

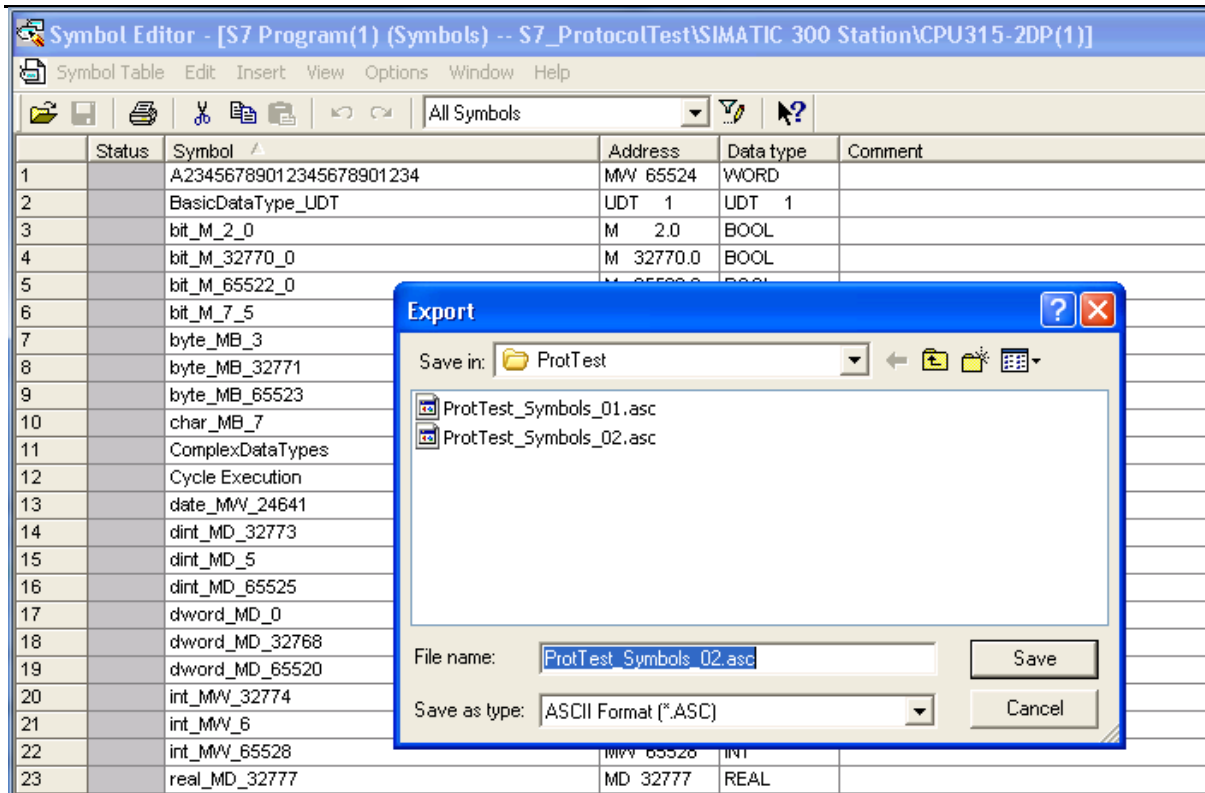


Figure 6

The “.awl” file comes from the export operation of the Source code.  
Open any program block in the editor, for instance OB1.  
Click on “File” menu and select “Generate Source...”

You will get the dialog shown in the figure below:

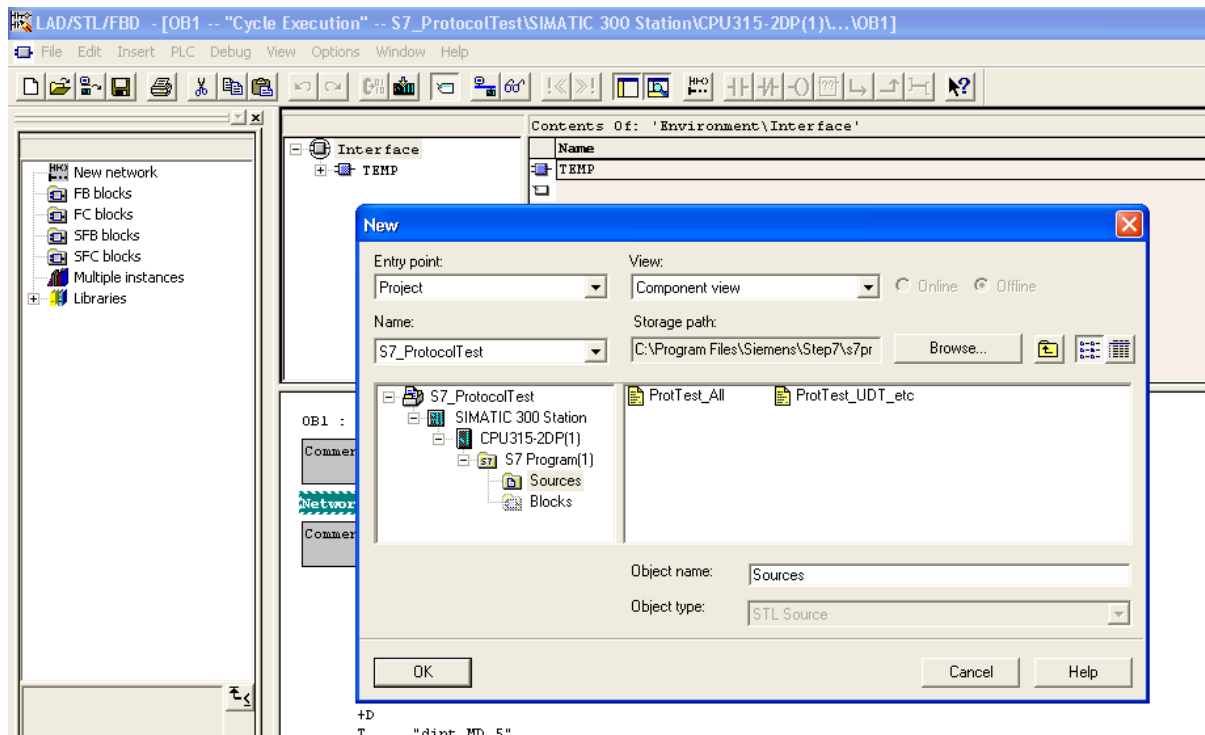


Figure 7

Give a name (in the figure "Sources") and click OK.

In the "Generate source Sources" dialog click "All" to select source generation for all blocks and then confirm with OK.

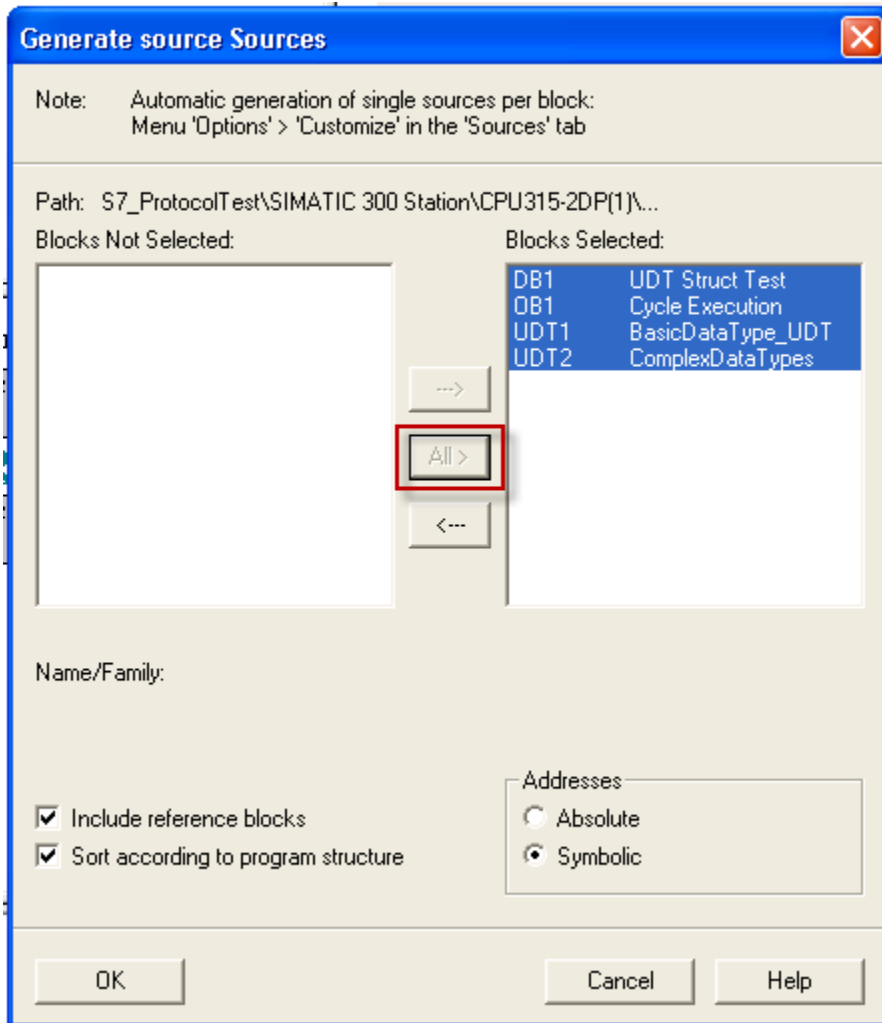


Figure 8

This will generate an object called "Sources" (the name given before) accessible from the "Sources" folder of the eStep7 project as shown in the next figure.

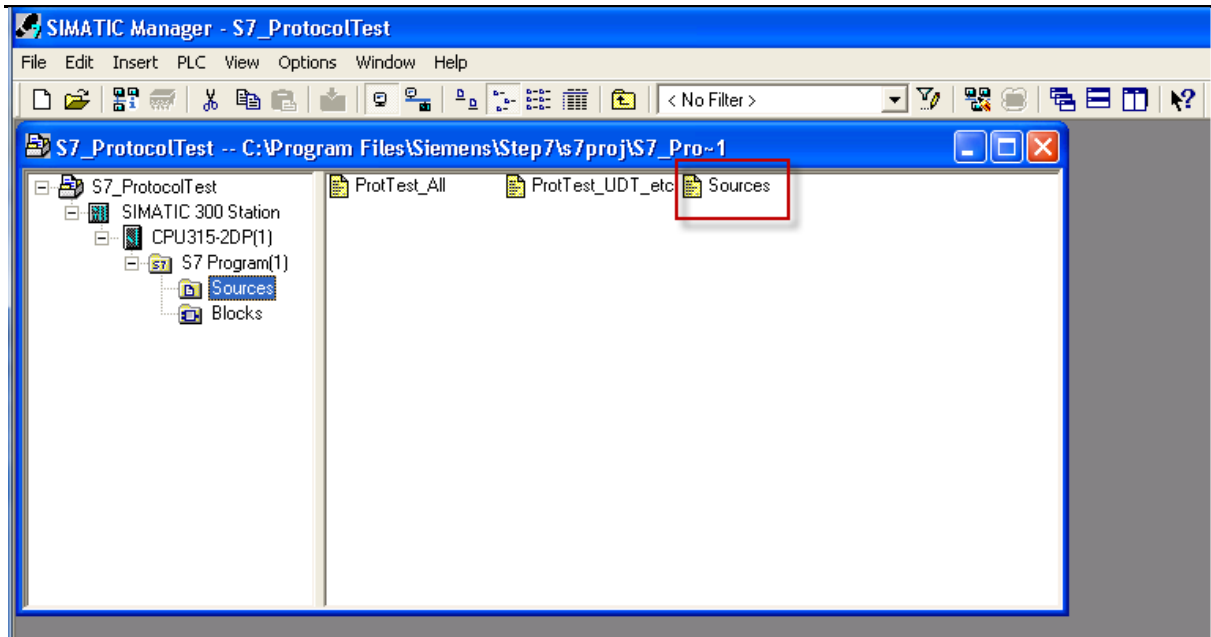


Figure 9

Right click on the object and select “Export Sources...”  
This will allow you to get the “.awl” file to be imported in the Studio Tag Editor.

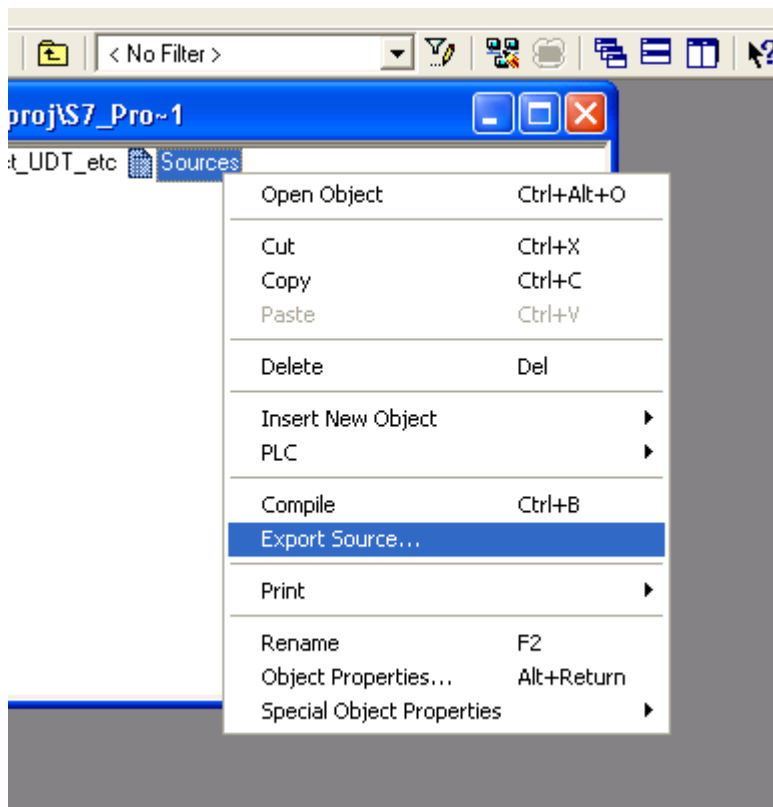


Figure 10

## PLC-specific Data Types

The Simatic Time data type is handled with a special data conversion.

Assuming you have a certain memory location in the PLC which contains values coded as S5Time, you need to apply to the tag the conversion called "S5Timer(BIN)" as shown in the following figure.

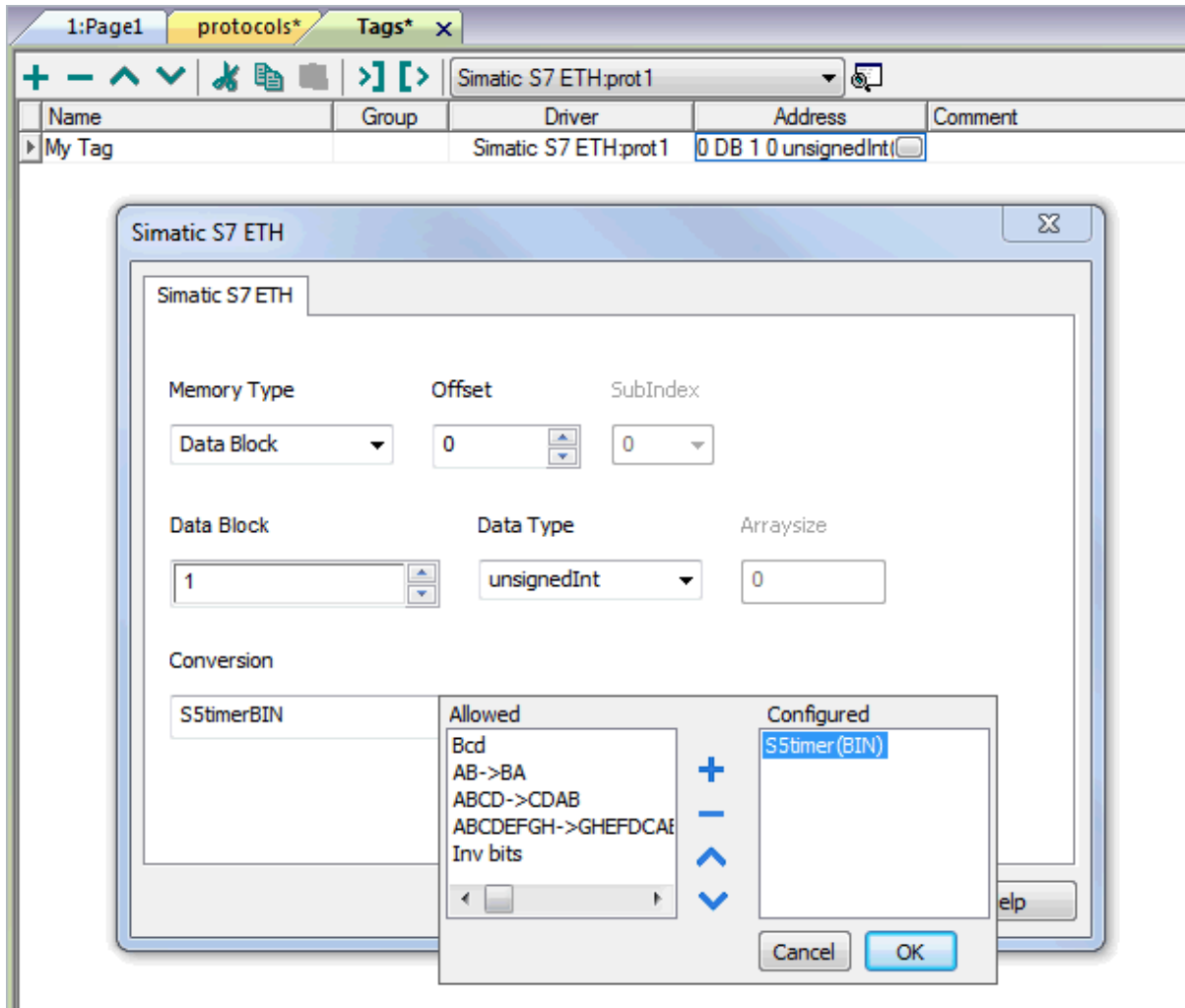


Figure 11

The proper visualization of the time information from this tag can be achieved using the widget dedicated to handle "time" data source as shown in the following figure.

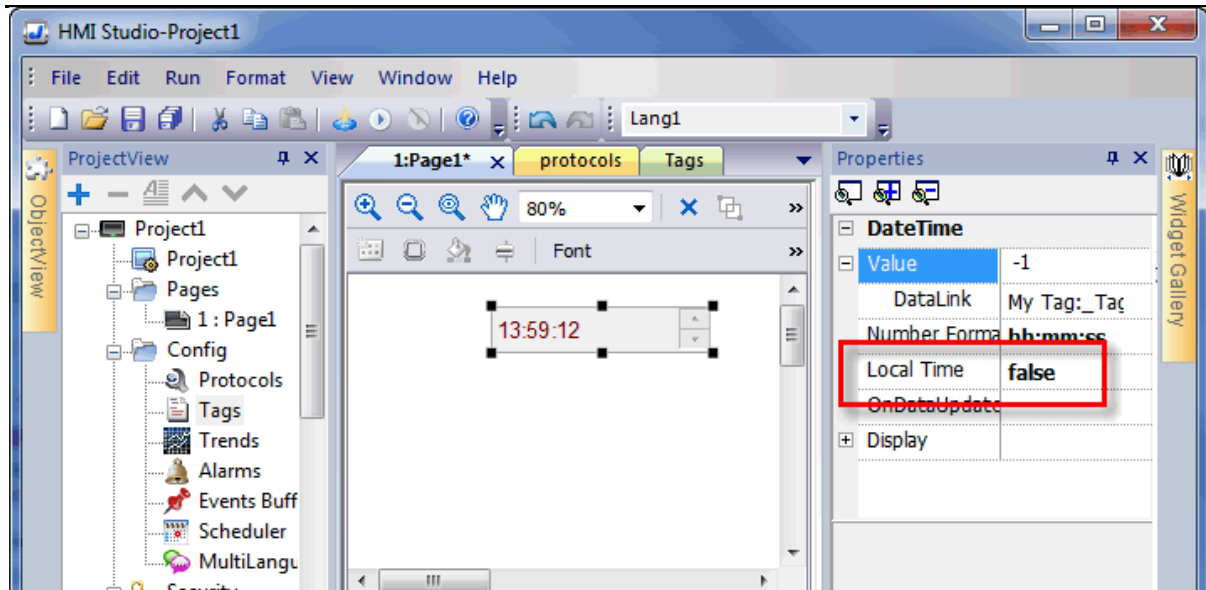


Figure 12

**Note:** In the “DateTime” widget it is important to set the “Local time” property to “false” in order to avoid the influence on the visualization of the panel RTC time zone and DST settings.

### Communication Status

The communication status can be displayed using the dedicated system variables. Please refer to the User Manual for further information about available system variables and their use.

The status codes supported for this communication driver are:

Error	Notes
NAK	Controller replies with a not acknowledge.
Timeout	Request is not replied within the specified timeout period; ensure the controller is connected and properly configured for network access
Invalid response	The panel did receive from the controller a response, but its format or its contents or its length is not as expected; ensure the data programmed in the project are consistent with the controller resources.
General Error	Error cannot be identified; should never be reported; contact technical support