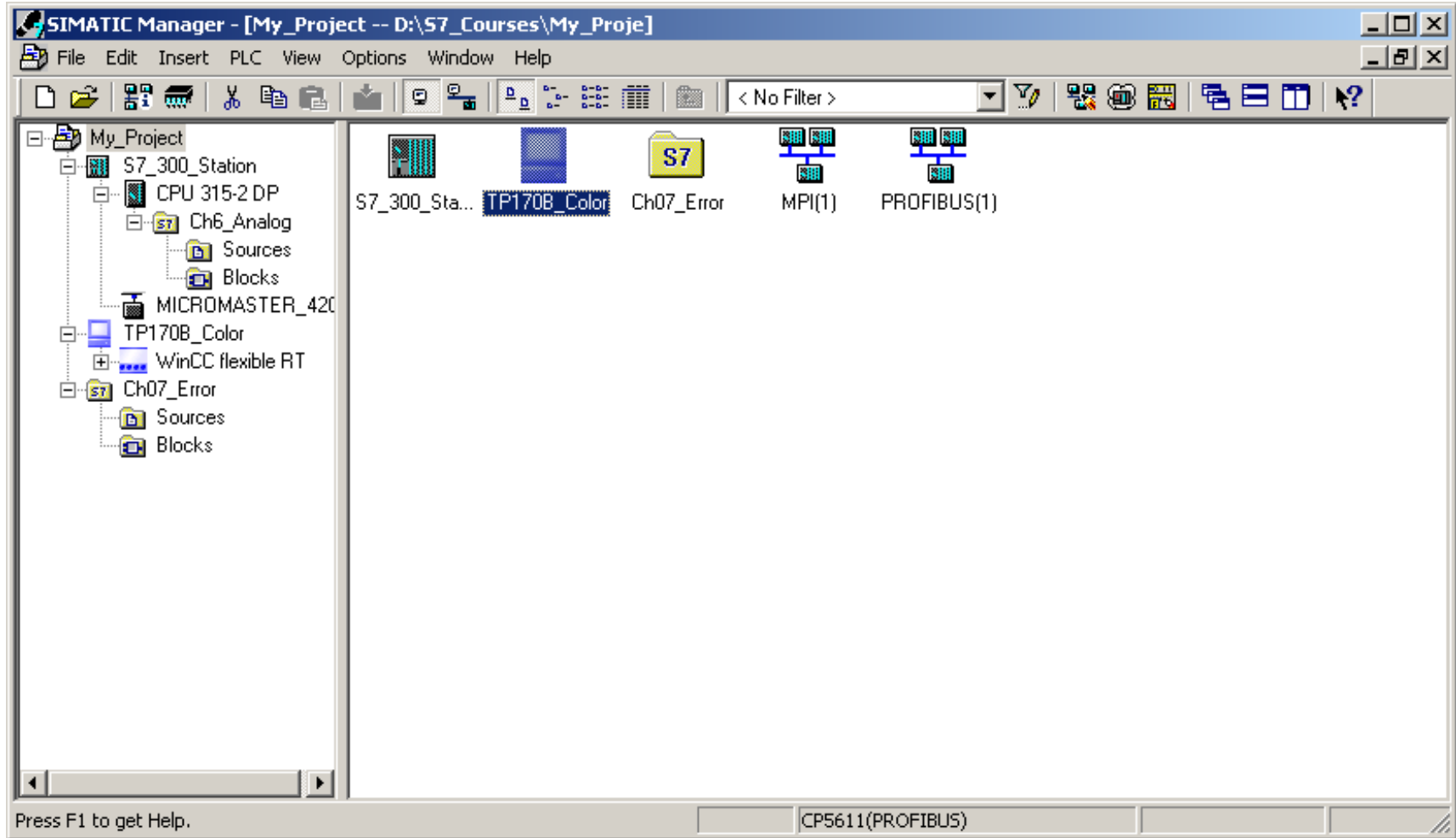


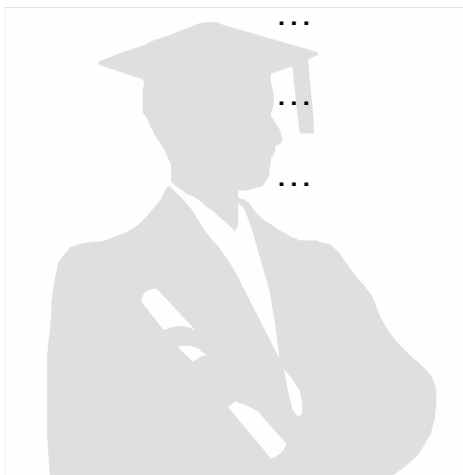
# The SIMATIC Manager



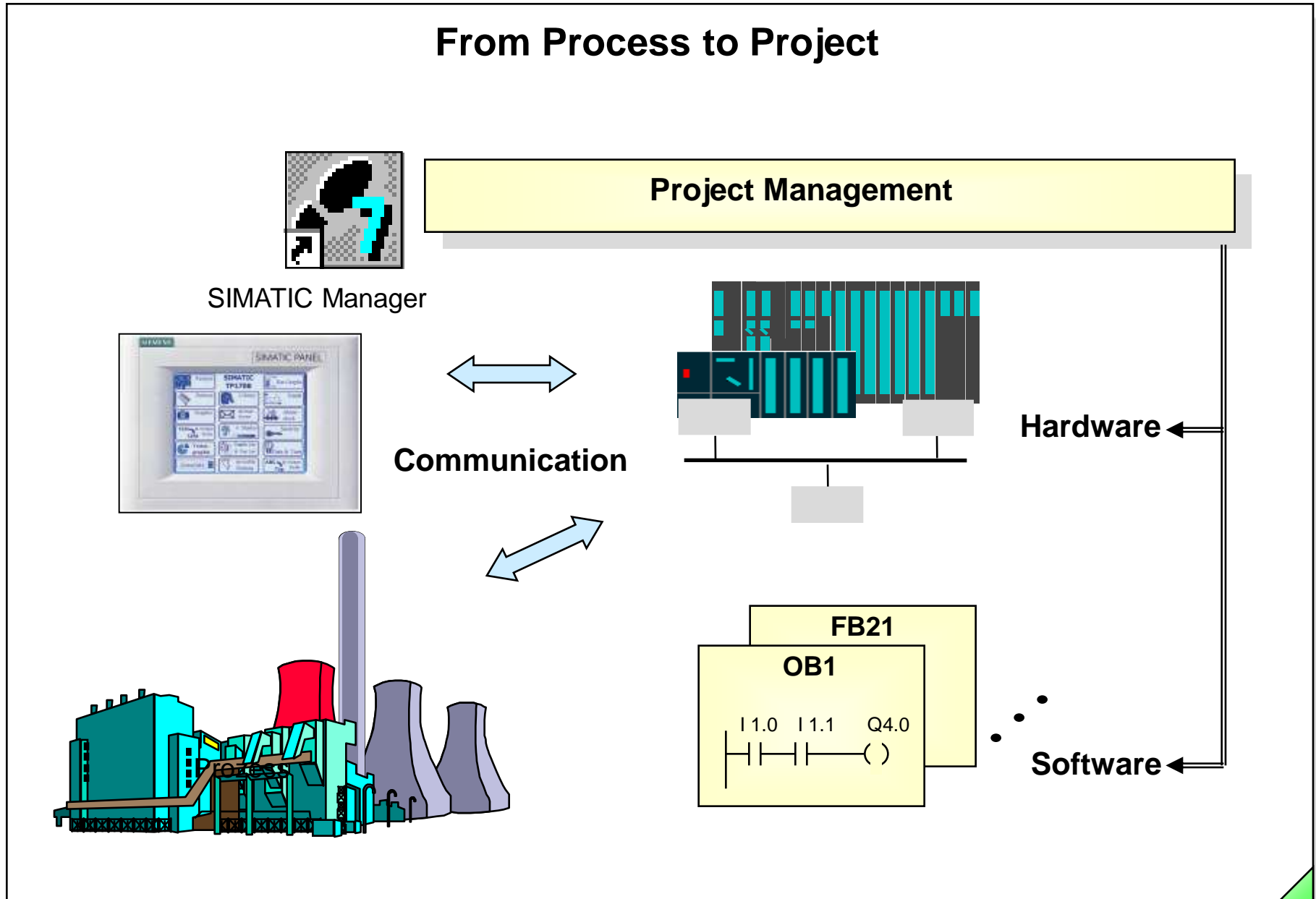
# Objectives

## Upon completion of the chapter the participant will ...

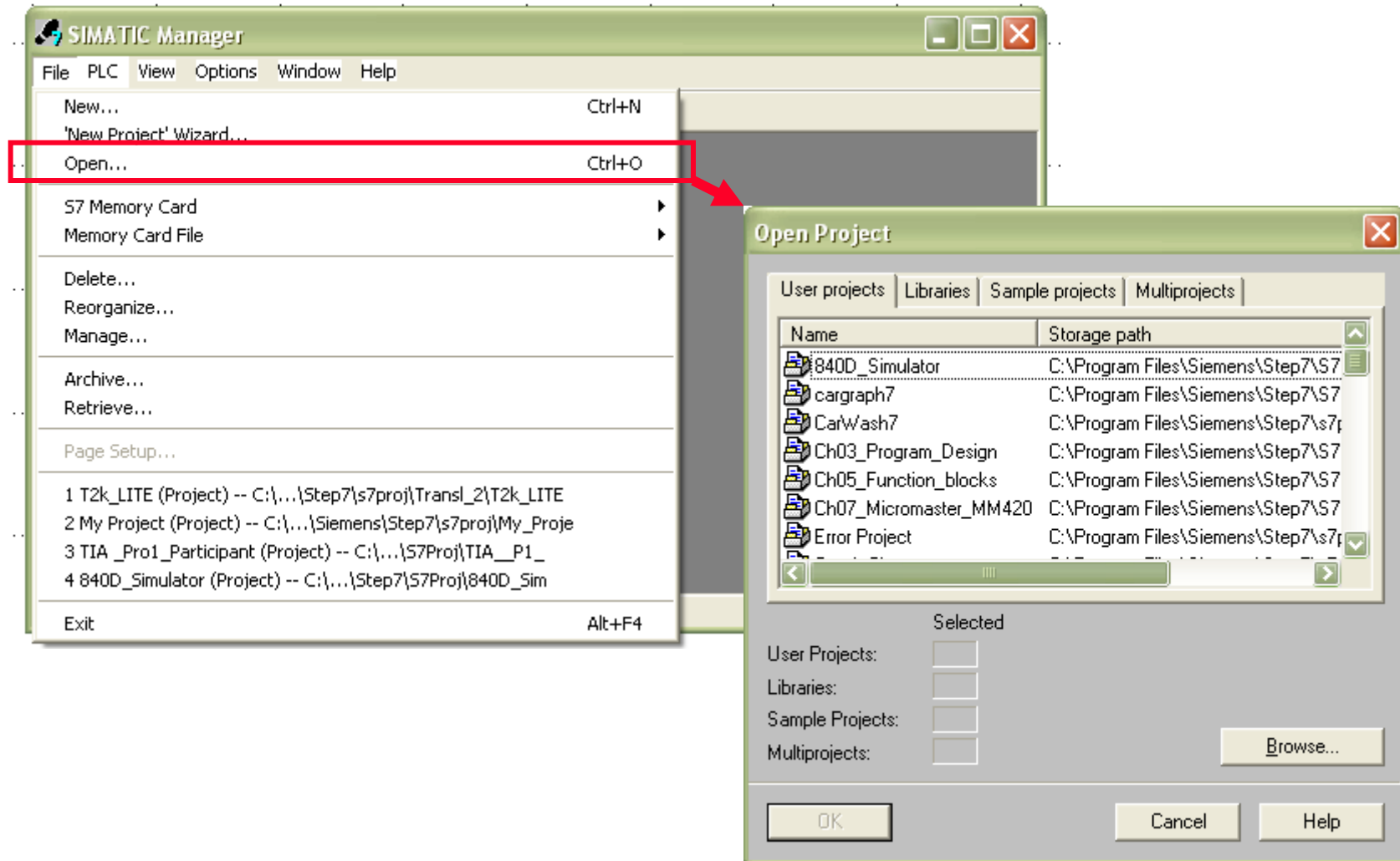
- ... understand the project structure in the SIMATIC Manager
- ... understand the function "accessible nodes"
- ... be familiar with the offline / online view in the SIMATIC Manager
- ... be familiar with the STEP7 Standard Libraries
- ... be familiar with the STEP7 help system
- ... be able to create and manage a project with the SIMATIC Manager
- ... be able to set the PG's interface
- ... be able to erase an MMC
- ... be able to perform an S7 CPU memory reset



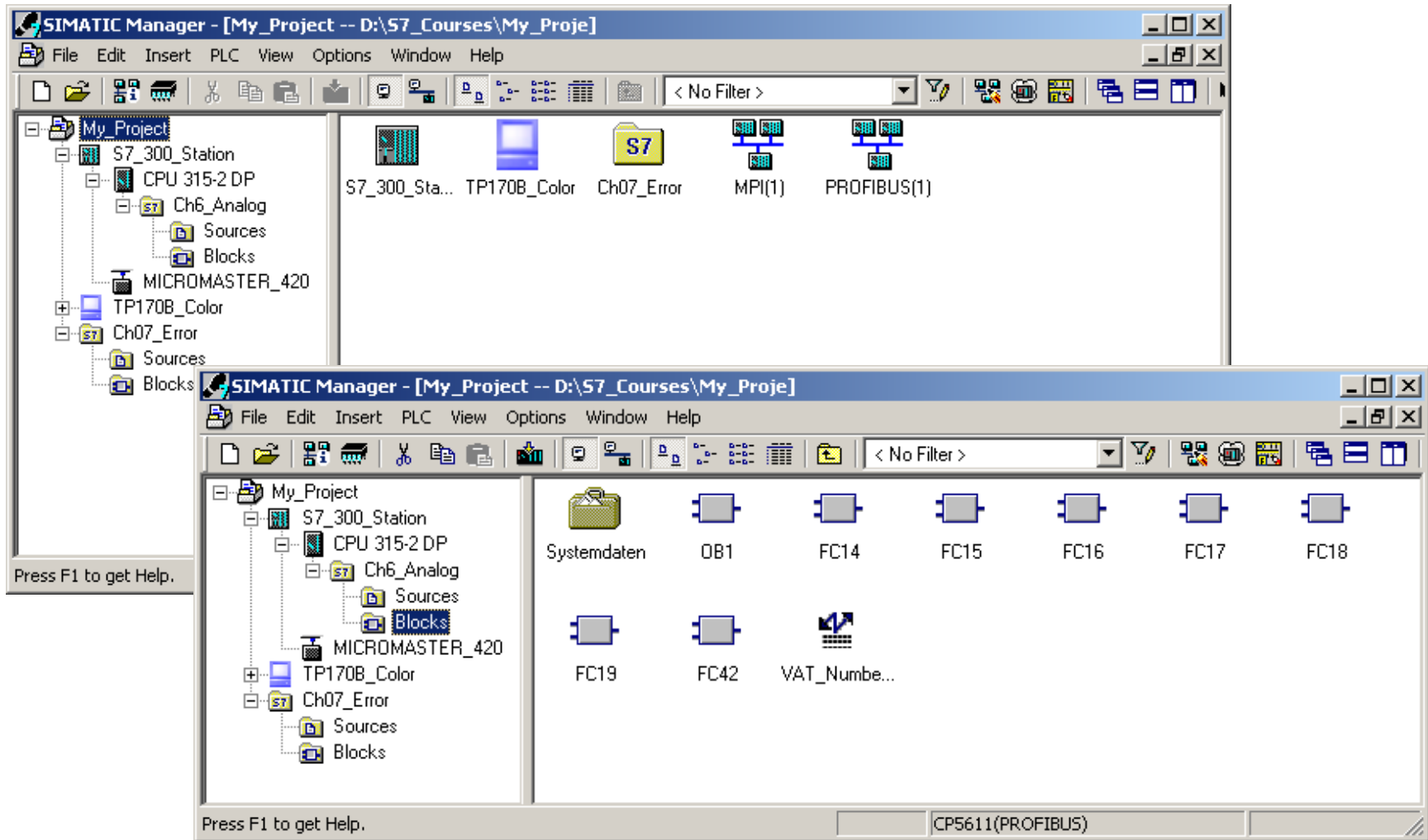
# From Process to Project



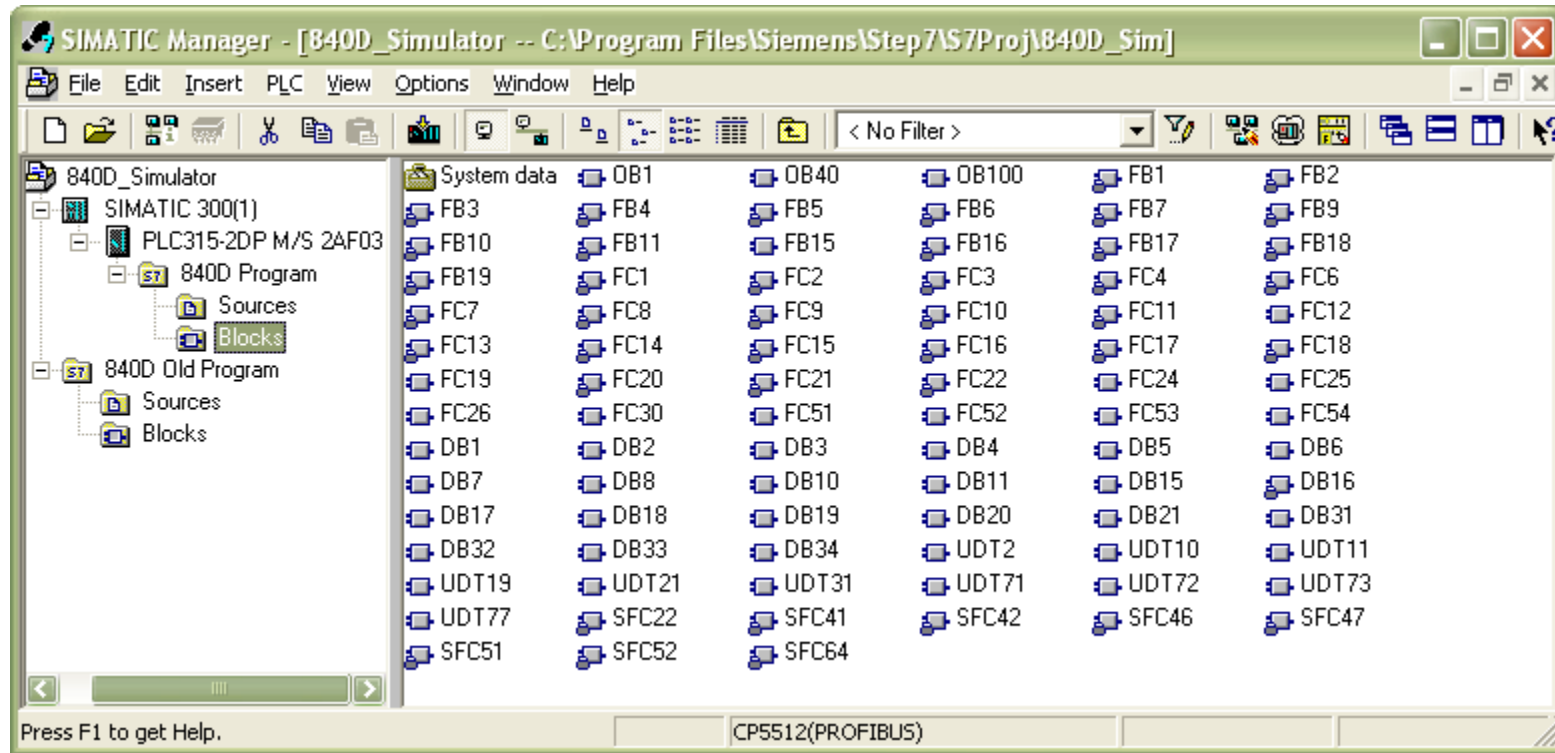
## Opening a Project, Deleting a Project, and Project Save As



# STEP 7 Project Structure

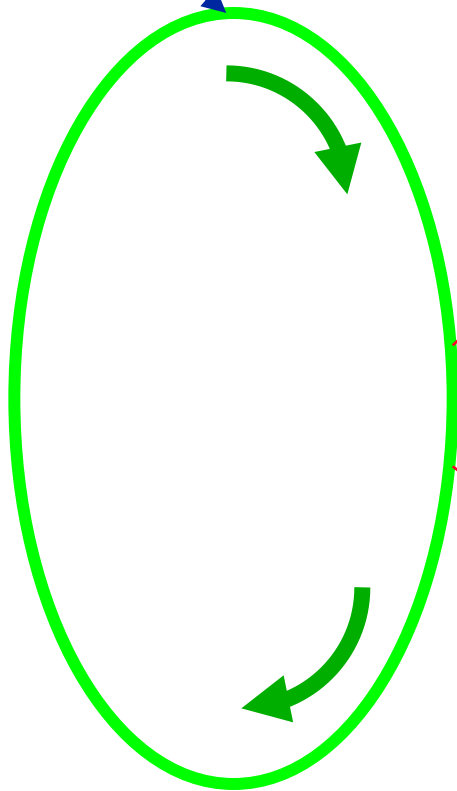


# S7 Program Blocks



## Cyclic Program Processing

Scan Cycle Timer  
Start/Reset



### User Program Execution

OB1

Network 1

```
A(
O      I      0.0
O      Q      4.1
)
A      I      0.1
=      Q      4.1
```

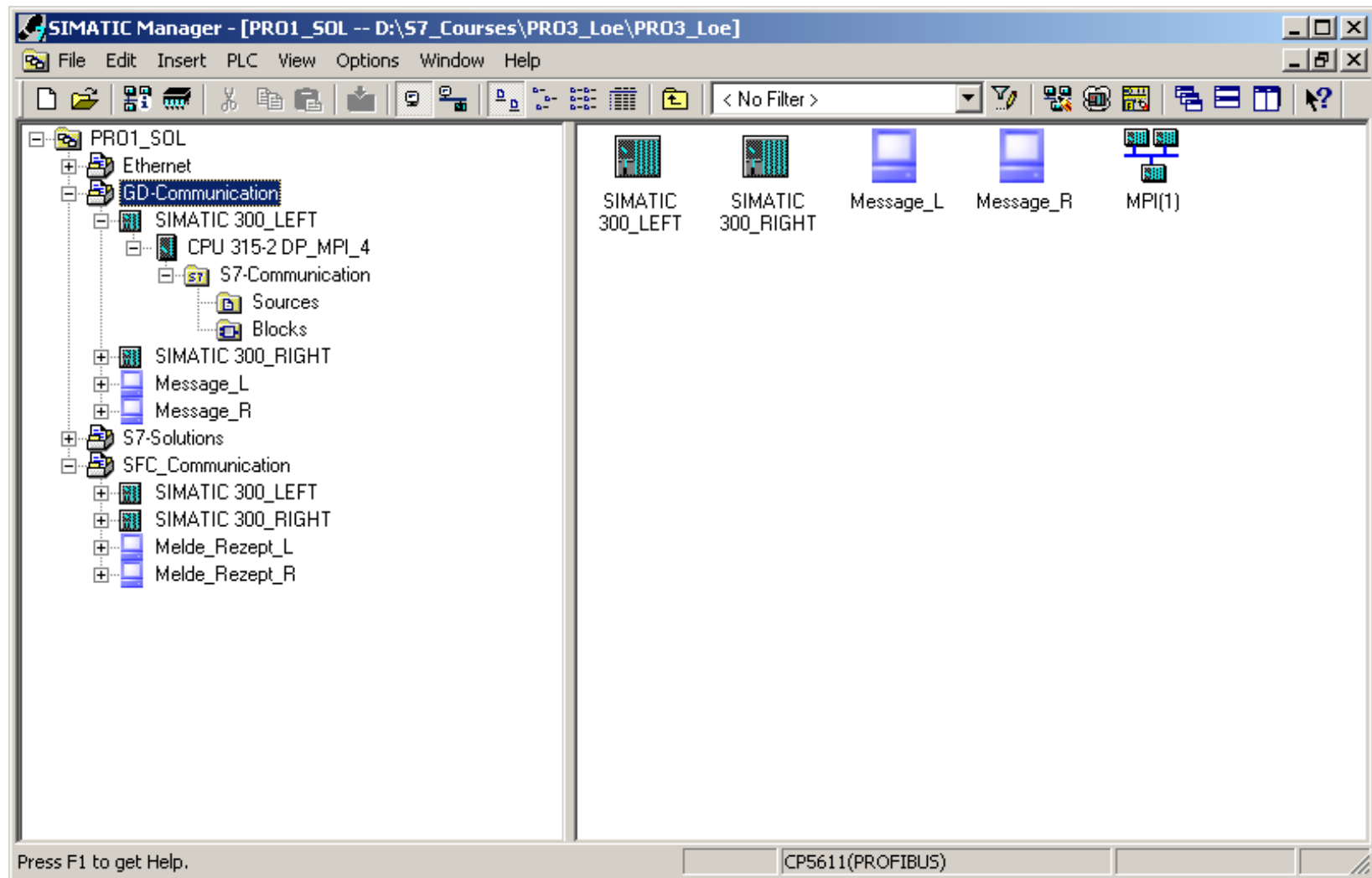
Network 2

```
Call   FC      1
NOP    0
```

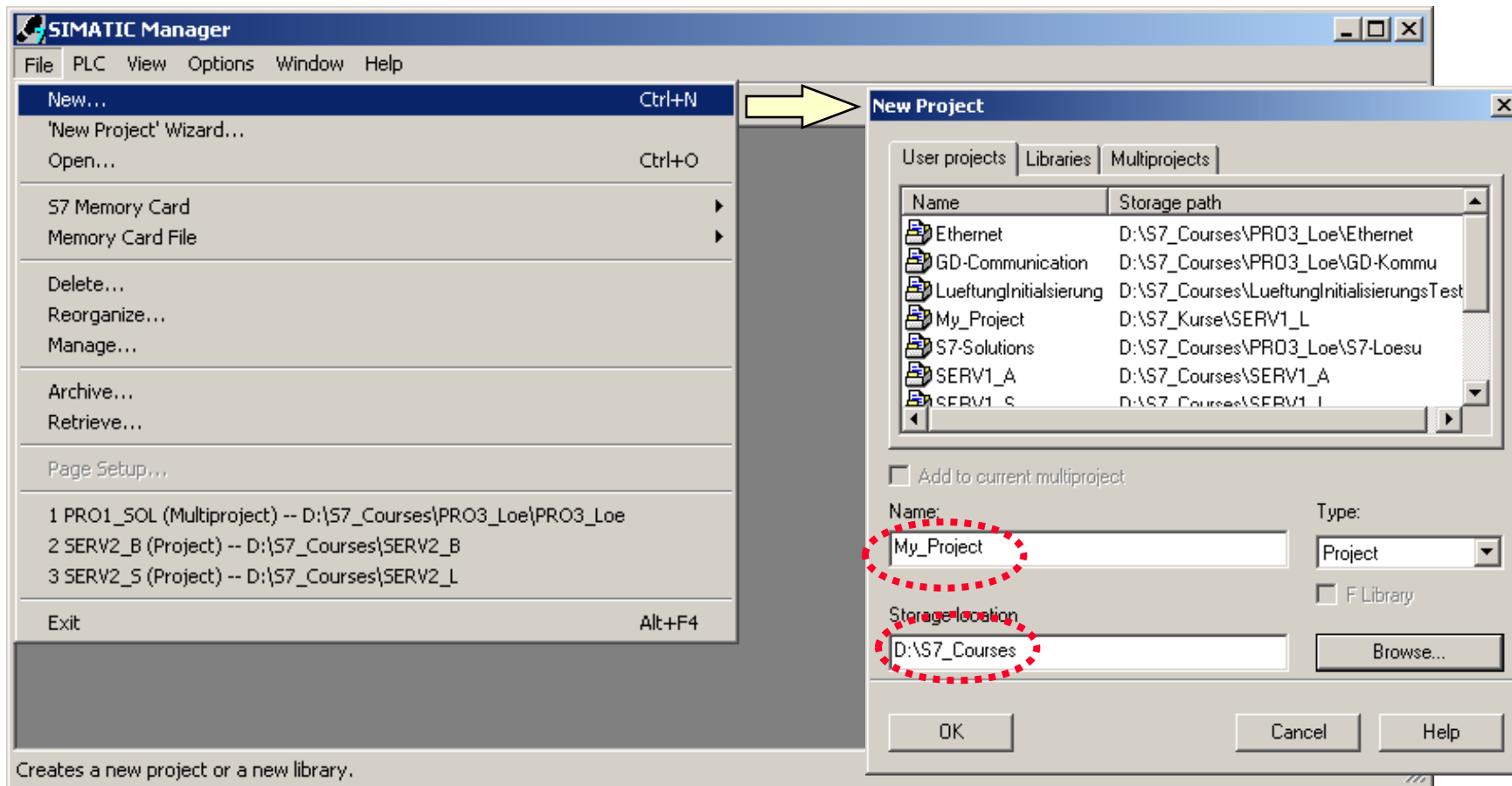
Network 3



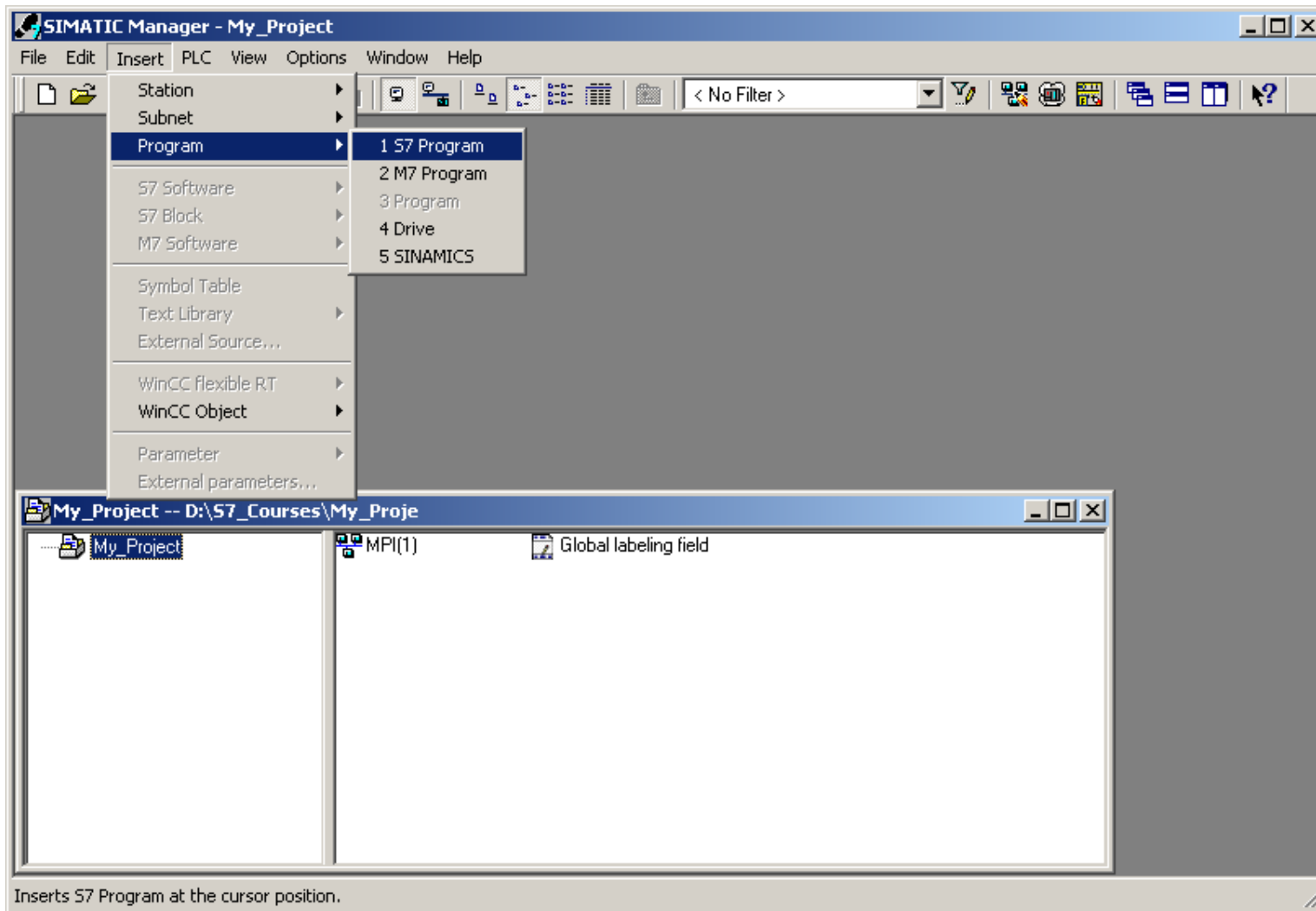
# Interesting Facts about Multiprojects



# Creating an S7 Project



# Inserting an S7 Program



# Standard Library

The screenshot shows the SIMATIC Manager interface. The 'Open...' menu item is highlighted in the 'File' menu. The 'Open Project' dialog box is open, showing a list of libraries. The 'Standard Library' is selected in the list. The 'Libraries' checkbox is checked, and the 'OK' button is highlighted. A yellow arrow points from the 'Open...' menu item to the 'Open Project' dialog box, and another yellow arrow points from the 'OK' button to the 'Standard Library' window.

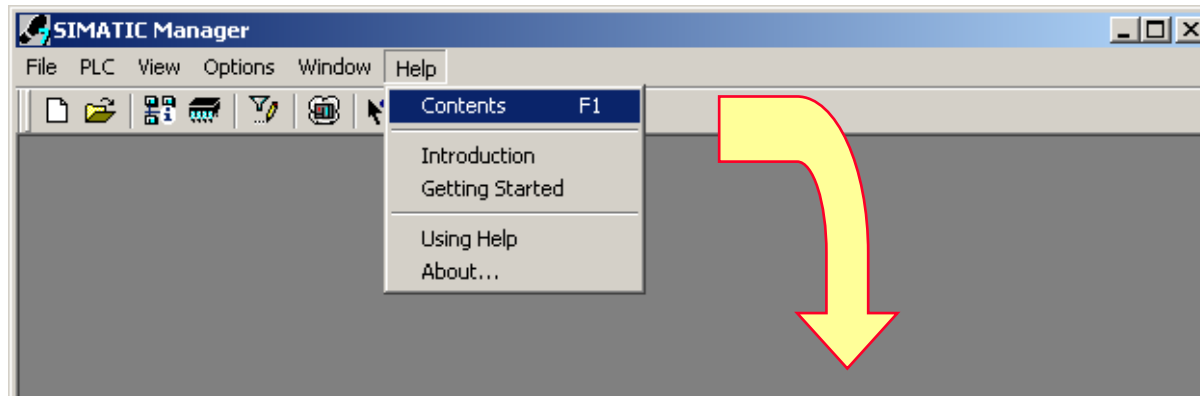
**Open Project Dialog Box:**

Name	Storage path
PDIAGLIB	C:\Program Files\Siemens\Step7\S7lit
PROFINET System-Library	C:\Program Files\Siemens\Step7\S7lit
Redundant IO (V1)	C:\Program Files\Siemens\Step7\S7lit
Redundant IO CGP	C:\Program Files\Siemens\Step7\S7lit
SIMATIC_NET_CP	C:\Program Files\Siemens\Step7\S7lit
<b>Standard Library</b>	C:\Program Files\Siemens\Step7\S7lit
stdlibs (V2)	C:\Program Files\Siemens\Step7\S7lit

**Standard Library -- C:\Program Files\Siemens\Step7\S7libs\stdlib30**

Standard Library	Communication Blocks	IEC Function Blocks
	Miscellaneous Blocks	Organization Blocks
	PID Control Blocks	S5-S7 Converting Blocks
	System Function Blocks	TI-S7 Converting Blocks

# STEP 7 Help System



Press Hot-key F1

## Project Object

The project represents the entirety of all the data and programs in an automation solution, and is located at the top of an object hierarchy.

### Position in the Project View

<pre> graph TD     Project --&gt; Station     Station --&gt; ProgrModule[Progr. Module]     ProgrModule --&gt; S7Program[S7 Program]     S7Program --&gt; SourceFiles[Source Files]     S7Program --&gt; Blocks             </pre>	<p><b>Project Object</b></p> <p><a href="#">Station Object</a></p> <p><a href="#">Programmable Module Object</a></p> <p><a href="#">S7/M7 Program Object</a></p> <p><a href="#">Source File Folder Object</a></p> <p><a href="#">Block Folder Object</a></p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Example

# Context Sensitive Help in STEP 7

Press F1 to get Help.

Press Hot-key F1

Object name	Symbolic name	Created in language	Size in t...	Type	Version (H
SFC1	READ_CLK	STL		System function	1.0
SFC2	SET_RTM	STL		System function	1.0
SFC3	CTRL_RTM	STL		System function	1.0
SFC4	READ_RTM	STL		System function	1.0
SFC5					
SFC6					
SFC7					
SFC9					
SFC10					
SFC11					
SFC12					
SFC13					
SFC14					
SFC15					
SFC17					
SFC18					

**Help on Standard and System Functions**

File Edit Bookmark Options Help

Contents Index Back Print << >> Help on STEP 7 Glossary

## Reading the Time with SFC 1 "READ\_CLK"

**Description**

With SFC 1 "READ\_CLK" (read system clock), you read the current date or current time of the system clock of the CPU.

Parameter	Declaration	Data Type	Memory Area	Description
RET_VAL	OUTPUT	INT	I, Q, M, D, L	If an error occurs during the execution of the function, the return value contains an error code.
CDT	OUTPUT	DT	D, L	The current date and current time are output at the CDT output.

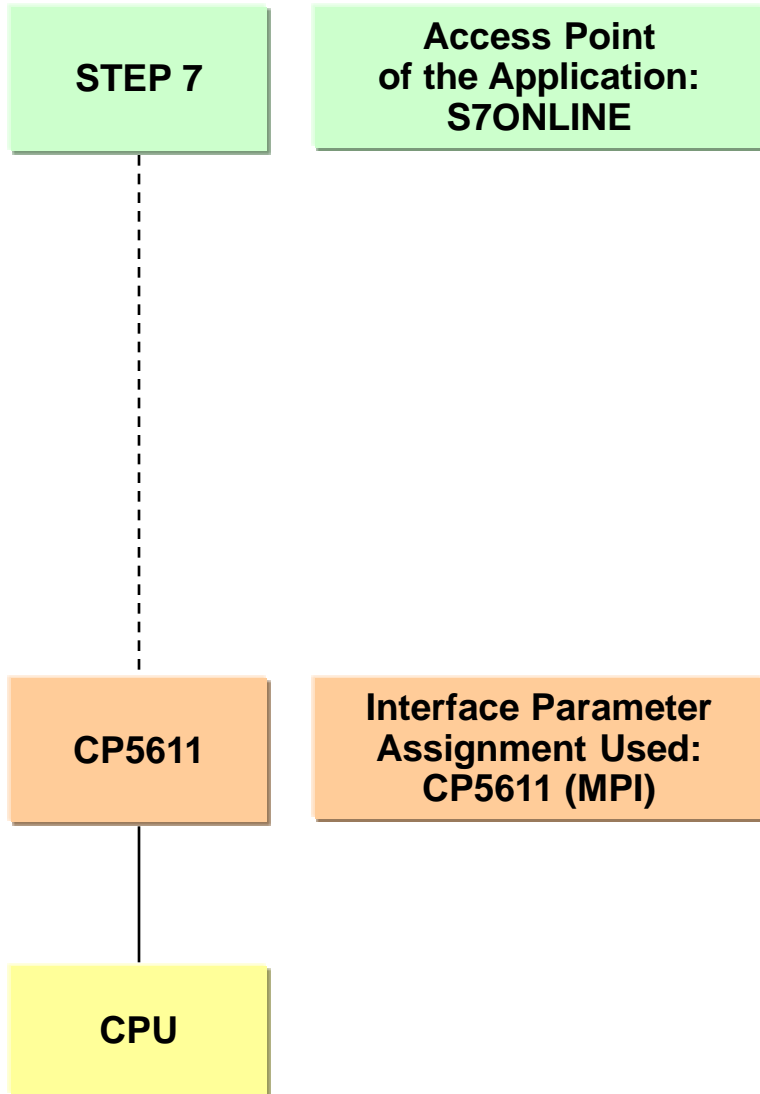
**Error Information**

See Chapter [Evaluating Errors with the Output Parameter RET\\_VAL](#)

**See also:**

[Example of an SFC 0 \(SET\\_CLK\) / SFC 1 \(READ\\_CLK\) - task](#)

# Setting the PG/PC Interface



**Set PG/PC Interface**

Access Path

Access Point of the Application:  
S7ONLINE (STEP 7) -> CP5611(MPI)

(Standard for STEP 7)

Interface Parameter Assignment Used:  
CP5611(MPI)

CP5611(MPI)  
CP5611(PPI)  
CP5611(PROFIBUS - DP Slave)  
CP5611(PROFIBUS) <Active>

Properties...  
Diagnostics...  
Copy...

(Parameter assignment for communications in MPI network)

Interfaces  
Add/Remove

OK

**Properties - CP5611(MPI)**

MPI

Station Parameters

PG/PC is the only master on the bus

Address: 0

Timeout: 1 s

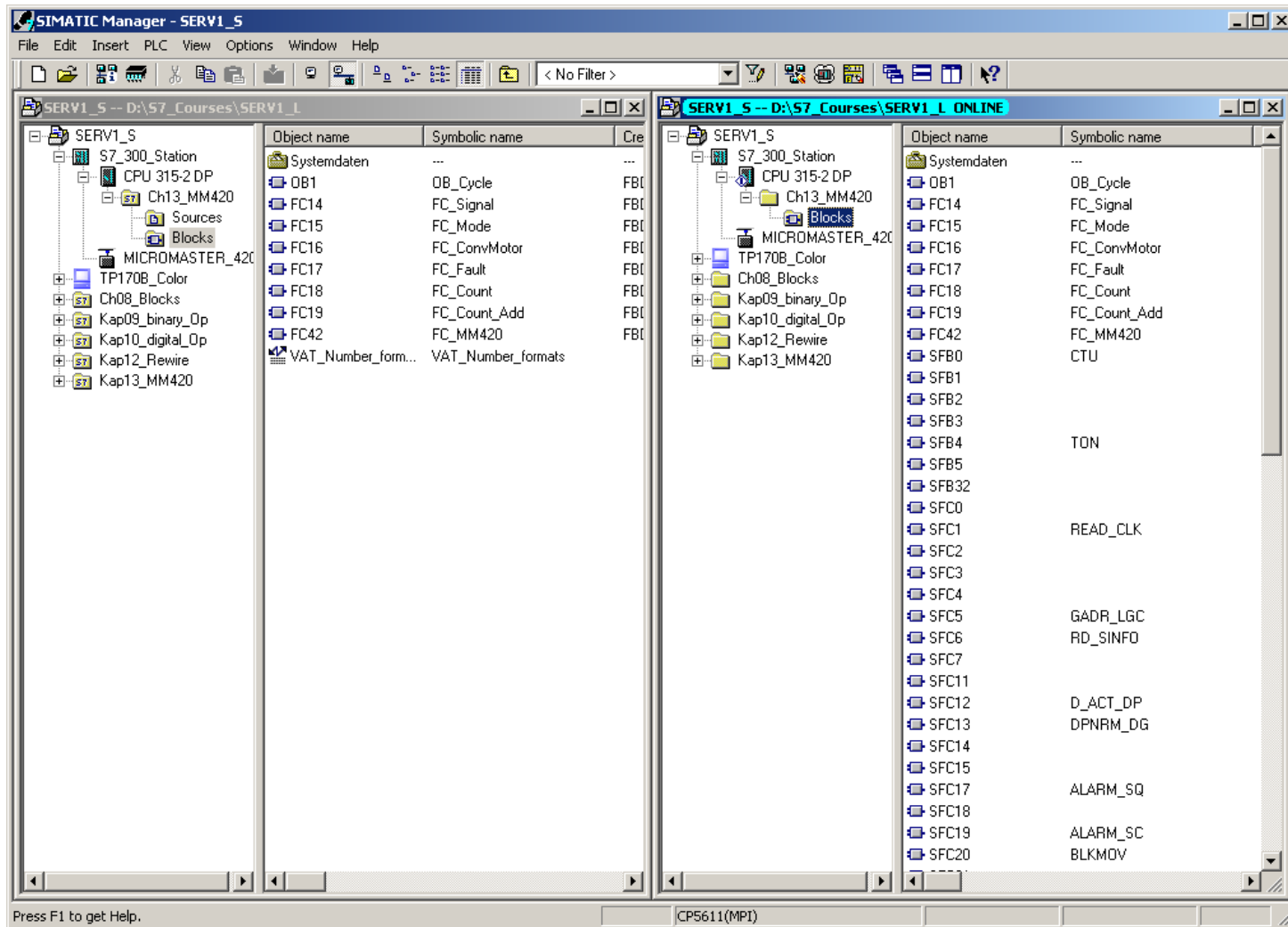
Network Parameters

Transmission Rate: 187.5 Kbps

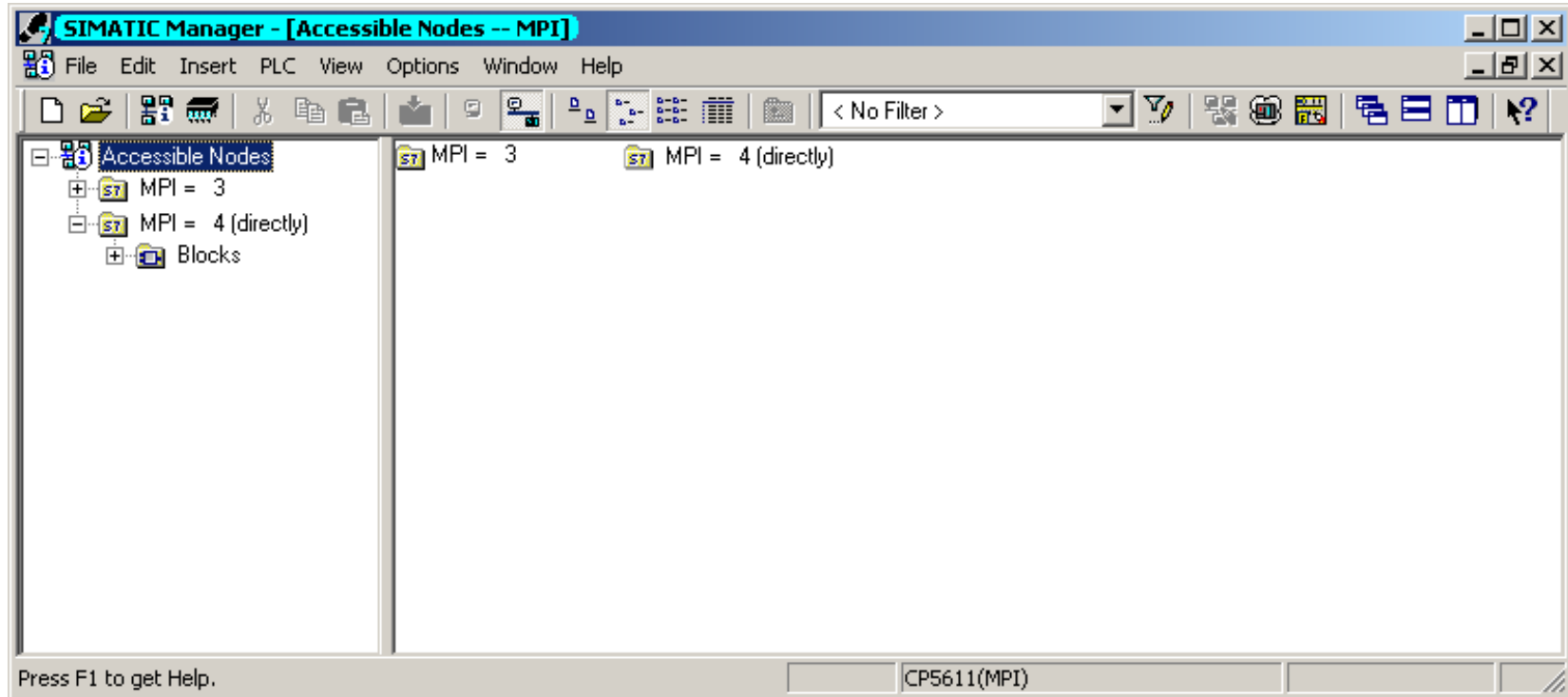
Highest Station Address: 31

OK Default Cancel Help

# Offline / Online View in the SIMATIC Manager



# Online Connection using "Accessible Nodes"



# Erasing Data Stored on the MMC

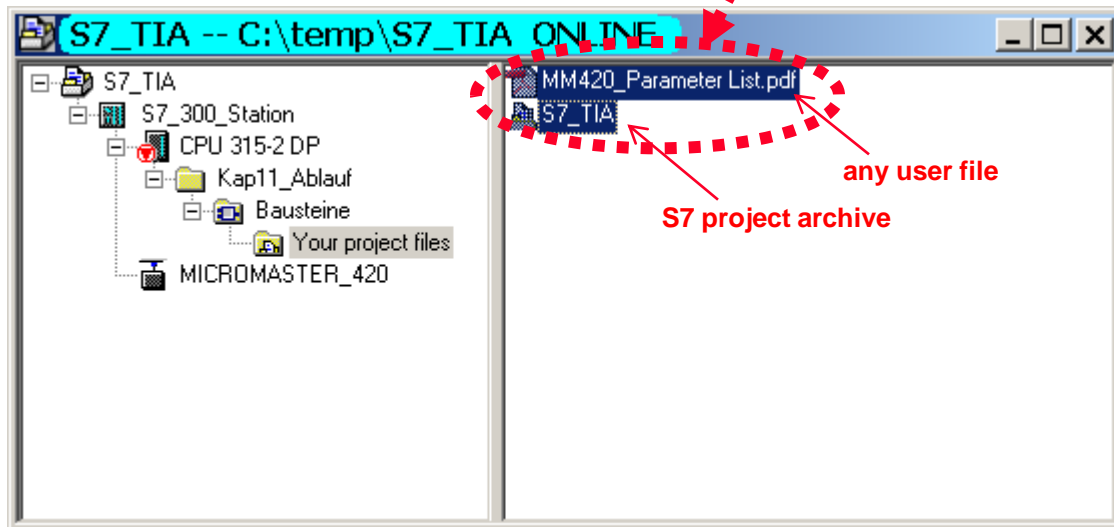
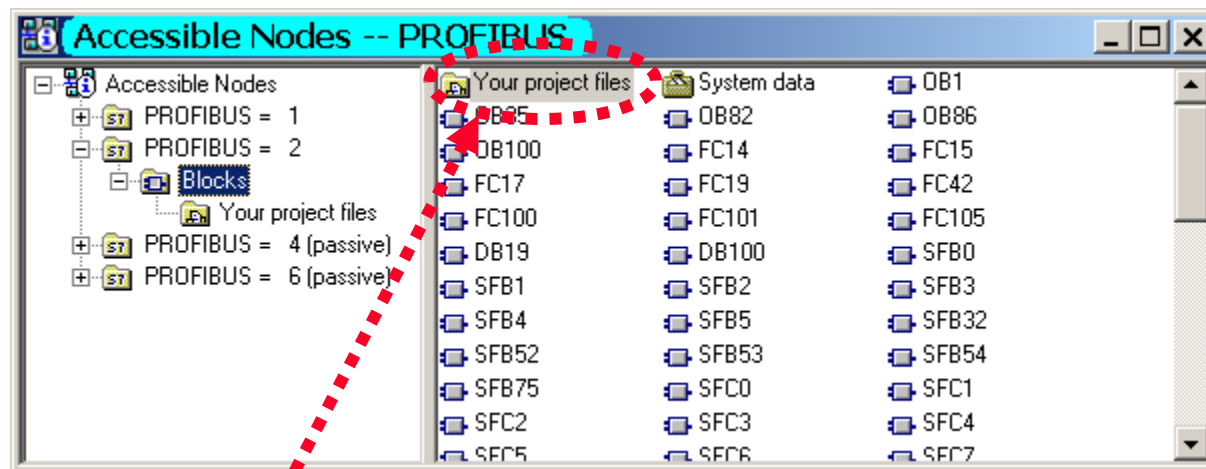
## Accessible Nodes:

Icon



or

Menu option "PLC → display accessible nodes"



S7 project archive

any user file

## Project – Online – View:

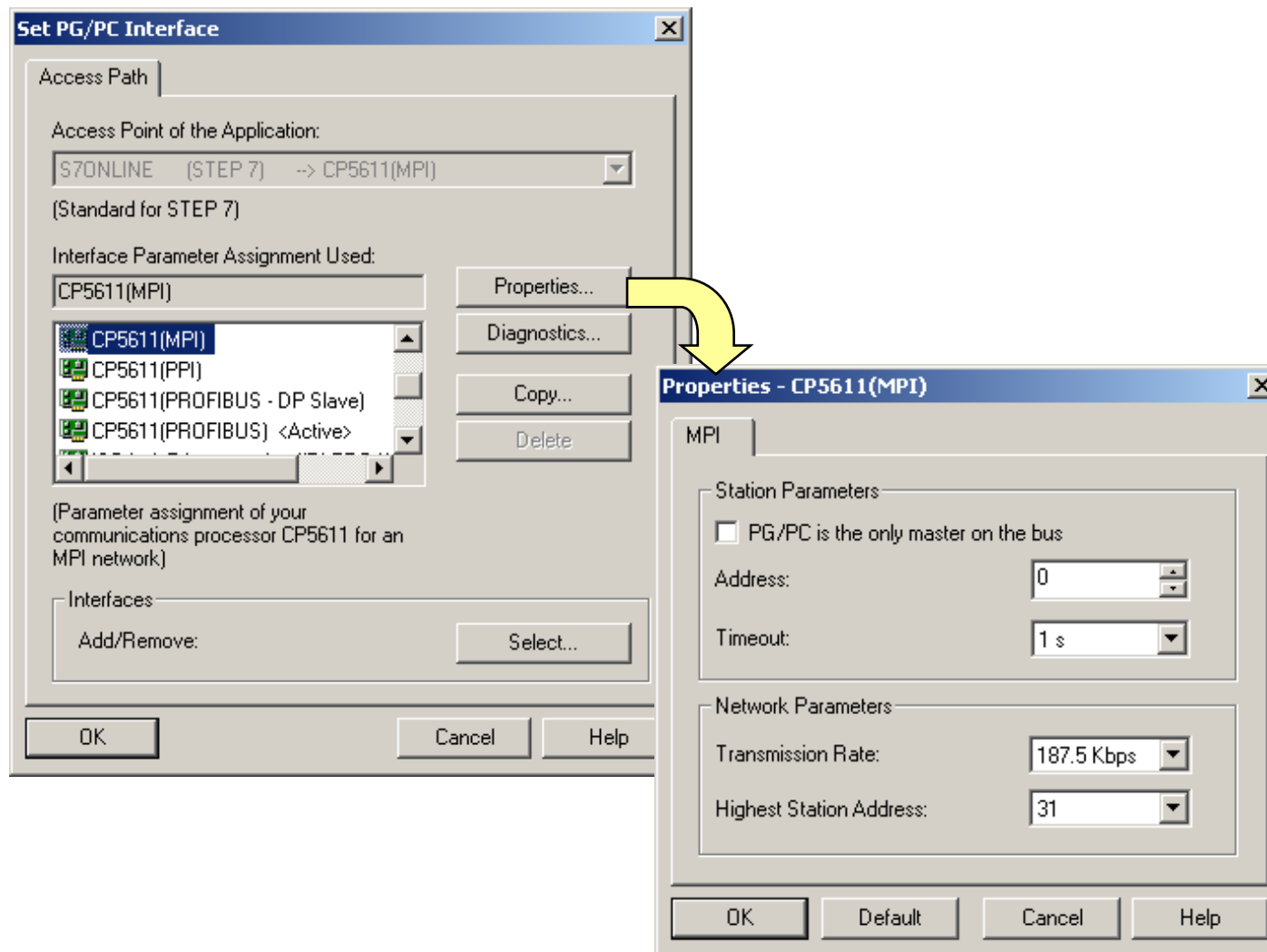
Icon



or

Menu option "View → online"

## Exercise 1: Setting the PG Interface to MPI



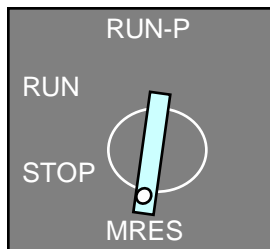
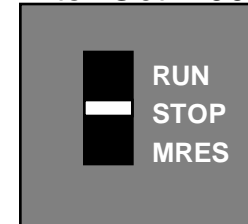
## Exercise 2: Performing a CPU Memory Reset and a Warm Restart

Until Oct. 2002

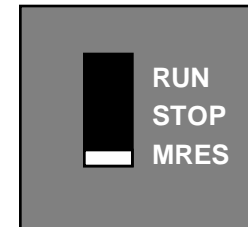


1. Set the mode selector switch to STOP

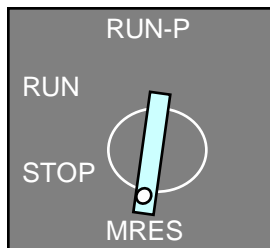
After Oct. 2002



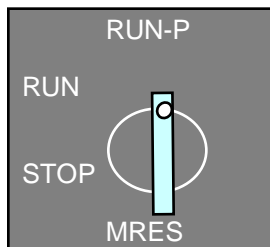
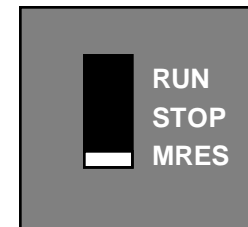
2. Hold (Press) the mode selector switch in the MRES position until the STOP LED has flashed twice slowly. Release the mode selector switch so that it returns to the STOP position.



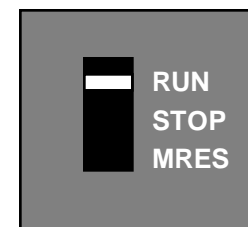
within 1 sec



3. Turn (press) the mode selector switch to the MRES position once more until the STOP LED begins to flash quickly. Release the mode selector switch so that it returns to the STOP position.



4. Set the mode selector switch to the RUN-P (RUN) position. (A warm restart is carried out in the transition from STOP to RUN/RUN-P)



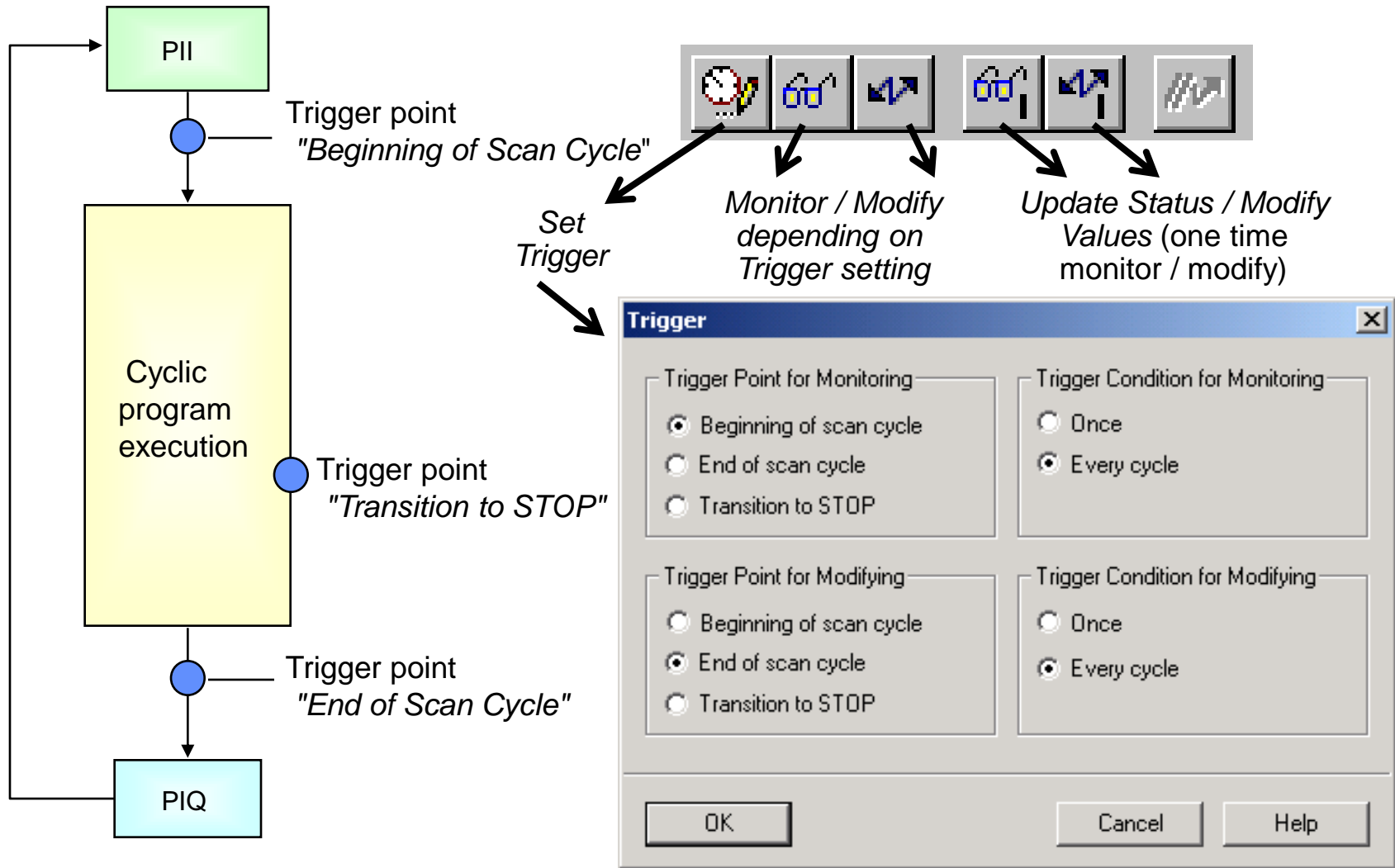
# Calling the "Monitor/Modify Variables" Tool

The screenshot illustrates the process of opening the 'Monitor/Modify Variables' tool in SIMATIC Manager. The main window shows the LAD editor for FC18, with the 'Monitor/Modify Variables' option highlighted in the 'PLC' menu. A yellow arrow points from this menu item to the 'Var - [Variable table1 ONLINE]' window. This window displays a table of variables with their addresses, symbols, comments, display formats, and status values.

Address	Symbol	Symbol comment	Display format	Status value
1 Q 4.2	"L_MAN"	Manual Mode of Operation Light	BOOL	
2 Q 4.3	"L_AUTO"	Automatic Mode of Operation Light	BOOL	
3 I 0.2	"T_Jog_RT"	Jog Conveyor Right, Momentary Contact	BOOL	
4 I 0.3	"T_Jog_LT"	Jog Conveyor Left, Momentary Contact	BOOL	
5 Q 8.5	"K_RT"	Run Conveyor Right	BOOL	
6 Q 8.6	"K_LT"	Run Conveyor Left	BOOL	
7 IW 2	"IW_BCD"	BCD Push Buttons - Input Word	HEX	

At the bottom of the variable table window, the status is shown as 'RUN' in a green bar, with 'Abs < 5.2' next to it.

# Establishing Trigger Points for "Monitor/Modify Variable"

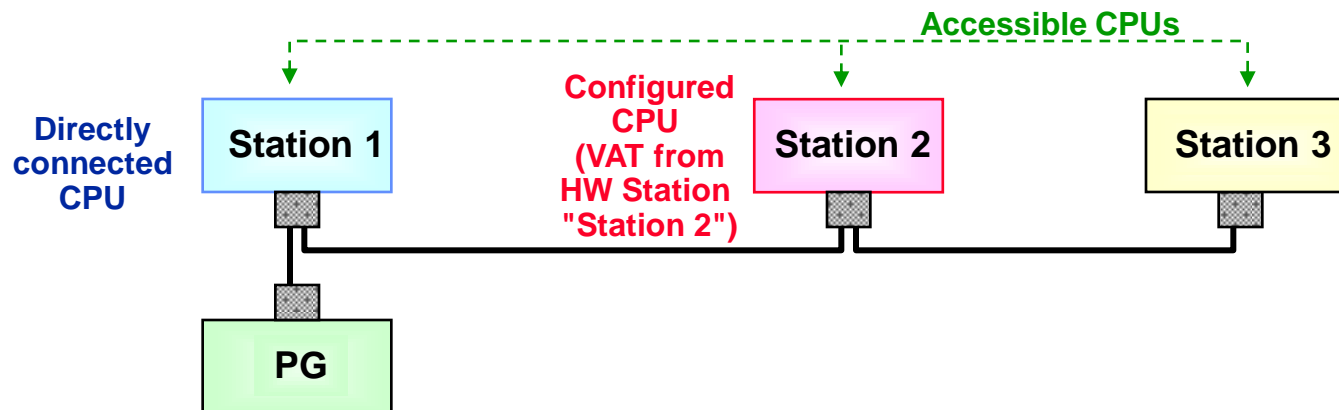


# Opening a Variable Table and Establishing a Connection to the CPU

The screenshot shows the SIMATIC Manager interface. The main window displays a project tree on the left with 'My\_Project' expanded to 'My\_Station' and 'CPU 314'. The central pane shows a list of system data including OB1, OB100, FC1, FC16, FC20, DB2, I/O Conveyor, OB35, OB121, FC4, FC17, FC99, DB3, FB20, FC15, FC18, FC105, and DP18. A 'Var - [VAT1 -- My\_Project\My\_Station\CPU 314\My\_Program ONLINE]' window is open, showing a table with columns 'Address' and 'Symbol'. The table contains the following data:

Address	Symbol
Q 4.2	"L_MAN"
Q 4.3	"L_AUTO"
I 0.2	"T_Jog_L"
I 0.3	"T_Jog_R"
Q 8.5	"K_RT"
Q 8.6	"K_LT"
IW 2	"IW_BCD"

The 'Var' window also shows a 'Connect to' menu with options: 'Configured CPU' (Ctrl+L), 'Direct CPU' (Ctrl+G), 'Accessible CPU...' (Ctrl+E), 'CPU Messages...', 'Module Information...' (Ctrl+D), 'Operating Mode...' (Ctrl+I), 'Run Conveyor Right', 'Run Conveyor Left', and 'BCD Push Buttons - Input Word'. The status bar at the bottom indicates 'RUN' mode with 'Abs < 5.2'.



## Exercise 3: Creating a Project

The screenshot displays the SIMATIC Manager interface for a project named 'My\_Project' located at 'D:\S7\_Courses\My\_Proje'. The interface includes a menu bar (File, Edit, Insert, PLC, View, Options, Window, Help), a toolbar, and a project tree on the left. The project tree shows 'My\_Project' containing 'My\_Program', 'Sources', and 'Blocks'. The main area displays a table of objects:

Object name	Symbolic name	Type	Size	Author
S7 My_Program	---	S7 Program	---	---
MPI(1)	---	MPI	2920	---

At the bottom of the window, there is a status bar with the text 'Press F1 to get Help.' and a dropdown menu showing 'CP5611(MPI)'.

# If You Want to Know More



# SIMATIC Manager Customizing Options

