SIEMENS

SIMATIC

Windows Automation Center WinAC Basis Overview

Manual

C79000–G7076–C219–03

Edition: 3

Safety Guidelines

This manual contains notices which you should observe to ensure your own personal safety, as well as to protect the product and connected equipment. These notices are highlighted in the manual by a warning triangle and are marked as follows according to the level of danger:

Danger

indicates that death, severe personal injury or substantial property damage **will** result if proper precautions are not taken.

Warning

indicates that death, severe personal injury or substantial property damage **can** result if proper precautions are not taken.

Caution

indicates that minor personal injury or property damage can result if proper precautions are not taken.

Note

draws your attention to particularly important information on the product, handling the product, or to a particular part of the documentation.

Qualified Personnel

Only **qualified personnel** should be allowed to install and work on this equipment. Qualified persons are defined as persons who are authorized to commission, to ground, and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

Correct Usage

Note the following:

Warning

This device and its components may only be used for the applications described in the catalog or the technical descriptions, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens.

This product can only function correctly and safely if it is transported, stored, set up, and installed correctly, and operated and maintained as recommended.

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Preface

The Windows Automation Center (WinAC) Basis runs on your personal computer (PC) and provides PC-based control of your process. The WinAC Basis software consists of the following products:

- Windows Logic Controller (WinLC)
- Computing software
- Tool Manager

Note

For WinAC, the term “control engine” applies to a processor or program that manages and manipulates data which is used to control a process or machine. The control engine can be can be either software or hardware.

WinAC Basis provides a Windows Logic Controller (WinLC) as its control engine, and WinAC Pro uses a slot PLC such as CPU 416-2 DP ISA as its control engine. The ActiveX controls provided by SIMATIC Computing communicate with these control engines, as well as other SIMATIC controllers.

Audience

This manual is intended for engineers, programmers, and maintenance personnel who have a general knowledge of programmable logic controllers.

Scope of the Manual

This manual describes the features and the operation of version 3.0 of the WinAC Basis software.

How to Use This Manual

This manual provides the following information:

- Overview of the components of the WinAC Basis package
- Installing and authorizing the WinAC software
- Getting started with the WinAC software
- Using the Tool Manager

This manual also provides the following reference material:

- WinAC and DCOM (Microsoft’s Distributed Component Object Model)
- OPC (OLE for Process Control) connections

Other Manuals

For additional information, refer to the following manuals:

Title	Content
Windows Logic Controller (WinLC) User Manual	This manual provides basic information about the performance characteristics and operation of the WinLC controller.
Computing User Manual	This manual describes the SIMATIC ActiveX controls of the Computing software.
OPC Server Interface Manual	This manual describes the browsable OPC server interface provided with the Computing software.

You can also find information about the components of the WinAC in the online help for the software.

Additional Assistance

If you have any questions not answered in this or one of the other STEP 7 manuals, if you need information on ordering additional documentation or equipment, or if you need information on training, please contact your Siemens distributor or sales office.

To contact Customer Service for Siemens in North America:

- Telephone:
  - (609) 734–6500
  - (609) 734–3530
- E–mail:
  - ISBU.Hotline@sea.siemens.com
  - simatic.hotline@sea.siemens.com
- Internet:
  - http://www.aut.sea.siemens.com/winac/
  - http://www.aut.sea.siemens.com/simatic/support/index.htm
  - http://www.ad.siemens.de/support/html_76/index.shtml
  - http://www.sea.siemens.com/industrialsoftware

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- Fax: ++49 (0) 911 895 7001
- E–mail: simatic.support@nbgm.siemens.de
- Internet: http://www.ad.siemens.de/simatic–cs

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Product Overview

1

Chapter Overview

The Windows Automation Center (WinAC) Basis package consists of the following products:

- The Windows Logic Controller (WinLC) software allows you to use your personal computer like a programmable logic controller (PLC) for running your process.

  WinLC is a PC-based logic controller in the family of S7 controllers. This controller is fully compatible with the automation tools provided by the SIMATIC family of products, such as the STEP 7 programming software and the Windows Control Center (WinCC).

- The SIMATIC Computing software provides ActiveX controls, which you can use to create a tailored view into your process. Computing lets you use any mix of S7 and third-party ActiveX controls not only to view, but also to modify, process data.

- The TagFile Configurator creates tag files that allow you to use symbols for the memory locations being accessed in the control engine. Tag files also allow you to access data in several control engines at the same time.

In addition to these products, WinAC provides a configuration tool to quickly change language, support legacy applications, and set up OPC communications. It includes and a tool manager to provide quick access to software applications that you want to use with WinAC.

1.1 What's New in WinAC Version 3.0?

WinAC V.3 incorporates several new features:

- WinLC now communicates over PROFIBUS, Ethernet, or MPI networks.
- SIMATIC Computing now supports rack/slot addressing for H1, MPI, and PROFIBUS networks. You can use rack/slot addressing in Computing and in the tagfile.
- SIMATIC Computing provides new unified user controls.
- You can purchase the CP card for your network separately. WinAC is able to support multiple card types.
- SIMATIC Computing is now available as a standalone package, separate from WinAC Basis and WinAC Pro.

1.2 WinLC controls your process...

WinLC provides a computer-based solution for your automation projects. WinLC connects a PC-based controller over a PROFIBUS–DP, Ethernet, or MPI network to the distributed (remote) I/O that connect to the process or automation project.

As shown in Figure 1-1, you can use the Computing software to provide access to the process data. You can also use the standard SIMATIC products with WinLC, such as STEP 7 and WinCC.

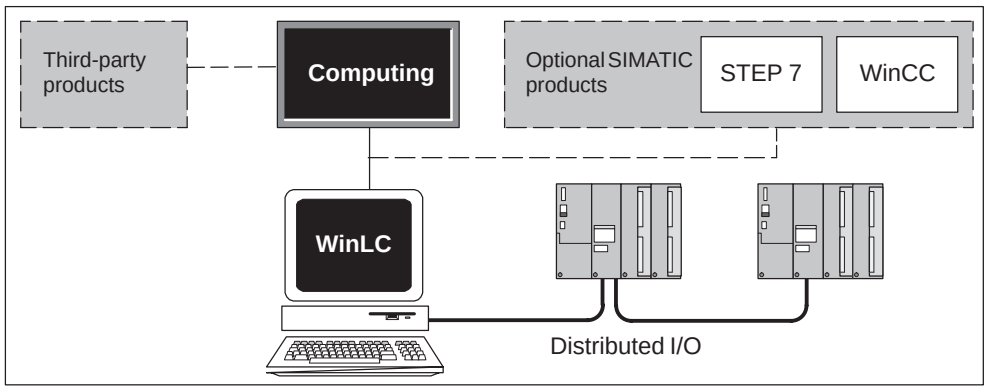

Figure 1-1 Components of WinAC Basis

The CPU panel (see Figure 1-2) provides the functions for changing the operating mode, for displaying the status of the controller, and for resetting the memory areas.

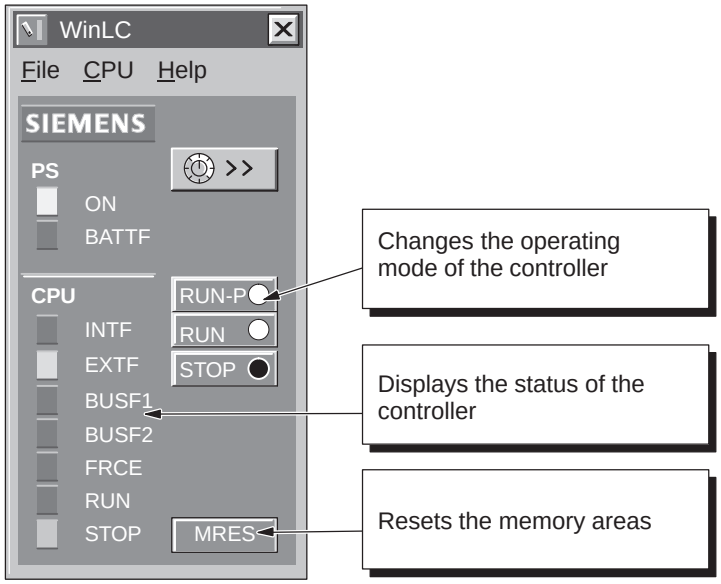

Figure 1-2 CPU Panel of WinLC

1.3 Computing provides access to the process data...

As shown in Figure 1-3, the Computing software allows you to access WinLC in order to monitor and modify the process data.

Computing provides several methods for accessing the process data:

- You can use standard ActiveX controls (OCX) that access the process data.
- You can use DCOM (Microsoft's Distributed Component Object Model) to integrate distributed applications over a network. A distributed application consists of multiple processes or different computers that cooperate to accomplish a single task. (See Section 1.6.)
- You can use the OPC (OLE for Process Control) server, which allows any OPC client application to access data in the control device. (See Section 1.7.)

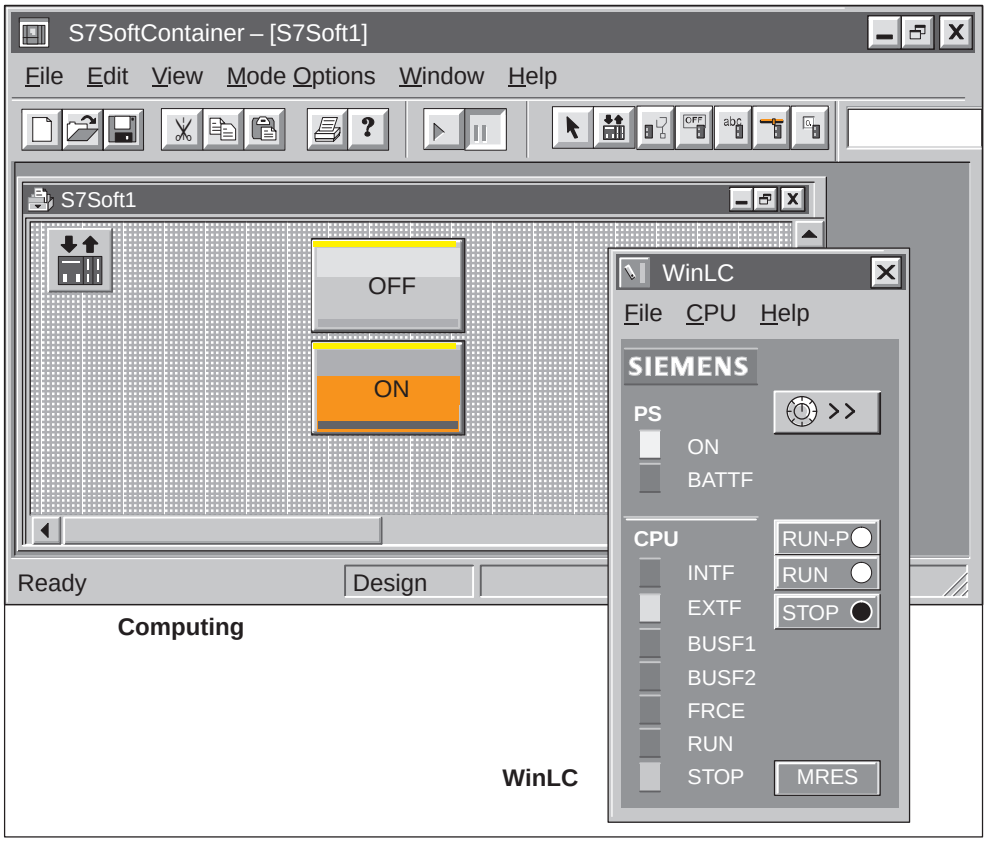

Figure 1-3 Accessing the Process Data with Computing

1.4 Tag files allow you to use symbols for the process data...

A tag file provides a source of symbolic information for memory locations and control engines. Linking to a tag file allows you to use symbolic names instead of absolute addresses when assigning variables in Computing. See Figure 1-4.

The TagFile Configurator creates a tag file that provides a source of symbolic information for the memory locations and control engines. The tag file can then be used on a computer that does not have STEP 7 installed.

For more information about the TagFile Configurator, see the *WinLC User Manual* or the *Computing User Manual*.

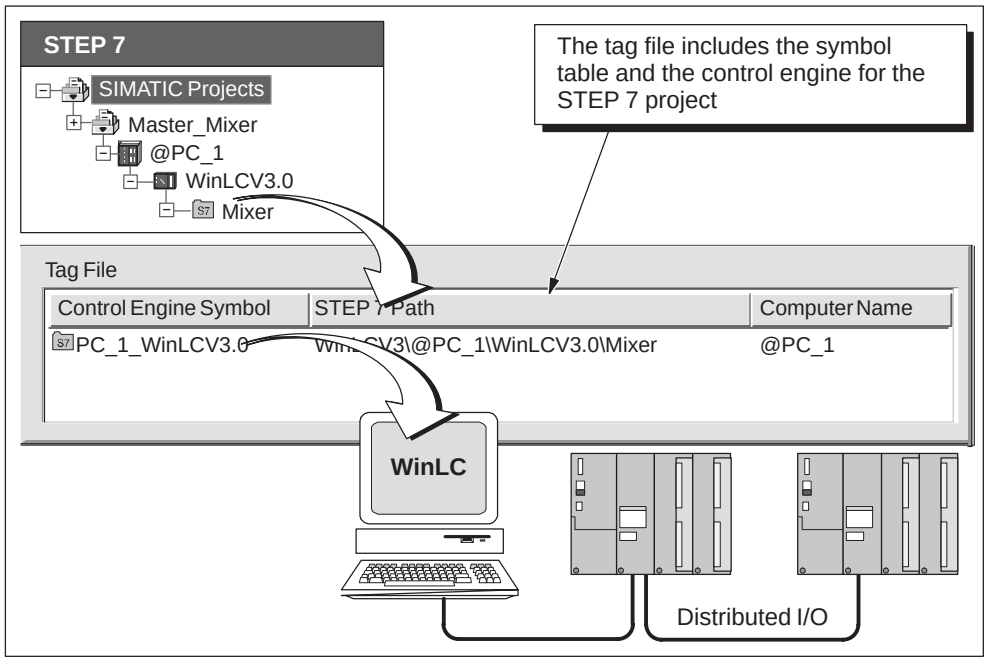

Figure 1-4 Using STEP 7 Symbols to Access Data in the Control Engine

1.5 Tag files allow you to access multiple control engines...

Multiple STEP 7 programs can be mapped into a single tag file, with each program providing access to a different computer and control engine. This allows Computing to access data from different computers and control engines simultaneously.

As shown in Figure 1-5, you can connect your program to control engines residing on several different computers. You use the TagFile Configurator to insert more than one control engine into a tag file. For more information about the TagFile Configurator, see the *WinLC User Manual* or the *Computing User Manual*.

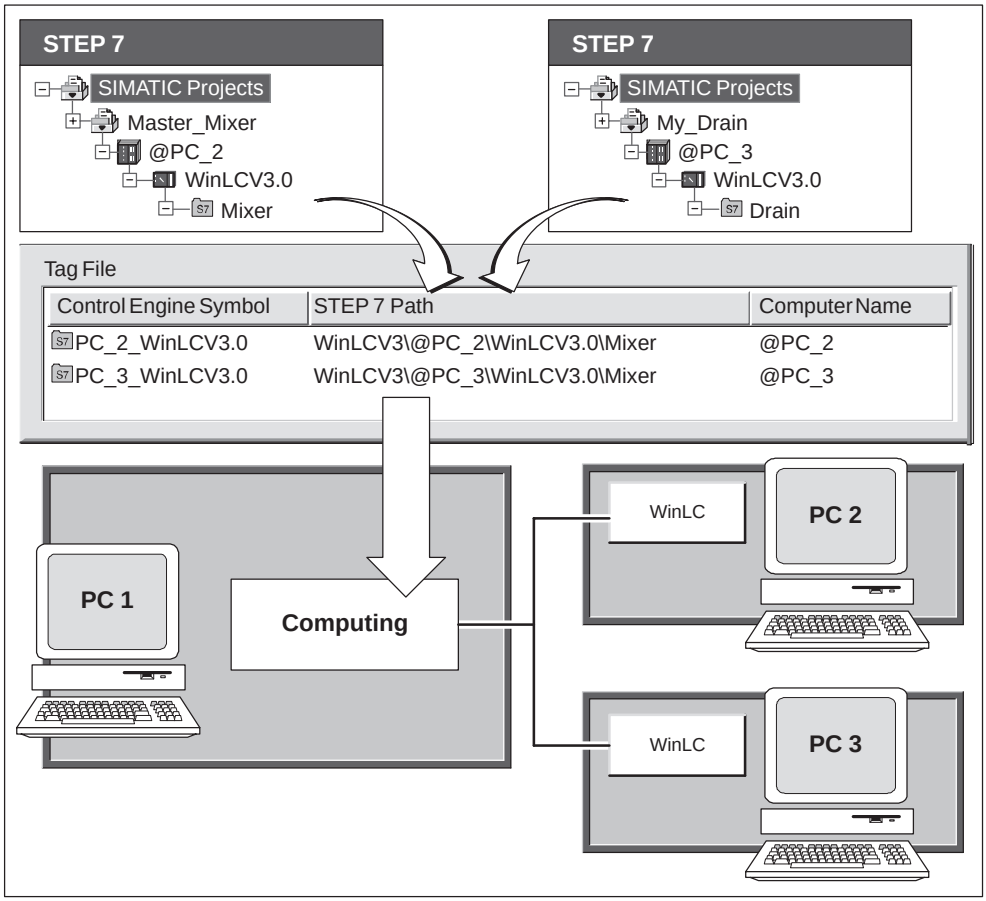

Figure 1-5 Using a Tag File to Access Data from Several Control Engines

1.6 Use Computing over a DCOM network...

Microsoft's Distributed Component Object Model (DCOM) is a set of program interfaces in which client program objects can request services from server program objects on other computers in a network.

You can use DCOM for integrating distributed applications over a network. See Figure 1-6. A distributed application consists of multiple processes or different computers that cooperate to accomplish a single task.

For more information about using WinAC over a DCOM network, see Appendix A.

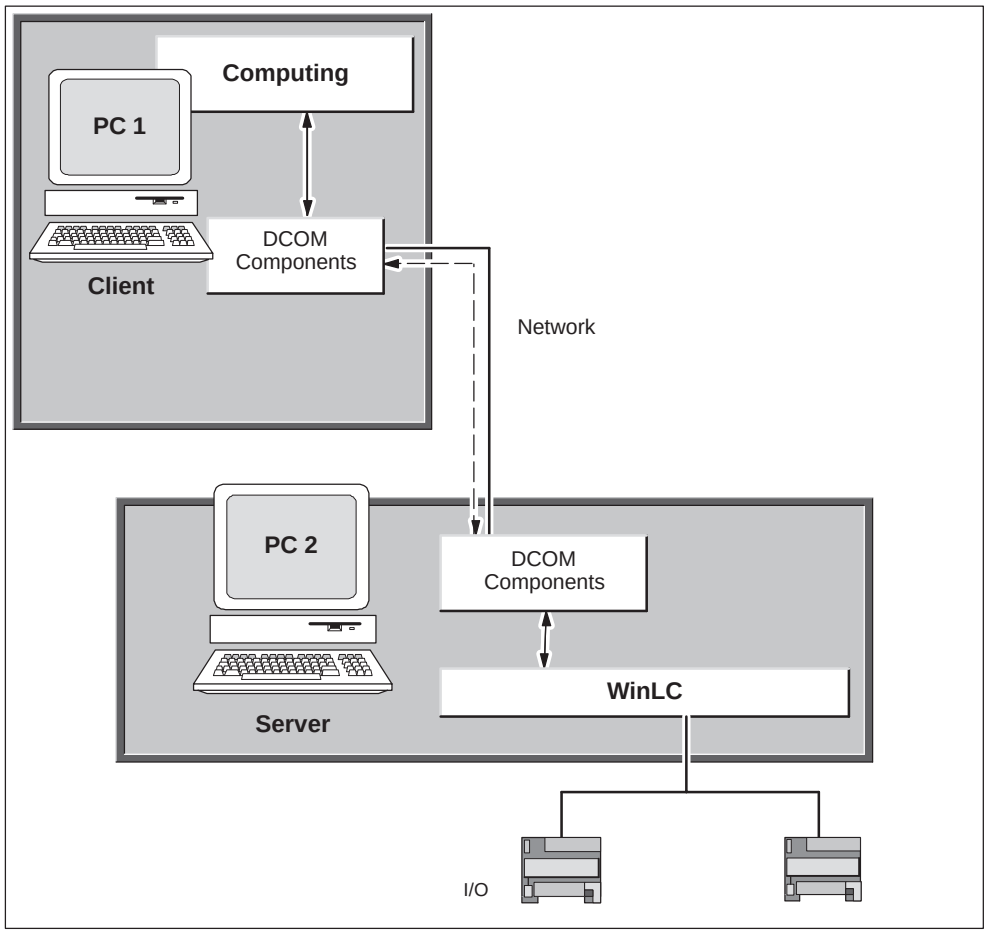

Figure 1-6 Connecting WinAC on Several Computers across a DCOM Network

1.7 Use OPC to connect third-party applications to Computing...

OLE for Process Control (OPC) provides a standard mechanism for communicating to numerous data sources, whether they be the devices on your factory floor or a database in your control room. OPC is based on the OLE/COM technology from Microsoft. For more information about OPC, refer to the OPC specification *OLE for Process Control Data Access Standard, version 2.0* from the OPC Foundation.

As shown in Figure 1-7, you can use the OPC server provided with the Computing software to communicate with the control engine and provide access to the process data. Computing provides an OPC server that allows any OPC client application to access data in the control engine; Computing does not provide any OPC client application.

The name of the OPC server is: OPCServer.WinAC

SIMATIC Computing allows you to use OPC for connecting either to a single control engine or to several control engines. You can also connect to the control engine over a network, such as a local area network (LAN).

For more information about configuring the OPC server, see Appendix B.

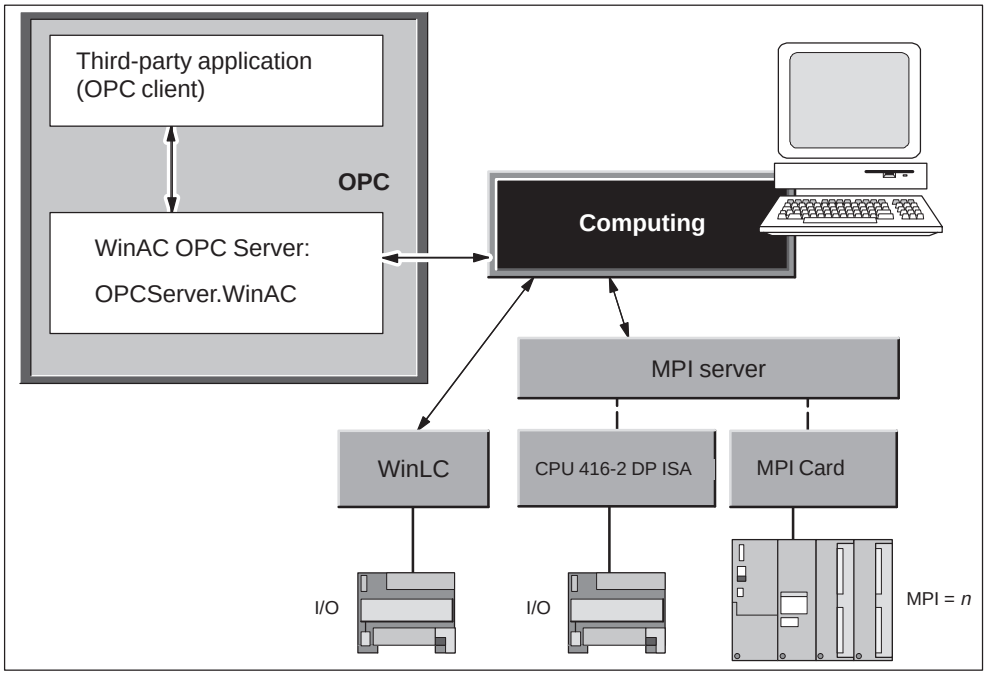

Figure 1-7 Using OPC to Connect Third-Party Applications to Computing

1.8 Tool Manager provides shortcuts to your programs...

The Tool Manager is a toolbar that lets you consolidate all of the applications that you want to use while working with your process data. For instance, if you plan to use Visual Basic with WinAC, or want to put process data into a Microsoft Excel spreadsheet, you can insert shortcuts to those items on the Tool Manager. The Tool Manager is especially convenient for users who do not have a mouse on their computer, since all of the functions of the Tool Manager can be accessed by keystrokes from one central location.

Figure 1-8 shows the Tool Manager and its shortcut icon. You can insert shortcut icons for any of your programs into the Tool Manager tray. You then use the Tool Manager to start these programs.

For more information about the Tool Manager, see Section 4.

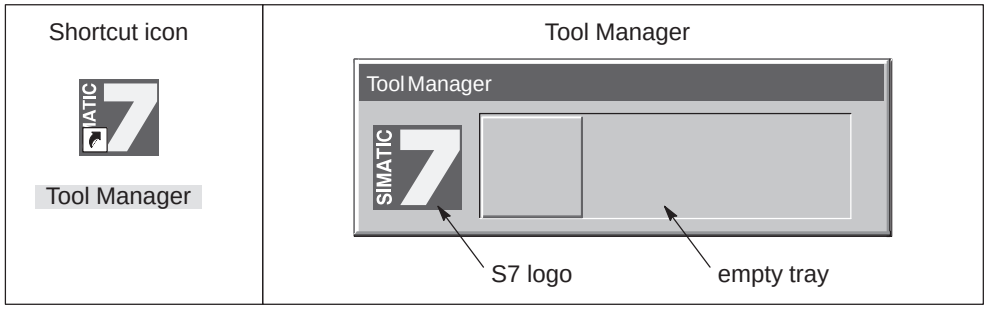

Figure 1-8 Tool Manager and Shortcut Icon

Installing the Components of WinAC Basis 2

Chapter Overview

The WinAC software provides a single setup program that installs the WinLC, SIMATIC Computing, and Tool Manager software. There is a single authorization disk for these products. This chapter provides the following information:

- Section 2.1 lists the requirements for installing and running the WinAC Basis software.
- Section 2.2 provides procedural information about installing the WinAC Basis software.
- Section 2.3 provides procedural information about uninstalling the WinAC Basis software.
- Section 2.4 provides procedural information about installing the authorization for WinAC Basis.
- Section 2.5 provides additional information about installing the components of WinLC.

Note

The installation of the WinLC option requires that you install a CP 5412 communications processor board and SIMATIC NET communications software. To install the CP 5412, you must turn off your computer and install the board. You may want to install the CP 5412 before installing the WinAC software.

Refer to the special notes (Section 2.5) and to the *Windows Logic Controller (WinLC) User Manual* for information about installing the components of the WinLC product.

2.1 System Requirements

To run the components of WinAC, it is recommended that your computer meet the following criteria:

- A personal computer (PC) with the following:
  - Pentium processor running at 166 MHz or faster
  - 64 Mbytes RAM
  - Microsoft Windows NT version 4.0 (or higher)
- A color monitor, keyboard, and mouse (or other pointing device) that are supported by Microsoft Windows NT
- A hard drive with 20 Mbytes of free space
- At least 1 Mbyte free memory capacity on drive C for the Setup program (Setup files are deleted when the installation is complete.)

The product has been tested, and operated successfully, on machines as slow as a 486 processor running at 66 MHz with 24 Mbytes RAM operating on a Windows NT platform. Computing has also been successfully tested on high-end PCs with dual Pentium processors.

2.2 Installing the WinAC Software

The WinAC software includes a Setup program which executes the installation automatically. The screen prompts guide you step by step through the installation procedure.

During installation, the program checks to see whether an authorization is installed on the hard disk. If no authorization is found, a message notifies you that the software can be used only with an authorization. If you wish, you can run the authorization program immediately or you can continue the installation and execute the authorization later. See Section 2.4.

Note

You must have administrator (“ADMIN”) privileges to install the WinAC software.

Installing the Components of WinAC

Figure 2-1 shows the dialog box that allows you to choose which components to install. Select the components that you want to install. Each component that you have selected is installed in the same directory.

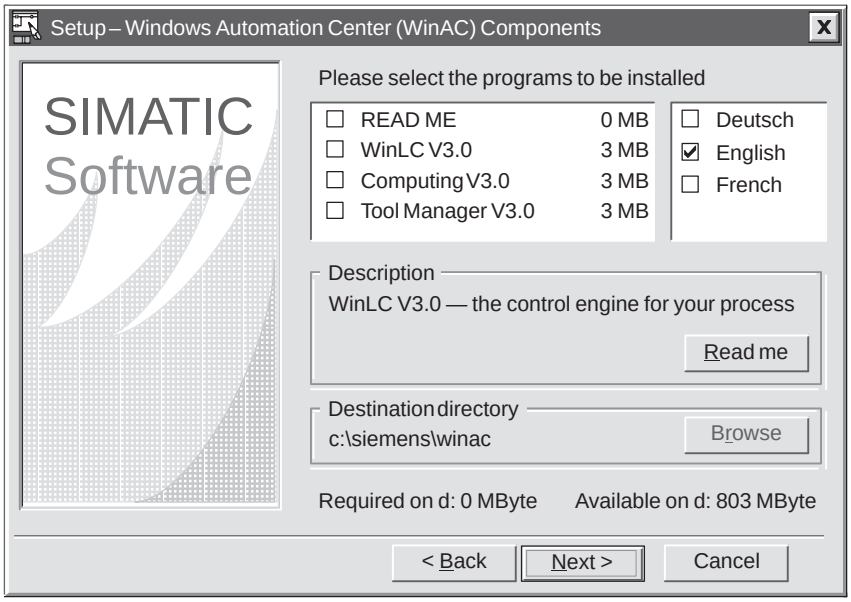

Figure 2-1 Installing the Components of WinAC

Note

The installation of the WinLC software requires that you install a CP 5412 communications processor board and SIMATIC NET communications software. To install the CP 5412, you must turn off your computer and install the board. You may want to install the CP 5412 before installing the WinAC software.

In the future, other communications boards in addition to the CP5412 will be available. Refer to Siemens website http://www.sea.siemens.com/industrialsoftware for a listing of approved communications processor boards.

Refer to the special notes (Section 2.5) and to the *Windows Logic Controller (WinLC) User Manual* for information about installing the components of the WinLC software.

Starting the Installation Program

The Setup program guides you step by step through the installation process. You can switch to the next step or to the previous step from any position. To start the installation program, proceed as follows:

1. Insert the CD-ROM in your computer.
2. Use the Windows NT Start menu (select the **Start ▸ Run** menu command) to open the “Run” dialog box.
3. Click on the “Browse” button on the “Run” dialog box and select the installation program (Setup.exe) on the CD-ROM.
4. Click on the “Open” button to enter the Setup.exe program into the “Run” dialog box.
5. Click on the “OK” button to start the installation program.
6. Follow the instructions displayed by the installation program step by step.
7. When prompted by the software, insert the WinAC authorization diskette in drive A. For more information about authorizing the WinAC software, see Section 2.4.

Once the installation has been completed successfully, a message to that effect is displayed on the screen.

Note

You install the WinAC authorization on the server computer; you install the SIMATIC Computing authorization on the client computer. If you want to run SIMATIC Computing on a PC other than the PC running WinLC, then you must purchase SIMATIC Computing standalone. For more information about installing an authorization, see Section 2.4.

If an Older Version of WinAC Has Already Been Installed

If the installation program finds another version of WinAC on the programming device, the program reports this and prompts you to decide how to proceed by offering the following choices:

- Abort the installation so that you can uninstall the older version of the WinAC software under Windows NT and then start the installation again.
- Continue the installation and overwrite the older version with the new version.

Your software will be better organized if you uninstall any older versions before installing the new version. Overwriting an old version with a new version has the disadvantage that if you then uninstall, any remaining components of the old version are not removed.

Troubleshooting Any Errors That Occur during Installation

The following errors may cause the installation to fail:

- Initialization error immediately after starting Setup: The SETUP.EXE program was probably not started under Windows NT.
- Not enough memory: You need at least 3 Mbytes of free space on your hard disk.
- Bad disk: Verify that the disk is bad, then call your local Siemens representative.
- Operator error: Start the installation again and read the instructions carefully.

2.3 Uninstalling the WinAC Software

Use the following procedure to remove the WinAC software from your computer:

1. Double-click on the “Add/Remove Programs” icon in the Control Panel.
2. Select the WinAC entry in the displayed list of installed software. Click on the “Add/Remove...” button to uninstall the software.
3. If the “Remove Enable File” dialog boxes appear, click the “No” button if you are unsure how to respond.

Caution

If improperly transferred or removed, the authorization for the WinAC software may be irretrievably lost.

The Readme file on the authorization diskette contains guidelines for installing, transferring, and removing the authorization for the WinAC software. If you do not follow these guidelines, the authorization for the WinAC software may be irretrievably lost. Losing the authorization would prohibit you from modifying any program that was downloaded to the WinAC and from downloading another program to the WinAC.

Read the information in the Readme file on the authorization diskette, and follow the guidelines in regard to transferring and removing the authorization.

2.4 Authorizing the WinAC Software

The WinAC software requires a product-specific authorization (or license for use). The software can be used only if the relevant authorization for the program or software package has been found on the hard disk of the computer.

Note

You must have administrator (“ADMIN”) privileges to install the WinAC software.

Using the WinAC Authorization Diskette

The WinAC software includes an authorization diskette. It contains the authorization and the AUTHORSW program which displays, installs, or removes the authorization for running the WinAC software.

There are separate authorization diskettes for each of the SIMATIC automation software products. You must install the authorization for each product as part of the installation procedure for that software. For more information and rules on how to handle authorizations, see the documentation for the specific SIMATIC software product.

Caution

If improperly transferred or removed, the authorization for the WinAC software may be irretrievably lost.

The Readme file on the authorization diskette contains guidelines for installing, transferring, and removing the authorization for the WinAC software. If you do not follow these guidelines, the authorization for the WinAC software may be irretrievably lost. Losing the authorization would prohibit you from modifying any program that was downloaded to the WinAC and from downloading another program to the WinAC.

Read the information in the Readme file on the authorization diskette, and follow the guidelines in regard to transferring and removing the authorization.

Installing the Authorization for the First Time

When you install the software for the first time, a message prompts you to install the authorization. Use the following steps to install the authorization for the WinAC software:

1. When prompted, insert the authorization diskette in a drive.
2. Acknowledge the prompt.

The authorization is transferred to a physical drive, and your computer registers the fact that the authorization has been installed.

Adding an Authorization at a Later Date

If you attempt to start the WinAC software and there is no authorization available for the software, a message informs you of this. If you want to install the authorization, use the AUTHORSW program on the authorization diskette. This program allows you to display, install, and remove authorizations. The program is menu-driven.

Note

Always enter drive C as the destination drive for the authorization for WinAC.

Removing an Authorization

If you should need to repeat the authorization (for example, if you want to reformat the drive on which the authorization is located), you must first remove the authorization. You need the original authorization diskette to do this.

Use the following steps to transfer the authorization back to the authorization diskette:

1. Insert the original authorization diskette in your floppy disk drive.
2. Start the program AUTHORSW.EXE from the authorization diskette.
3. From the list of all authorizations on drive C, select the authorization to be removed.
4. Select the menu command **Authorization ▸ Transfer...**.
5. In the dialog box, enter the target floppy drive to which the authorization will be transferred and confirm the dialog box.
6. The window with the list of authorizations remaining on the drive is then displayed. Close the AUTHORSW program if you do not want to remove any more authorizations.

You can then use the diskette again to install an authorization.

If Your Hard Drive is Defective...

If a fault occurs on your hard disk before you can back up the authorization, contact your local Siemens representative.

2.5 Special Notes for Installing the WinLC Controller

Installing the Components of WinLC

As shown in Figure 2-2, you must perform the following tasks to install the components of WinLC:

- Install the CP 5412 communications processor card in your computer. For information about this installation procedure, refer to the documentation for the CP 5412. The CP 5412 card must be purchased separately.
- Install the SIMATIC NET software for the CP 5412. This procedure includes installing the PROFIBUS-DP authorization on your computer. For information about installing the PROFIBUS-DP software, refer to the documentation for the CP 5412.
- Install the WinLC software. For information about this installation procedure, refer to the *SIMATIC Windows Logic Controller (WinLC) User Manual.*

Note

Other communications processor boards in addition to the CP5412 will be available in the future. Refer to Siemens website http://www.sea.siemens.com/industrialsoftware for a listing of approved communications processor boards.

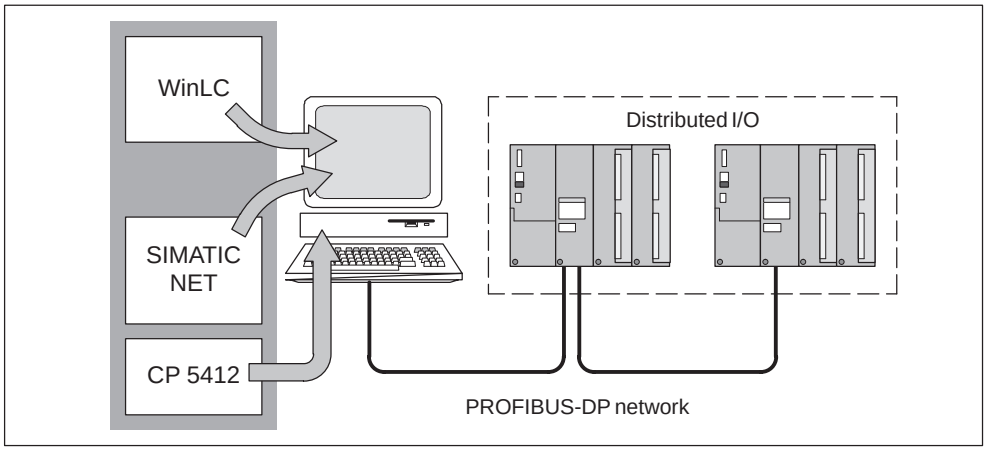

Figure 2-2 Installing the WinLC Controller

Running the WinLC Controller without the Authorization

If you remove (or accidentally delete) the authorization for the software, the WinLC controller continues to operate; however, you cannot modify the program being executed and you cannot download a new program. You are still permitted to change from RUN mode to STOP mode, and the controller continues to execute the user program. You are still permitted to create and reload archive files.

A notification message appears every six minutes to alert you that the authorization is missing.

Getting Started with WinAC Basis 3

Chapter Overview

WinAC Basis provides two basic components:

- WinLC: a software-based S7 programmable logic controller (PLC), also referred to as a “control engine”
- Computing: a set of SIMATIC controls that utilize Microsoft’s ActiveX technology to access data in the control engine

You can use a sample program (provided with the STEP 7 programming software) to help understand how to use the components of WinAC Basis.

3.1 Using WinAC Basis with a Sample Program

To help you start using the components of WinLC, this chapter provides information about the following tasks:

- Start the WinLC controller.
- Modify a sample program (provided by STEP 7) for use with WinLC and then download the program to WinLC.
- Create a process form for the sample program, using the OLE container (SoftContainer) and two of the SIMATIC control provided by Computing.

Figure 3-1 lists the order of the tasks required for using WinAC Basis with the sample program.

Note

This example uses a hardware configuration that does not configure distributed I/O for WinLC. When you configure WinLC to control a process, you must also configure the distributed I/O for the PROFIBUS subnet.

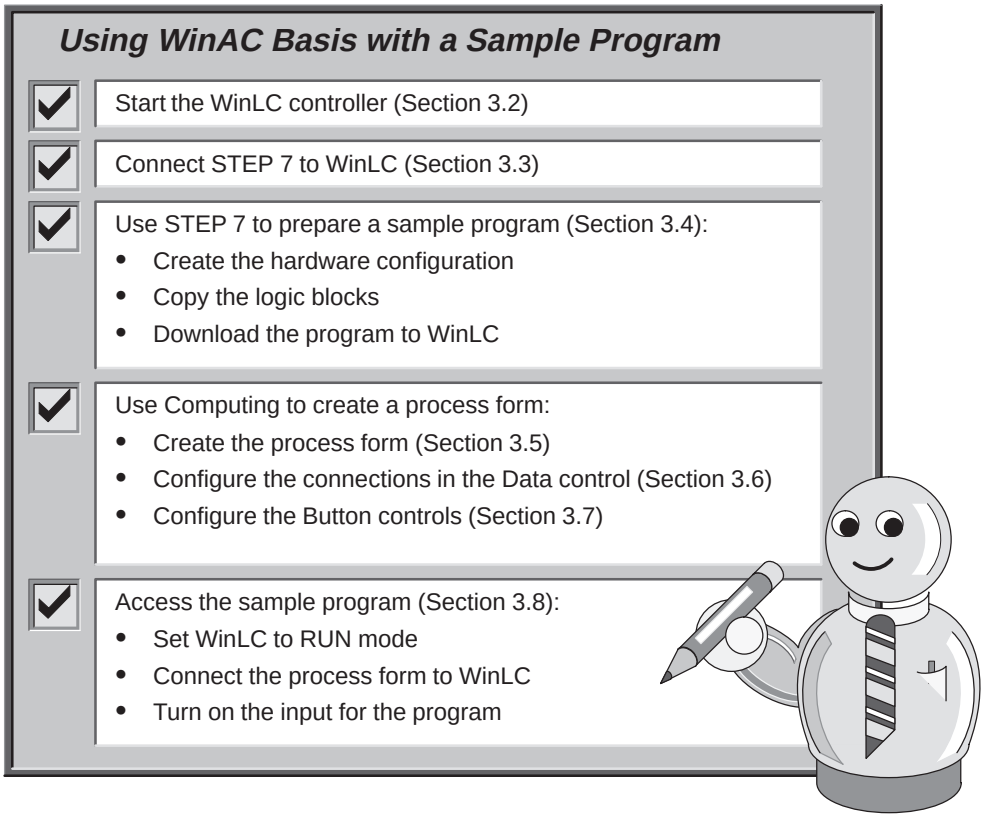

Figure 3-1 Tasks for Using WinAC Basis with a Sample Program

In order to perform the tasks described in this chapter, you must have installed the following software packages:

- WinLC: provides the controller that will run the sample program. WinLC is installed as part of the Setup program for WinAC Basis. (Refer to Chapter 2 for information about installing WinAC Basis.)
- Computing: provides the container and the ActiveX controls for creating the process form that will access the program running on WinLC. Computing is installed as part of the Setup program for WinAC Basis. (Refer to Chapter 2 for information about installing WinAC Basis.)
- STEP 7: provides the sample program and the tools for creating the hardware configuration for WinLC. Refer to the documentation for STEP 7 for information about installing STEP 7.The recommended version of STEP 7 is STEP7 V5.0 SP3 or higher, but WinLC can be used with earlier versions of STEP 7.

3.2 Starting the WinLC Controller

To start WinLC, select the **Start ▸ SIMATIC ▸ PC Based Control ▸ Windows Logic Controller** menu command from the Windows NT Start menu. As shown in Figure 3-2, the CPU panel of WinLC opens. You use this CPU panel to control the operations of WinLC.

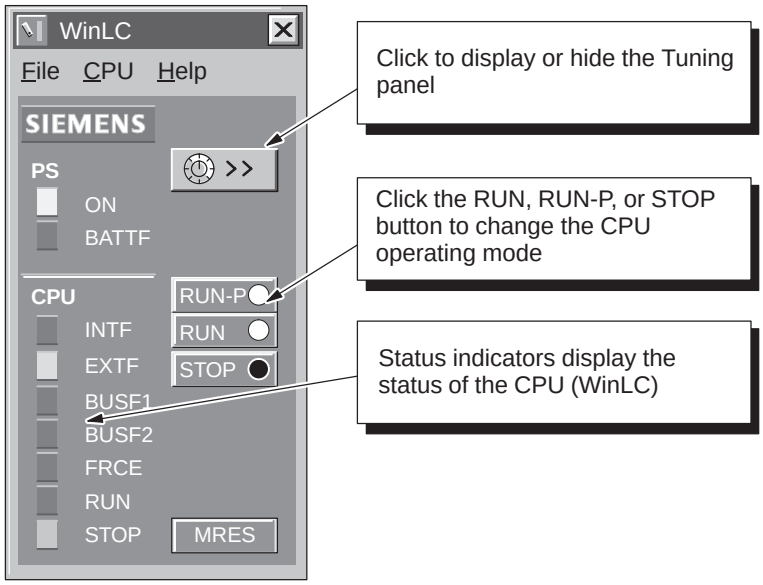

Figure 3-2 Starting the WinLC Controller

3.3 Going On-line to WinLC with STEP 7

For this “Getting Started” example, you will be downloading a sample program from the STEP 7 programming software to WinLC. In order for STEP 7 to download this program, you must establish communications to WinLC. Redirecting communications from MPI as done in earlier versions of WinLC is no longer supported or available. Follow the procedure below that is appropriate for your computer setup.

Connecting STEP 7 to WinLC on the Same Computer

Use the following procedure to configure STEP 7 for communicating with WinLC on the same computer:

1. From WinLC open the interface tool as follows: (**CPU ▸ Setting the PG/PC Interface**).
2. Use these steps to configure STEP 7 as the local access point:

- From the “Access point of application” drop-down list, select **S7ONLINE (STEP 7)** (Figure 3-3).
- From the “Interface parameter set used” drop down list, select **PC Internal (local)** for the interface parameter).

STEP 7 is now configured to communicate with WinLC on this computer.

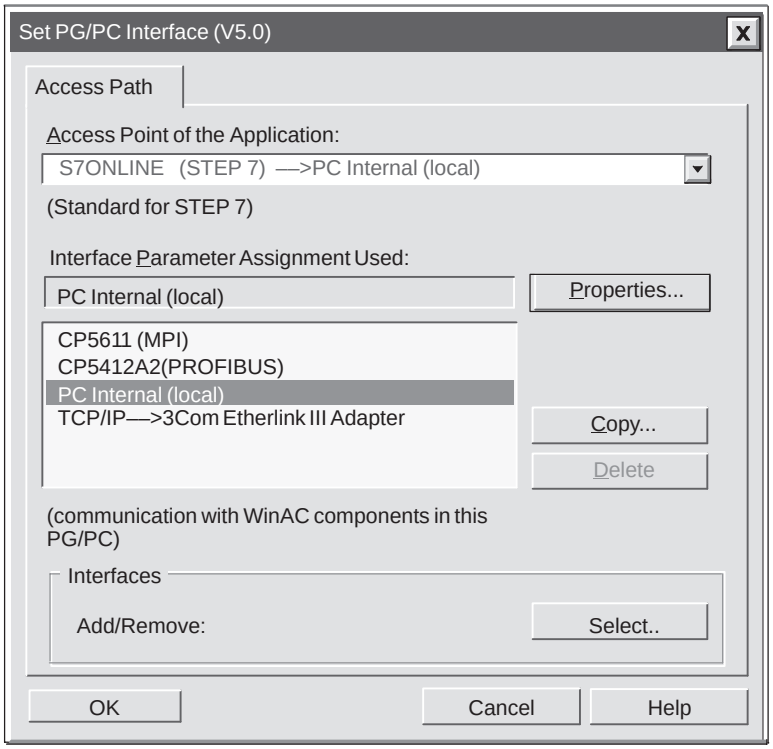

Figure 3-3 Setting the PG/PC Interface for PC Internal (local)

Connecting STEP 7 to WinLC on a Different Computer

As shown in Figure 3-4, you can connect STEP 7 on one computer to a WinLC on a different computer. You must define the network connection over which STEP 7 and WinLC communicate by setting the PG/PC interface on the remote computer.

The remote computer must have STEP 7 installed, and the computer to which you wish to connect must have WinLC installed.

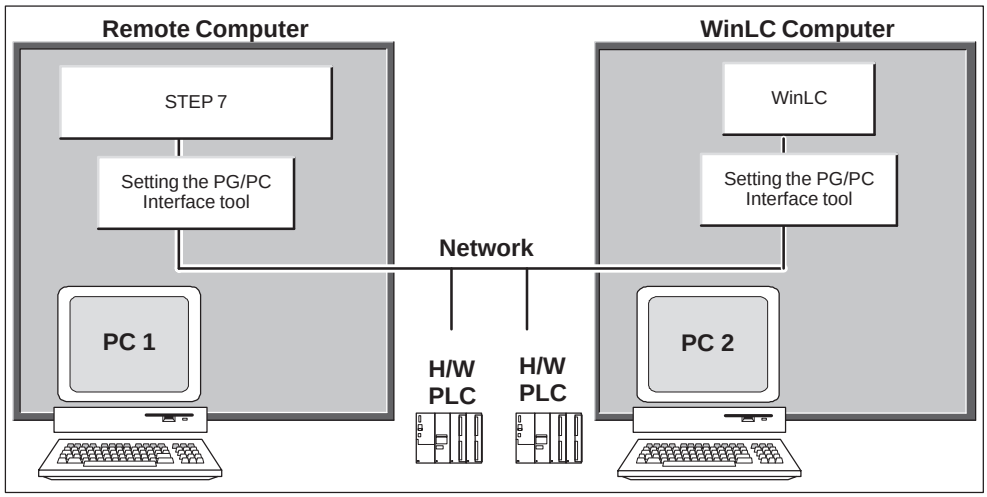

Figure 3-4 Connecting STEP 7 to WinLC over a network

Use the following procedure to configure STEP 7 for communicating with WinLC on a remote computer:

1. Access the interface configuration tool through WinLC. Use (**CPU ▸ Setting the PG/PC Interface** (Figure 3-5).

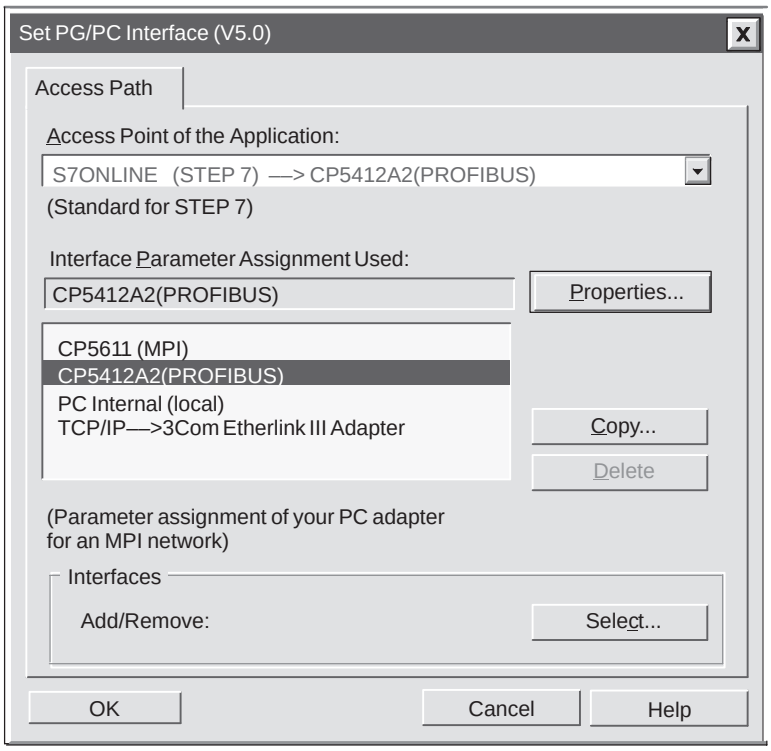

Figure 3-5 Setting the PG/PC Interface

2. From the “Access Point of Application” drop-down list, select **S7ONLINE (STEP7).**

- For MPI communication, select the MPI interface, for example **CP5611(MPI**).
- For PROFIBUS–DP communication, select the PROFIBUS–DP interface, for example, **CP5412A2(PROFIBUS).**

  The WinLC’s PROFIBUS card must be properly configured through **Setting the PG/PC Interface** before WinLC is visible to other PGs on the PROFIBUS–DP network **(S7ONLINE (STEP7) ––><cardname> Profibus...**. Click on the Properties button. On the PROFIBUS tab, check “PG is the only master on the bus.”
- For H1 communication, select your installed ethernet card, for example, **TCP/IP –> 3Com Etherlink III Ada...** You must have the NCM Options package for H1 communication and STEP 7 V5 SP3.

Note

NetPro cannot reconfigure the MPI or H1 addresses or the bus parameters of a WinLC from a different computer. The required CP cards are not controlled by WinLC. This can only be done via the local Setting the PG/PC Interface application. The PROFIBUS node address and bus parameters can be reconfigured remotely if a valid configuration is already in the WinLC. The WinLC is the master of its own PROFIBUS I/O card.

3.4 Downloading a Sample Program to WinLC

In order to download the sample program to WinLC, you must use the STEP 7 programming software to perform the following tasks:

- Open a sample project.
- Insert a PC station station into the sample project. (STEP 7 V5 SP3 supports PC stations.)
- Create the hardware configuration for WinLC.
- Copy the program blocks for a sample program to the WinLC station.
- Download the sample program and hardware configuration to WinLC.

This section provides procedures for accomplishing these tasks. Refer to the *STEP 7 User Manual* and the online help for the STEP 7 software for additional information about using STEP 7.

Note

With STEP7 V5.0 SP3 or higher, WinLC is configured as a PC station. WinLC 3.0 has features that can only be used if configured in a PC station. In earlier versions of STEP 7 without the service pack, you must use an S7300 station and configure WinLC as version 2.0.

Opening a Sample Project

STEP 7 provides a sample project that you can use with WinAC Basis. Use the following procedure to open a sample project:

1. Open the SIMATIC Manager by selecting the **Start ▸ SIMATIC ▸ SIMATIC Manager** menu command from the Windows NT Start menu. (For STEP 7 version 4, use the **Start ▸ SIMATIC ▸ STEP 7 ▸ SIMATIC Manager** menu command.)
2. Select the **File ▸ Open** menu command (or click on the “Open” icon) to display the “Open” dialog box.
3. In the “Open” dialog box, select the “Sample Projects” tab.

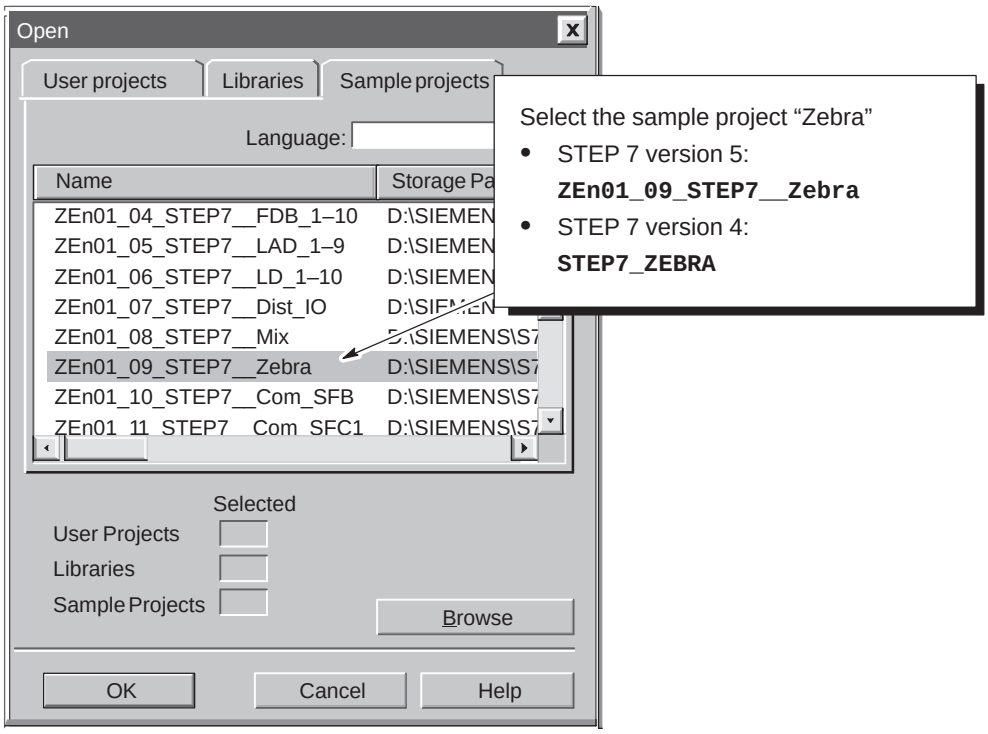

Figure 3-6 Opening the Sample Project (ZEn01_09_STEP7__Zebra)

4. As shown in Figure 3-6, scroll down the list of projects and select the “Zebra” project:
   – For STEP 7 version 5, select: ZEn01_09_STEP7__Zebra
   – For STEP 7 version 4, select: S7_ZEBRA

   You may need to change the width of the “Name” column to view the full name.
5. Click on the “OK” button to open the sample project.

STEP 7 opens the sample project. See Figure 3-7.

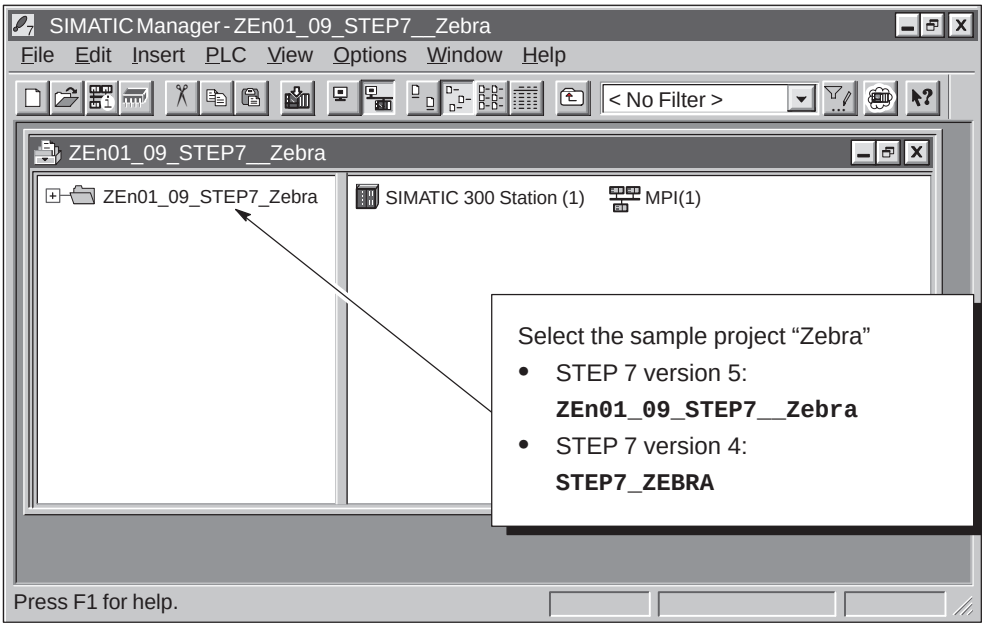

Figure 3-7 Sample STEP 7 Program (ZEn01_09_STEP7__Zebra)

Inserting a PC Station into the Sample Project

Before you can create the hardware configuration for WinLC, you must insert a station under your project. For STEP 7 Version 5, Service Pack 3, insert a PC station. STEP 7 V5 SP3 models WinLC as a component in a PC station. (For versions of STEP 7 prior to Version 5, Service Pack 3, you must insert a SIMATIC 300 station.) Use the following procedure for inserting a station:

1. Select (click on) the project (ZEn01_09_STEP7__Zebra).
2. Select the **Insert ▸ PC Station** menu command to insert a station under the project. (To insert a SIMATIC 300 station, select **Insert ▸ SIMATIC 300 Station**.)
3. Select (click on) the station to display the hardware icon for the station.

Note

Certain System Data Blocks have a different structure depending on whether the WinLC is configured in a 300 Station or a PC Station. You must inform WinLC which station type to use via the Panel menu. In WInLC, select **CPU ▸ Options ▸ Customize** and then select the **Station Type** tab**.** Select the appropriate station type as shown in Figure 3-8. Failure to configure the correct station type will cause upload/download errors.

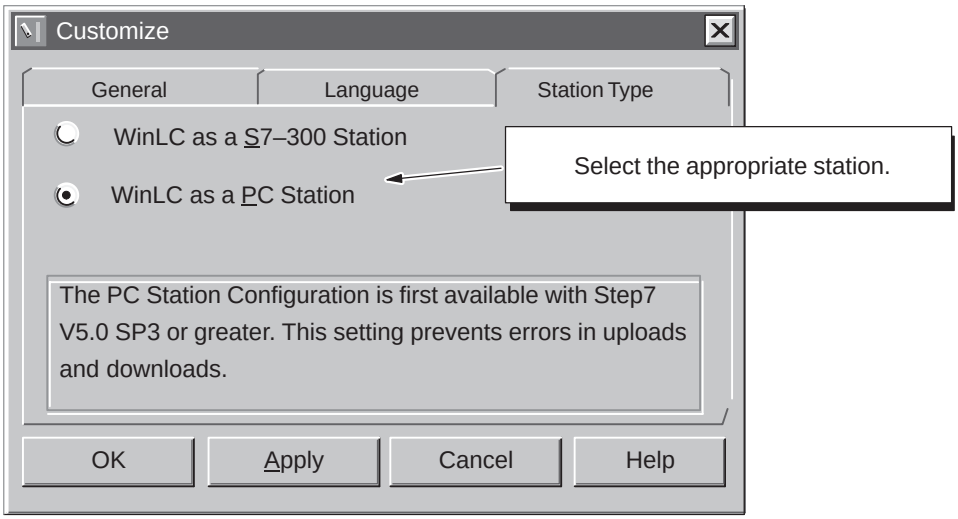

Figure 3-8 Setting the Station Type

Creating the Hardware Configuration for WinLC

Use the following procedure to create the hardware configuration for WinLC:

1. Select the PC station. If you have STEP 7 without the service pack, select SIMATIC 300 station.
2. Double-click on the Hardware object to open the configuration tool of the STEP 7 software (Figure 3-9).

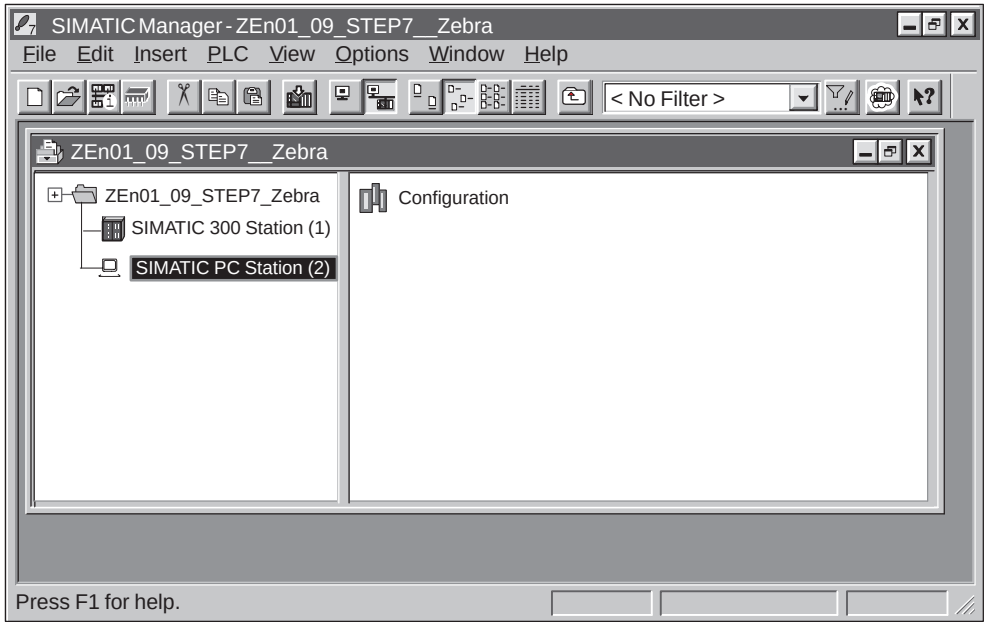

Figure 3-9 Configuring the PC Station in the Sample Project

3. For a PC station:
   - Double-click on the Configuration icon to open the hardware catalog.
   - Select the 2nd slot in the PC display.
   - Select **SIMATIC PC Station ▸ Controller** from the catalog. Click on the WinLC icon.
   - Use the mouse to drag the “WinLC” object into slot 2 of the PC display

Note

With STEP7 V5.0 SP3 or higher, WinLC is configured as a PC station. WinLC 3.0 has features that can only be used if configured in a PC station. In earlier versions of STEP 7 without the service pack, you must use an S7300 station and configure WinLC as version 2.0. See step 4. below.

4. For a SIMATIC 300 station in a version of STEP 7 prior to V5 SP3:
   - Select the **Insert ▸ Hardware Components** menu command to open the hardware catalog.
   - Select and open the “SIMATIC PC Based Control 300/400 ‘” object.
   - Double-click the “WinLC” object. If you do not have STEP 7 V5 SP3, be sure to select WinLC V2.0.
5. In the “Properties – PROFIBUS Node DP Master” dialog box, click on the “New” button to open the “Properties – New Subnet PROFIBUS” dialog box and enter a PROFIBUS subnet or click OK to accept the default of PROFIBUS(1).

   (Although you will not be using the subnet or configuring distributed I/O for this sample program, STEP 7 requires that you configure a subnet for WinLC.)
6. Click on the “OK” button to enter the default parameters for a PROFIBUS subnet.
7. Select the PROFIBUS(1) subnet.
8. Click on the “OK” button to enter the default subnet and address and to close the “Properties – PROFIBUS Node DP Master” dialog box. WinLC V.3.0 appears as the module in slot 2 of the rack.
9. Select the **Station ▸ Save and Compile** menu command to create the sample hardware configuration for WinLC.

STEP 7 generates the SDBs for the hardware configuration. Exit the Hardware Configuration tool.

Copying the Sample Program to the WinLC Station

The original station in the Zebra project contains the logic blocks (OB1 and FC1) of the sample user program. You will copy these blocks to the WinLC station that you just created and configured. Use the following procedure to copy the sample program:

1. Open the hierarchy for the SIMATIC 300 station program:
   - Double-click on: **SIMATIC 300-Station(1)**
   - Double-click on: **CPU314(1)**
   - Double-click on: **S7-Program(1)**
   - Double-click on: **Blocks**
2. Select the logic blocks of the 300 station program (OB1 and FC1).
3. Select the **Edit ▸ Copy** menu command to copy these logic blocks.
4. Open the hierarchy for the PC station program:
   - Double-click on: **SIMATIC PC Station(1)**
   - Double-click on: **WinLCV3.0**
   - Double-click on: **S7-Program(2)**
   - Double-click on: **Blocks**
5. Select the **Edit ▸ Paste** menu command to paste the logic blocks (OB1 and FC1) into the PC station program.

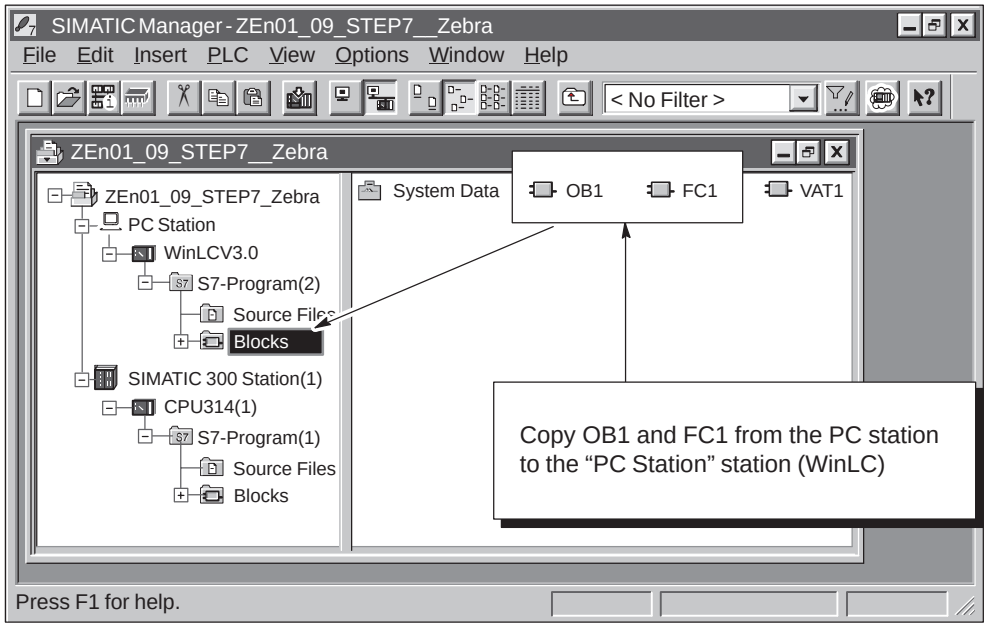

Figure 3-10 Pasting the Sample Logic Blocks into the WinLC Program (PC Station)

Downloading the Sample Program

After you copy the logic blocks to the PC station, you can download the program to WinLC. Use the following procedure to download the sample program:

1. Select the “Blocks” folder in the SIMATIC PC station.
2. Select the menu command **PLC ▸ Download** or click on the download button.
3. When prompted to download the hardware configuration, click on the “OK” button.

STEP 7 downloads the sample program and the sample hardware configuration to WinLC.

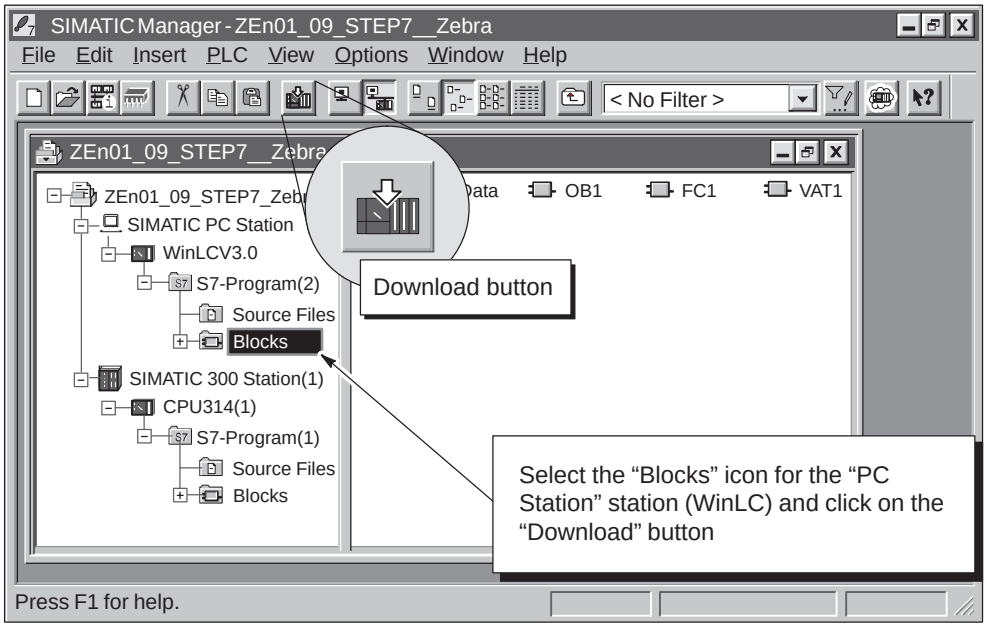

Figure 3-11 Downloading the Sample Program

3.5 Using the Computing SoftContainer to Create a Process Form

Computing provides a SoftContainer, which is an OLE container for ActiveX controls. Using the SoftContainer, you can create process forms for accessing the control engine (such as WinLC).

The toolbar of the SoftContainer contains icons for the SIMATIC controls provided by the Computing software. These icons allow you to insert these controls easily onto the process form. You can also add other ActiveX controls to the process form (and to the toolbar of the SoftContainer).

Opening a Process Form

To open the SoftContainer and the default process form, select the **Start ▸ Simatic ▸ PC Based Control ▸ SIMATIC Computing Softcontainer** menu command from the Windows NT Start menu. (You can also double-click on the icon for Computing.)

Figure 3-12 shows the SoftContainer with the default process form (S7Soft1).

Select the **File ▸ Save As...** menu command to display the “Save As” dialog box. Rename the process form to **`Traffic_Lamp`** and save the process form.

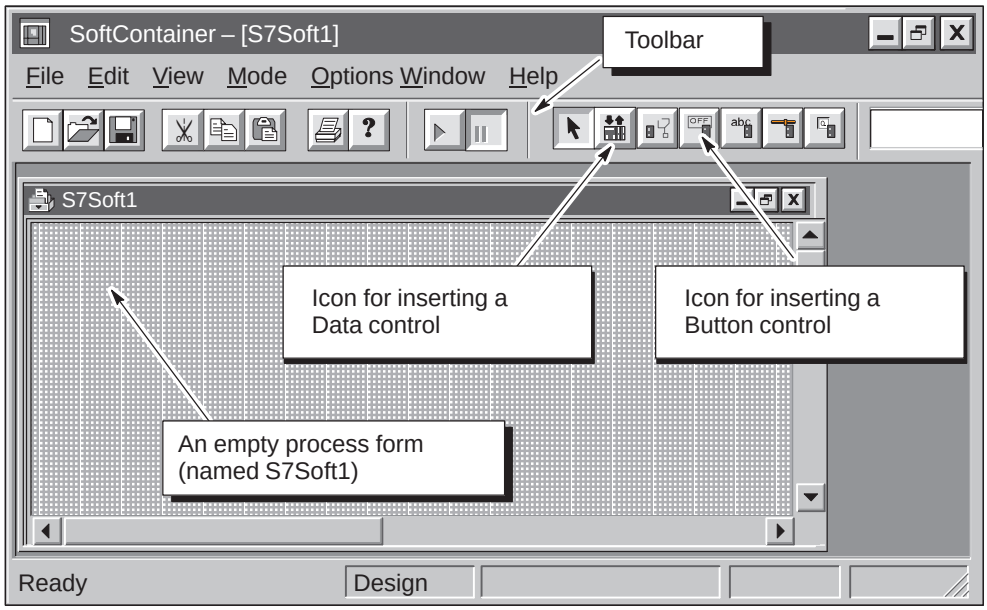

Figure 3-12 SoftContainer with the Default Process Form

Inserting SIMATIC Controls onto the Process Form

For this example, you insert four SIMATIC controls: a Data control and three Button controls. The Data control connects the Button controls to WinLC, and the Button controls access memory locations (or “variables”) in WinLC.

Use the following procedure to insert the controls onto the process form:

1. As shown in Figure 3-13, insert a Data control:
   – Click on the icon for the Data control.
   – Move the cursor to the process form.
   – Click the left mouse button to insert the Data control onto the process form.

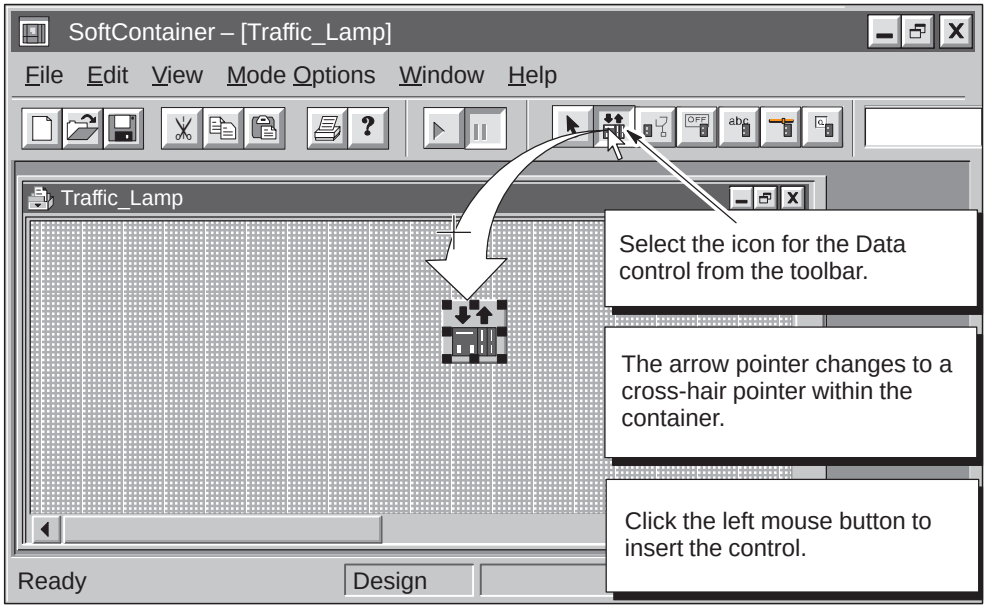

Figure 3-13 Inserting a SIMATIC Data Control from the Toolbar

2. As shown in Figure 3-14, insert three Button controls onto the process form:
   - Click on the Button icon on the toolbar.
   - Move the cursor to the process form.
   - Click the left mouse button to insert a Button control (Button1) onto the process form.

   Repeat to insert the other two Button controls (Button2 and Button3).

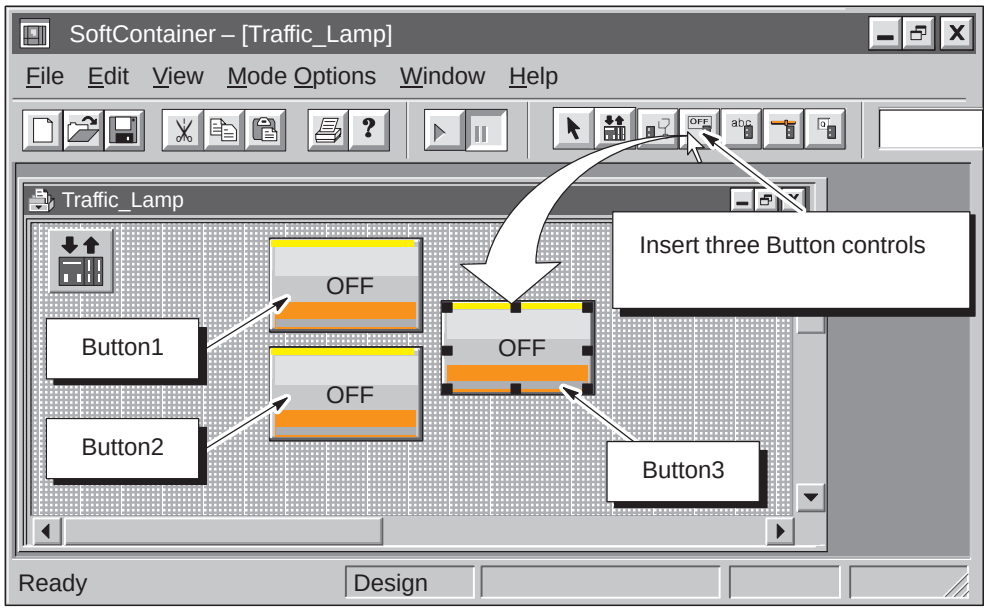

Figure 3-14 Inserting SIMATIC Button Controls

3.6 Configuring the Connections for the Process Form

The SIMATIC controls provide dialog boxes for configuring the properties for the control. In this example, you will use the “Properties” dialog box of the Data control to perform the following tasks:

- Selecting the control engine (in this example, WinLC)
- Assigning the variables (memory addresses) in the control engine to properties of the ActiveX controls (in this example, the Button controls) in the process form

Accessing the “Properties” Dialog Box for the Data Control

Use the following procedure to open the “Properties” dialog box for the Data control:

1. If the Data control in not already selected, select (click on) the Data control (S7Data1).
2. As shown in Figure 3-15, double-click on the Data control (or click the right mouse button to display a pop-up menu and select the **S7Data1 Properties** menu command) to display the “Properties” dialog box for the Data control.

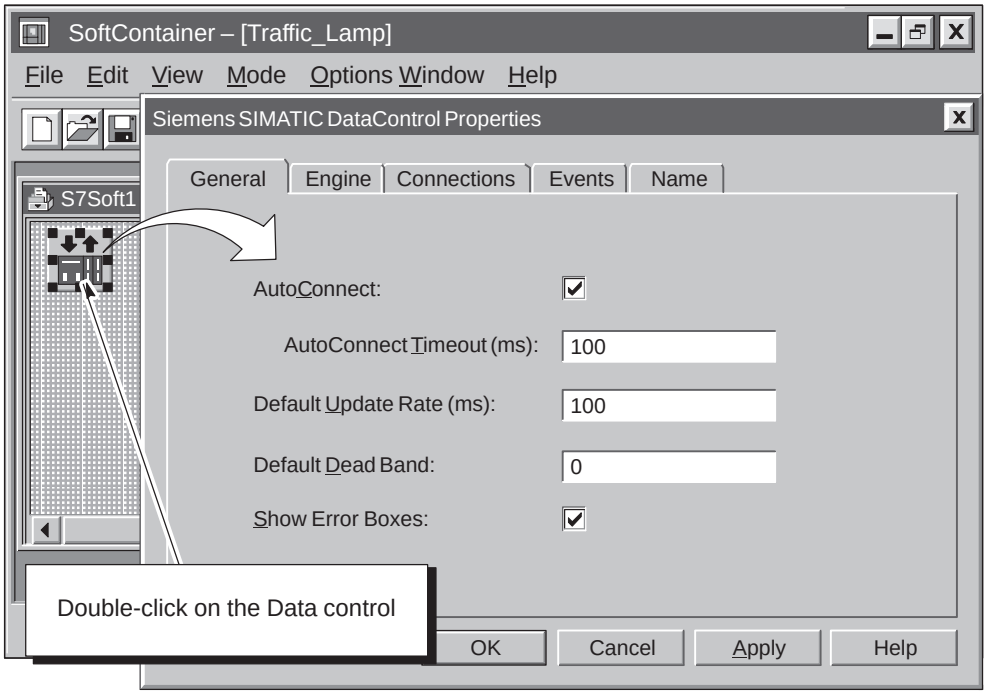

Figure 3-15 Accessing the “Properties” Dialog Box for the Data Control

Configuring the Data Control to Connect to WinLC

Use the following procedure to select WinLC as the control engine:

1. In the “Properties” dialog box for the Data control, select (click on) the “Engine” tab to display the options for selecting the control engine. See Figure 3-16.
2. Select (click on) the “Direct Connect” option.
3. In the “Control Engine” field, enter: **`WinLC`**
4. Click on the “Apply” button to configure the Data control to connect to WinLC.

Note

Clicking on the “Apply” button enters the changes you have made in the dialog box, but keeps the dialog box open. Clicking on the “OK” button enters the changes and closes the dialog box. For this example, keep the dialog box open for the following procedures.

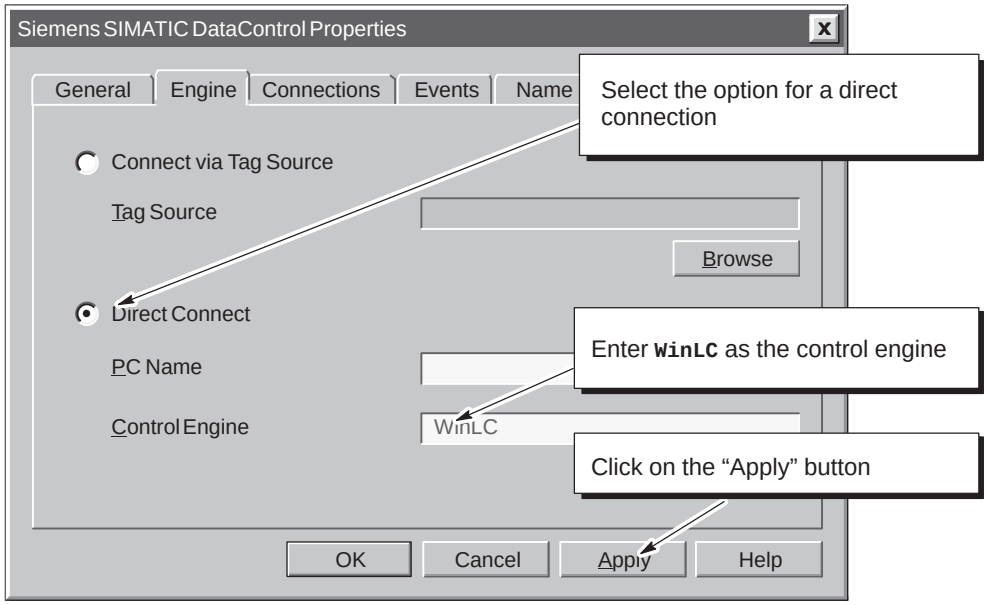

Figure 3-16 Connecting the Data Control to WinLC

Assigning the Variables in the Control Engine to the Button Controls

You use the “Properties” dialog box for the Data control to connect the other controls to memory locations in the control engine (WinLC). You do this by assigning a variable (memory location) to a property of the control. Use the following procedure to assign variables in WinLC to the Button controls:

1. In the “Properties” dialog box for the Data control, select (click on) the “Connections” tab.
2. If the controls and properties are not already displayed, expand the hierarchy for S7Data1. See Figure 3-17.

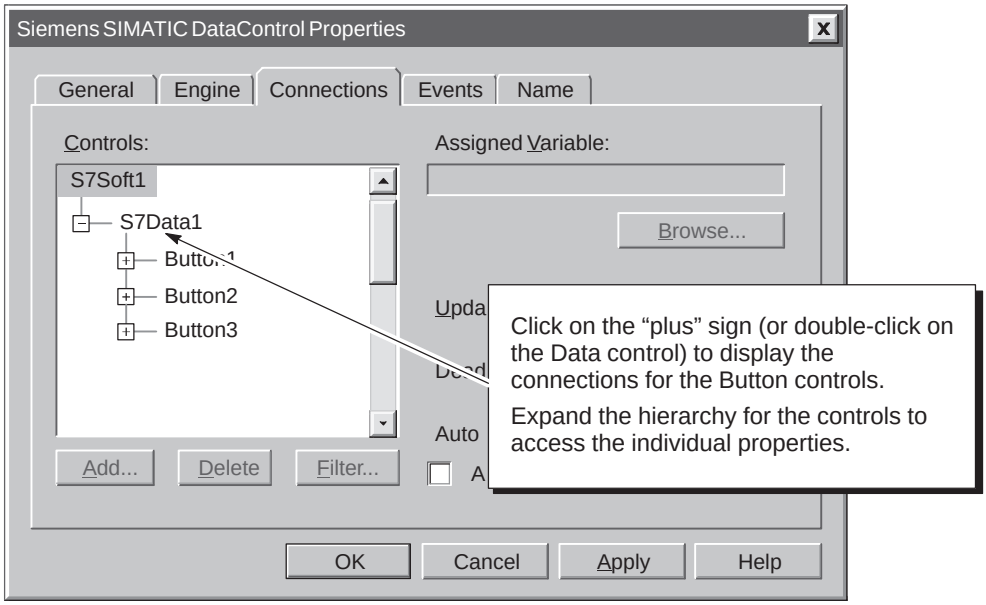

Figure 3-17 Accessing the Connections for the SIMATIC Controls

3. If the properties for Button1 are not already displayed, expand the hierarchy for Button1 and select the Value property.

   You can filter the properties to display only the Value property:

   – Click on the “Filter” button to display the “Property Filter” dialog box and click on the “Add” button to display the “Add” dialog box.
   – Enter the following text in the “Add a new property” field: **`Value`**
   – Click on the “OK” button to add the Value property to the filter and to close the “Add” dialog box.
   – Click on the “OK” button to add the Value property to the filter and to close the “Property Filter” dialog box.
   – Select (click on) the “Apply filter to properties” option to display only those properties in the filter.
4. With the Value property for Button0.0n1 selected, enter **`Q0.0`** in the “Assigned Variable” field See Figure 3-18.

5. Click on the “Apply” button to enter the assigned variable.

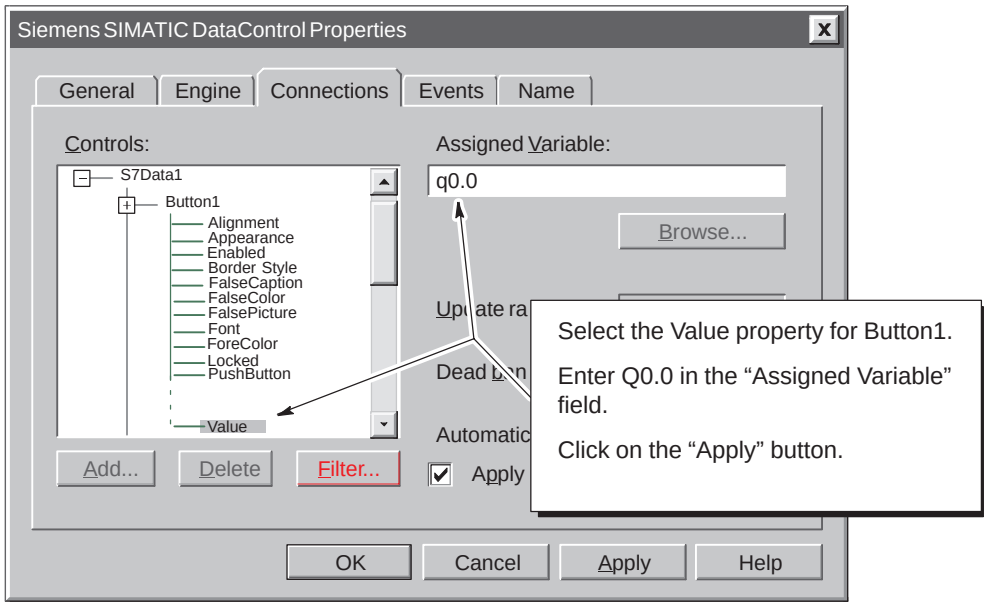

Figure 3-18 Assigning the Variable for Button1

6. If the properties for Button2 are not already displayed, expand the hierarchy for Button2 and select the Value property.
7. With the Value property for Button2 selected, enter **`Q0.1`** in the “Assigned Variable” field. See Figure 3-19.
8. Click on the “Apply” button to enter the assigned variable.

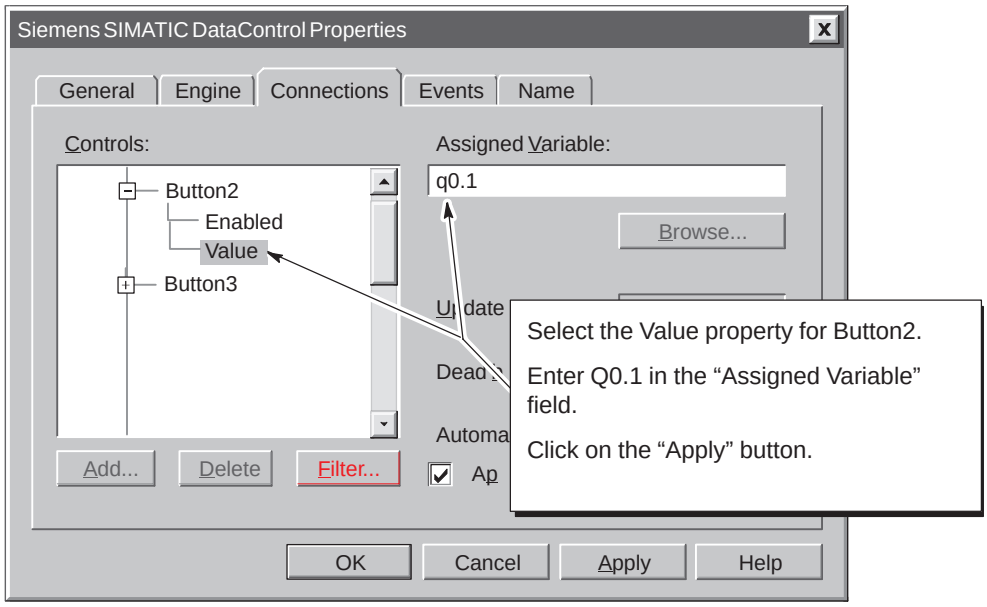

Figure 3-19 Assigning the Variable for Button2

9. If the properties for Button3 are not already displayed, expand the hierarchy for Button3 and select the Value property.
10. With the Value property for Button3 selected, enter **`i0.0`** in the “Assigned Variable” field. See Figure 3-20.
11. Click on the “Apply” button to enter the assigned variable.

You have finished configuring the properties of the Data control. Click on the “OK” button to close the “Properties” dialog box.

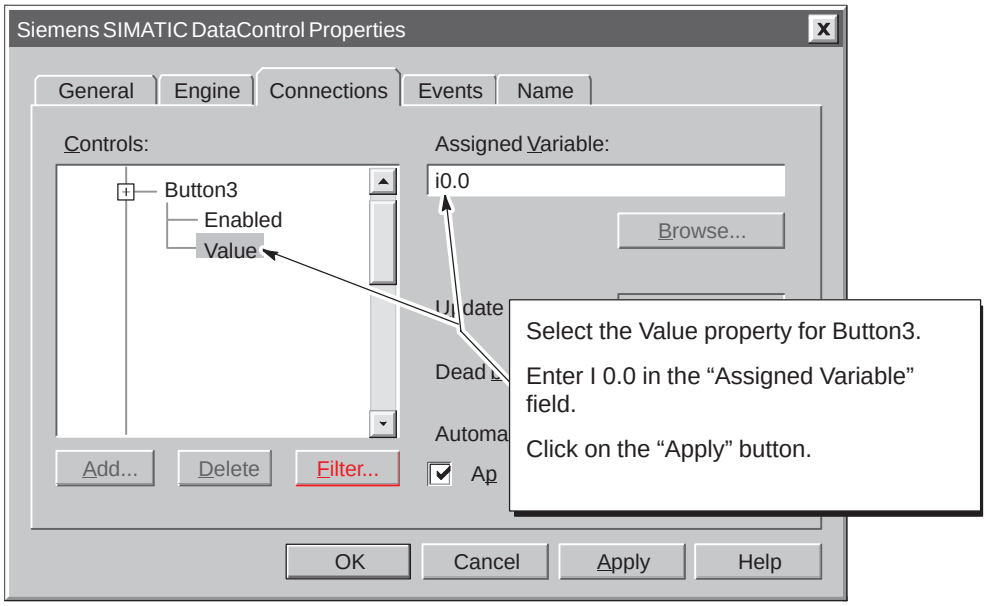

Figure 3-20 Assigning the Variable for Button3

3.7 Configuring the Button Controls on the Process Form

You use the “Properties” dialog box for the Button control to define the appearance of the control. For this example, you will configure the properties for two of the Button controls:

- Button control 1 (Button1):
  - When Q0.0 is off (false), the control is gray and has no caption.
  - When Q0.0 is on (true), the control is red and the caption displays: STOP!
  - If you click on this control, the value of the variable does not change.
- Button control 2 (Button2):
  - When Q0.1 is off (false), the control is gray and has no caption.
  - When Q0.1 is on (true), the control is green and the caption displays: GO!
  - If you click on this control, the value of the variable does not change.

Button control 3 (Button3) remains enabled: when you click on this control, the value of I 0.0 changes in WinLC.

Configuring the First Button Control (Button1)

The “Properties” dialog box for the control allows you to change the label and the color of the control for the different states of the assigned variable: True = 1 (on) and False = 0 (off). You also use this dialog box to disable the control from writing new values to the control engine.

Use the following procedure to configure the properties of the first Button control (Button1):

1. Select (click on) the Button control 1 (Button1).
2. Double-click on Button1 (or click the right mouse button to display a pop-up menu and select the **Button1 Properties** menu command) to display the “Properties” dialog box for the Button control.
3. Click on the “General” tab of the “Properties” dialog box to display the labels (captions) for the control.

4. As shown in Figure 3-21, modify the labels (captions) for the control:
   – In the “TrueCaption” field, replace the text with the new caption: **STOP!**
   – In the “FalseCaption” field, delete the text and leave this field blank.
5. Click on the check box for the Enabled property and deselect this property. See Figure 3-21.

   (When the control is enabled, clicking on the control changes the value of the assigned variable and writes the changed value to the control engine. When you disable the control, clicking on the control does not change the value.)
6. Click on the “Apply” button to enter these changes to Button1.

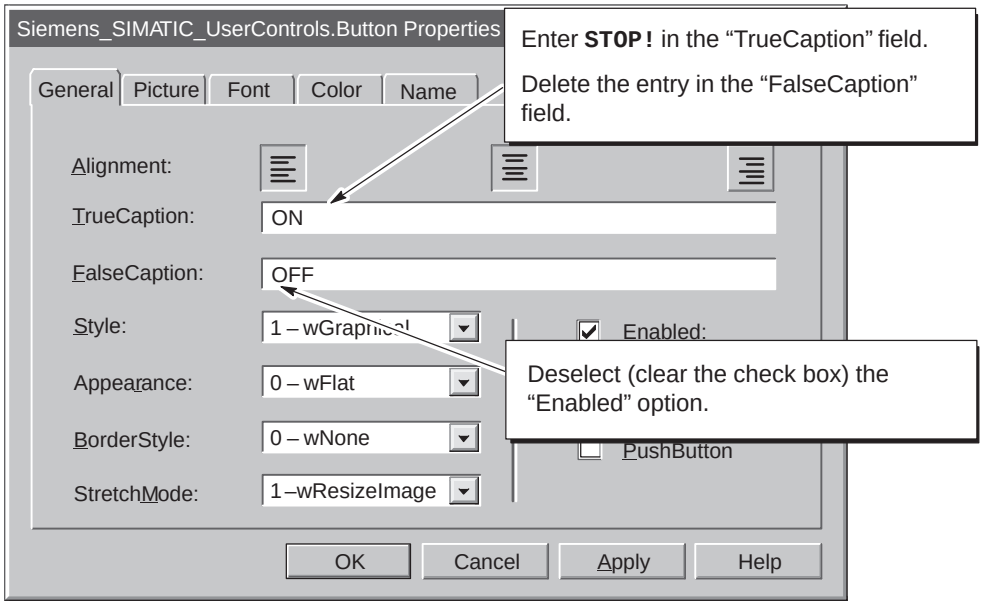

Figure 3-21 Configuring the Caption for Button1 (Button Control 1)

7. Click on the “Color” tab of the “Properties” dialog box to display the color assignments for the two states of the control (True or False).
8. Select (click on) FalseColor in the “Properties” box and click on the color Gray in the “Color Palette” box. See Figure 3-22.

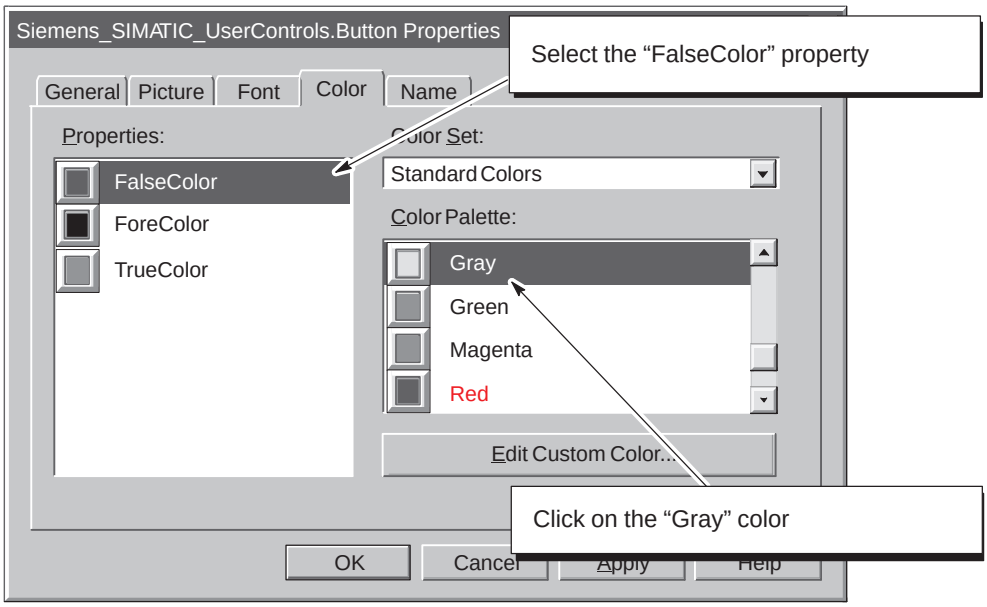

Figure 3-22 Configuring the False Color for Button1 (Button control 1)

9. Select (click on) TrueColor in the “Properties” box and click on the color Red in the “Color Palette” box. See Figure 3-23.
10. Click on the “Apply” button to enter the changes, and click on the “OK” button to close the “Properties” dialog box.

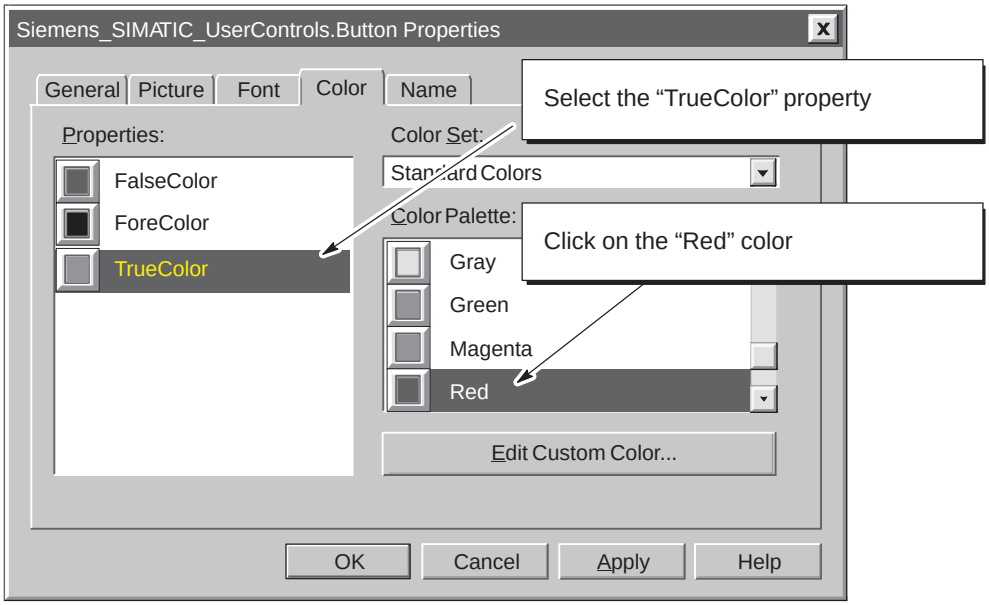

Figure 3-23 Configuring the True Color for Button1 (Button control 1)

Configuring the Second Button Control (Button2)

The second Button control is connected to Q0.1, which is the “Walk” light for the PC Station program. Use the following procedure to configure the properties of the second Button control (Button2):

1. Select (click on) the Button control 2 (Button2).
2. Double-click on Button1 (or click the right mouse button to display a pop-up menu and select the **Button2 Properties** menu command) to display the “Properties” dialog box for the Button control.
3. Click on the “General” tab of the “Properties” dialog box to display the labels (captions) for the control.
4. As shown in Figure 3-24, modify the labels (captions) for the control:
   – In the “TrueCaption” field, replace the text with the new caption: **WALK**
   – In the “FalseCaption” field, delete the text and leave this field blank.
5. Click on the check box for the Enabled property and deselect this property. See Figure 3-24.
6. Click on the “Apply” button to enter these changes to Button2.

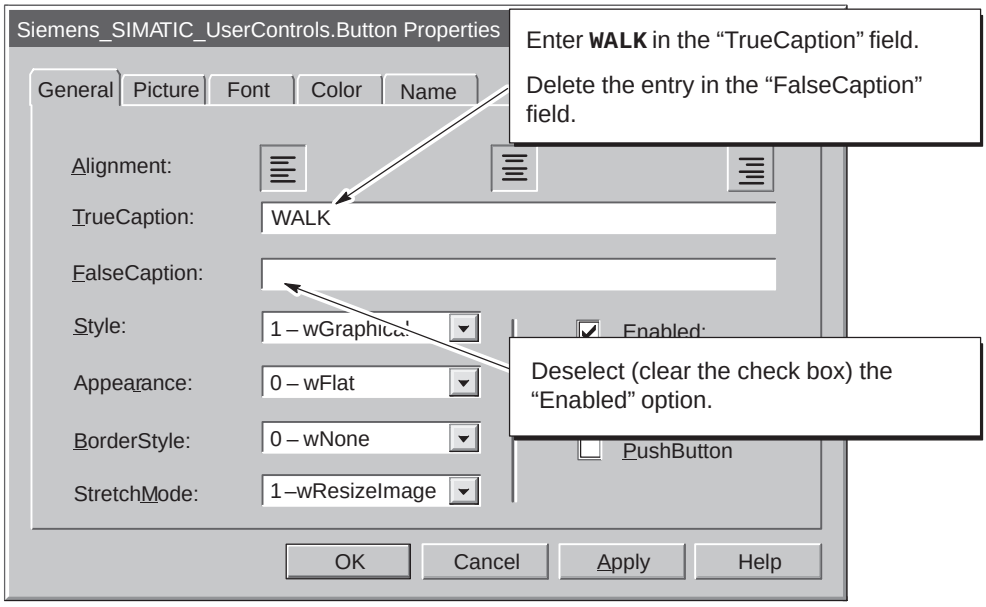

Figure 3-24 Configuring the Caption for Button2 (Button Control 2)

7. Click on the “Color” tab of the “Properties” dialog box to display the color assignments for the two states of the control (True or False).
8. Select (click on) FalseColor in the “Properties” box and click on the color Gray in the “Color Palette” box. See Figure 3-25.

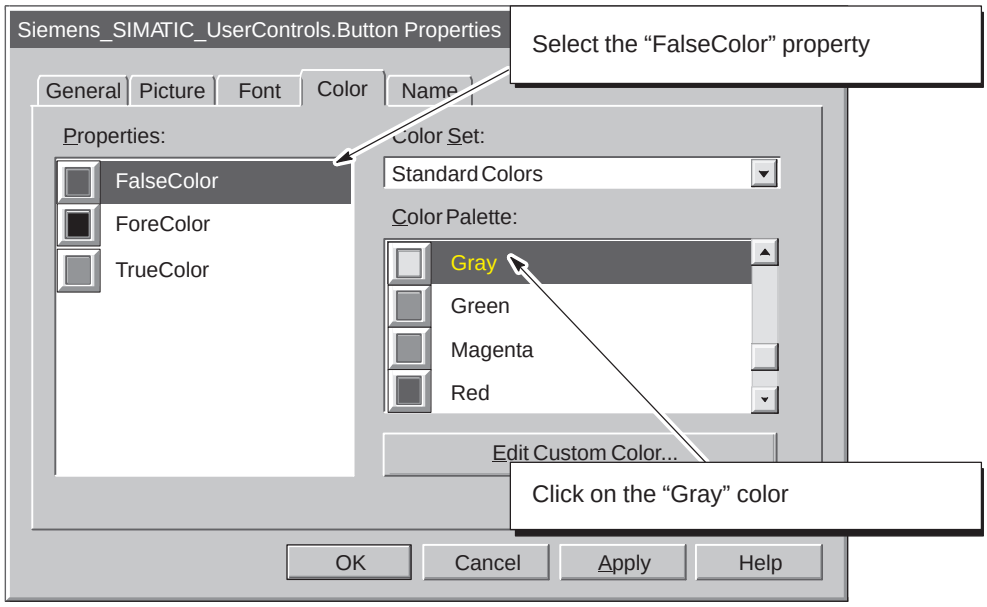

Figure 3-25 Configuring the False Color for Button2 (Button control 2)

9. Select (click on) TrueColor in the “Properties” box and click on the color Green in the “Color Palette” box. See Figure 3-26.

10. Click on the “Apply” button to enter the changes, and click on the “OK” button to close the “Properties” dialog box.

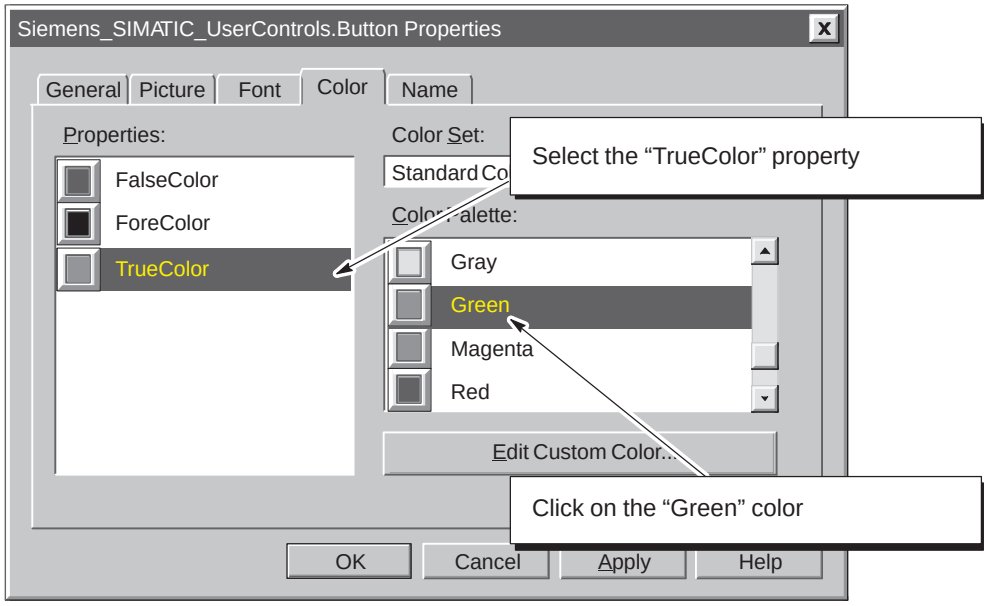

Figure 3-26 Configuring the True Color for Button2 (Button control 2)

3.8 Running the Process Form with the Sample Program

For this example, you have performed the following tasks:

- Started WinLC and redirected MPI communications to WinLC
- Modified the sample program and downloaded the program to WinLC
- Created the process form

You are now ready to run the sample program and access the data with the process form.

Setting WinLC to RUN mode

To start the execution of the sample program, you set WinLC to RUN mode:

1. Display the CPU panel for WinLC.
2. As shown in Figure 3-27. click on the “RUN” or “RUN-P” button to set WinLC to RUN mode. (You can also use the **CPU ▸ RUN** or **CPU ▸ RUN-P** menu command to change the operating mode of WinLC.)

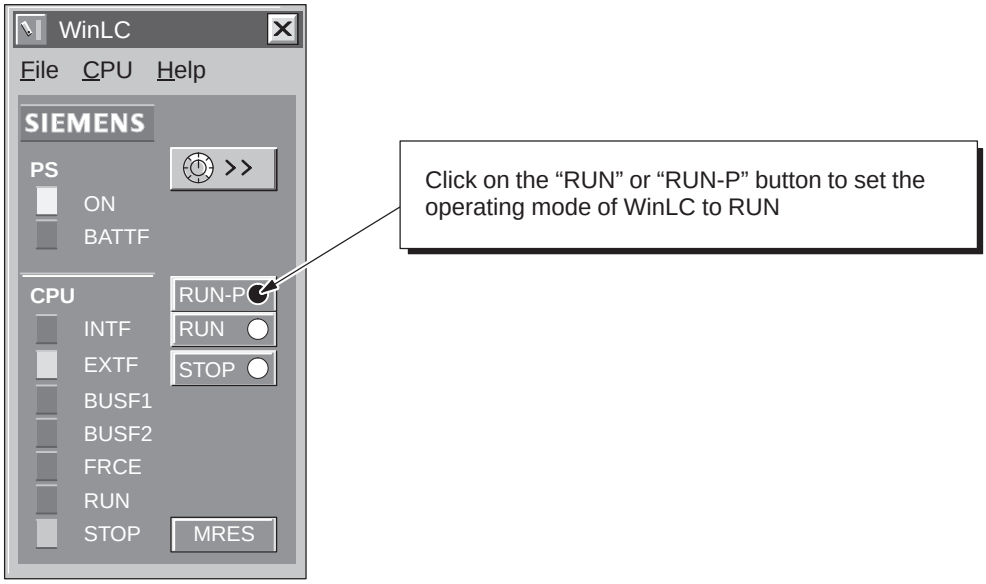

Figure 3-27 Setting WinLC in RUN mode

Connecting the Process Form to the Sample Program

When you switch the container from “Design” mode to “Run” mode, you connect the process form to WinLC.

Use the following procedure to connect the process form with the sample program being executed by WinLC:

1. As shown in Figure 3-28, select the Run icon or use the **Mode ▸ Run** menu command to place the SoftContainer in Run mode and connect the process form to WinLC.
2. As shown in Figure 3-28, click on the button labelled “OFF” (which is Button control 3, or Button3) to start the cycles for the PC Station program.

   Button control 1 (Button1) and Button control 2 (Button2) change color to reflect the status of the outputs.
3. To disconnect the process form from WinLC, select the Design icon or use the **Mode ▸ Design** menu command to return the SoftContainer to Design mode.

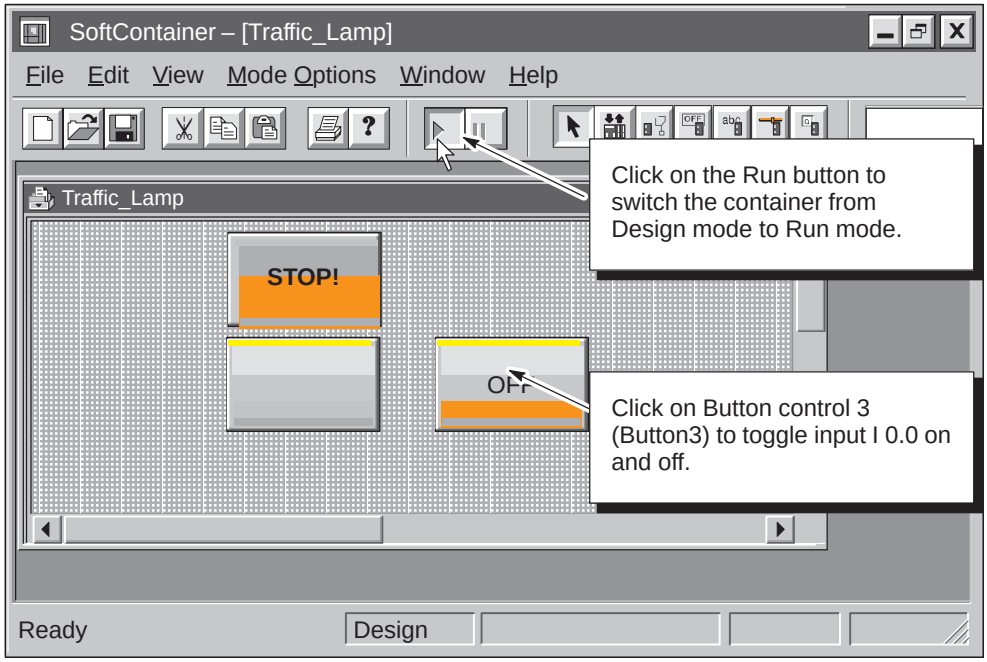

Figure 3-28 Placing the SoftContainer into Run Mode

Using the Tool Manager

4

Chapter Overview

The Tool Manager provides quick access to the programs on your computer. The Tool Manager is configurable: you can insert a shortcut icon for any of your programs into the tray. You can then access that program from the Tool Manager.

4.1 Creating a Toolbar for Easy Access to Your Programs

Figure 4-1 shows the Tool Manager and its shortcut icon. You can change the size of the Tool Manager. You can also choose to display the Tool Manager either horizontally or vertically.

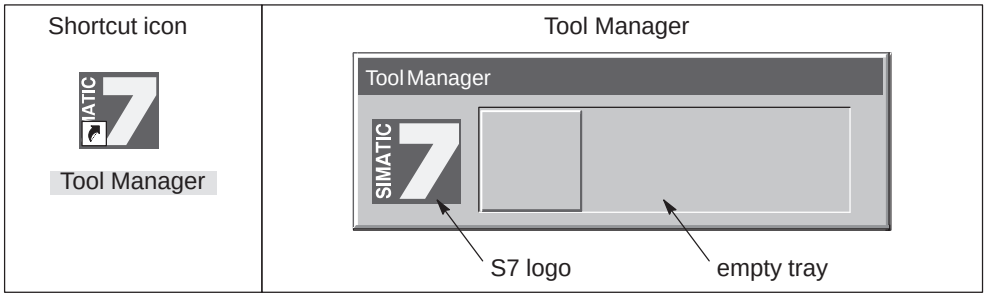

Figure 4-1 Tool Manager

Inserting Icons into the Tool Manager

There are two methods for inserting shortcut icons into the Tool Manager:

- Using the Windows Explorer to “drag and drop” the program or shortcut into the Tool Manager
- Using the **Insert** menu command of the Tool Manager (see Figure 4-2)

Note

Some shortcuts, such as the Panel application of the WinLC, pass command line (cmdline) parameters. To insert a shortcut for these programs, you **must** use Windows Explorer to drag and drop the shortcut to the Tool Manager. Using the **Insert** menu command results in the command line parameter being lost.

Use the following procedure to drag and drop icons into the Tool Manager:

1. Open the Windows Explorer by selecting the **Start ▸ Programs ▸ Windows NT Explorer** menu command.
2. Open the Tool Manager by selecting the **Start ▸ SIMATIC ▸ PC Based Control ▸ Tool Manager** menu command (or by double-clicking on the shortcut icon for the Tool Manager).
3. In the Windows Explorer, select the program or shortcut whose icon is to be inserted into the Tool Manager.

4. Holding down the left mouse button, drag the program or shortcut to the tray of the Tool Manager.
5. Release the left mouse button to drop the icon into the Tool Manager.

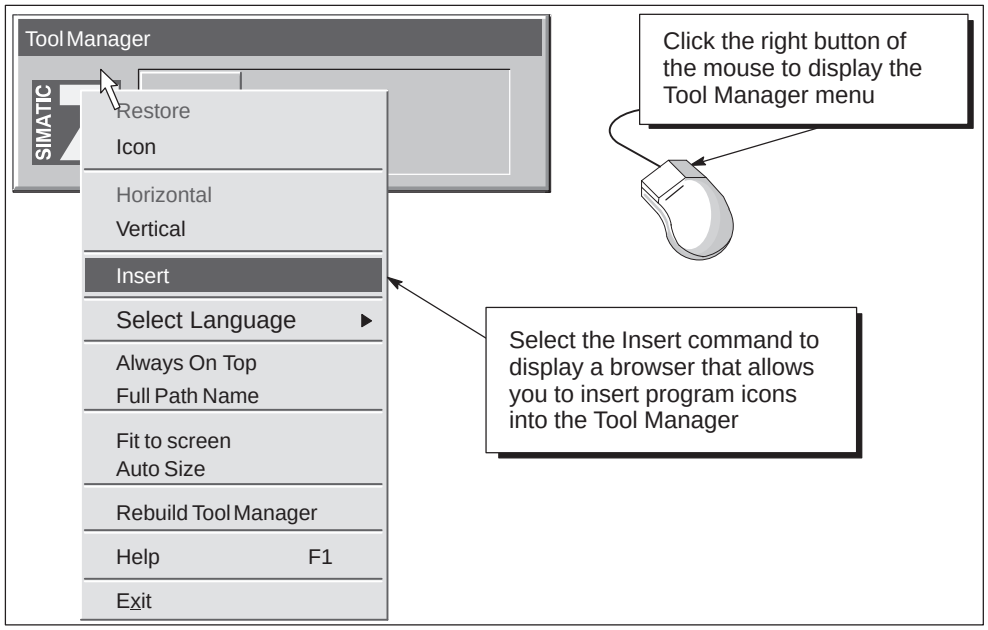

Figure 4-2 Inserting Icons into the Tool Manager

Use the following procedure to insert icons into the Tool Manager:

1. Open the Tool Manager by selecting the **Start ▸ SIMATIC ▸ PC Based Control ▸ Tool Manager** menu command.
2. Click the right button of the mouse to display the menu options for the Tool Manager. See Figure 4-2.
3. Select the **Insert** menu command to display a browser for selecting program icons.
4. Select the icons from the browser and confirm.

Customizing the Display Options for the Tool Manager

You can use the mouse to resize the Tool Manager. You can also use the options menu (shown in Figure 4-2) to further customize the Tool Manager:

- Select either the **Horizontal** or **Vertical** menu command to choose the orientation for the Tool Manager.
- Select the **Always On Top** menu command to always display the Tool Manager on top of the application, instead of being hidden behind an open application.
- Select the **Auto Size** menu command to automatically size the Tool Manager to the width (or height) of the screen.
- Select the **Full Path Name** menu command to display the path name for the shortcut icons.
- Select the **Rebuild Tool Manager** menu command to update (refresh) the icons for existing program or to remove the icons for programs that have been removed or deleted.

Pressing the F1 key or selecting the **Help** menu command displays the online help for the Tool Manager.

4.2 Using the Tool Manager without a Mouse

Table 4-1 lists the specific keyboard operations for various key combinations. You can use the keyboard to access all of the functions of the Tool Manager:

- Pressing the F1 key displays the online help for the Tool Manager.
- Pressing the Tab key changes the focus between the S7 logo and the shortcut icons. If the Tool Manager is running, pressing the ALT + Tab keys displays the Tool Manager.
- Pressing the Return key when a shortcut icon has the focus starts the associated program.

Table 4-1 Keyboard Operations for the Tool Manager

Key Combination	Description
Tab	Displays the Windows Taskbar: tab to the S7 logotype to give Tool Manager the focus
Alt + Tab	Alternates the focus between the S7 logotype and the selected shortcut icon
When focus is on the S7 logotype...	
Page Up or Page Down	Displays the Tool Manager in a horizontal or vertical orientation
Left arrow or Right arrow	Displays the application menu when the Tool Manager is oriented vertically
Shift + (Left or Right arrow)	Move the Tool Manager left or right
Cntl + (Left or Right arrow)	Moves the Tool Manager to the left or right edge of the screen
Alt + (Left or Right arrow)	Stretches or shrinks the Tool Manager when the Tool Manager is oriented horizontally (Not available in Auto Size mode)
Up arrow or Down arrow	Displays the application menu when the Tool Manager is oriented horizontally
Shift + (Up or Down arrow)	Moves the Tool Manager up or down
Cntl + (Up or Down arrow)	Moves the Tool Manager to the top or bottom edge of the screen
Alt + (Up or Down arrow)	Stretches or shrinks the Tool Manager when the Tool Manager is oriented horizontally (Not available in Auto Size mode)
Enter	Minimizes or restores the Tool Manager
When focus is on a shortcut icon...	
Home or End	Sets focus to the first or last shortcut icon
Enter	Runs the application of the shortcut icon that has focus
Delete	Deletes the shortcut icon that has focus
Left arrow or Right arrow	Tool Manager is horizontal: Moves the cursor left or right Tool Manager is vertical: Displays the icon menu
Up arrow or Down arrow	Tool Manager is horizontal: Displays the icon menu Tool Manager is vertical: Moves the cursor left or right

4.3 Changing the Language Setting for WinAC

The Tool Manager provides a menu command for changing the language setting for all of the the WinAC software products. You can select between English, French and German for the menus and dialog boxes of the WinAC software (if all languages were installed when you installed WinAC Basis).

Use the following procedure to change the language setting:

1. Open the Tool Manager by selecting the **Start ▸ SIMATIC ▸ PC Based Control ▸ WinAC Toolmanager** menu command (or by double-clicking on the shortcut icon for the Tool Manager).
2. Click the right button of the mouse to display the menu options for the Tool Manager. See Figure 4-3.
3. Select the **Select Language** menu command to display the menu for selecting the language for WinAC. See Figure 4-3.
4. Select the language for WinAC.
5. Restart your applications to change the language for the menus and dialog boxes for the WinAC software.

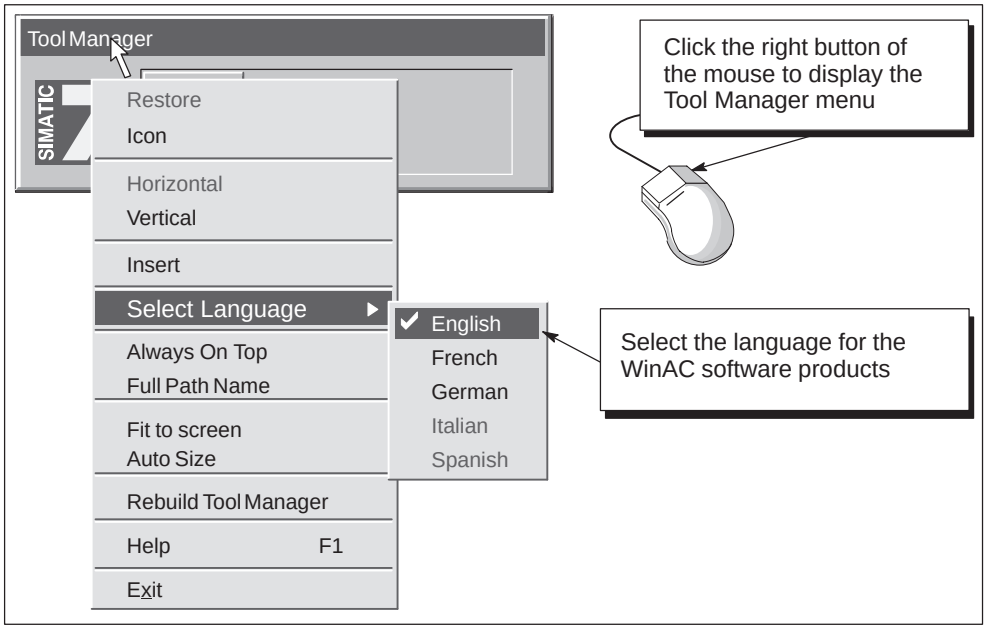

Figure 4-3 Changing the Language for WinAC

Distributed Component Object Model (DCOM)

A

Chapter Overview

WinAC allows you to communicate across networks using Microsoft's Distributed Component Object Model (DCOM). You can use DCOM to integrate distributed applications by way of a network. A distributed application consists of multiple processes or different computers that cooperate to accomplish a single task.

DCOM is a set of Microsoft concepts and program interfaces in which client program objects can request services from server program objects on other computers in a network. The Component Object Model (COM) provides a set of interfaces that allow clients and servers to communicate within the same computer (running Windows 95 or Windows NT).

A.1 Using DCOM to Expand the Capabilities of WinAC

You can run the components of WinAC on a stand-alone computer, as shown in Figure A-1. In this model, this computer provides the complete control system.

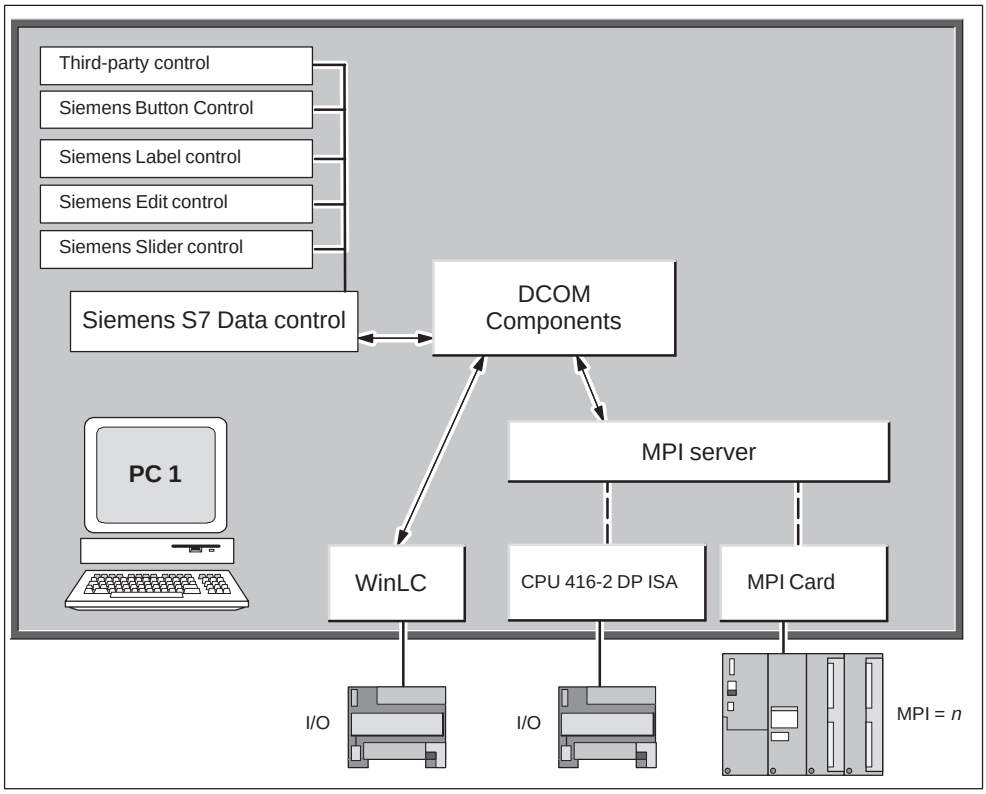

Figure A-1 Using WinAC Components with DCOM on a Single Computer

You can also utilize Microsoft's DCOM technology to create a network of computers that cooperate to provide the control system for a machine or process. Figure A-2 shows how one computer running an application that uses ActiveX controls (from Computing) can use DCOM to communicate with a different computer that uses WinLC (or other PLCs) to control a process.

The NT operating system provides a configuration tool (dcomcnfg) for setting up your DCOM security. Use this tool to configure the server and client computers.

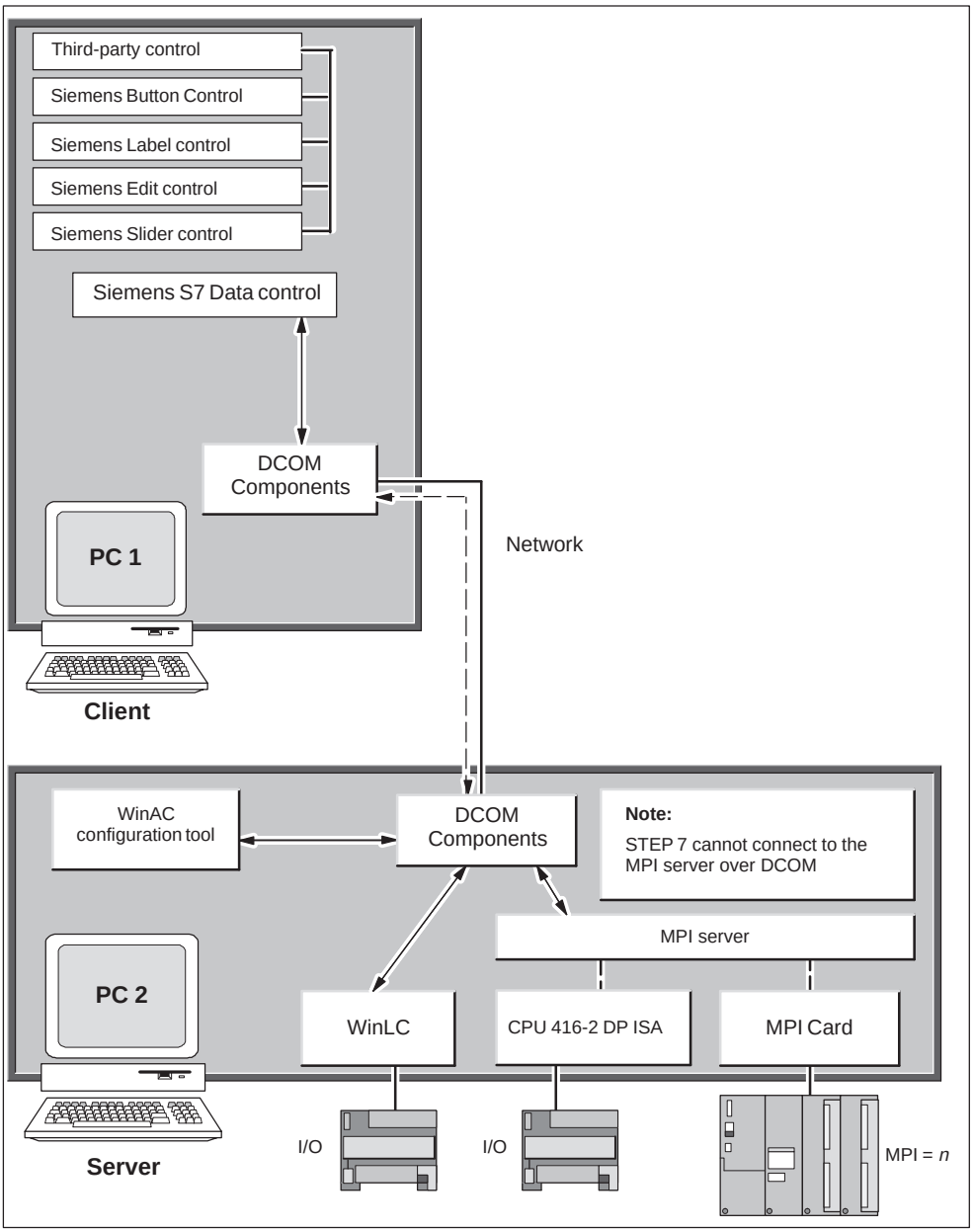

Figure A-2 Using WinAC with Several Computers over DCOM

Note

You install the WinAC authorization on the server computer; you install the SIMATIC Computing authorization on the client computer. If you want to run SIMATIC Computing on a PC other than the PC running WinLC, then you must purchase SIMATIC Computing standalone. For more information about installing an authorization, see Section 2.4.

A.2 Connecting to a Specific Control Engine over DCOM

As shown in Figure A-3, you can use the SIMATIC Data control to connect your program to a control engine residing on a different computer.

Note

When you configure the SIMATIC Data control to connect directly to a single control engine, you cannot connect a tag file. This means that you cannot use symbol names for the variables in the control engine.

To use symbol names, select the option for connecting via a tag source and browse to a tag file that contains symbols for only one control engine. Use the TagFile Configurator for creating tag files and connecting to control engines over DCOM. See the *Computing User Manual* for information about using STEP 7 and the TagFile Configurator.

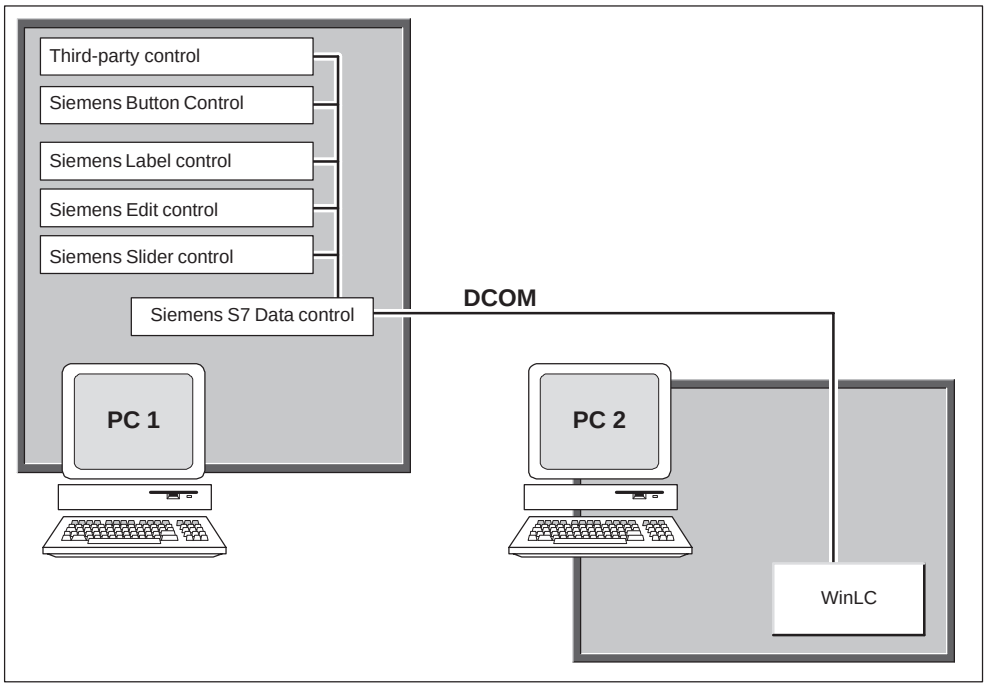

Figure A-3 Connecting to a Specific Control Engine over DCOM

OLE for Process Control (OPC)

B

Chapter Overview

OLE for Process Control (OPC) provides a standard mechanism for communicating to numerous data sources, whether they be the devices on your factory floor or a database in your control room. You can use the OPC server provided with the Computing software to communicate with the control engine (for example, WinLC or CPU 416-2 DP ISA) and provide access to the process data. Computing provides an OPC server that allows any OPC client application to access data in the control engine; Computing does not provide any OPC client application.

Computing implements the mandatory interfaces, as defined in the version 2.0 specification from the OPC Foundation, and also implements the IOPC BrowseServerAddressSpace interface.

OPC is based on the OLE/COM technology from Microsoft. For more information about OPC, refer to the OPC specification *OLE for Process Control Data Access Standard, version 2.0* from the OPC Foundation.

B.1 Using OPC with Computing

OPC allows you to access data from the plant floor and integrate the data into your existing business systems. You can use off-the-shelf tools (such as SCADA packages, databases, spreadsheets) to assemble a system that meets your needs. As shown in Figure B-1, OPC provides an open and effective communication architecture which concentrates on data access and not the types of data.

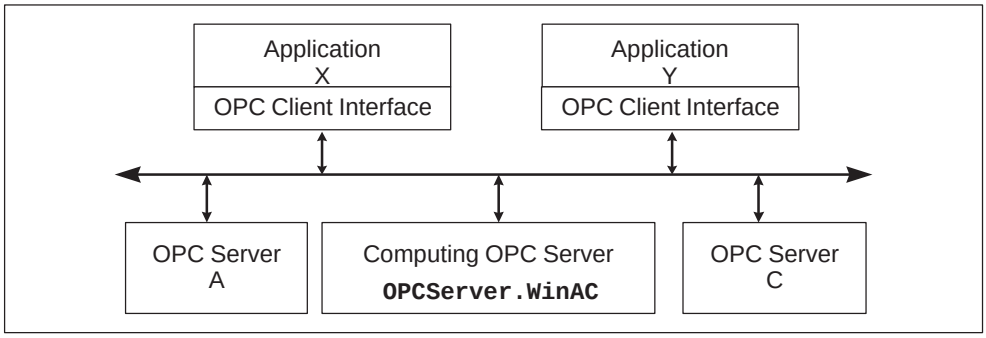

Figure B-1 Applications Working with Many OPC Servers

Your OPC client connects to the OPC server object provided by Computing. This connection allows you to create and manipulate OPC group objects, which organize the data to be accessed. You can activate or deactivate a group as a unit, or you can “subscribe” to the list in a group of items so that you can be notified when the data change. (A group is a collection of items.) Figure B-2 shows the connection from the OPC client application through WinAC to the process data.

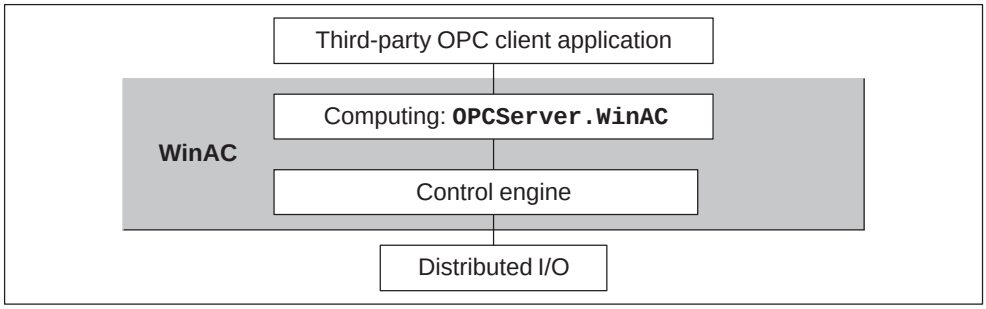

Figure B-2 Using the OPC Server to Access Your Process Data

To access the OPC server provided by the Computing software, browse to:
OPCServer.WinAC

S

T

W

To

SIEMENS ENERGY & AUTOMATION INC
ATTN: TECHNICAL COMMUNICATIONS M/S 519
3000 BILL GARLAND ROAD
PO BOX 1255
JOHNSON CITY TN USA 37605–1255

From

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Job Title: _

Company Name: _

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Country: _

Telephone: _

Please check any industry that applies to you:

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- ❐ Electrical Machinery
- ❐ Food
- ❐ Instrument and Control
- ❐ Non-electrical Machinery
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