Notices

Notice 1

The information in this document is subject to change without notice and should not be construed as a commitment by ABB. ABB assumes no responsibility for any error that may occur in this document.

Notice 2

This manual complies with the SMS 510 revision 1.0.0.

Notice 3

Additional information may be found in the Release Notes.

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LON is a registered trademark of Echelon Corporation.
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1 Introduction

This chapter describes the contents of the SMS 510.

1.1 Contents

1.1.1 Software

Categorization of the software:

- **Base System**: Kernel software, additional base tools and services, providing a framework for the object types and tools.
- **RED 500 Support**: RED 500 object types and the RED Relay Tool for parameterization of RED 500 series relays.
- **SPACOM Support**: SPACOM object type and the SPA Relay Tool for parameterization of SPACOM series relays.
- **REB 500 / RE.x16 Support**: REB 500 and RE. 216/316 object types and the CAP2/316, REBWIN 4.10 tools for these object types.
- **REx 5xx Interface**: REx 5xx object type and the interface for the Parameter Setting tool. Also includes the installer for the Microsoft® Internet Explorer v.4, which is needed for viewing the HTML Help shipped with the Parameter Setting tool.
- **HV/Collect Tool**: HV/Collect Tool for working with the disturbance recorders.
- **DR Collector Tool**: DR-Collector Tool for working with the disturbance recorders.
- **Documentation**: SMS 510 documentation in PDF format and an installer for installing the Acrobat Reader (version 3.01) from Adobe Corporation. The Acrobat Reader is needed to view the documentation.

This categorization is also present as installation options in the main SMS 510 installation application.

1.1.2 Documentation

SMS 510 manuals are listed in Table 1.

---

1 Acrobat is a registered trademark of Adobe Corporation.
The SMS 510 documentation is available both in electronic and printed format.

**Note!** The SMS 510 delivery contains the documentation in electronic format only. The paper copies can be acquired by placing a separate order.

### 1.1.3 SMS 510 installation applications

The SMS 510 Program CD contains two installation applications, which you need for installing the SMS 510. The applications are the following:

- SMS510.EXE, the main SMS 510 installation application.

<table>
<thead>
<tr>
<th>Manual</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMS 510 Installation and Commissioning Manual</td>
<td>1MRS751265-MEN</td>
<td>Provides installation and commissioning instructions for SMS 510 software.</td>
</tr>
<tr>
<td>SMS 510 Operator’s Manual</td>
<td>1MRS751267-MUM</td>
<td>Provides information on using the base system functions of SMS 510.</td>
</tr>
<tr>
<td>SM/RED Configuration Manual</td>
<td>1MRS751392-MEN</td>
<td>Provides information on using the object types for the RED 500 series of relays.</td>
</tr>
<tr>
<td>SM/SPACOM Configuration Manual</td>
<td>1MRS751393-MEN</td>
<td>Provides information on using the SPACOM object type.</td>
</tr>
<tr>
<td>RED Relay Tool Operator’s Manual</td>
<td>1MRS751383-MUM</td>
<td>Provides information on using the RED Relay Tool.</td>
</tr>
<tr>
<td>SPA Relay Tool Operator’s Manual</td>
<td>1MRS751385-MUM</td>
<td>Provides information on using the SPA Relay Tool.</td>
</tr>
<tr>
<td>DR-Collector Tool Operator’s Manual</td>
<td>1MRS751387-MUM</td>
<td>Provides information on using the DR-Collector Tool.</td>
</tr>
<tr>
<td>SM/Gateways Configuration Manual</td>
<td>1MRS751708-MEN</td>
<td>Provides information on using the communication gateway object types.</td>
</tr>
<tr>
<td>REG216 Operating Instructions</td>
<td>1MDU02005-EN</td>
<td>Provides operating instructions for Numerical Generator Protection Types REG 216, REG 216 Compact and Numerical Control Unit Type REC 216.</td>
</tr>
<tr>
<td>REL316*4 Operating Instructions</td>
<td>1MRB520050-UEN</td>
<td>Provides operating instructions for Numerical Line Protection Type REL 316*4.</td>
</tr>
<tr>
<td>Release Notes</td>
<td>1MRS751750-MZA</td>
<td>Provides general information on this release of SMS 510.</td>
</tr>
</tbody>
</table>

Table 1. SMS 510 manuals.
- PST.EXE, installs the Parameter Setting Tool (PST) and supported terminal libraries of the REx5xx object type.

1.1.4 Hardware

The communication cables listed in Table 2, are regarded as accessories and are not included in the SMS 510 delivery. They can be acquired by placing a separate order.

<table>
<thead>
<tr>
<th>Cable</th>
<th>Type</th>
<th>Relays</th>
</tr>
</thead>
<tbody>
<tr>
<td>1MKC9500001-1</td>
<td>Opto</td>
<td>RED 500</td>
</tr>
<tr>
<td>SPA-ZP 17A3</td>
<td>RS 232 - RS 232</td>
<td>SPTO front</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPCR front</td>
</tr>
<tr>
<td>SPA-ZP 5A3</td>
<td>RS 232 - TTL connector</td>
<td>SPACOM 100/300 series</td>
</tr>
<tr>
<td>SPA-ZP 6A2</td>
<td>RS 232 - RS 485</td>
<td>SACO, except for SACO 148D4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPAC 300/500/600 rear</td>
</tr>
<tr>
<td>SPA-ZP 21A</td>
<td>Connection cable for SPA-ZP 6A2 to SACO screw terminal</td>
<td>SACO, except for SACO 148D4</td>
</tr>
</tbody>
</table>

*Table 2. Communication hardware.*
2 Requirements

This chapter describes the requirements for installing the SMS 510 software.

2.1 SMS 510 requirements

SMS 510 v. 1.0.0 sets the following hardware and software requirements on the PC. Notice also the kernel-related dependencies, explained in section 3.2.6.

2.1.1 Software requirements

Table 3 lists the software requirements set by SMS 510.

<table>
<thead>
<tr>
<th>Item</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Microsoft® Windows NT® 4.0 Workstation or higher. On Windows NT 4.0, it is highly recommended to have the Service Pack 5 installed.</td>
</tr>
<tr>
<td>Network</td>
<td>Network software.</td>
</tr>
<tr>
<td>Remote Access Service (RAS)</td>
<td>Installation of RAS to enable 'Remote' connections from SMS 510 to SMS 510, SYS 500 and COM 500.</td>
</tr>
<tr>
<td>Microsoft Internet Explorer</td>
<td>Version 4 or higher to be capable of viewing the HTML help shipped with the PST tool.</td>
</tr>
</tbody>
</table>

Table 3. SMS 510 software requirements.

2.1.2 Hardware requirements

Table 4 lists the hardware requirements set by SMS 510.

---

2 Microsoft is a registered trademark of Microsoft Corporation.

3 Windows NT is a registered trademark of Microsoft Corporation.
## Requirements

### Minimum Recommended

<table>
<thead>
<tr>
<th>Item</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Pentium II 133 MHz</td>
<td>Pentium II 200 MHz</td>
</tr>
<tr>
<td>Memory</td>
<td>64 MB</td>
<td>128 MB</td>
</tr>
<tr>
<td>Display</td>
<td>SVGA, 800x600, 256 colours</td>
<td>SVGA, 1024x768, 256 colours</td>
</tr>
<tr>
<td>File system</td>
<td>NTFS file system on the installation drive</td>
<td></td>
</tr>
<tr>
<td>Hard disk space</td>
<td>300 MB</td>
<td>350 MB</td>
</tr>
<tr>
<td>Serial ports</td>
<td>Two COM ports</td>
<td></td>
</tr>
<tr>
<td>Parallel ports</td>
<td>Optionally one parallel port for printing purposes, if network printing not available</td>
<td></td>
</tr>
<tr>
<td>CD-ROM drive</td>
<td>Any device supported by the operating system</td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td>Any device supported by the operating system</td>
<td></td>
</tr>
<tr>
<td>ISA slots</td>
<td>One slot for each RER 109 PCLTA card</td>
<td></td>
</tr>
<tr>
<td>PCI slots</td>
<td>One slot for each PCLTA-20 card</td>
<td></td>
</tr>
<tr>
<td>Network adapter card</td>
<td>Any device supported by the operating system</td>
<td></td>
</tr>
<tr>
<td>Modem</td>
<td>Any Hayes compatible modem supported by the operating system</td>
<td></td>
</tr>
</tbody>
</table>

### Additional requirements

Table 5 lists the additional requirements set by SMS 510.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User account</td>
<td>You must be logged on to the operating system with administrator rights in order to install the software successfully, otherwise the installation is denied.</td>
</tr>
<tr>
<td>MicroSCADA service</td>
<td>The MicroSCADA service is not allowed to run in the background during the installation, otherwise the installation is denied.</td>
</tr>
</tbody>
</table>

Table 5. Additional requirements.

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4 Pentium is a registered trademark of Intel Corporation.
3 Installation

This chapter describes the software installation procedure of the SMS 510.

3.1 Preparing your computer for the SMS 510 installation

It is highly recommended that you make the following preparations before you install SMS 510.

3.1.1 Install-time user account

Ensure that you are able to logon to the computer from a user account having administrator rights.

3.1.2 Operating system software

Network software

Even if your computer does not participate in a network, install the Network software, if not done previously. It is recommended to install at least the TCP/IP network protocol.

Windows NT 4.0 Service Pack

Before you install SMS 510, consider updating the Windows NT 4.0 Service Pack to the recommended level, if not done previously.

3.2 Overview

3.2.1 Product’s current version

SMS 510 installations maintain a single current version of SMS 510 on your computer’s system registry. The current version information is the basis for installations to determine proper install-time actions.

3.2.2 Non-forced installation

A non-forced installation means, that the installation allows you to install any combination of the available installation options. This is possible only when you install to a destination containing the same version of SMS 510 as determined by the current version information.

This kind of installation should come into question, if part of the product obviously has become corrupt or is missing.
3.2.3 **Forced installation**

A *forced installation* means, that the installation does not allow you to select which portions of the software to install. This happens if SMS 510 has not been installed to the target computer previously or another version of SMS 510 has been installed to the currently selected destination. This is to guarantee consistent software installations.

3.2.4 **License of the product**

After the installation of the SMS 510 Base System, you are requested to supply license information when you start SMS 510 for the first time.

The required information is included in the SMS 510 delivery on the license label, which is located on the cover of the SMS 510 Program CD case.

3.2.5 **Applications running at install-time**

It is recommended to close all unnecessary applications before installing SMS 510.

3.2.6 **System-wide product interdependencies**

3.2.6.1 **Multiple installations of the kernel software**

The kernel software is embedded into a line of products. Due to the nature of the kernel, some issues may raise considerations regarding computers containing multiple installations of the kernel (each product installs its own copy of the kernel software).

The product line using the same kernel comprises:

- CAP 501 v. 2.0.0 or newer.
- CAP 505 v. 2.0.0 or newer.
- COM 500 v. 3.0 or newer.
- SYS 500 v. 8.4.3 or newer.

3.2.6.2 **MicroSCADA service**

The MicroSCADA service serves as a core part in execution of the kernel software. Without a properly installed MicroSCADA service, you can not use SMS 510 or any other product utilizing the kernel. A single kernel can execute at a time meaning that you can use only one of these products at a time.

**Controlling the rights to start and stop the MicroSCADA service**

By default, you are allowed to start and stop the MicroSCADA service only, if your logon account is granted Administrator rights. However, you may grant this right also to any user belonging to either the built-in Users group or any non-built-in user group,
defined on your computer. You can assign these rights by means of the MicroSCADA Service Access Manager tool. However, you should keep in mind that the access configuration is system-wide, affecting the above mentioned product line. For detailed information on the tool, see page 28.

3.2.6.3 The MicroSCADA user account

A user account named 'MicroSCADA' is created during the installation, if the installation does not detect one on the computer. This user account is required to enable execution of the MicroSCADA service.

When utilizing remote connections, the password of the MicroSCADA user account must be identical on both of the involved computers.

Note! Regarding the modification of this user account, only use the 'MicroSCADA User Password' dialog box for the purpose, since usage of the operating system’s user account management tools may bring the kernel into an inoperable state. For detailed information on the tool, see page 27.

3.2.6.4 Kernel incompatibility issues

Kernel revisions, that are incompatible with this version of SMS 510 and with the above mentioned product line, have been shipped with the following products:

- SYS 500 8.4.2A or older.
- COM 500 2.0A or older.

If you have either of these product versions installed on your computer, please take into account, that the installation of SMS 510 invalidates SYS 500 versions 8.4.2A and older and COM 500 versions 2.0A and older. These products will not be operable after the installation of SMS 510. To continue using the SYS 500 and COM 500 products, you must upgrade them according to Table 6.

<table>
<thead>
<tr>
<th>Product</th>
<th>Incompatible version</th>
<th>Compatible version</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS 500</td>
<td>8.4.2A or older</td>
<td>8.4.3 or newer</td>
</tr>
<tr>
<td>COM 500</td>
<td>2.0A or older</td>
<td>3.0 or newer</td>
</tr>
</tbody>
</table>

Table 6. Required SYS 500, COM 500 updates.

The SMS 510 installation notifies you, if it detects a SYS 500 or a COM 500 version, which should be upgraded. You are also provided the option to cancel the installation without modifying the computer’s configuration.

Note! If you are unsure about the possible effects of SMS 510 installation on the SYS 500 and/or COM 500, it is recommended that you do not install SMS 510.
3.3 Software installation procedure outlined

3.3.1 Overview

The installation of the SMS 510 software is done according to the following steps and in the following order:

1. Ensure, that the operating system is in an acceptable state, see section 3.1.
2. Install the main portion of the SMS 510 software by executing the SMS510.EXE installation application.
3. Install the Parameter Setting tool software by executing the PST.EXE installation application.

3.3.2 Main SMS 510 installation

When you have started the main SMS 510 installation, first it gathers the following information from your system:

- **Operating system**
  - If you are not running Windows NT 4.0 or higher, the installation notifies you, that it cannot continue.

- **User rights**
  - If you have logged on with insufficient user rights, you are prompted to exit the installation and to logon to operating system from an account having Administrator rights.

- **Current version**
  - If a version of SMS 510 already has been installed, the installation suggests to use the destination drive of the existing installation. Otherwise the installation looks for the first suitable destination drive; a physical NTFS formatted hard disk drive, and uses it as the default destination drive.

- **Status of the MicroSCADA service**
  - If the installation detects that the MicroSCADA service is running, you are prompted to exit the application, that utilizes the service. You are not allowed to continue with the installation while the service is executing.

- **Incompatible kernel revisions of SYS 500 and COM 500**
  - Installations of SYS 500 and COM 500, that are known to contain incompatible kernel revisions are detected. Provided, that such product versions are detected to be installed and superseding versions with compatible kernel of SYS 500 or COM 500 are not detected on the computer, you are prompted whether or not to continue the SMS 510 installation.

After these initial checks, the installation welcomes you to the SMS 510 installation. Thereafter, the SMS 510 product license agreement is displayed, explaining you the terms under which the product may be used. Once you have accepted license agreement terms by continuing the installation, a purely informative system information dialog box, based on the current version information, informs you about the status of SMS 510 on your computer.
Next, you enter the 'Select' dialog box, which is the main dialog box of the installation. Provided, that the current version is the same that you are installing and you are using the suggested destination drive, you can select any combination of the available installation options. Otherwise, the installation forces to install all the available options to the selected destination drive. You can change the destination drive by means of the 'Select Destination Drive' dialog box, which you access from the 'Select' dialog box.

Once you are satisfied with the settings you have specified, you can start the actual software installation from the main dialog box. Notice that, prior to that your computer has not been modified in any way.

If you install the Base System, the installation prompts you for the following information:

- Password for the MicroSCADA user account. Whether this MicroSCADA user account information is requested depends on your computer’s configuration.

- The operating system user groups, to which you wish to grant the rights to start and stop the MicroSCADA service on your computer.

Finally, when the installation has completed, you are notified about it. Depending on the status of some of the installed files, you may be requested to reboot your computer.

After the installation has been completed, you will find a program folder named 'SMS 510 1.0.0' which contains the icons for using SMS 510 software. In addition, a shortcut to this program folder is added onto your operating system desktop.

### 3.3.3 Parameter Setting tool installation

The PST installation is done separately from the main installation by means of the stand-alone installation application (PST.exe).

### 3.4 Installing the software

#### 3.4.1 Starting the main installation

To start the SMS 510 installation, place the SMS 510 Program CD into your CD-ROM drive. The installation application is named as 'SMS510.exe' and it is located in the root directory of the Program CD.

For example, provided, that your CD-ROM drive has been assigned the drive letter 'Y:' do the following steps:

- Press the <Control>+<Esc> key combination to open the operating system Start Menu.

- Choose 'Run' and enter the following command in the 'Run' dialog box:
Y:\SMS510.EXE

- Click ‘OK’ to start the SMS 510 installation.

If the initial checks are passed without any notifications, the installation enters directly the Installation Wizard, which is explained in the following.

### 3.4.2 Installation Wizard

The software installation comprises a series of dialog boxes referred to as the Installation Wizard, which guides you through the SMS 510 installation. The installation can be exited virtually at any point by either clicking 'Exit' where available or by pressing the <Esc> key from the keyboard. You will be prompted to confirm that you actually wish to exit the installation prematurely.

Most of the information needed to install SMS 510, is gathered in the Installation Wizard dialog boxes, thereafter the installation transfers the software onto your computer. However, during the process of transferring the software, you may be prompted for additional information depending on your computer configuration.

The following paragraphs describe in detail each of the Installation Wizard dialog boxes in the order they appear during the installation.

#### 3.4.2.1 Welcome

The ‘Welcome’ dialog box welcomes you to the SMS 510 installation, see Figure 1.

![Welcome dialog box](welcome.png)

*Figure 1. The 'Welcome' dialog box.*

Click 'OK' to continue with the installation. To exit the installation, click 'Cancel'.

#### 3.4.2.2 Product License Agreement

The ‘Product License Agreement’ dialog box contains the license agreement of the SMS 510, see Figure 2.
To accept the terms of the license click 'Yes' to continue. If you do not accept these terms, click 'No' to exit the installation. This dialog box is displayed only once during the installation.

### 3.4.2.3 System Information 1

If you have not installed SMS 510 previously you will see the 'System Information' dialog box shown in Figure 3.
To display the 'Select' dialog box, click 'Next>>'. Otherwise, click 'Exit' to exit the installation.

### 3.4.2.4 System Information 2

If the installation detects that a SMS 510 version above 1.0.0 has been installed to the destination, you will see the 'System Information' dialog box shown in Figure 4.

![SMS 510 Information dialog box](si_notinst.tif)
The current version information is available here for viewing. To display the 'Select' dialog box, click 'Next>>'. Otherwise, click 'Exit' to exit the installation.

### System Information 3

If the installation detects that the same version of SMS 510 has been installed to the destination, you will see the 'System Information' dialog box shown in Figure 5.
3.4.2.6  

**Select - forced installation**

In case of a forced installation, you will see the 'Select' dialog box shown in Figure 6.

*Note!* As stated on this dialog box, the options represented on the dialog box can not be selected.
This dialog box provides the following information:

- The currently selected destination drive and the root directory under which the software will be installed.
- The amount of hard disk space that is required and available on the currently selected destination drive.
- A notification that you can not choose individual options.

To change the destination drive for the installation click 'Change Drive', see the description of the 'Destination Drive' dialog box, on page 26. To view the previously displayed 'System Information' dialog box, click '<<Back'. If you are satisfied with the current settings, click 'Start' to start the actual software installation.

### 3.4.2.7 Select - non-forced installation

In case of a non-forced installation, you will see the 'Select' dialog box shown in Figure 7.
This dialog box provides the following information:

- The currently selected destination drive and the root directory under which the software will be installed.
- The amount of hard disk space that is required and available on the currently selected destination drive.
- The software options which will be installed.

The selected options have a check mark on their left side and are subject to install. Clicking with the mouse on an option toggles its selection status.

To change the destination drive for the installation click 'Change Drive', see the description of the 'Destination Drive' dialog box below. To view the previously displayed 'System Information' dialog box, click '<<Back'. If you are satisfied with the current settings, click 'Start' to start the actual software installation.
3.4.2.8 Destination Drive

This dialog box allows you to select the destination drive for the installation.

![Destination Drive Dialog Box]

All disk drives available to the operating system are listed in the drive list (highlighted in the above figure). In addition, the amount of available and required hard disk space are shown on the lower right area of the dialog box.

Press the <F4> key from the keyboard or click on the arrowhead on the right side of the drive list to view it in the drop-down mode. You can use either the arrow keys on the keyboard or the mouse to select a drive from the list.

As you change the selection, the installation checks whether the drive can be used for installing the software. If it can not be used, you will see a notification message and the drive that was selected at the time of entering the dialog box, is reset as the destination drive. The possible notifications are described in more detail in section 5.7.

To use the selected drive and to return to the 'Select' dialog box click 'OK'. Otherwise, click 'Cancel' and the changes to the destination drive will be discarded as you return to the 'Select' dialog box.
3.4.2.9 Installing

Once you have clicked the 'Start' button on the 'Select' dialog box, the progress of the installation is displayed in a dialog box shown in Figure 9.

![Installing dialog box](image)

*Figure 9. The 'Installing' dialog box.*

You may cancel the installation by clicking 'Cancel'.

**Note!** No support for a rollback or uninstall is available, meaning that you can not revert to the configuration that existed prior to the installation of SMS 510.

3.4.2.10 MicroSCADA user account

**Overview**

Properly configured MicroSCADA user account on your computer is essential for SMS 510. The account is added/configured on your computer by means of the 'MicroSCADA User Password' dialog box, shown in Figure 10.

After the installation of SMS 510, you will find an icon for this tool in the SMS 510 program folder, so you can also later modify the account configuration when necessary. Usage of this tool requires that you have logged on to the operating system with administrator rights.

If other products, that also utilize the MicroSCADA user account, already are installed on your computer, it is recommended to use the same password that has been used before for the account, if possible.

**Configuring the account**

The 'MicroSCADA User Password' dialog box is shown below. This is the only tool you need for the account configuration.
Enter an appropriate password confirming it. Click ‘OK’ to apply it. The new password will take effect the next time you start SMS 510. All other properties of the MicroSCADA user account are set automatically.

**Note!** The note text on the dialog box incorrectly states that the MicroSCADA user account is used for accessing non-local printer resources. In SMS 510, you access non-local printer resources in the logged-on user’s security context.

### 3.4.2.11 MicroSCADA Service Access Manager

#### Overview

If you install the Base System, the ‘MicroSCADA Service Access Manager’ dialog box, shown in Figure 11, appears. The installation does not continue until you have closed this dialog box. The installation adds an icon for this tool to the SMS 510 program folder, so you can use it anytime after the installation. Usage of this tool requires that you have logged on to the operating system with administrator rights.

#### Purpose

By using the MicroSCADA Service Access Manager you can define those user-defined user groups whose members are allowed to start and stop the MicroSCADA service i.e. start and stop the SMS 510 on the computer. In addition to the user-defined user groups, the built-in Users group can also be granted these rights.

By default, all users belonging to the operating system Administrators group are granted these rights, hence the tool never displays the Administrators group. Obviously, if the users of SMS 510 on the computer will not be members of the Administrators group, you should use this tool to set up a proper configuration by granting the appropriate user groups the start and stop rights.
Granting the rights to a group

To grant the rights to start and stop the MicroSCADA service to the appropriate user groups, first highlight the group in the upper list labelled 'No service start access' and click 'Add'. In the above example, the user group named 'Standard Corporate Users' is granted these rights.

Revoking the rights from a group

To revoke the rights from a user group, first highlight the group in the lower list labelled 'Service start access' and click 'Remove'. In the above example, the operating system's built-in user group named 'Users' has been revoked these rights.

Note! This is a system-wide configuration affecting also all other products using the same kernel software. For example, if you have SYS 500 installed on the computer and you grant the rights to a group named 'Visitors', intended for ordinary visitors, any logged on member of that group is able to start and stop both SMS 510 and SYS 500 on the computer.

Saving the configuration

To save the configuration, click 'Close' and confirm that by clicking 'OK' on the message box that will open, see Figure 12.
Discarding changes to the configuration

To close the tool without saving the configuration, click ‘Cancel’ in the ‘MicroSCADA Service Access Manager’ dialog box. Provided that the configuration has been changed, you must confirm the cancellation by clicking ‘OK’ on the dialog box that will open, see Figure 13, otherwise click ‘Cancel’ to return to the manager.

3.4.2.12

Installation completed

After the selected software has fully been transferred onto your system, the SMS 510 installation displays the following message to inform you that the installation has been completed.

Click ‘OK’ to acknowledge the message.

3.4.2.13

System reboot

If some of the installed files were in use at the time of the installation, you are prompted to reboot your computer, see Figure 15.
Click 'OK’ to reboot your computer immediately. You may reboot later if you wish, by clicking 'Cancel'. Notice however, that before starting the SMS 510 or installing other software, you must reboot the computer in order for all of the changes to take effect in the system.

3.4.3 Cancelling the installation

When you are about to cancel the installation, the dialog box shown in Figure 16 appears.

Click 'Exit Setup’ to exit the installation, otherwise click 'Resume’ to continue the installation normally.

3.5 Installing the Parameter Setting tool software

To install the Parameter Setting tool, start the PST.exe and follow the instructions provided on screen.

3.5.1 Starting the PST installation

To start the PST installation, place the SMS 510 Program CD into your CD-ROM drive. The installation application is named as 'PST.exe’ and it is located in the \PST subdirectory of the Program CD.
For example, provided, that your CD-ROM drive has been assigned the drive letter 'Y:' do the following steps:

- Press the `<Control>+<Esc>` key combination to open the operating system’s Start Menu.
- Select 'Run' and enter the following command in the 'Run' dialog box:

  \[Y:\PST\PST.EXE\]

- Click 'OK' to start the PST installation.

The destination location, to where you install the tool, can be freely chosen, since the PST installation automatically configures the environment so that the tool will be available in SMS 510.

### 3.6 SMS 510 program folder

The program folder for SMS 510 is named as 'SMS 510 1.0.0' and it is accessible to all logged on users, see Figure 17. The program folder contains the following subfolders:

1. Doc, in this folder you find the SMS 510 manuals.
2. Setup, in this folder you find the additional installation applications.
3. Tools, in this folder you find both maintenance tools and tools that you also can use outside SMS 510.

![Folder structure](image)

*Figure 17. SMS 510 program folder.*

- To start the SMS 510, double-click the icon 'Start SMS 510'.
- To view the SMS 510 Release Notes, double-click the icon 'SMS 510 Release Notes'.

### 3.6.1 Subfolder - Doc

- To view a manual, double-click the appropriate icon entry. This operation requires that a viewer capable of reading PDF files is installed.
3.6.2 Subfolder - Setup

- To install the Adobe Acrobat Reader, close any programs you have running and double-click the icon 'Install Adobe Acrobat Reader'.

- To view the Readme file for Microsoft Internet Explorer installation, double-click the icon 'ReadMe for Internet Explorer 4.01 SP2'.

- To install the Microsoft Internet Explorer, close any programs you have running and double-click the icon 'Install Internet Explorer 4.01 SP2'.

3.6.3 Subfolder - Tools

- To start the 'CAP2/316' tool, double-click the icon 'CAP2.316 6.0'.

- To start the 'MicroSCADA Service Access Manager' tool, double-click the icon 'MicroSCADA Service Access Manager'.

- To start the 'MicroSCADA User Password' tool, double-click the icon 'MicroSCADA User Password'.
• To start the 'REBWIN' tool, double-click the icon 'REBWIN 4.10 English'.

![Image of program folder]

Figure 20. Subfolder - Tools.

### 3.6.4 Shortcut to the SMS 510 program folder

A shortcut named 'SMS 510 1.0.0' is added onto your desktop, see Figure 21. This shortcut provides access to the SMS 510 program folder from your desktop.

![Image of desktop shortcut]

Figure 21. The shortcut to the program folder on your desktop.

• To open the SMS 510 program folder, double-click the shortcut.

### 3.7 Uninstalling the software

Currently uninstalling the SMS 510 software is not supported.
4 Commissioning

About this chapter

This chapter describes the commissioning activities required after software installation.

4.1 Commissioning tasks

Commissioning the installed software involves the following tasks:

- Applying the license information for SMS 510. Whenever the SMS 510 Base System has been installed, this task must be performed. Without proper license information, SMS 510 will not execute. You apply the license information using the License tool, see section 4.2.

- Preparing the computer for communication. This comprises:
  - Installation and configuration of LON® communication card(s) and accompanying device drivers, if not done previously. Those tasks you accomplish by means of the System Configuration tool, see section 4.4. Regarding the computer’s serial port communication capabilities, it is recommended to verify that the serial ports are correctly configured and working at the operating system level.
  - Installation of Remote Access Service (RAS) and modem(s), for detailed instructions see section 4.7.
  - Ensuring proper Distributed COM (DCOM) identity of the CAP2/316 tool. This is needed to have the CAP2/316 tool to run in the security context of the MicroSCADA user account. For detailed instructions see section 4.6.
  - Optionally, configuring the operating system’s user groups whose members are granted the rights to start and stop the MicroSCADA service on your computer. You grant these rights using the MicroSCADA Service Access Manager tool, for detailed instructions see section 3.4.2.11.

4.2 Licensing the product - License tool

4.2.1 General

The License tool is intended for applying the license information. SMS 510 does not provide any specific entry for accessing this tool instead it appears automatically at SMS 510 start-up, if the computer does not contain a valid license.

5 LON is a registered trademark of Echelon Corporation.
4.2.2 License Information dialog box

Figure 22 illustrates the License tool dialog box as it is initially displayed when the license information cannot be found, or it is otherwise invalid.

![License Information dialog box](lic1.tif)

**Figure 22. License tool dialog box.**

<table>
<thead>
<tr>
<th>Dialog box items</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Customer' field</td>
<td>For entering the value for Customer.</td>
</tr>
<tr>
<td>'System ID' field</td>
<td>For entering the value for System ID.</td>
</tr>
<tr>
<td>'Authorization key'</td>
<td>For entering the value for Authorization key.</td>
</tr>
<tr>
<td>field</td>
<td></td>
</tr>
<tr>
<td>'OK' button</td>
<td>For saving the license information and closing the License tool, see section 4.2.3.</td>
</tr>
<tr>
<td>'Apply' button</td>
<td>For saving the information without closing the License tool, see section 4.2.3.</td>
</tr>
<tr>
<td>'Close' button</td>
<td>For closing the License tool.</td>
</tr>
</tbody>
</table>

4.2.3 Entering license information

The SMS 510 delivery contains the license information printed on the license label, which you find on the cover of the SMS 510 Program CD case. Be sure to store that information, so that it is available in case you need to re-supply the license information.

**Note!** When you enter the requested items, be careful to type the text exactly as provided on the license label. All fields are case sensitive; also, space characters are taken into account.

After you have entered all items, apply the information, thereafter you must restart SMS 510 in order for the new license to take effect.

To enter the license information:
1. Type the Customer name into the 'Customer' field.
2. Type the System ID value into the 'System ID' field.
3. Type the Authorization key value into the 'Authorization key' field.
4. Click 'OK', or 'Apply' if you do not want to close the dialog box immediately. If the supplied information was correct, you will see one of the messages shown below:

![License information updated successfully](lic_ok.tif)

*Figure 23. License information updated successfully.*

![License information updated successfully](lic_ok2.tif)

*Figure 24. License information updated successfully.*

5. Dismiss the message by clicking 'OK'. When you close the dialog box, you will be yet notified with the message shown in Figure 25.

![Restart required](lic_restart.tif)

*Figure 25. Restart required.*

As stated in the message, you have to restart SMS 510.

### 4.2.4 Invalid license information

If you have supplied incorrect information, the tool displays the message shown in Figure 26.
Click ‘OK’ to dismiss the message and correct the license information carefully.

An example of correctly entered and valid license information is provided in Figure 27.

![License Information](lic2.tif)

*Figure 27. An example of correctly entered and valid license information.*

### 4.3 Communication support

#### 4.3.1 Communication protocol support

Table 7 lists the communication protocols supported by SMS 510.

<table>
<thead>
<tr>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA</td>
</tr>
<tr>
<td>SPA/Optical Frontpanel Connector</td>
</tr>
<tr>
<td>LON</td>
</tr>
</tbody>
</table>

*Table 7. Communication protocol support.*

For information on which communication protocols are applicable to various relay terminals, refer to the *SM/RED Configuration Manual* and *SM/SPACOM Configuration Manual.*
4.3.2 Communication channels

SMS 510 allows you to define the total of eight communication channels in a project’s communication configuration. Each defined serial port using SPA protocol and each LON card channel occupies one communication channel. For example, a dual-channel RER 109 card reserves two communication channels thus allowing you to define six serial ports with SPA protocol.

4.3.3 Serial port communication

4.3.3.1 SMS 510 vs. operating system serial port configuration

Serial ports

Each serial port defined for use in SMS 510 must also exist at the operating system level. For example, if you define serial ports COM1 through COM4 in SMS 510, you must define them also under operating system. For detailed information on configuring the serial ports under the operating system, refer to the operating system Help or other applicable source of information.

Advanced serial port settings

Advanced serial port settings are defined at the operating system level only so you do not have to define them in SMS 510. These settings include:

- interrupt request line (IRQ)
- input/output (I/O) addresses
- data buffering settings

Basic serial port settings

The basic serial port settings that are defined at the operating system level are overridden by the settings you specify in SMS 510. These settings include:

- baud rate
- data bits
- parity
- stop bits
4.3.4 LON communication

4.3.4.1 LON communication adapters

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Type</th>
<th>Device driver</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>RER 109 PCLTA Card</td>
<td>ISA full-length bus card</td>
<td>MiSCLONP</td>
<td>n/a</td>
</tr>
<tr>
<td>PCLTA-20 PCI LonTalk Adapter</td>
<td>PCI half-length bus card</td>
<td>PNPLON</td>
<td>Supports Plug-and-Play and downloadable memory.</td>
</tr>
<tr>
<td>PCC-10 PC Card</td>
<td>A Type II PC card, formerly PCMCIA</td>
<td>PNPLON</td>
<td>On Windows NT, only a single card can be present in the system at a time, due to the operating system Type II PC Card support capabilities. Supports Plug-and-Play and downloadable memory.</td>
</tr>
</tbody>
</table>

Table 8. LON adapter support.

Note! The PCLTA-10 PC LonTalk Adapter is not supported.

4.3.4.2 LON communication software components

<table>
<thead>
<tr>
<th>Item</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MiSCLONP device driver</td>
<td>The device driver for the RER 109 PCLTA Card. Supplied with an installation and a configuration tool.</td>
</tr>
<tr>
<td>PNPLON device driver</td>
<td>The device driver for the PCC-10 and PCLTA 20 Cards. Supplied as a third party (Echelon) installation and configuration package.</td>
</tr>
<tr>
<td>Net Interface Tool</td>
<td>For initial configuration of the Neuron Chip(s) on the RER 109 PCLTA Cards.</td>
</tr>
</tbody>
</table>

Table 9. Software components for LON communication.

4.3.5 Time synchronization

4.3.5.1 Overview

All bay equipment is equipped with a real-time clock for time stamping. When for example a disturbance occurs in a network, the disturbance recorders are triggered, and the time is added to the disturbance record in order to enable post-disturbance analysis. When gathering information from several terminals for analysis it is of utmost importance that the clocks of different devices are synchronized. SMS 510 provides time synchronization capabilities both over LON and SPA.

4.3.5.2 Time synchronization over LON protocol

For the LON protocol there are two different ways of obtaining time synchronization functionality. In the first method, the system clock of the SMS 510 workstation is the time source. In the other method, the time source is e.g. a LON Clock Master equipped with a GPS receiver, which is connected to the LON thus enabling also the
synchronization of the system clock of the SMS 510 workstation, if desired. Both of these methods can be applied on a SMS 510 workstation simultaneously provided that there are at least two available LON channels, of which one receives the clock sync and the other sends it.

The used time synchronization is defined separately for every used LON channel. Every single LON channel can have only one time synchronization source. This means, that only one device may send the clock sync to the LON bus, and all the other devices read the clock sync from the bus. Any LON channel can also be defined so that it does not participate in the time synchronization function.

The relays connected to the LON bus don't require any settings for the time synchronization; they are synchronized automatically from the LON bus.

4.3.5.3 Time synchronization over SPA protocol

For the SPA protocol, the time synchronization capabilities are reduced so that the system clock of the SMS 510 workstation always acts as the time source i.e. there is no option to synchronize the SMS 510 workstation's system clock from the SPA. As with LON, any SPA channel can also be defined so that it does not participate in the time synchronization function.

The used time synchronization is defined separately for every used SPA channel. This is a simple On/Off setting which defines whether or not the time synchronization is sent to a SPA channel.

The relays connected to the SPA don't require any settings for the time synchronization; they are synchronized automatically from the SPA channel.

4.3.6 Procedure for commissioning communication components

Generally, commissioning the communication components comprises the following tasks:

- Install the LON communication card(s) into your computer.
- Install the device driver for the LON communication card(s).
- Configure the device driver for the LON communication card(s).
- Configure the Neuron® Chip on the LON communication card(s). This applies only to RER 109 PCLTA cards.
- Configure sufficient amount of serial (COM) ports.

Neuron is a registered trademark of Echelon Corporation.
The main tool for accomplishing these tasks is the SMS 510 System Configuration Tool, see section 4.4.

4.4 System Configuration tool

4.4.1 Overview

The System Configuration tool serves the following purposes:

- Creation of the projects’ communication configuration which is required to enable communication/time synchronization with the relays. The communication configuration has to be done/verified for every project you use in SMS 510. This functionality is available on the Communication page of the System Configuration tool.

- Scheduling of user-defined tasks that are executed automatically without user intervention. This functionality is available on the Scheduler page of the System Configuration tool.

- Specification of general settings, currently this includes the Autologoff configuration. This functionality is available on the General Settings page of the System Configuration tool.

4.4.1.1 Scheduler

For detailed information on the scheduler functionality, refer to the SMS 510 Operator's Manual.

4.4.1.2 General Settings

For detailed information on the general settings, refer to the SMS 510 Operator's Manual.

4.4.1.3 Communication configuration

Every project has its own copy of the communication configuration, which is enforced when the project is opened into the Project Structure Navigator. Likewise, when a project is closed, its communication configuration is stored with the project.

The System Configuration tool automatically edits the communication configuration of the project that is being opened into the Project Structure Navigator. If there is no project open in the Project Structure Navigator, the System Configuration tool will not execute.

In every project’s communication configuration you define:

- Serial ports that are to be used for various types of communication.
- LON card(s) that are to be used for LON communication
- Time synchronization settings for each SPA and LON channel.
Note! Some of the System Configuration tool functions, such as modifying LON device driver settings, require administrator rights at the operating system level.

### 4.4.2 Starting

Two entry points for accessing this tool are provided:

- On the Project Structure Navigator’s ‘System Tools’ menu.
- On the ‘Communication’ page of the ‘General Object Attributes’ dialog box.

### 4.4.3 System Configuration tool dialog box

Figure 28 illustrates the System Configuration tool dialog box.

The ‘Communication’ page embeds two pages:

- Serial Ports
- LON

![System Configuration tool dialog box](image)

*Figure 28. Communication page of the System Configuration tool dialog box.*
Communication configuration pages

<table>
<thead>
<tr>
<th>'Serial Ports' page</th>
<th>For managing serial port configuration, see section 4.4.3.1.</th>
</tr>
</thead>
<tbody>
<tr>
<td>'LON' page</td>
<td>For managing the LON configuration, see section 4.4.3.5.</td>
</tr>
</tbody>
</table>

Common dialog box buttons

<table>
<thead>
<tr>
<th>'OK' button</th>
<th>For closing the System Configuration tool and saving the configuration, see section 4.4.3.9.</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Cancel' button</td>
<td>For closing the System Configuration tool without saving the configuration, see section 4.4.3.11.</td>
</tr>
<tr>
<td>'Apply' button</td>
<td>For saving the configuration without closing the System Configuration tool, see section 4.4.3.10.</td>
</tr>
</tbody>
</table>

### 4.4.3.1 Serial Ports page

Figure 29 displays the System Configuration tool’s 'Serial Ports' page. Initially the configuration is empty, as illustrated in the figure.

![System Configuration Tool](image)

*Figure 29. The 'Serial Ports' page.*
### Serial Ports page items

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Serial Ports' list</td>
<td>For selecting a serial port. Displays all currently defined serial ports.</td>
</tr>
<tr>
<td>'Protocol' list</td>
<td>For assigning the communication protocol to the currently selected serial port.</td>
</tr>
<tr>
<td>'Connection Type' list</td>
<td>For selecting the type of the remote connection. Enabled only when protocol is 'SPA'.</td>
</tr>
<tr>
<td>'Modem Command (AT)' field</td>
<td>For defining the modem initialization command for remote connections over a modem. Enabled only when connection type is 'Modem'.</td>
</tr>
<tr>
<td>'Baud Rate' list</td>
<td>For assigning the baud rate to the currently selected serial port.</td>
</tr>
<tr>
<td>'Data Bits' list</td>
<td>For assigning the data bits setting to the currently selected serial port.</td>
</tr>
<tr>
<td>'Parity' list</td>
<td>For assigning the parity setting to the currently selected serial port.</td>
</tr>
<tr>
<td>'Stop Bits' list</td>
<td>For assigning the stop bits setting to the currently selected serial port.</td>
</tr>
<tr>
<td>'Add …' button</td>
<td>For adding a new serial port, see section 4.4.3.2.</td>
</tr>
<tr>
<td>'Delete …' button</td>
<td>For deleting the currently selected serial port, see section 4.4.3.3.</td>
</tr>
<tr>
<td>'Send clock synchronization' check box</td>
<td>For configuring whether the relays that are connected to the currently selected serial port are synchronized. Not available for modem connections. Enabled only when protocol is 'SPA'.</td>
</tr>
</tbody>
</table>

### 4.4.3.2 Serial ports - Add

To add a serial port:

1. Click 'Add …' to bring up the dialog box shown in Figure 30.

2. Enter the serial port number, which must be in range of 1 through 8, inclusive. If you enter an out-of-range value or a value, which already is in use, you are requested to enter a proper value.

![Add serial port](sc_addsp.tif)

Figure 30  Define the port number for the new COM port.

3. Click 'OK' to add the new serial port, which appears in the 'Serial Ports' list, see Figure 31. Otherwise, click 'Cancel' to keep the configuration unchanged.
The newly added port’s basic settings and communication protocol are assigned default values. If you wish to use other than the default values, you can configure them as described below.

### Serial ports - Configure

Table 10 displays serial port properties, which you can configure on a per-port basis.

<table>
<thead>
<tr>
<th>Property</th>
<th>Available values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication protocol</td>
<td>SPA, SPA/Optical Frontpanel Connector</td>
</tr>
<tr>
<td>Baud Rate</td>
<td>300, 600, 1200, 2400, 4800, 9600, 19200</td>
</tr>
<tr>
<td>Data Bits</td>
<td>5, 6, 7, 8</td>
</tr>
<tr>
<td>Parity</td>
<td>None, Odd, Even</td>
</tr>
<tr>
<td>Stop Bits</td>
<td>1, 2</td>
</tr>
<tr>
<td>Send clock synchronization</td>
<td>On / Off</td>
</tr>
</tbody>
</table>

Table 10. Configurable properties of serial ports.

To configure a serial port property:

1. Select the serial port from the ‘Serial Ports’ list.

Figure 31. A new serial port 'COM1' added with default values.
2. Configure the item by selecting the desired value from the appropriate list.

4.4.3.4 **Serial ports - Delete**

Any serial port, defined in a project's system configuration, can be deleted at any time.

To delete a serial port from the configuration:

1. Select the serial port from the 'Serial ports' list.
2. Click 'Delete …'.
3. When prompted to confirm the deletion, see Figure 32, click 'Yes' to delete the serial port. Otherwise click 'No' to leave the serial port intact.

![System Configuration](image)

**Figure 32. Confirm to delete the selected serial port.**

The deletion invalidates the communication settings of any device objects, which has been configured to use the port you are about delete.

**Note!** If you accidentally delete ports you can revert to the most recently saved system configuration by clicking 'Cancel', see section 4.4.3.11.

4.4.3.5 **LON page**

Figure 33 displays the System Configuration tool's 'LON' page. Initially no card is selected, as illustrated in the figure.
### 4.4.3.6 Selecting the adapter

The System Configuration tool allows to use only a single type of LON card at a time i.e. you can not have multiple types of LON cards in-use simultaneously. The LON card is selected from the ‘Adapter type’ list. If you don’t use any LON cards, then select the option ‘No card’ from the list.

When you select an adapter from the ‘Adapter type’ list, the tool scans the computer for currently defined LON devices for the selected adapter type. If such are found, they will be displayed immediately, thus allowing you to take the channel(s) into use by assigning the appropriate channel settings, see section 4.4.3.7.

If no LON devices have been defined or you want to modify the current configuration by e.g. adding new devices or removing currently defined devices, click the ‘Install Driver…’ button.
Driver’ button. For RER 109 PCLTA cards this invokes the MicroSCADA Device Driver Configuration tool, for other card types, this invokes the application, which installs the device driver onto your computer.

### 4.4.3.7 Assigning LON channel settings

Each LON channel needs to have a unique Subnet/Node value pair assigned to it, since it appears as any other node on the network. Valid range is 1 through 127, inclusive for both Subnet and Node. It is also required to specify the time synchronization setting on a per LON channel basis.

To assign the Subnet/Node values to a LON channel:

1. Click with the mouse on the intended channel’s Subnet cell to activate it, see Figure 34.

2. Type in the appropriate value for the Subnet.

3. Repeat the procedure for the Node cell. When you enter the value for the Node, the channel is assigned a default time synchronization value, which you can change as explained below.

If the adapter type is ‘RER 109 PCLTA card’, this enables configuration of the currently selected channel i.e. the 'Configure Channel' button is enabled.
To assign the time synchronization setting to a LON channel:

1. Click on the intended channel’s time synchronization cell. This brings up the 'Time Synchronization' dialog box, shown in Figure 35, on which you specify the appropriate setting.

![Time Synchronization dialog box](image)

Figure 35. The 'Time Synchronization' dialog box.

2. Select the setting mode.

**Time Synchronization in Basic Mode**

If you select the Basic mode, you have the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No clock synchronization</td>
<td>The channel does not participate in time synchronization.</td>
</tr>
<tr>
<td>Send synchronization to LON</td>
<td>The time sync will be sent to LON via this channel. This option maps to the</td>
</tr>
<tr>
<td></td>
<td>'Link Type 3 - Send LSG and minute pulse' advanced option. This is also the</td>
</tr>
<tr>
<td></td>
<td>default option when adding new LON channels.</td>
</tr>
<tr>
<td>Receive synchronization from LON</td>
<td>The system clock of the SMS 510 workstation will be synchronized via this</td>
</tr>
<tr>
<td></td>
<td>channel. This option maps to the 'Link Type 4 - Receive LSG clock sync'</td>
</tr>
<tr>
<td></td>
<td>advanced option.</td>
</tr>
</tbody>
</table>

**Note!** Remember that in a project’s communication configuration you can have only one LON channel at a time configured with this setting. Otherwise, you will be prompted to change the configuration when you attempt to save it.

**Time Synchronization in Advanced Mode**

If you select the Advanced mode, you have the following options:
### Option Explanation

<table>
<thead>
<tr>
<th>Option</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Link Type 0 - No clock sync</td>
<td>The channel does not participate in time synchronization.</td>
</tr>
<tr>
<td>Link Type 1 - Send LSG clock sync</td>
<td>Send LSG clock sync (for the relays that utilize nv warning and nv clock telegrams)</td>
</tr>
<tr>
<td>Link Type 2 - Send minute pulse</td>
<td>Send minute pulse (for the relays that utilize nv time telegram)</td>
</tr>
<tr>
<td>Link Type 3 - Send LSG and minute pulse</td>
<td>Send LSG and minute pulse.</td>
</tr>
<tr>
<td>Link Type 4 - Receive LSG clock sync</td>
<td>Receive LSG clock sync.</td>
</tr>
<tr>
<td>Link Type 5 - Receive minute pulse</td>
<td>Receive the minute pulse. Note! It is recommended to use this option only when the other synchronization methods do not work, or when the exact time is not needed because of the inaccuracy on high channel load on LON line with minute pulse.</td>
</tr>
</tbody>
</table>

3. Select the appropriate time synchronization setting.

4. Click 'OK'.

After you have assigned the appropriate values, save the changes to the communication configuration, as explained below.

### 4.4.3.8 Saving system configuration

The system configuration is saved permanently by using either the 'OK' or the 'Apply' button. The difference is that the 'OK' button closes the System Configuration tool whereas the 'Apply' button allows you to proceed working with the System Configuration tool.

The tool also provides you with the possibility to revert to the most recently saved configuration, in order to prevent accidental changes to the configuration, see section 4.4.3.11.

### 4.4.3.9 Save configuration - close tool

To save a changed configuration closing the System Configuration tool, click 'OK'. The System Configuration tool prompts you to confirm the operation, see Figure 36.

*Figure 36. Confirm to save the configuration.*
To save the configuration click 'Yes'. Clicking 'No' enforces the most recently saved configuration.

4.4.3.10 Save configuration - proceed configuration

To save a changed configuration without closing the System Configuration tool, click 'Apply'. The System Configuration tool prompts you to confirm the operation, see Figure 37.

![System Configuration](sc_ok.tif)

*Figure 37. Confirm to save the configuration.*

To save the configuration click 'Yes' so that the configuration becomes the most recently saved configuration. Otherwise click 'No' to proceed without saving.

4.4.3.11 Discard configuration changes

To revert to the most recently saved configuration, click 'Cancel'. This closes the System Configuration tool without further prompting.

4.5 Installing LON cards

4.5.1 RER 109 PCLTA Card commissioning procedure

The RER 109 PCLTA card hardware and software is configured in the following order:

1. Install the card into the PC. See section 4.5.4.
2. Install and configure the RER 109 PCLTA Card device driver (MiSCLONP). See section 4.5.4.
3. Assign LON channel Subnet and Node values. See section 4.4.3.7.
4. Configure the Neuron Chip on the RER 109 PCLTA card, if necessary. See section 4.5.4.5.

4.5.2 PCC-10 PC Card commissioning procedure

The communications hardware and software are configured in the following order:

1. Install the card into the PC. See section 4.5.5.
2. Install and configure the PCC-10 PC Card device driver (PNPLON). See section 4.5.5.1.

3. Assign LON channel Subnet and Node values. See section 4.4.3.7.

### 4.5.3 PCLTA-20 Card commissioning procedure

The communications hardware and software are configured in the following order:

1. Install the card into the PC. See section 4.5.6.

2. Install and configure the PCLTA-20 Card device driver (PNPLON). See section 4.5.6.1.

3. Assign LON channel Subnet and Node values. See section 4.4.3.7.

### 4.5.4 RER 109 PCLTA Card installation and configuration

#### 4.5.4.1 Card overview

A RER 109 PCLTA Card may have one or two channels, thus allowing the connection of one or two transceivers, as shown in Figure 38.

![Figure 38. A RER 109 PCLTA Card.](image)

The use of the cards requires the installation and configuration of a MicroSCADA (MiSCLONP) device driver. During the device driver configuration, each transceiver is given a device number.

**Note!** During the driver installation, the I/O base addresses of the cards are requested. These addresses must coincide with the addresses set physically on the cards.
4.5.4.2 Card installation

To install:

1. Select an I/O base address for the card and set it on the card as described in the PCLTA Card manual, also refer to Figure 38. Any free I/O address where the next 7 addresses are free can be selected. The driver installation tool suggests the 340 default value, which is also the setting on the card at delivery (the setting shown in Figure 38). Other possible values are 300, 308, 310, 318 ... 370 and 378 hex. The selected I/O address should be noted down, e.g. in Table 11, because it will be needed during the driver configuration.

If transceivers other than RER 107 are used, the card will probably have to be configured for the transceivers. For more information, refer to the PCLTA Card and the transceiver documentation.

<table>
<thead>
<tr>
<th>Card No.</th>
<th>I/O Address</th>
<th>Channel</th>
<th>Device No = n</th>
<th>Device Name = LONPn</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 11. The card information needed during system configuration.

4.5.4.3 Device driver installation and configuration

Overview

The device driver for the RER 109 PCLTA Card is installed and configured using a special configuration tool - MicroSCADA Device Driver Configuration tool. This tool is started through the 'Install Driver…' button, located on the LON page of the System Configuration tool, see Figure 39.
Once the configuration tool starts the dialog box shown in Figure 40, appears.

**Device driver configuration**

Figure 39. Starting the driver installation/configuration for the RER 109 PCLTA Card.
Table 12 briefly explains the functions available on this dialog box.

<table>
<thead>
<tr>
<th>Dialog box buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Driver Version'</td>
<td>To view which version of the MiSCLONP driver currently is in use and which version of the driver has come with the installed package, use this button.</td>
</tr>
<tr>
<td>'Update Driver'</td>
<td>If there is an older version of the MiSCLONP driver currently in use, then you can use this button to update the driver to the latest version. If the version currently in use is newer than the one in the installed package, then this button remains disabled i.e. you cannot downgrade the driver.</td>
</tr>
<tr>
<td>'Add Device'</td>
<td>Use this button to add and configure a RER 109 PCLTA card. If no cards have been defined previously, the MiSCLONP driver is automatically installed on the computer when adding the first card.</td>
</tr>
<tr>
<td>'Remove Device'</td>
<td>Use this button to remove a RER 109 PCLTA card. When you remove the last card, you have the option to remove the MiSCLONP device driver from the computer.</td>
</tr>
<tr>
<td>'Change Settings'</td>
<td>Use this button to change settings of an existing device.</td>
</tr>
<tr>
<td>'Close'</td>
<td>Use this button to exit the configuration tool. <strong>Note!</strong> Depending on the actions, you have taken, you may be requested to reboot the computer. In that case, prior to reboot, close the System Configuration tool and exit SMS 510 first.</td>
</tr>
</tbody>
</table>

Table 12. MicroSCADA Device Driver Configuration functions.

To add and configure a device:

1. Click 'Add Device’ to bring up the dialog box shown in Figure 41.
2. Enter the following data:
   Card Number: The number of the card. It is recommended that you set the first card as card number 0, the second card as card number 1 and so on.
   Type of Card: The type of the card. The following card types are supported: PCLTA Single Channel and PCLTA Dual Channel cards.

3. Click 'OK'.

The dialog box shown in Figure 42 appears. In this dialog box, you specify each of the channels of the card.

4. Enter the following data for each of the channels of the card:
   Device Number: The device number. Each channel is seen as a device with a device number. It is recommended that you set channel A on card 0 as device 0 and channel B as device 1. Then use numbers 2 and 3 for the two channels on card 1.
   I/O Port Address: The I/O base address of the card. This must be the same as the address set physically on the card. If a card has two channels, channel B is automatically given an I/O base address which is 4 + the address of channel A.
IRQ Level: The interrupt level used by the channel. This must be unique among all devices in the computer. Allowed values are 5, 9, 10, 11, 12, and 15. You can check which of the values are free in the operating system's Diagnostics tool (WINMSD.EXE).

Clock Select: The Neuron clock rate for the channel. The default value, 10 MHz, can be used.

Uplink Buffers: The number of uplink buffers used by the channel. The default value 20 can be used.

Downlink Buffers: The number of downlink buffers used by the channel. The default value 20 can be used.

DL Priority Buffers: The number of downlink priority buffers used by the channel. The default value 20 can be used.

Flush cancel at init: If this option is checked (default), the device driver will issue the niFLUSH_CANCEL command to the network interface after reset. This means that the network interface is reset into NORMAL state and can participate in network transactions. If no niFLUSH_CANCEL command is issued, the network interface remains in a FLUSH state where it ignores all incoming messages and prevents all outgoing messages.

5. Click OK and define the next channel on the card in the same way, and then the next card.

When all cards and channels have been configured, configure automatic start-up of the driver as described in section 4.5.4.4. If you are prompted to reboot the computer, exit SMS 510 first.

4.5.4.4 Automatic MiSCALONP device driver start-up

Removing the MicroSCADA Device Driver Notification

Once the device driver has been installed, a 'MicroSCADA Device Driver Notification' dialog box will appear at the next system start-up as shown in Figure 43.

![MicroSCADA Device Driver Notification](image)

*Figure 43. ‘MicroSCADA Device Driver Notification’ dialog box.*

**Note!** The reference to the 'MicroSCADA Installation Manual' is irrelevant in SMS 510 context.
To prevent this dialog box from appearing at future system start-ups:

1. Click ‘Remove Notification’.

**Configuring the automatic start-up**

The MiSCLONP device driver should be configured to automatically start at system start-up. On Windows NT 4.0, this is done through the Control Panel applet named ‘Devices’, see Figure 44.

![Control Panel](image)

**Figure 44. Starting of the Windows NT Devices applet.**

1. Open the applet and when it is running select the ‘MiSCLONP’ device from the device list, see Figure 45.

![Devices](image)

**Figure 45. The ‘MiSCLONP’ device.**

**Note!** If you cannot find the ‘MiSCLONP’ device driver name, the driver installation has failed and must be redone.

2. Click ‘Startup’ to enter the ‘Device’ dialog box, shown in Figure 46, and select the option ‘Automatic’.

![Device dialog box](image)
3. Click ‘OK’ to dismiss the dialog box accepting the changes.

At the next operating system start-up, the MiSCLONP device starts automatically. You can now either reboot the computer or directly attempt to start the MiSCLONP device by clicking 'Start' on the Devices dialog box, see Figure 45, after which the device driver should be fully working.

4.5.4.5

RER 109 PCLTA Card Neuron Chip configuration

Overview

The Neuron Chip on the card must be configured initially after installation of the card and re-configured when the Neuron Chip’s communication ability has been lost due to a newly installed transceiver module, such as RER 107. The Neuron Chip is configured using the Net Interface Tool.

The following Neuron Chip values are modified by the Net Interface Tool:

- comm_type
- comm_pin_dir
- comm_clock
- input_clock

When the RER 107 module is used, the comm_type value is typically zero, meaning that the PCLTA Card is unable to communicate. Usually the other values are correct.

The Net Interface Tool provides two configuration methods for different purposes, namely the 'Standard' and the 'Custom' methods. The desired method is selected at the tool’s start-up.

Standard configuration method

When configuring a RER 109 PCLTA Card equipped with the RER 107 optical module, the Standard configuration method allows for a quick configuration.
Custom configuration method

The Custom configuration method is to be used on the following occasions:

- The Neuron Chip configuration is to be verified.
- Some other than the default values should be used.

Starting the Net Interface Tool

The Net Interface Tool is started through the ‘Configure Channel…’ button, located on the LON page of the System Configuration tool, see Figure 47.

![System Configuration](image)

*Figure 47. Starting the Net Interface Tool.*

**Note!** In order for the configuration to be successful, the appropriate device driver must be started at the time you start the Net Interface Tool.

At the tool’s start-up, you are prompted whether to proceed the operation, see Figure 48. To return to the System Configuration tool, click 'No'.
If you answered 'Yes', the dialog box for selecting the configuration method appears, see Figure 49.

At this stage, the dialog box displayed in Figure 50 appears and is automatically iconized in a few seconds of time.

**Table 13. Neuron Chip configuration data of the Standard Method.**
Upon completion of the Neuron Chip configuration, the Net Interface Tool displays the following message:

![Network Interface Tool message](image)

Table 14. Network Interface message after successful configuration.

At this point, the Net Interface Tool terminates and the Neuron Chip should be able to communicate.

**Custom configuration method**

Once the Custom configuration method has been selected on the start-up dialog box, the dialog box shown in Figure 51 appears.

![Network Interface Config](image)

*Figure 51. Sample PCLTA Card Neuron Chip configuration values.*

Here the desired `comm_type`, `comm_pin_dir`, `comm_clock` and `input_clock` can be manually selected. In addition, the bit rate derived from the clock ('Lon Bit Rate') value is also shown and is not subject to change.

To read the values from the Neuron Chip and to verify that they have been set correctly, choose 'Read'.

To update the settings to the Neuron Chip choose 'Write'. If it succeeds, the message shown in Figure 52 appears.
4.5.5 PCC-10 PC Card installation and configuration

For information on installing and configuring the PCC-10 PC Card, please view the documentation shipped with the card.

4.5.5.1 Device driver installation

The installer for the PCC-10 PC Card is started through the 'Install Driver…' button, located on the LON page of the System Configuration tool, see Figure 53.

Note! The program, which you start, installs images and the driver (PNPLON.SYS) for the PCC-10, PCLTA-10 and PCLTA-20 cards. The instructions for the driver installation and configuration are provided in the package.
4.5.5.2 Device driver configuration

For information on configuring the PCC-10 device driver, please view the Windows Help shipped with the device driver package.

To access the Help on Windows NT 4.0, open the Control Panel and open the applet titled 'LonWorks® Plug’n Play', shown in Figure 54.

![LonWorks® Plug’n Play](image)

*Figure 54. Starting the 'LonWorks® Plug 'n Play' applet.*

Once the LonWorks® Plug’n Play applet is running click 'Help' to view the Help for the package.

4.5.6 PCLTA-20 Card installation and configuration

For information on installing and configuring the PCLTA-20 Card, please view the documentation shipped with the card.

4.5.6.1 Device driver installation

The installer for the PCLTA-20 Card is started through the 'Install Driver…' button, located on the LON page of the System Configuration tool, see Figure 55.
The program, which you start, installs images and the driver (PNPLON.SYS) for the PCC-10, PCLTA-10 and PCLTA-20 cards. The instructions for the driver installation and configuration are provided in the package.

4.5.6.2 Device driver configuration

For information on configuring the PCLTA-20 device driver, please view the Windows Help shipped with the device driver package.

To access the Help on Windows NT 4.0, open the Control Panel and open the applet titled 'LonWorks® Plug ‘n Play', shown in Figure 56.

Figure 55. Starting the driver installation for the PCLTA-20 Card.

**Note!** The program, which you start, installs images and the driver (PNPLON.SYS) for the PCC-10, PCLTA-10 and PCLTA-20 cards. The instructions for the driver installation and configuration are provided in the package.

4.5.6.2 Device driver configuration

For information on configuring the PCLTA-20 device driver, please view the Windows Help shipped with the device driver package.

To access the Help on Windows NT 4.0, open the Control Panel and open the applet titled 'LonWorks® Plug ‘n Play', shown in Figure 56.

Figure 56. Starting the 'LonWorks® Plug ‘n Play' applet.
4.6 CAP2/316 - Distributed COM identity

4.6.1 Overview

The CAP2/316 tool needs to be configured under Distributed COM (DCOM) to run in the context of the MicroSCADA user account.

4.6.2 When to apply the DCOM identity

The DCOM identity has to be configured when:

- You have installed the option 'REB 500 / RE.x16 Support'.
- You have changed the password of the MicroSCADA user account on the computer.

4.6.3 DCOM identity configuration

The identity configuration is done by means of the 'Distributed COM Configuration Properties' dialog box (DCOMCNFG.EXE), which is part of the operating system installation.

To configure the identity:

1. Choose 'Run' from the Windows NT Start menu.
2. Type 'DCOMCNFG.EXE' in the 'Run' dialog box and click 'OK'. This opens the 'Distributed COM Configuration Properties' dialog box shown in Figure 57.
3. Browse for the application titled 'ScilComApp.Connection2' and click 'Properties…'.

4. On the opening dialog box, click the 'Identity' tab and select the option 'This user:'.

5. As in Figure 58, type in 'MicroSCADA' as the User. Type in the same password as is used for the MicroSCADA user account on your computer.

Figure 57. The list of registered DCOM applications.
6. Click 'OK' to return to the previous dialog box.

7. Click 'OK' to close also the 'Distributed COM Configuration Properties' dialog box.

The identity configuration will take effect the next time you start SMS 510.

4.7

RAS/Modem installation

This section describes the installation of Remote Access Service (RAS) and the installation of modem(s).

4.7.1

Overview

RAS service is not installed automatically in the express installation of Windows NT. It must be installed afterwards, both in the server and in the client computer to enable 'Remote' connections between SMS 510/other systems. The server is configured to accept incoming calls, while the client is configured to make outgoing calls.

The installation procedure comprises the following steps, which will be detailed below:
• Installing modems to both of the involved computers.

• Installing RAS in both of the involved computers.

• Installing MS Loopback Adapter driver (in the RAS server computers only).

• Configuring start-up of Remote Access Server on the RAS server.

• Configuring dial-in permissions (in the RAS server computers only).

• Preparing for dial-up from the client computer.

4.7.2 Installing modems

To install a modem:

1. Double-click the icon 'My Computer' and 'Control Panel'. From Control Panel double-click the 'Modems' icon to bring up the 'Install New Modem' Wizard, see Figure 59.

2. You can either use automatic modem detection or enter the RAS communication media manually.

   • If you use automatic modem detection, select 'Next>' and follow the instructions on the screen.

   • In case, you do not wish to use automatic modem detection, the windows in Figure 60 and Figure 61 will be shown. Select the type of modem.

*Figure 59. Installing a new modem.*
The installation program searches for the type of the connected modem in the MODEM.INF file, in the directory \WINNT\SYSTEM32\RAS. An error message is produced if the modem type is not found. In that case, you should have a separate modem installation diskette, containing the required information. Select 'Have Disk' and supply the required information on the diskette.

3. Click 'Next>' to select the serial ports for the modem.

---

**Figure 60. Selecting the modem manually.**

**Figure 61. Selecting the communication port manually.**
4. The modem installation completes with the following dialog box. To finish the installation, click 'Next'.

4.7.3 Installing Remote Access Service

RAS must be installed both in the client and server computers. Below follows a step-by-step description of the RAS installation. The configuration differences between server and client computers are pointed out. Refer also to the applicable operating system documentation, if necessary.

1. Double-click the icon 'My Computer' and 'Control Panel'. From Control Panel, double-click the 'Network' icon to bring up the Network tool.

2. Select the Services page and click 'Add' to open up the 'Select Network Service' dialog box, see Figure 59.
3. Select 'Remote Access Service' and click 'OK'.
4. Select the installation media, e.g. 'A:\I386' if diskette.

![Select Network Service]

*Figure 63. The list of Network services.*

5. Click 'Continue'. File copying starts, and when ready, you are asked the following question if there are no modems in your computer.

![Windows NT Setup]

*Figure 64. Selecting installation media. Here, RAS will be installed from a directory on a local hard disk drive.*

5. Click 'Continue'. File copying starts, and when ready, you are asked the following question if there are no modems in your computer.

![Remote Access Setup]

*Figure 65. Question related to RAS setup.*
6. Make sure that the modem is connected to the desired COM port, and click 'Yes'. This initiates the modem installation procedure explained above.

7. Click 'OK' to use the selected modem for the RAS connection. To install additional modems, click 'Install Modem…', eventually you will return to this dialog box.

![Selecting the RAS device.](image1)

Figure 66. Selecting the RAS device.

![Remote Access Setup dialog box.](image2)

Figure 67. Remote Access Setup dialog box.

8. Select the appropriate device and click 'Configure'.

![Configuring Port Usage.](image3)

Figure 68. Configuring Port Usage.
9. Be sure to select the option 'Dial out and Receive calls' in the server computer
Note! The 'Receive calls only' will not work properly on the server computer.
Select 'Dial out only' in the client computer and click 'OK'.

10. Click 'Network', see Figure 69.

![Network Configuration dialog box](sry_net_cfg.tif)

Figure 69. Network Configuration dialog box.

11. Select the 'TCP/IP' protocol and click 'Configure'.


12. Configure as shown in Figure 70, given as an address range. Define a range of at least two IP addresses as RAS assigns one IP for either end of the RAS connection. Do not include the IP for the Loopback adapter in this range.

13. Click 'OK' and 'Continue'.

14. If you are operating on a computer which will act as a RAS server, install the 'MS Loopback Adapter driver', see the instructions below. Otherwise, you can exit the 'Network' control panel application and restart the computer for the new configuration to take effect.

### 4.7.4 Installing MS Loopback Adapter driver

A MS Loopback adapter is required on the station level computer (RAS Server). This driver comes as part of the operating system delivery.

To install the driver/adapter:

1. Double-click the My Computer icon then the Control Panel icon. From Control Panel double-click the Network icon to bring up the Network tool.

2. Select the 'Adapters' page and click 'Add' to open up the 'Select Network Adapter' dialog box, see Figure 71. From the list select the 'MS Loopback Adapter'.

*Figure 70. Entering TCP/IP addresses in the server computer.*
Select Network Adapter

Click the Network Adapter that matches your hardware, and then click OK. If you have an installation disk for this component, click Have Disk.

Network Adapter:
- Madge Smart 16/4 PCI Ringnode and EM2
- Madge Smart 16/4 PCI Ringnode BM
- Micro-dynx NE10/130 PCI Adapter
- MicroGate SyncLink Internet Adapter
- MS Loopback Adapter
- MFC Std 11/64 Token Ring Adapter

Figure 71. MS Loopback Adapter driver is selected.

- Click 'OK'. On the following dialog box, see Figure 72, accept the default value '802.3' by clicking 'OK'.

MS Loopback Adapter Card Setup

Frame Type: 002.3

Figure 72. Specifying the frame type for the driver.

3. Next, specify the location of the installation files for your operating system, in the opening dialog box, see Figure 73.

Windows NT Setup

Setup needs to copy some Windows NT files
Setup will look for the files in the location specified below. If you want Setup to look in a different place, type the new location. When the location is correct, click Continue.

E:\Setupst\386\NT_setup2.tif

Figure 73. Specify the location to the operating system installation files.
4. Click ‘Continue’ to install the software. Upon completion, you will return to the ‘Network’ dialog box. Make note that the MS Loopback Adapter has appeared to the list of installed adapters.

5. Next, switch to the ‘Protocols’ page, select ‘TCP/IP Protocol’ as in Figure 74.

![Network Configuration](image)

*Figure 74. Selecting the TCP/IP protocol.*

6. To specify the TCP/IP address for the MS Loopback adapter, click ‘Properties’ and on the opening dialog box select ‘MS Loopback Adapter’ as shown in Figure 75.
7. Set the 'IP Address' to 192.168.0.1 (see the note below for details) and the 'Subnet Mask' to 255.255.255.0. The 'Default Gateway' can be left empty.

8. Click 'OK' and close the 'Network' dialog box by clicking 'Close' to finish the installation. The binding information will be updated when the dialog box closes, the settings will take effect the next time you start the computer.

4.7.5 Considerations when specifying IP addresses

If you want a fast and trouble free installation follow the examples to the letter, the described settings is a working configuration.

The IP addresses used in this manual are examples (The IP addresses used in this example are part of reserved IP-ranges or nets that are reserved for 'private' use. It is thus safe to use them anywhere, provided that the same IP addresses are not used for other purposes in the local network. Discuss with someone knowledgeable in TCP/IP networking if you are not familiar with it yourself. It may/will save you much grief and frustration.

For more information on 'private' nets, please refer to RFC1918.
4.7.6 Configuring start-up of Remote Access Server service

In a RAS server computer, the 'Remote Access Server' service should be configured to start up automatically when the operating system starts. Otherwise, this service has to be manually started to enable RAS client computers to dial-in the server computer.

Note! When configured to start-up automatically, RAS server reserves all COM port(s) that have been configured to accept incoming calls. This must be kept in mind when configuring the serial port communications of SMS 510 projects to avoid overlapping COM port usage in RAS and SMS 510. If overlapping settings have been specified, when turned on, SMS 510 System Self Supervision will indicate the COM port(s) that are inaccessible.

To configure:

1. Double-click the icon 'My Computer' and 'Control Panel'. From Control panel double-click the 'Services' icon.

![Services Window](image)

*Figure 76. The Windows NT window for managing services.*

2. Select 'Remote Access Server' and click 'Startup'.

4. Click ‘OK’.

4.7.7 Verifying Remote Access Server service

The operating system provides the Remote Access Admin tool (RASADMIN.EXE), which can be useful in diagnosing the RAS installation and the connections. Under Windows NT 4.0, this tool is started from the ‘Start Menu/Programs/Administrative Tools’ menu.

![Remote Access Admin](image)

*Figure 78. Viewing the status of the Remote Access Server service on a server computer.*

For more information, please refer to the help shipped with the tool.

4.7.8 Configuring dial-in permissions in the RAS server computer

The RAS client computer dials the server in the MicroSCADA user’s security context. This means that the account must be granted the permissions to dial-in the RAS server computer.
To grant the permissions:

1. Open the operating system’s 'User Manager' application. On Windows NT 4.0 it can be found under 'Start Menu/Programs/Administrative Tools' menu.

2. Select the MicroSCADA user account, see Figure 79.

![User Manager application](image)

*Figure 79. The User Manager application.*

3. From the File menu, choose 'Properties' and on the opening dialog box, click 'Dialin' to open the 'Dialin Information' dialog box shown below.

![Dialin Information](image)

*Figure 80. Dialin information for the MicroSCADA user account.*

4. Mark the check box 'Grant dialin permission to user' and click 'No Call Back'. If you wish to apply a more secure Call Back configuration, refer to the operating system help.

5. Click 'OK' twice and close the User Manager by selecting 'Exit' from the File menu.
4.7.9  About phonebooks and SMS 510

SMS 510 uses a private phonebook which is not accessible through the operating system's Dial-up Networking functionality. This phonebook is managed by means of the 'Remote Connection Properties' dialog box. For more information on utilizing remote connections in SMS 510, see the SMS 510 Operator's Manual.

4.7.10  Dialing-Up in SMS 510

In SMS 510 the dial-up takes place when you activate a Remote connection from the Project Structure Navigator. The Project Structure Navigator automatically hangs up the call when you switch to another connection or open a local project.
5 Troubleshooting installation

This chapter provides information that aims to help you recovering from problems that you have encountered during the SMS 510 installation.

5.1 Incorrect operating system detected

If you attempt to install SMS 510 on an operating system other than Windows NT 4.0 or Windows 2000, the installation notifies you with the message shown in Figure 81.

![Incorrect operating system detected](os_not_nt.tif)

Figure 81. Incorrect operating system detected.

Click ‘OK’ to exit the installation. Ensure correct computer configuration and rerun the installation.

5.2 Incorrect operating system version detected

If you attempt to install SMS 510 on a Windows NT operating system lower than version 4.0 the installation notifies you with the message shown in Figure 82.

![Incorrect operating system version detected](os_ver_err.tif)

Figure 82. Incorrect operating system version detected.

Click ‘OK’ to exit the installation. Ensure correct computer configuration and rerun the installation.
5.3 Installing on Windows 2000

If you are installing SMS 510 on the Windows 2000 operating system, the installation notifies you with the message shown in Figure 83.

![Notification Message](os_w2k.png)

*Figure 83. Notification about the recommended operating system.*

In order to guarantee successful operation of SMS 510, click 'No' to abort the installation and install on a computer running Windows NT 4.0. However, if you wish to proceed with the SMS 510 installation, click 'Yes'.

5.4 Insufficient user rights to install

If you have logged on to your computer having non-administrator rights, the installation notifies you with the message shown in Figure 84.

![Notification Message](insuff_r.png)

*Figure 84. Insufficient user rights to install SMS 510.*

To recover click 'OK' and logon to the computer having administrator rights and restart the installation.

**Note!** You may erroneously receive this notification even if you have logged on with administrator rights. When encountering such behaviour, the problem most probably
relates to the TEMP environment variable setting on your computer, see section 5.11.2 for instructions to recover.

5.5 MicroSCADA service is running

If the MicroSCADA service is running when you start the SMS 510 installation, you are notified with the message shown in Figure 85.

![Installation Notification]

Figure 85. MicroSCADA service must be shut down before continuing with the installation.

In order to continue, exit the application currently utilizing the MicroSCADA service and click 'Yes'. The application is one of the applications listed in the message. Notice that you can not continue with the installation while the service is executing. To exit the installation, click 'No'.

5.6 Failing to install the MicroSCADA service

If the installation of the MicroSCADA service does not succeed, the installation displays the message shown in Figure 86.

![MicroSCADA Service Installation]

Figure 86. The MicroSCADA service installation has failed.

The most probable reason for this is that the MicroSCADA service has started during the SMS 510 installation. In order to recover from this, click 'OK' to dismiss the
message and exit the installation by clicking 'Cancel' on the 'Installing' progress dialog box. Restart the installation and install at least the Base system.

5.7 **Troubleshooting destination drive error messages**

Depending on the current destination drive setting and your computer configuration, you may be notified with any of the following messages.

**CD-ROM drive as destination**

![Invalid Destination Drive!](cd_drv.tif)

*Figure 87. You can not install to a CD-ROM drive.*

**Non-NTFS drive as destination**

![Invalid Destination Drive!](nonntfs.tif)

*Figure 88. You can not install to a non-NTFS drive.*
Network drive as destination

Figure 89. You can not install to a network drive.

Removable media drive as destination

Figure 90. You can not install to a removable media drive.

Virtual drive as destination

Figure 91. You can not install to a virtual (substituted) drive.

To recover, click 'OK' and select a suitable destination drive in the Installation Wizard's 'Select Destination Drive' dialog box.
5.8 **Insufficient disk space**

Provided, that the selected destination drive does not contain sufficient free disk space the installation displays the dialog box shown in Figure 92.

![Insufficient disk space to install](image)

The available options are:

- **'Abort'**, which aborts the installation immediately. **Note!** Your computer configuration has not yet been modified at this point, so you can safely select this option to exit installation.

- **'Retry'**, which checks the disk space and redisplay this dialog box if the amount of available disk space has not increased sufficiently. Otherwise, the software installation continues normally.

- **Ignore'**, which causes the installation blindly to continue copying the software to the destination. Notice that it is not recommended to use this option as the installation might eventually fail in its operation.

5.9 **No suitable destination drive available**

If your computer does not contain any drives formatted to NTFS and you have not installed SMS 510 v. 1.0.0 before the installation displays the message shown in Figure 93.

![No suitable destination drive available for installation](image)

Click 'OK’ to dismiss the message and to exit the installation.
In order to install SMS 510, you must format a drive to NTFS. Use the operating system tools to accomplish this task, for example, under Windows NT 4.0 you can use the Disk Administrator utility.

5.10 Incompatible SYS 500 and/or COM 500 installed

During the start-up of the installation, you may see the notification displayed in Figure 94.

![Figure 94. Product upgrades will be required if SMS 510 is installed.](update_syscom.tif)

As stated, the old versions of SYS 500 and COM 500 can not be used if you install SMS 510. If you are unsure about installing SMS 510 click 'No' to exit the installation, otherwise click 'Yes' to continue with the installation.

**Note!** Provided, that you choose to install SMS 510, remember that the SYS 500 and COM 500 must be updated to the respective versions stated in the message, before you can continue using those products.

5.11 Miscellaneous

5.11.1 Repaired operating system installations

If your computer experiences operating system failures and you repair the operating system installation, it is recommended that you reinstall at least the following options of the SMS 510 in order to guarantee correct installation of SMS 510:

- Base System
- REB 500 / RE.x16 Support

In addition, reinstall the Parameter Setting tool.
5.11.2 TEMP environment variable

Notice that the 'TEMP' environment variable must be defined on your computer and its content must reference an existing directory to which you have read/write access. Also, make sure that the drive on which this directory exists is not near to its storage capacity.

To verify this on Windows NT 4.0:

1. Open the 'System' applet from the Windows NT Control Panel.
2. Choose the 'Environment' page as shown in Figure 95 and locate the 'TEMP' variable from one of the lists. The setting may be defined both as a System and a User variable. If found, the User variable setting overrides the respective System variable setting.

![System Properties](image)

*Figure 95. The TEMP environment variable setting.*

3. Make sure that the defined directory actually exists on your computer, in the figure above, the directory is 'C:TEMP'. Use e.g. the Windows NT Explorer to browse for this directory.
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