SIEMENS

SIMATIC

Process Control System PCS 7

Software Update from PCS 7 V5.1 and V5.2 to V6.1 (PCS 7 V6.0 to V6.1)

Getting Started

Preface, Contents

Before Starting the Software Update 1

Hardware Requirements and Licenses 2

New Concept for License Keys 3

Legend for Procedure 4

Basic Procedure for the Software Update 5

Index

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Safety Guidelines

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring to property damage only have no safety alert symbol. The notices shown below are graded according to the degree of danger.

Danger
indicates that death or severe personal injury **will** result if proper precautions are not taken.

Warning
indicates that death or severe personal injury **may** result if proper precautions are not taken.

Caution
with a safety alert symbol indicates that minor personal injury can result if proper precautions are not taken.

Caution
without a safety alert symbol indicates that property damage can result if proper precautions are not taken.

Attention
indicates that an unintended result or situation can occur if the corresponding notice is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The device/system may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by **qualified personnel.** Within the context of the safety notices in this documentation qualified persons are defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

Prescribed Usage

Note the following:

Warning
This device and its components may only be used for the applications described in the catalog or the technical description, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens.
Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance.

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We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Technical data subject to change.

Preface

Purpose of Documentation

This getting started provides a check list for tasks to be performed for updating the software from PCS 7 V5.1 and V5.2 to PCS 7 V6.1. The check list takes you through the required documentation from the installation of the PCs to updating the PCS 7 projects and downloading to the PCS 7 components.

The target audience includes service personnel, commissioning personnel and other personnel with the required system know-how.

This documentation is available as a PDF file that can be downloaded from Service & Support in the Internet free of charge.

Knowledge Requirements

General knowledge in the area of automation engineering and basic knowledge of PCS 7 is required to understand this manual. An understanding of PCs using Windows operating systems is also required.

Administrator capability is needed to install the networks.

Basics for working with PCS 7 are presented in the following documentation:

- Configuration manual *Process Control System PCS 7; Engineering System/Operator Station*
- Configuration manual, *PCS 7 Process Control System; Operator Station*
- Manual *Process Control System PCS 7; Getting Started Part 1 - First-Time Users*

Scope of This Documentation

The documentation applies to the software package, "Process Control System PCS 7 Toolset V6.1".

Updating Redundant Systems During Operation

Notice

For a **Software Update of Redundant Systems in Runtime**, use the procedure described in the manual, Software Update without Utilization of New Functions (PCS 7 V5.x to V6.0).

Required Documentation

This documentation about the topic of "software updating" is available as a PDF file that can be downloaded from Service & Support in the Internet free of charge.

Documentation	Content
Software Update* with *Utilization of New Functions	
Manual *Software Update* with *Utilization of the New Functions* (PCS 7 5.x to 6.0)	Describes the procedure for the software update from PCS 7 Version 5.x to 6.0 with utilization of new functions.
"*Software Update with Use of New Functions"* (PCS 7 V6.0 to V6.1)	Describes the procedure for the software update from PCS 7 Version V6.0 to V6.1 with the utilization of the new functions.
Software Update without Utilization of the New Functions	
Manual *Software Update without Utilization of the New Functions* (PCS 7 V5.x to V6.0)	Describes the procedure for the software update from PCS 7 Version 5.x to 6.0 without use of new functions.
Manual *Software Update without Utilization of the New Functions* (PCS 7 V6.0 to V6.1)	Describes the procedure for the software update from PCS 7 Version V6.0 to V6.1 with the utilization of the new functions.

Additional Information

Additional information providing support for the "software update" is available in the manuals on the "Process Control System PCS 7 Toolset V6.1" DVD in the "_Manuals" folder.

Documentation	Content
PCS 7 Process Control System; *Service Support and Diagnostics*	Assurance of availability of a PCS 7 system; contains information on creating backups and how to perform firmware updates.
PCS 7 Process Control System; *PC Configuration and Authorization*	PCS 7 PC hardware and installation; Windows settings and help programs; software packages and required authorizations.
PCS 7 *"Released Modules" documentation*	All modules released for SIMATIC PCS 7 V6.1 are listed with the following information: • Product designation • MLFB (order no.) • Firmware version • Brief description
Online Help WinCC Information System	Describes the update of WinCC projects.
PCS 7 Function Manual; *Fault-Tolerant Process Control Systems*	Describes the principles of use of fault-tolerant (redundant) components in SIMATIC PCS 7.

Further Support

If you have any technical questions, please get in touch with your Siemens representative or agent responsible.

You will find your contact person at:

http://www.siemens.com/automation/partner

You will find a guide to the technical documentation offered for the individual SIMATIC Products and Systems here at:

http://www.siemens.com/simatic-tech-doku-portal

The online catalog and order system is found under:

http://mall.automation.siemens.com/

Training Centers

Siemens offers a number of training courses to familiarize you with the Process Control System PCS 7. Please contact your regional training center or our central training center in D 90327 Nuremberg, Germany for details:

Telephone: +49 (911) 895-3200.

Internet: http://www.sitrain.com

Technical Support

You can reach the Technical Support for all A&D products

- Via the Web formula for the Support Request
  http://www.siemens.com/automation/support-request
- Phone: + 49 180 5050 222
- Fax: + 49 180 5050 223

Additional information about our Technical Support can be found on the Internet pages http://www.siemens.com/automation/service

Service & Support on the Internet

In addition to our documentation, we offer our Know-how online on the internet at:

http://www.siemens.com/automation/service&support

where you will find the following:

- The newsletter, which constantly provides you with up-to-date information on your products.
- The right documents via our Search function in Service & Support.
- A forum, where users and experts from all over the world exchange their experiences.
- Your local representative for Automation & Drives.
- Information on field service, repairs, spare parts and more under "Services".

Contents

1 Before Starting the Software Update 1-1

2 Hardware Requirements and Licenses 2-1

3 New Concept for License Keys 3-1

4 Legend for Procedure 4-1

5 Basic Procedure for the Software Update 5-1

Index

1 Before Starting the Software Update

Using PCS 7 Add-on Products

Notice

If you have used PCS 7 add-on products (software packages or hardware components) in your process control system, contact your SIMATIC PCS 7 representative.

Updating Redundant Systems During Operation

Notice

For a **Software Update of Redundant Systems in Runtime**, use the procedure described in the manual, Software Update without Utilization of New Functions (PCS 7 V5.x to V6.0).

"PCS 7 What's New?" and in "PCS 7 Readme"

Note

"PCS 7 What's New?" and "PCS 7 Readme" provide information about the changes in the version 6.1 compared to previous versions.

Reading this information will facilitate your use of PCS 7 V6.1.

Deciding for a Software Update with or without New Functions

Process Control System PCS 7 Software Update with Utilization of the New Functions (PCS 7 V5.1/V5.2 to V6.1)	**Process Control System PCS 7 Software Update without Utilization of the New Functions (PCS 7 V5.1/V5.2 to V6.1)**
You would like to add the new functions of PCS 7 V6.1 to a PCS 7 project you used with PCS 7 V5.1 or PCS 7 V5.2. • If you do not wish to use some of the new functions provided by PCS 7 V6.1, you do not have to activate or configure these functions. We recommend installing the complete range of functions.	• You would like to perform the software update with minimal configuration effort. • You do not wish to use any new hardware or firmware in your automation system.
Result	
After the software has been updated, an old PCS 7 project behaves the same as a project created using PCS7 V6.1 provided all of the tasks described in this documentation are performed in the order described.	Following the software update, the updated PCS 7 project reacts the same as it did before the software update. The new functions can be implemented by performing additional tasks.

2 Hardware Requirements and Licenses

Notice

Inform yourself about the required preparations for the software update that you need to carry out for PCS 7 V5.1 or PCS 7 V5.2 (see section Procedure – Steps 1 to 13)

Note

You can perform the software update on every PC on which you have installed the operating system with the corresponding components and PCS 7 V6.1.

Hardware Requirements

- Each PC on which the PCS 7 software is installed must have:
  - network access to a DVD drive or
  - its "own" DVD drive (a USB DVD drive, for example)
- The hardware requirements for the PC are described in the *PCS 7 Readme* file on the PCS 7 Toolset DVD.

Licensing

You require license keys for SIMATIC PCS 7 V6.1

Additional Information

- Manual *PCS 7 Process Control System; PC Configuration and Authorization*
- File: PCS 7 Readme
- Online Help: WinCC Information System > Authorization
- Function manual *PCS 7 Process Control System; PCS 7 OS Web Option*

3 New Concept for License Keys

Make sure that the required license keys for SIMATIC PCS 7 V6.1 are installed on the engineering station (ES) and operator stations (OS).

Note

The licensing scheme for PCS 7 has changed as of PCS 7 V6.0 SP3. Therefore, the term "license key" is used in the following even when a licensed product uses the old authorization licensing scheme.

The software used to transfer license keys is the Automation License Manager (ALM). Authorizations can also be transferred with the ALM.

The term "authorizations" is exclusively used in the supporting documentation for updating from PCS 7 V5.x to V6.0.

Authorizations can be converted to license keys in an upgrade to PCS 7 V6.1.

There are two methods for licensing:

- Authorizations: the licensing method used up to PCS 7 V6.0.
- License keys: The following license types are used based on the application involved:

License type	Description
Single license	The use of the software with a single license is permitted on any one computer for an unlimited period. The type of usage is defined by the certificate of license.
Floating license	The use of the software with a floating license is permitted on any one computer or through shared rights over a network for an unlimited period.
Rental license	The use of the software with this license is limited to: • The number of hours stipulated in the agreement • The number of days after first use as stipulated in the agreement • The expiration data as stipulated in the agreement
Trial license	The use of the software with this license is limited to: • A maximum of 14 days • A specific number of days after first use • Testing and validation (excludes liability)

License type	Description
Upgrade license	An upgrade may demand specific requirements on the system status: • An upgrade license enables you to convert an existing version x to version >x+.... • An upgrade may be required, for example, if you wish to increase the number of computers running an application.

4 Legend for Procedure

The table contains the following columns:

Column	Meaning
Step	Step number
Action	Title in the corresponding manual
Performed on:	
ES	Task to be performed on the engineering system
OS Server	Task to be performed on the OS server
OS Client	Task to be performed on the OS client
AS	Task to be performed on the automation system

Abbreviation	Meaning
m & o	Performed to update the software with and without new functions
w	Performed **only** to update the software with new functions
w/o	Performed **only** to update the software without new functions
w1 w/o	Performed to update the software without new functions and with new functions **only** if runtime data is to be updated
w w/o1	Performed to update the software with new functions and without new functions **only** if runtime data is to be updated
w/o2	Performed if faceplates from PCS 7 V5.x are used and **only** to update the software without new functions
w o2	Performed to update the software without new functions and with new functions **only** if faceplates from PCS 7 V5.x are used

5 Basic Procedure for the Software Update

The tasks in the following should be performed in the order described and according to the importance assigned in the corresponding manuals.

The steps listed for the actions are based on the titles of the steps in the corresponding manuals.

Note

The meanings of the abbreviations are described in the section, "Legend for the Procedure".

Step	Action	Performed on:			
		ES	**OS Server**	**OS Client**	**AS**
Manual *Software Update with/without Utilization of New Functions (PCS 7 5.x to 6.0)*					
1	Before Starting the Software Update	w & w/o			
2	For an old operating system: Preparing a PCS 7 V5.x Project for the Software Update	w & w/o			
3	For an old operating system: Backing up a PCS 7 V5.x Project	w & w/o	w & w/o		
4	For an old operating system: Backing up Custom V5.x Libraries	w & w/o	w & w/o		
5	Exporting Operator and Display Texts **Note:** Perform this task only in the following situation: If you have changed operator texts or display texts for blocks in the plant to be updated from the PCS 7 factory state and wish to use the new faceplates from PCS 7 V6.1, you should back up the "old" texts before performing the software update. Use the description provided in the manual, ***Software Update without Utilization of New Functions (PCS 7 V6.0 to V6.1)***	w/o			
6	For an old operating system: Backing up Authorizations	w & w/o	w & w/o	w & w/o	

Step	Action	Performed on:			
7	For an old operating system: Hardware Requirements, Installations and Authorizations - Checking Hardware **Note:** Consult list of "PCS 7 - Released Modules.pdf" and the section, "Hardware Requirements, Installations and Licenses". Use the description provided in the manual, ***Software Update without Utilization of New Functions (PCS 7 V6.0 to V6.1)***	w & w/o	w & w/o	w & w/o	
8	Updating the CPU Operating System				w
9	CP 443-5 Extended firmware update				w
10	CP 443-1CP 443_1 firmware update				w
11	Testing interface modules IM 153-2 and IM 157				w
12	Testing Y-couplers				w
13	Testing diagnostic repeaters				w
14	Install the operating system, required components and PCS 7 - see the documentation, Process Control System PCS 7; PC Configuration and Authorization. **Recommendation for Selecting the Operating System** PCS 7 V6.1 should be installed on Windows XP Professional or Windows Server 2003 operating systems (depending on the role of the respective PC). **Note about Installation of PCS 7** Select the setup type "Installation" in the Setup.	w & w/o	w & w/o	w & w/o	
15	Installing Sybase 7	w & w/o	w1 w/o		
16	Installing Bugfix for Sybase 7	w & w/o	w1 w/o		
17	Settings in the Commissioning Wizard	w & w/o	w & w/o		
18	Settings for the PC-Station • Setting PC Station on ES/OS • Settings in the Configuration Console • Settings in the Component Configurator	w & w/o	w & w/o		
19	Installing PCS 7 library	w & w/o			
20	Install PCS 7 driver blocks (section: Installing PCS 7 Driver Blocks V6.0) **Note:** Contrary to the description in the manual, use the "Library PCS 7 V6.1" instead of the "Library PCS 7 V6.0".	w/o			
Adaptations on the Engineering System (ES)					
21	Installing Additional Libraries	w & w/o			
Manual Software Update with/without Utilization of New Functions (PCS 7 V6.0 to V6.1)					

Step	Action	Performed on:			
22	Preparation **for Projects without a Multiproject** • Pre-settings • Create a multiproject using the PCS 7 wizards. • Insert an existing project into the multiproject.	w			
23	Project Migrator **Note:** Contrary to the description in the manual, the following requirements apply: • The PCS 7 project to be updated must be at least PCS 7 V5.1. • An OS has been created on the PC stations. • RT data are not updated on the ES. They must first be updated on the OS server on which they were stored. To do this, you must install Sybase 7 on this OS server for the update and then remove it afterward. • Sybase 7 including the bugfix must be installed on the migration PC.	w w/o1	w w/o1		
24	Checking the PH consistency	w & w/o			
Manual Software Update with/without Utilization of New Functions (PCS 7 5.x to 6.0)					
25	Creating an ES Station **Note:** If you have already created an ES station in your project, you can skip this section.	w & w/o			
26	Activating the S7 Runtime Manager **Note:** Contrary to the description in the manual, PCS 7 V6.1 must be installed.	w & w/o			
Manual Software Update with/without Utilization of New Functions (PCS 7 V6.0 to V6.1)					
27	Adapting the Hardware Changes • Configuring Replacement Hardware • Setting CPU Properties • Configuring Symbols • Working with Device Database Files (*.GSE Files)	w			
28	Checking and Adapting the Connection Data	w & w/o			
29	Creating Global Declarations	w & w/o			
30	Converting CFC/SFC Charts	w & w/o			
31	Copying Objects from Other Libraries into the Master Data Library	w			
32	Copying Blocks to the Master Data Library	w			
34	Copying V6 Blocks to the Master Data Library	w			
35	Editing Messages for Faceplates	w & w/o			
36	Updating the Block Types in the Project	w			
37	Special Features of PI Blocks	w			

Step	Action	Performed on:			
38	Compiling CFC Charts	w			
39	Activating New Functions • Activating the Detection of Secondary Values for HART Devices • Replacing Blocks for the Motor Starter with ET 200S	w			
40	Replacing OS basic pictures, local computer actions and faceplates	w			
41	Replacing Controls with Picture Objects	w & w/o			
42	Updating Picture Objects	w			
43	Creating New Stations • Setting Up a Central Archive Server • Setting Up a Maintenance Station • Setting Up the PCS 7 OS Web Option	w			
44	Opening and Saving the OS Redundancy Dialog	w & w/o			
45	Notes about the Use of Scroll Bars	w & w/o			
46	Checking Time Settings	w & w/o			
47	Updating Lifebeat Monitoring	w & w/o			
48	Checking the OS Destination Path	w & w/o			
49	Setting the Compiling Mode	w			
50	Compiling the OS	w & w/o			
51	Adaptations for OS Clients	w & w/o			
52	Adaptations for Single Clients	w & w/o			
53	Mixed Operation of Faceplates	w & w/o		w & w/o	
54	Installing a Library from a Backed Up Project		w/o2	w/o2	
Adaptations on the Operator Stations					
55	Installing additional libraries on all OS stations		w w/o2	w w/o2	
Downloading to PLCs					
56	Downloading to PLCs • Downloading Connection and Configuration Data from NetPro to the ES • Downloading connection and configuration data to the AS stations from NetPro • Downloading an S7 Program to the PLC • Downloading connection and configuration data to the OS server from NetPro • Downloading OS Server Projects • Downloading OS Client Projects	w & w/o			

Step	Action	Performed on:			
Activating systems					
57	Checking the settings on OS servers		w & w/o		
58	Activating OS Servers		w & w/o		
59	Checking the settings on OS clients			w & w/o	
60	Activating OS Clients			w & w/o	
61	Activating Single Clients			w & w/o	

1 Only if RT data is updated.

2 Only if faceplates from PCS 7 V5.x are used.

Index

B

Before Starting the Software Update 1-1

H

Hardware requirements
installations and licenses 2-1

L

Legend for Procedure 4-1

N

New Concept for License Keys 3-1

P

Procedure 5-1