

SIMOTION Version 4.0 Update Description

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Notes:

A generally valid procedure for updating the software is described here. Information contained in the Readme file for the associated software level must always be observed! The Readme file is contained on the Simotion SCOUT CD and after the SCOUT installation can be found at Start Programs -> SIMATIC -> Information -> English.

Further information for the software handling, e.g. new installation, platform change, etc. is contained in the general documentation for Simotion.

Further general conditions are contained on the Simotion SCOUT CD at:

\1_Important\English\General_Conditions\SIMOTION_General_Conditions_V40.pdf

The STARTER commissioning tool is integrated in SIMOTION SCOUT.

The general conditions relevant for STARTER are contained on the CD at:

\1_Important\English\General_Conditions\STARTER_Readme.wri

The general conditions that apply to the configuring of the drives must be observed.

1 Updating the Engineering System

1.1 Updating SIMOTION SCOUT

A complete installation of SIMOTION SCOUT consists of the following programs:

- SIMOTION SCOUT V4.0
- Automation License Manager
- SIMOTION SCOUT V4.0 Help (not selectable)
- SIMOTION SCOUT V4.0 Manuals

SIMOTION SCOUT uses as language setting the default language set in the SIMATIC Manager. Make any changes to this setting in SIMATIC Manager in the **Options > Settings... > Language** menu.

Currently the German, English, Italian and French languages are available in SCOUT. If any other languages are set in SIMATIC Manager, the SCOUT setting is English.

SIMOTION SCOUT V4.0 has been changed to the new licensing mechanism and so is licensed in the same way as STEP5 V5.3. Rather than the previous authorization, SCOUT is now licensed with the "floating license" license key. The "Automation License Manager" program is used for the licensing.

The Automation License Manager program will be automatically updated to the more recent version during the installation.

The CamTool version has not been changed and remains at the V2.1 SP1 +HF version. This means the CamTool must still be licensed with the authorization. The AuthorsW program must be used for any update from V2.0 to V2.1. This program is also installed during the CamTool installation.

Prerequisites

The exact prerequisites for the associated version are contained in the Readme.txt on the installation CD.

Examples of the most important prerequisites for version V4.0 are:

- You must be logged on with administrator rights to the operating system
- Computer with Windows 2000 (Service Pack 4) or XP (Service Pack 2)
- Microsoft Internet Explorer (Version 5.0.1)
- SIMATIC STEP 7 Version 5.3 SP3 + HF1 or Version 5.4 (only necessary for IRT) (does not affect SCOUT stand-alone)
- One of the following cards must be used as software access point
 - An integrated PROFIBUS card for a PG
 - A PROFIBUS card, e.g. CP5611, for a standard PC
 - A PCMCIA PROFIBUS adapter, e.g. CP5512, for a notebook
 - An Ethernet card

Note: The Starter tool for the commissioning of single drives, e.g. SINAMICS or MICROMASTER 410/420/440 as independent PC application, cannot be installed together with SIMOTION SCOUT on a single computer because Starter is already contained in SIMOTION SCOUT.

Procedure

1. Insert the SIMOTION SCOUT CD in the CD-ROM drive.
2. Start the Windows Explorer and switch to the CD-ROM drive.
3. Open the **SCOUT_Vx.x/Disk1** directory.
4. Double-click **Setup.exe**.
5. Follow the instructions of the installation program.
Recommendation:
Install the authorization (license key) as described in Section 1.3. Click the "Ignore" button for the setup prompt for the authorization.
6. If a reboot is required during the installation: logon again after the start of the operating system with your user name and administrator rights.
7. At the end of the installation: restart the PC and logon again with your user name and administrator rights. Now every user logged on as main user can start and operate SIMOTION SCOUT.

1.2 Updating SIMOTION CamTool

Prerequisites

The exact prerequisites for the associated version are contained in the Readme.txt on the installation CD.

The most important prerequisites are:

- SIMOTION SCOUT must be installed on the system on which you want to install SIMOTION CamTool.
- You must be logged on with administrator rights to the operating system. After the installation, each user (also without administrator rights) can work with SIMOTION CamTool.
- All the other prerequisites correspond to the prerequisites for SIMOTION SCOUT and are thus already present on the PC.

Procedure

a) Uninstalling SIMOTION CamTool:

1. Click in the Windows startbar on Start > Settings > Control Panel. The Control Panel window will be displayed.
2. Double-click Software. The Software Properties window will be displayed.
3. Mark the "SIMOTION SCOUT CamTool" entry in the Install/Uninstall tab.
4. Click Add/Remove. The uninstall program will be started.
5. Execute the uninstall program. SIMOTION CamTool will be uninstalled.

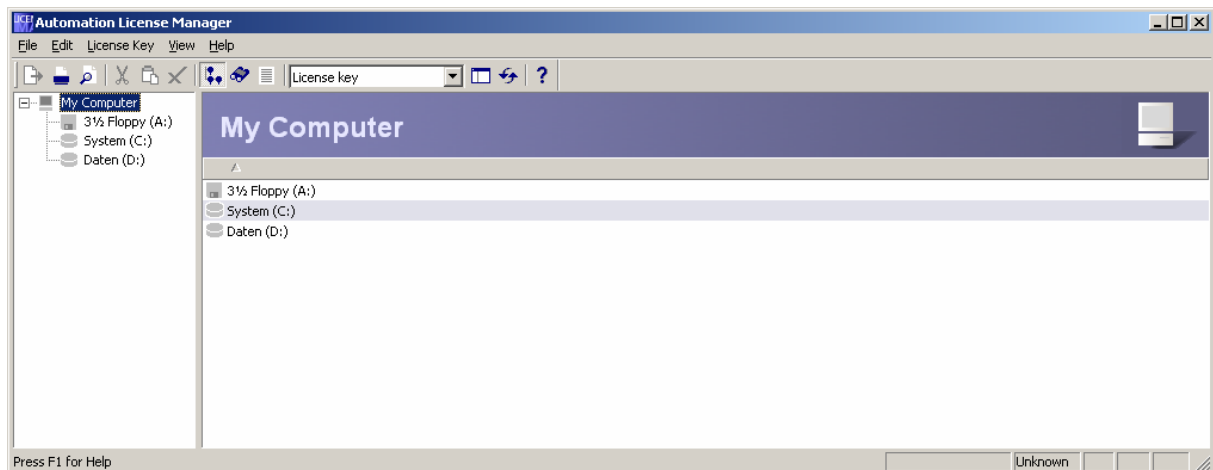
b) Installing SIMOTION CamTool

1. Insert the CD with the installation software in the CD-ROM drive.
2. Start the Windows Explorer and switch to the CD-ROM drive.
3. Open the CamTool\Disk1 directory.
4. Double-click **setup.exe**. The installation program will be started.
5. Execute the installation program. SIMOTION CamTool will be installed.

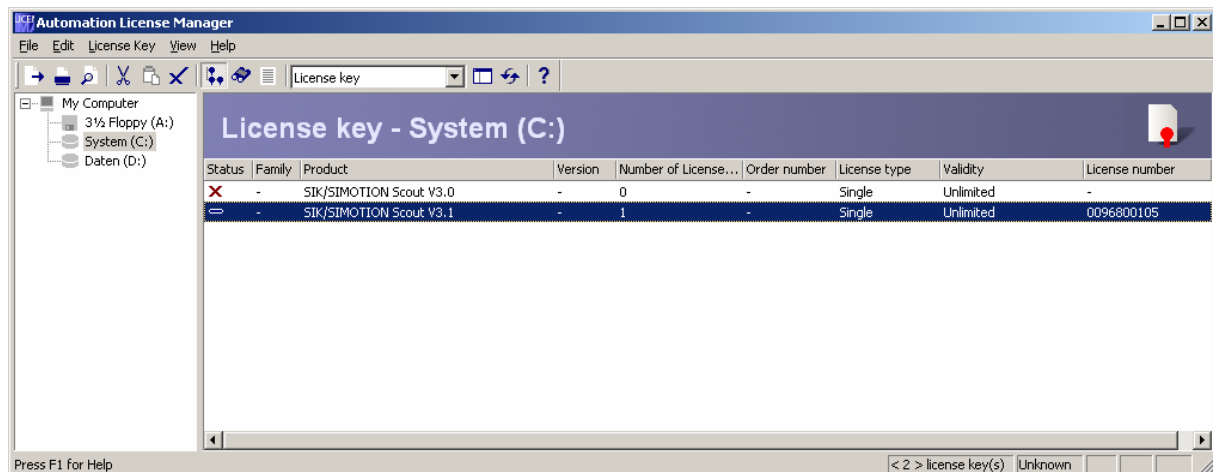
1.3 Upgrading the License Key

To use SIMOTION SCOUT, the associated diskette with the license key for the upgrade will be provided with the delivered product CD. As of version 4.0, the SIMOTION SCOUT authorization (single license) has been changed to the new licensing procedure with floating license. The "Automation License Manager" program is used for administering the licenses.

1. Insert the diskette with the upgrade license key in the diskette drive.
2. Start the authorization program in the **SIMATIC > License Management > Automation License Manager** start menu. A new window opens.

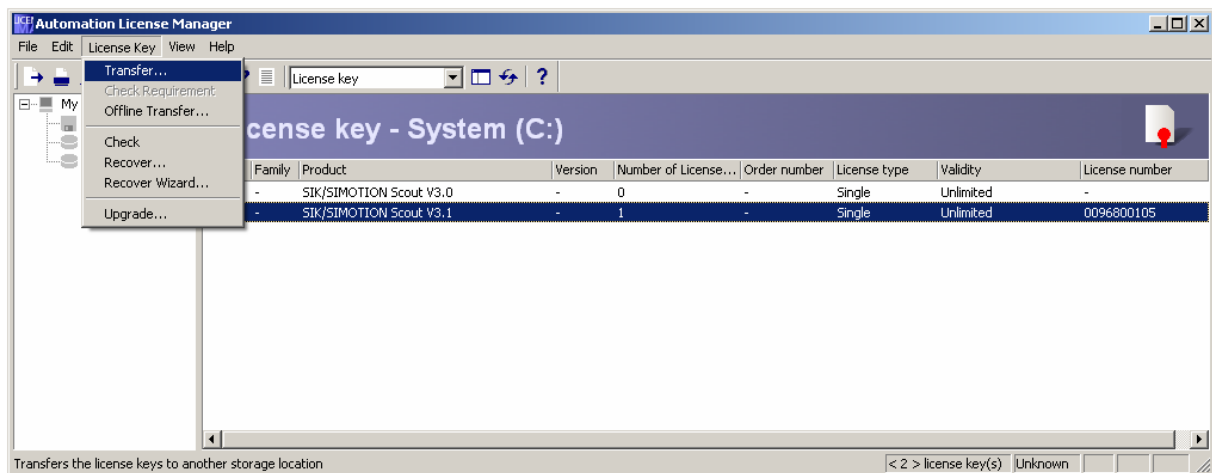


3. Select in the navigation area (the left-hand window) the drive that contains the authorization of the older SCOUT version. The authorization is normally installed on the hard disk drive of the PC.

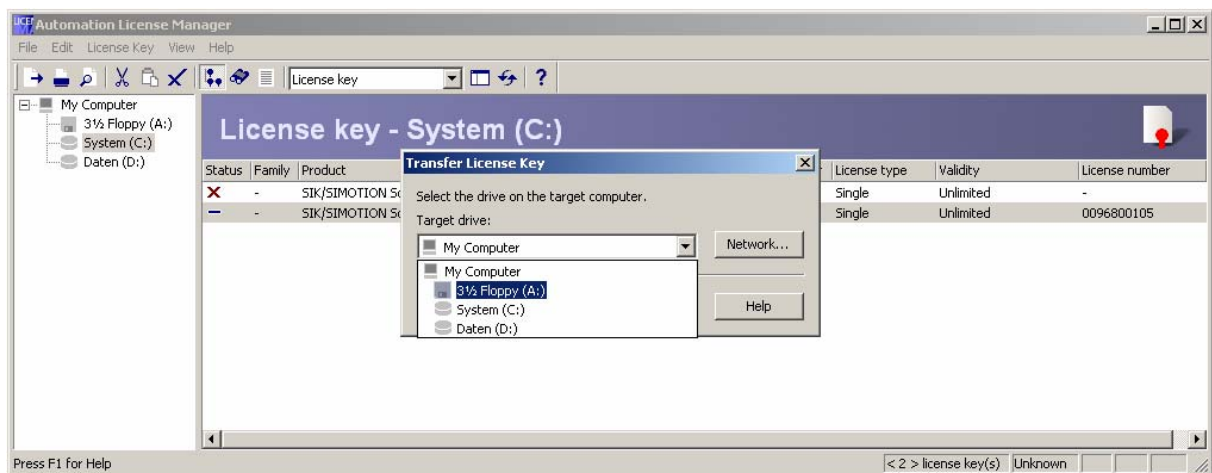


Update Simotion V4.0

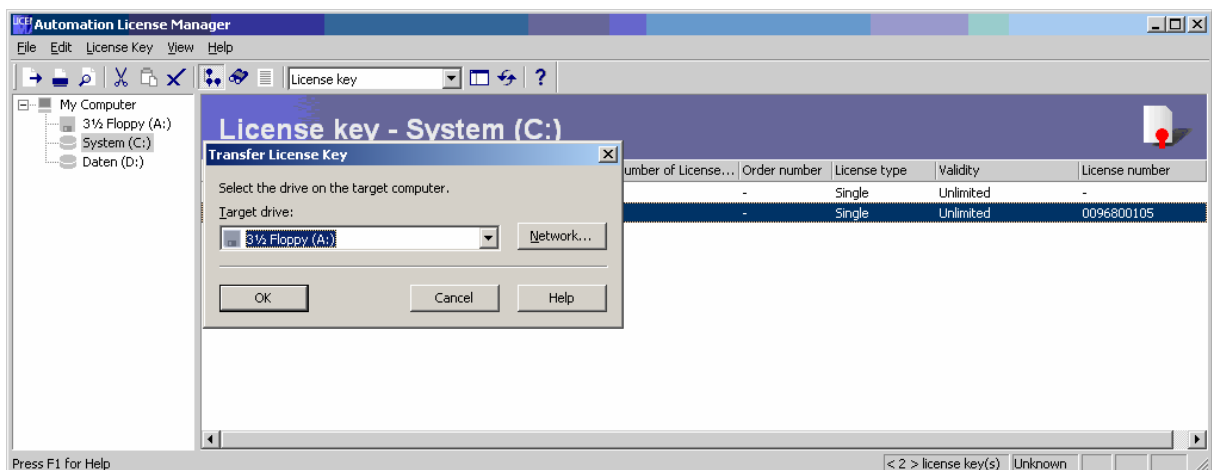
- Transfer the authorization to the diskette with the upgrade license key. Select here the license in the right-hand window and select **License Key > Transfer...** in the menu.



- Select the diskette drive that contains the upgrade diskette.

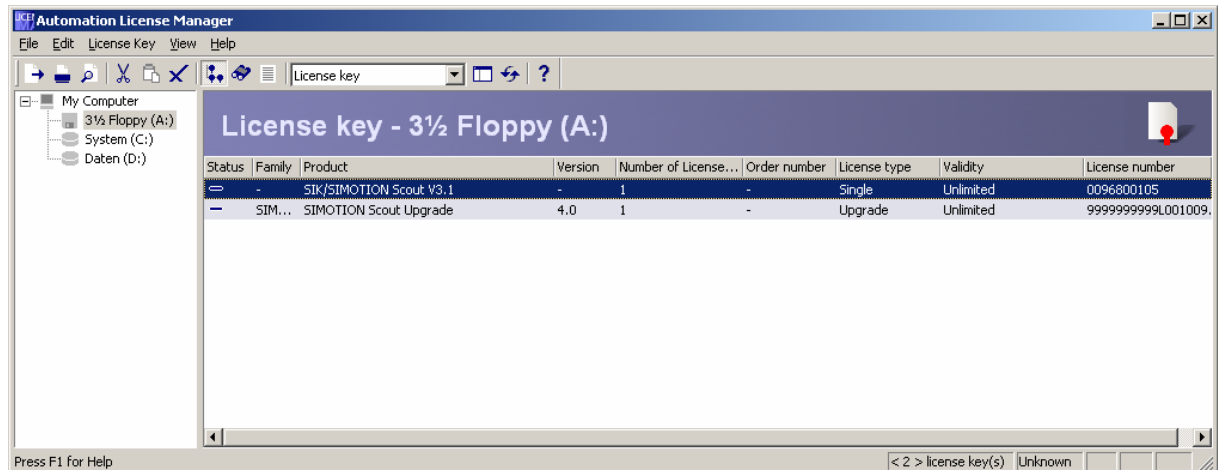


- The transfer is started by clicking "OK".

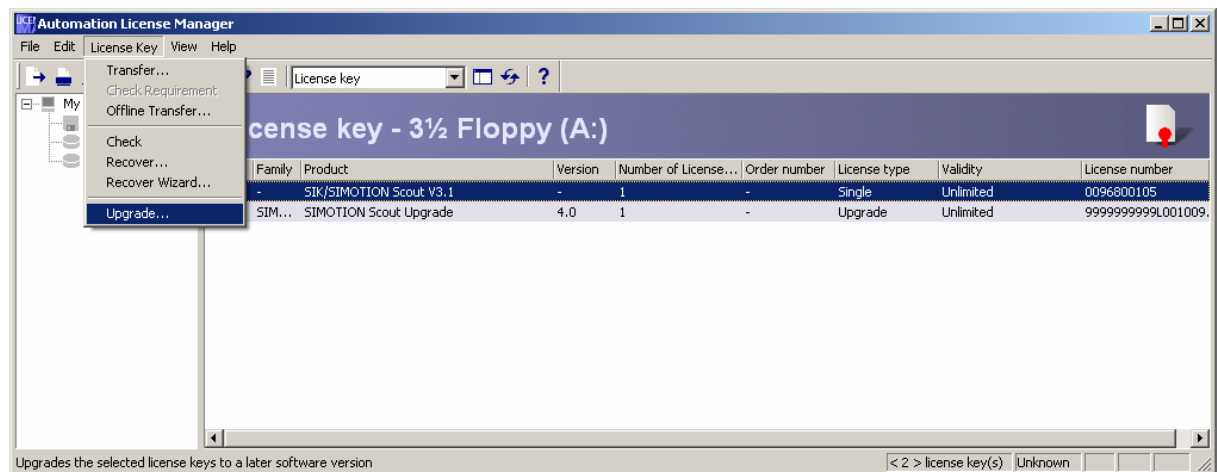


Update Simotion V4.0

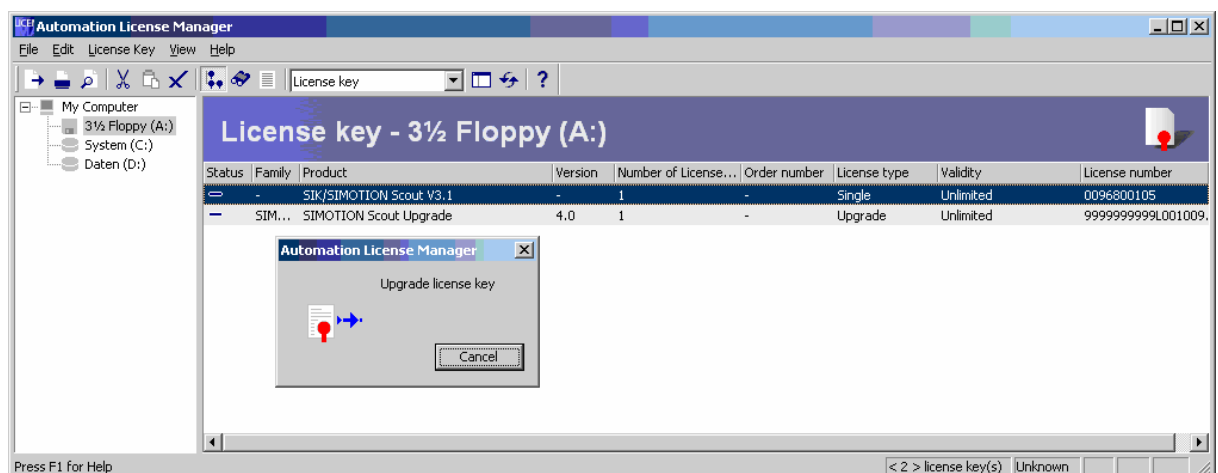
7. The authorization and the upgrade license key are now on the diskette.



8. Now select **License Key > Upgrade...** in the menu.

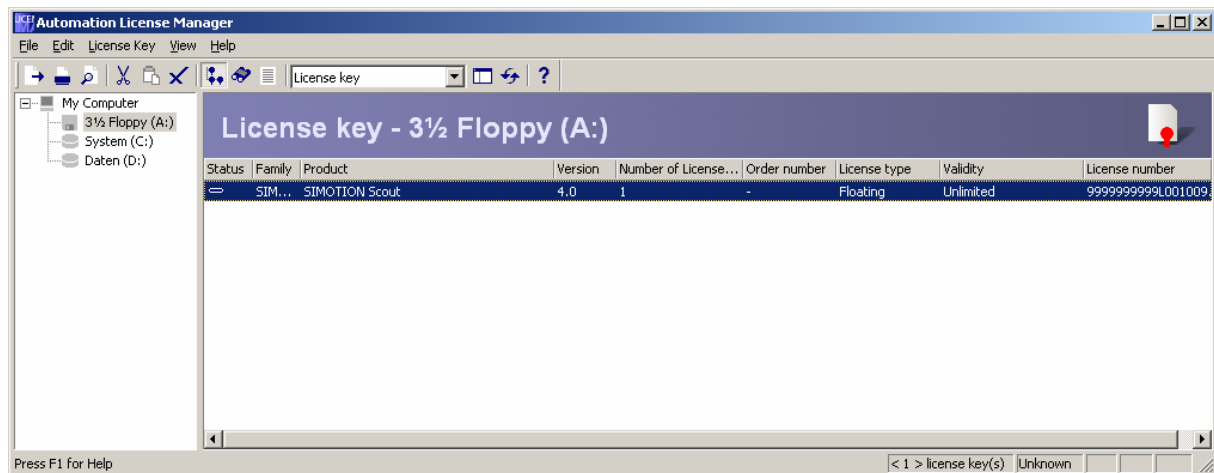


9. The older authorization will be upgraded to the new "floating license".

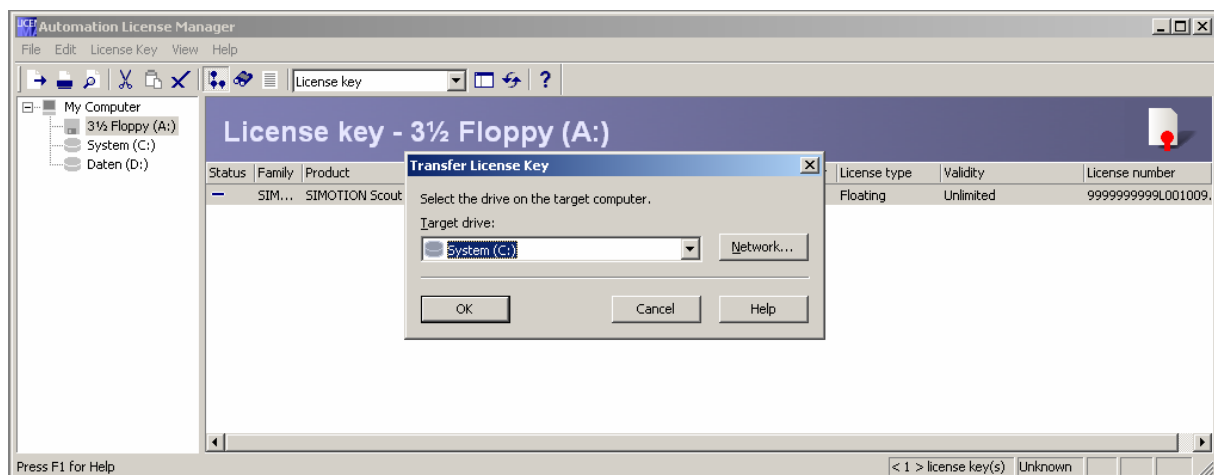


Warning:
Do not interrupt the upgrade task. An interruption can cause the loss of the license keys.

10. The older authorization will be deleted and a complete floating license for SIMOTION SCOUT will be available.



11. Now transfer this floating license to your hard disk drive using the **License Key > Transfer...** menu in the same way as previously for the authorization to the diskette.



12. After a successful transfer, remove the diskette from the drive. SCOUT can now be used without restriction.

You can at any time transfer the license key to any data medium for transport to another computer. In addition, you can store several license keys on a network drive. When SCOUT starts, a free license key will be assigned on the network drive and will be automatically freed when SCOUT ends. If the computer must be operated separately from the network, the license key can be transferred back to the local hard disk and thus SCOUT can operate unrestricted without the network.

2 Updating the Project (Offline)

2.1 Saving the SIMOTION Platform Data

2.1.1 User Retain Data and User Data Records (Recipes)

Prior to updating a SIMOTION platform, you can save the data that is only saved in the runtime system (e.g. retain data) and also the user data records saved on the memory card. This data can then be reused on the new/updated SIMOTION platform.

The SCOUT **Save variables** function can be used to save the data.

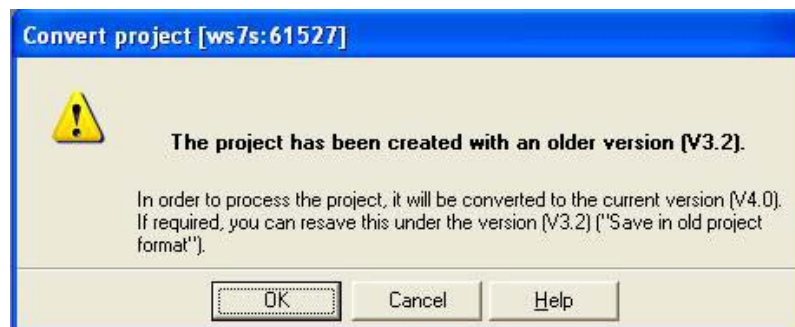
The saving must be performed before updating the SCOUT project

- with the previous SCOUT version level
- with SCOUT V4.0

The procedure with SCOUT V4.0 is described below.

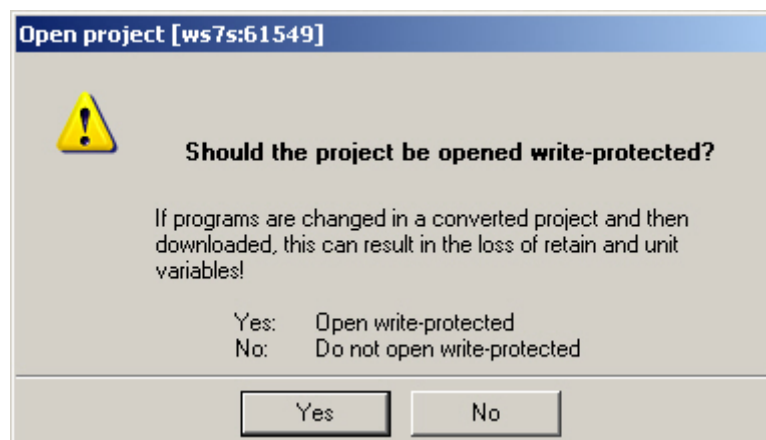
If the project is opened with a more recent Scout version, after confirmation, an update of the project will be performed automatically.

1. When the project opens, a window appears with the information that the project to be opened was created with a different Scout version and also a prompt whether the update is to be performed.



→ This prompt must be confirmed with "OK".

2. After the conversion, you are prompted whether the project is to be opened write-protected.



→ This prompt must be confirmed with "Yes" (Open write-protected).

Open write-protected: The project remains consistent. The data in the control and in the project is identical. Diagnostic functions (Status, Trace, etc.) can be performed directly. The project does not need to be loaded into the control beforehand.

3. Go online on the SIMOTION device (in the STOP mode) and then perform the SCOUT **Save variables** function. The retain variables (interface and implementation) are saved and also the user files (saved with _saveUnitDataSet or _exportUnitDataSet) on the PG/PC.

Detailed information is contained in the SCOUT Configuration Manual, Section 3.11. Then close the project.

If you use a different PG/PC than that before the last download, no online connection is initially possible. The PG/PC assignment must first be updated, preferably using the following method.

- Close SCOUT
- Open the user project directly from STEP 7
- Start NetPro from here and update the PG/PC assignment
- Close NetPro and SIMATIC Manager again

The SCOUT project can again be opened write-protected and the online connection is possible.

2.1.2 Diagnostic Buffer

Use SCOUT Target system->Device diagnosis->Diagnostic buffer to save the diagnostic buffer contents as a file.

2.1.3 Other Data on the Memory Card

1. Save the folder KEYS on the CompactFlash card using the Windows Explorer on the PC/PG. This folder may contain license keys for licensed software options.
2. Save log files
 - user\simotion\hmi\prjlog\userlog.txt (machine logbook by the user)
 - user\simotion\hmi\syslog\syslog.000 (system logbook of the ROM actions)
3. If IT-Diag is used, save the
 - user\simotion\hmicfg\webcfg.xml and
 - user\simotion\hmi\files\user.htm files or
 - all files in the files directory for your own HTML pages on PG/PC.
4. If the _activateConfiguration system function (modular machine) is used, possibly save the created LOG file (at install\simotion\log).

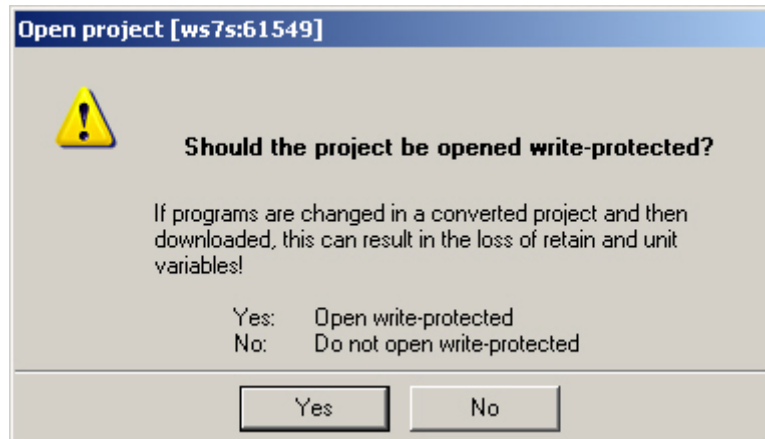
2.2 Updating a User Project

Note: Prior to the update, you should create a backup copy of the original project because the data storage of the project will also be updated with the update. This ensures that it is possible to return to the original project in case of a failure (power failure, unexpected faults, incorrect operation,...).

Procedure

1. When the project opens, a window reappears with the information that the project to be opened was created with a different Scout version and a prompt whether the update should be performed.

→ This prompt must be confirmed with "OK".
2. After the conversion, you are prompted whether the project is to be opened write-protected.



→ For a firmware update, this prompt must be confirmed with "No" (Do not open write-protected).

Do not open write-protected: The project can be edited. The data between the control and the project is not consistent. Diagnostic functions cannot be performed directly. The project must first be loaded into the control.

Open write-protected: The project remains consistent. The data in the control and in the project is identical. Diagnostic functions (Status, Trace, etc.) can be performed directly. The project does not need to be loaded into the control beforehand.

Note: A project that was last edited with a higher Scout version cannot be opened by a Scout with a lower version. The project, however, can be converted beforehand with the more current Scout version to the required software level (operation: Project → Save in old project format). The project can then be opened with the lower Scout version. Debug information, such as for the status, however, is no longer available.

2.3 Replacing the Simotion Device in the Project

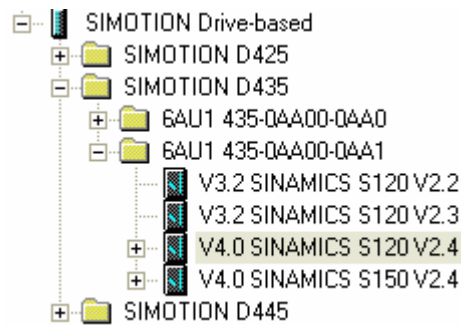
Perform this replacement in the hardware configuration.

Procedure

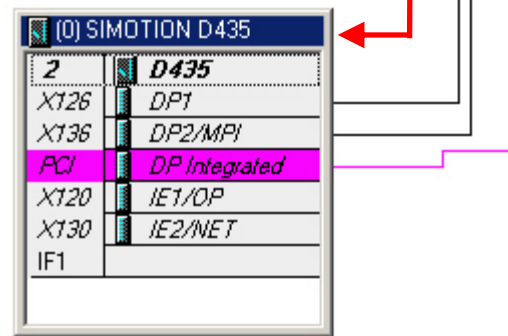
1. Double-click in the Project Navigator in SIMOTION SCOUT on the SIMOTION device to be replaced. The HW-Config opens.
2. Open the corresponding folder structure in the hardware catalog. **Drag-and-drop** the entry to the previously assigned rack.

Note

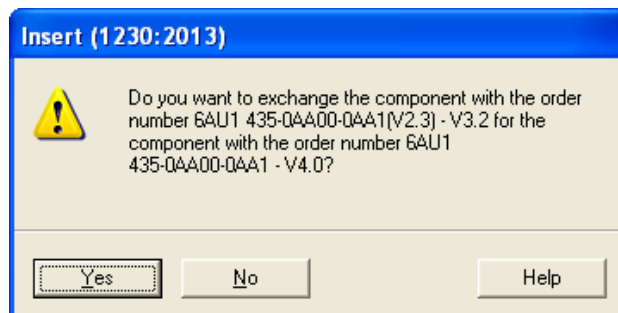
Ensure that you do **not delete** the control to be replaced beforehand!



With pressed left mouse button drag the appropriate control over the control to be replaced and then let go of the mouse button. Confirm the replacement of the control with "Yes".



3. Confirm the displayed dialog window with **Yes** if you want to replace the SIMOTION device.



4. Accept the changes of the hardware configuration with **Station > Save and compile** in the hardware configuration.
5. Close the HW-Config.

Note

The data of the SIMOTION device will be transferred immediately into the SIMOTION SCOUT project and the **complete project** will be saved. All changes in the project (e.g. axis configuration, etc.) are also transferred to the project!

2.4 Updating Technology Packages (TP)

When modules are replaced or project data is imported, the versions of the technology packages (TP) assigned to the individual technology objects (TO) are not automatically transferred to a version valid for the SIMOTION device. This update is made in a subsequent work step.

Prerequisites

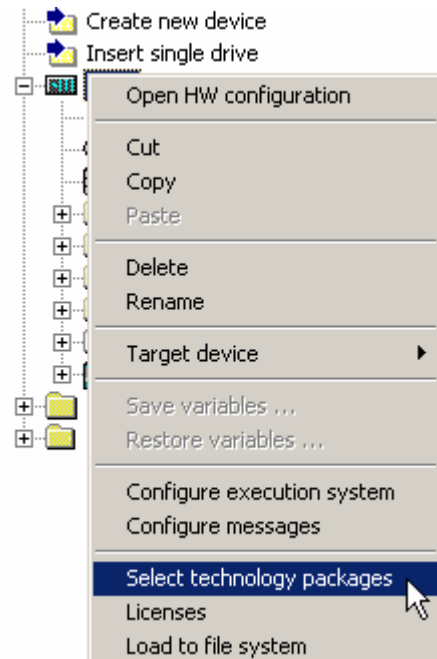
Update Simotion V4.0

An update is required when you want to replace the version of the SIMOTION device in your existing project.

- Project
- Scout with the appropriate software version

Procedure

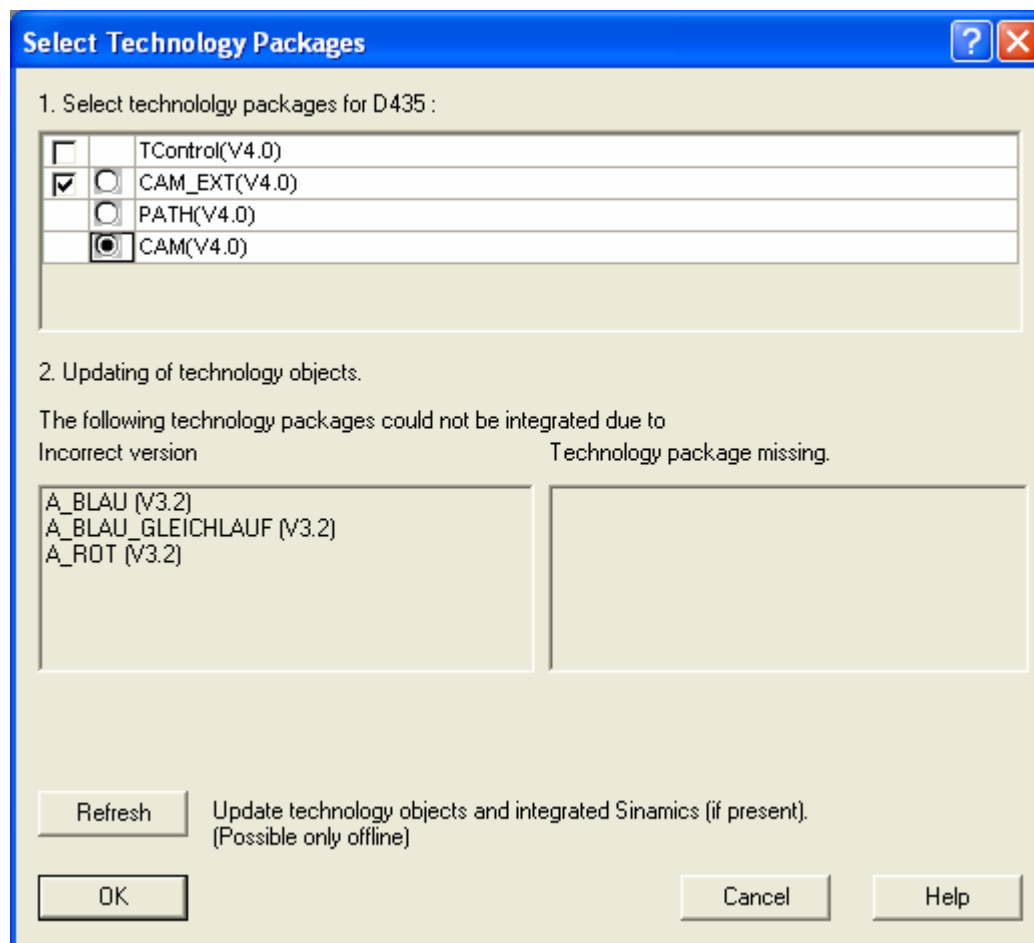
1. Mark in the Project Navigator the required **SIMOTION device**.
2. Select **Select technology packages** in the context menu.



3. If, as last work step, you have replaced the SIMOTION device, the **Technology Packages From Another Version** dialog window opens. Click **OK** to confirm the removal of the existing links to the TPs and to assign new TPs.



4. The **Select Technology Packages** dialog window then opens.



Update Simotion V4.0

Activate the technology packages checkbox. Because the technology packages must have the same version as the kernel, in SIMOTION SCOUT as of V3.0, the same version as the kernel will be automatically assigned to each technology package. Use the same technology package as in the previous version (usually TP CAM).

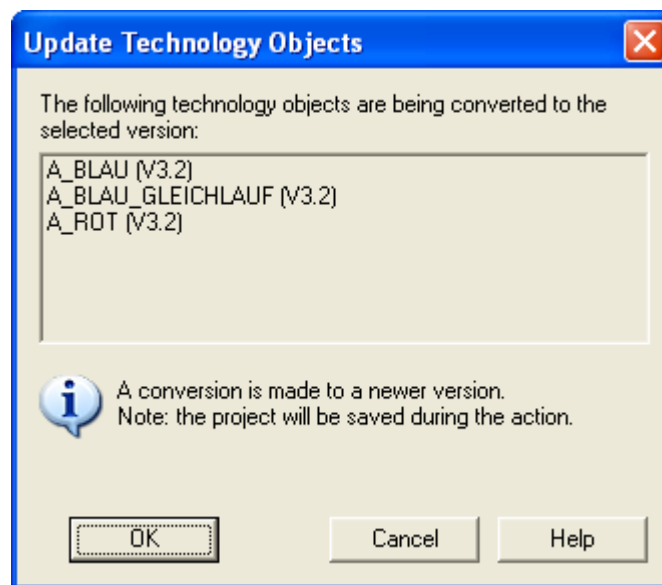
Note:

The PATH technology package is not yet supported in version V4.0.

5. If TOs that have an incorrect version are displayed under **incorrect version**, click **Refresh**. If this is not the case, continue with step 8.

The refresh automatically performs the firmware update to the version V2.4 required for SINAMICS_integrated.

6. The **Update Technology Objects** dialog window opens. Confirm this with **OK**.



7. The successful update will be displayed. Confirm with **OK**.
8. Click **OK** to confirm the **Select Technology Packages** dialog window. The update of the TPs is now complete.

Note

If you use libraries in the project, they must also be updated.

2.5 Updating a Library

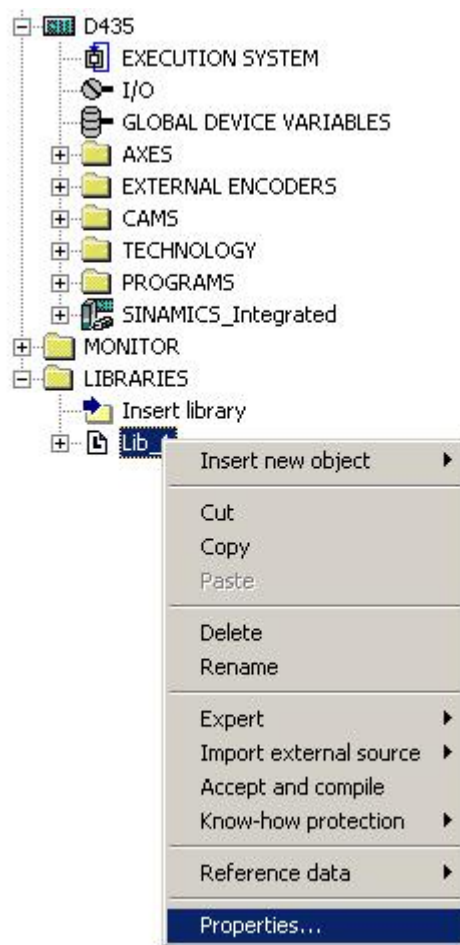
The associated libraries must be updated when the version of the SIMOTION device or the technology objects (TO) has changed in your existing project.

Prerequisites

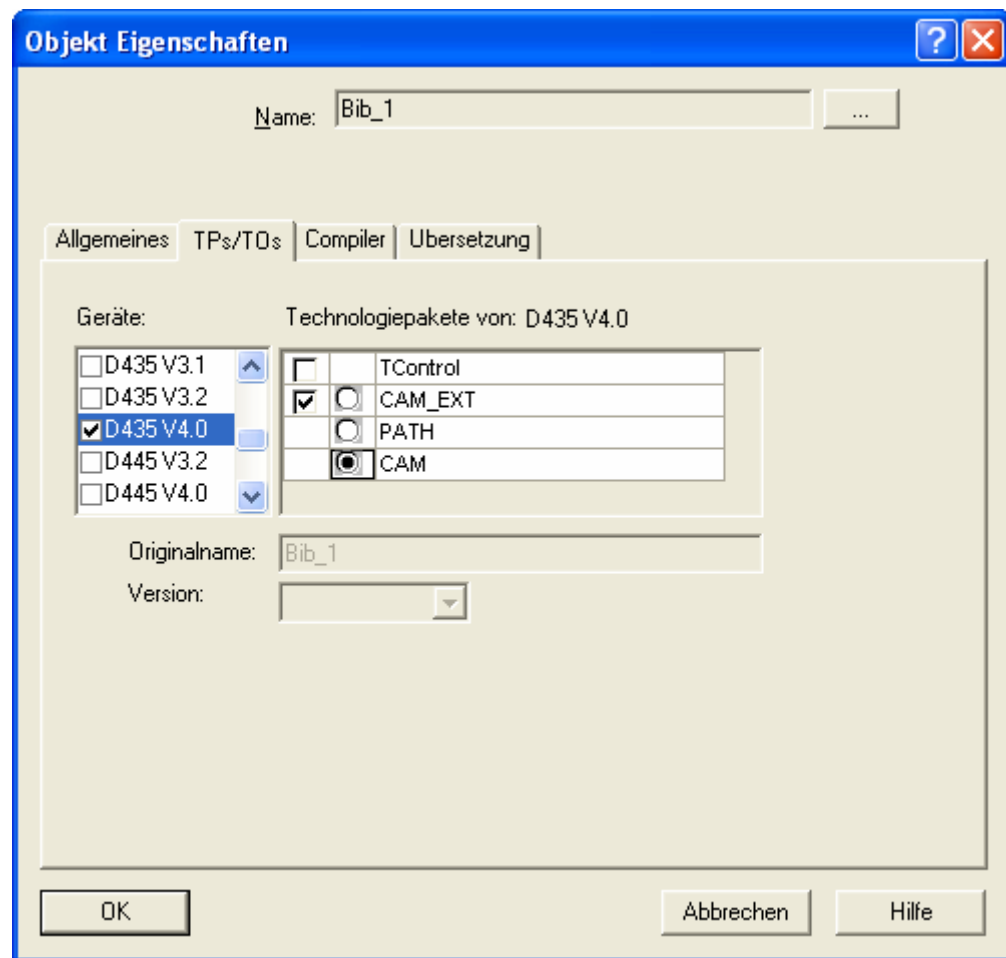
- Project
- Scout with the appropriate software version

Procedure

1. Open the **LIBRARIES** menu tree in the Project Navigator.
2. Select a library and right-click to open the context menu and select **Properties....**



3. Open the **TPs/TOs** menu in the window Properties. Select here the Simotion device (in the example, "D435 V4.0") and the technology packages (in the example, "CAM") for which the library is to be valid.

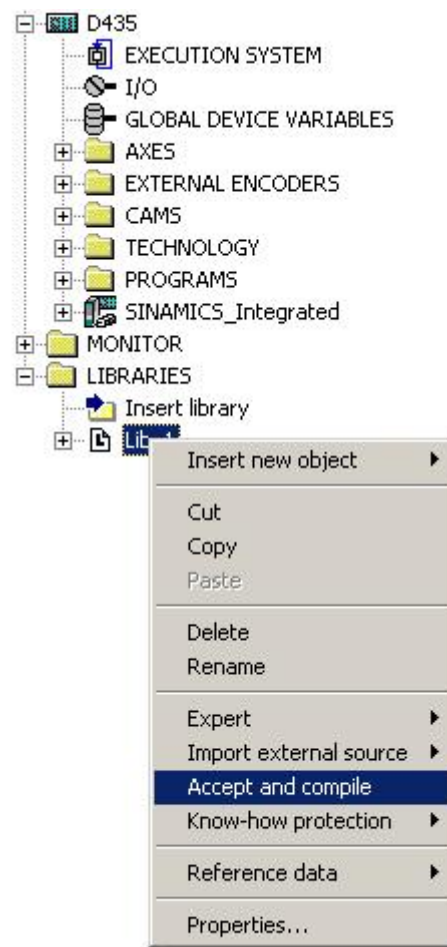


Note:

Observe the device dependencies under **Help** (Scout online help)

4. Click **OK** to close the dialog.

5. Select the library in the Project Navigator again, right-click to open the context menu and start **Accept and compile**.



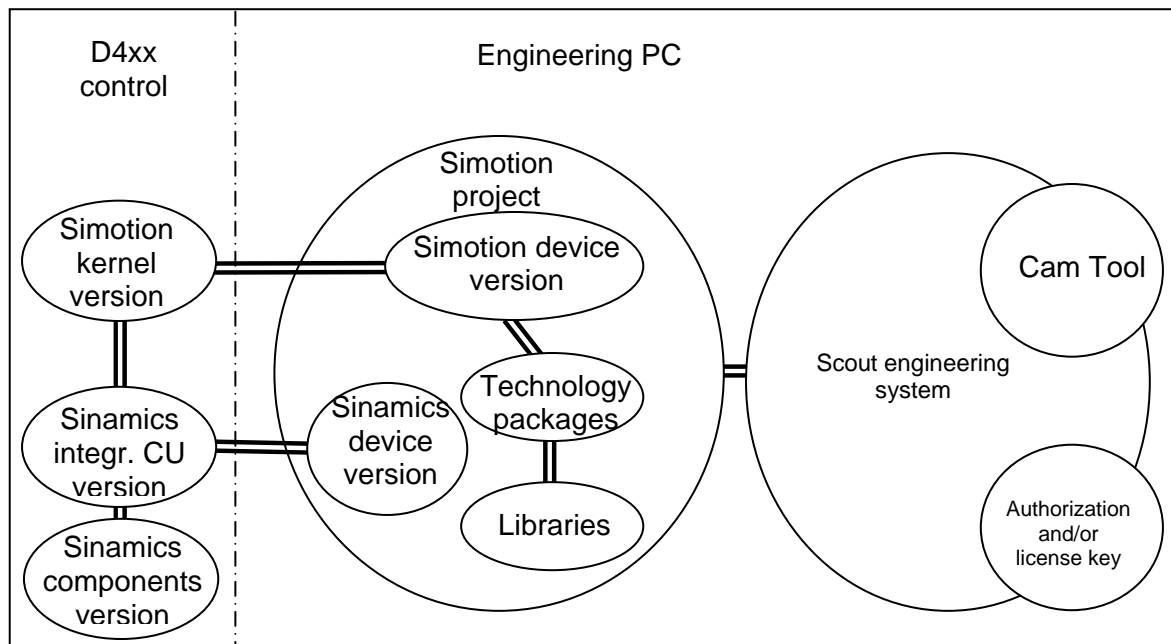
6. The update is complete when **Accept and compile** has been carried out without error.
7. Repeat steps 1 to 6 for each other library in the project.

2.6 Compiling the Project and Checking for Consistency

1. Save the project.
2. Perform the consistency check. No further error messages should occur.
3. Once you have updated the SIMOTION device (→ see Chapter 3), you can load the project into the control.

3 Updating a D4xx Device

Simotion D consists of several software single components that can be updated independently. The following figure shows the individual software components and their dependencies:



The following restrictions always apply:

- The kernel version of Simotion D4xx must agree with the version of the control in the Simotion project.
- The version of the used technology packages (e.g. TP-Cam) in the Simotion project must be appropriate for the controller version.
- The library blocks must be appropriate for the used technology packages.
- The Simotion project must be appropriate for the version of Simotion Scout. After a prompt, the project will be automatically updated to a newer Scout version when an older project is opened. A newer Simotion project cannot be edited with an older Scout version.
- The version of the integrated Sinamics Control Unit (CU) must be appropriate for the kernel version of Simotion.
- The Sinamics components (e.g. motor modules, SMCs, etc.) must be appropriate for the version of the integrated Sinamics Control Unit.

Note: Version dependencies for hardware and software components are shown in the compatibility list.

3.1 Updating a Control Unit

The firmware for SIMOTION D4xx is contained on the Compact Flash card. When delivered, this always contains the current version.

The user can install new or older versions on the Compact Flash card.

Prerequisites:

- Windows PC
- Card reader for the CompactFlash card

- **d435_fw.zip** update file

Note: This file must be used for all Simotion D devices (also D425 and D445).

Procedure

Warning:

The update will delete all project data, parameters and licenses on the CompactFlash card! The data (e.g. retain data) on the SIMOTION platform should have been saved beforehand (before updating the project), as described in Section 2.1.

Prior to the upgrade to a new version, a system reset or "delete the user data on the card" must be performed (for further details, refer to the documentation D4x5_commissioning.pfd, Subsection 7.10.2). This action clears the NVRam. As a consequence, however, a new absolute value encoder calibration is required when absolute value encoders are used. For the upgrade to a hotfix, the NVRam does not need to be cleared and the absolute value encoder offset remains valid for the same technology object names.

Important: The CompactFlash card may be removed or inserted only when the control is switched off.

1. Switch off the power supply for the D4xx.
2. Remove the CompactFlash card from the control.
3. Insert the CompactFlash card in the module slot of the card reader.
4. Open Windows Explorer. The CompactFlash card must be visible as a replaceable data medium with an arbitrary drive letter in the Windows Explorer.
5. Delete all files and folders on the CompactFlash card.
6. Unpack the **d435_fw.zip** file with a ZIP unpacker, e.g. "WINZIP", completely to the CompactFlash card. Note for the settings of the unpacker that the file structure must be retained.
7. Transfer the KEYS folder from the PC/PG to the CompactFlash card using Windows Explorer.
8. Remove the CompactFlash card from the PG/PC.
9. Insert the prepared CompactFlash card in the D4xx.
10. Switch on the power supply for the D4xx. The new firmware will be loaded from the SIMOTION CF into the D4xx. If the module after the startup has the "STOP" operating state, the update was successful.
11. **After the update of the control, the project must be recompiled and loaded.** If you load both the SIMOTION configuration and the SINAMICS configuration at the same time (standard setting when the Download button of the taskbar is clicked), Scout after the download of the SIMOTION Parts goes online on the SINAMICS and also loads this part into the device. Any version differences will cause error messages to be output. In this case, continue the update at item 2. in Section 3.2.

For the upgrade to a hotfix, the NVRam does not need to be cleared. This means that the retain data is kept.

Note: To ensure that the retain data is kept after the download, the "Initialization of all

remanent data" checkbox must not be set for Options/Settings/Download (not set in the default setting).

12. **Do not forget:** The individual SINAMICS components must subsequently be updated separately. (→ see Section 3.2)
13. After the upgrade, reload the saved data (from Section 2.1).
14. To ensure any original project is present for the next service action, after the upgrade, use SCOUT (save project to the card) to store the zipped ES project again. It will be stored by SCOUT at
 - user\simotion\hmi\prjlog\project.zip
 - user\simotion\hmi\prjlog\info.txt

3.2 Updating SINAMICS Components Firmware

After the firmware update of the D4xx control unit, you must update online the firmware of the individual SINAMICS components.

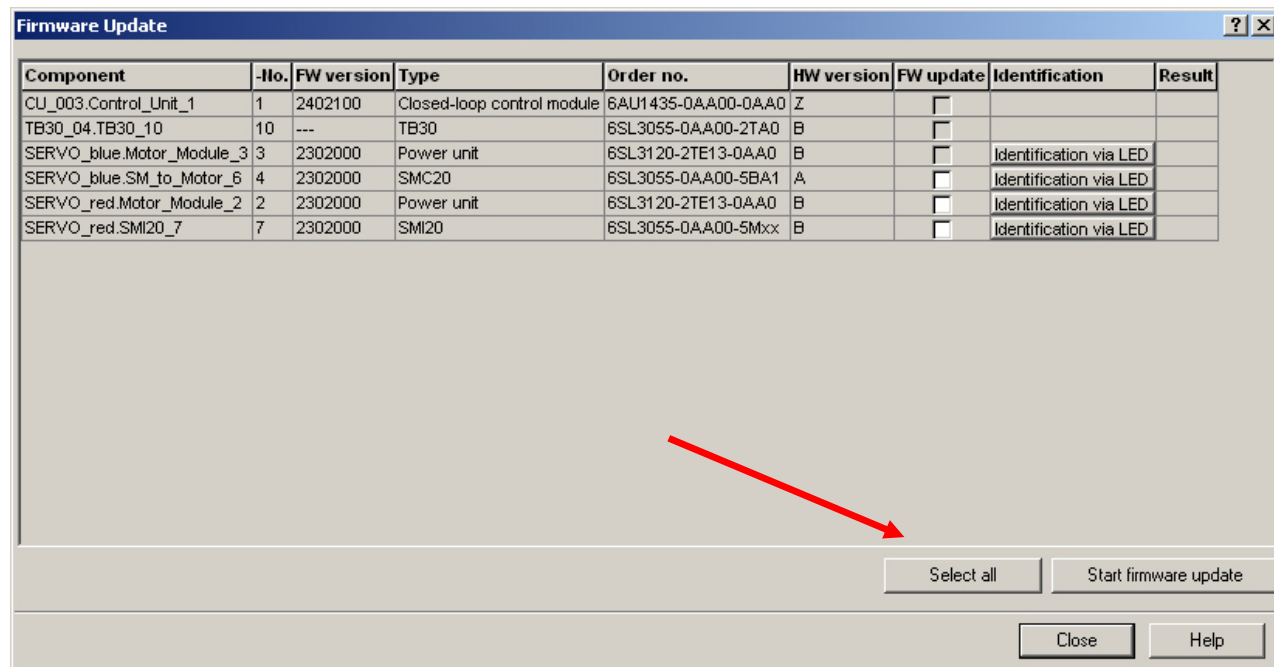
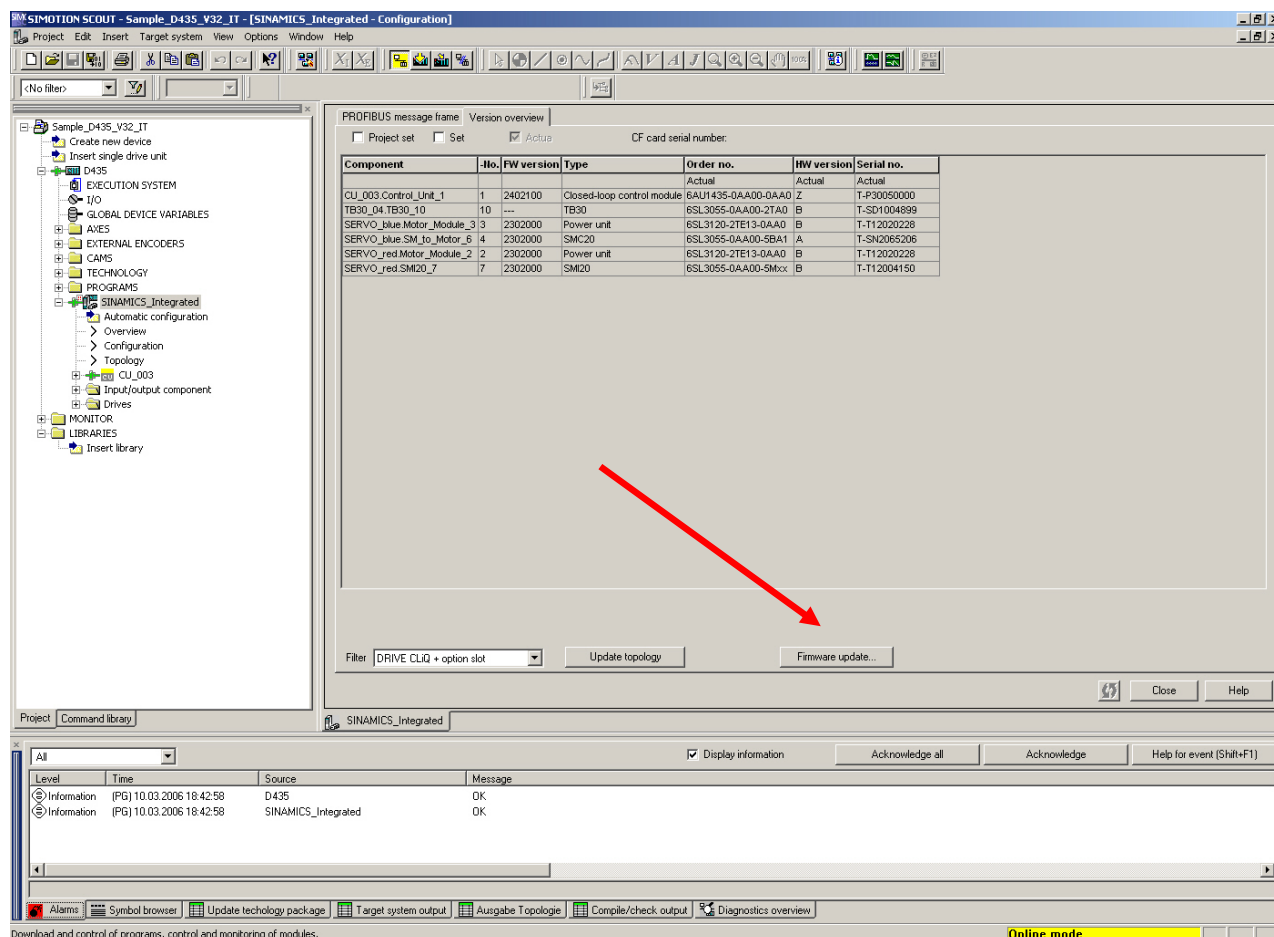
Prerequisites

The current firmware version must be saved on the CompactFlash card in the D4xx control unit. (→ see Section 3.1)

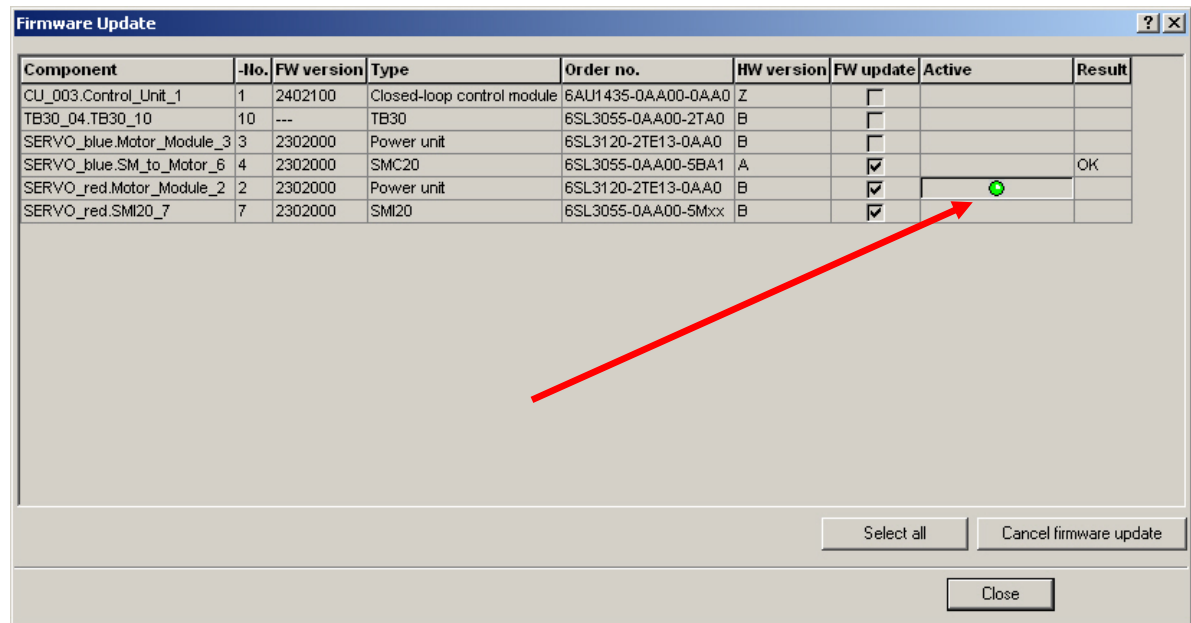
Procedure

1. Go online with SCOUT on SINAMICS.
2. Load the Sinamics project data (updated project) into the D4xx and perform "Copy RAM to ROM".
3. Use the "**Configuration → Version Overview → Firmware Update**" screen form in SCOUT to select all SINAMICS components and then start the firmware update.

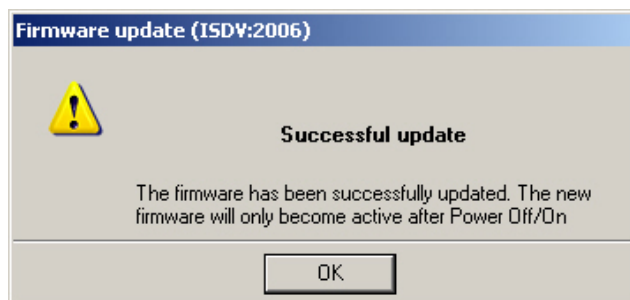
Update Simotion V4.0



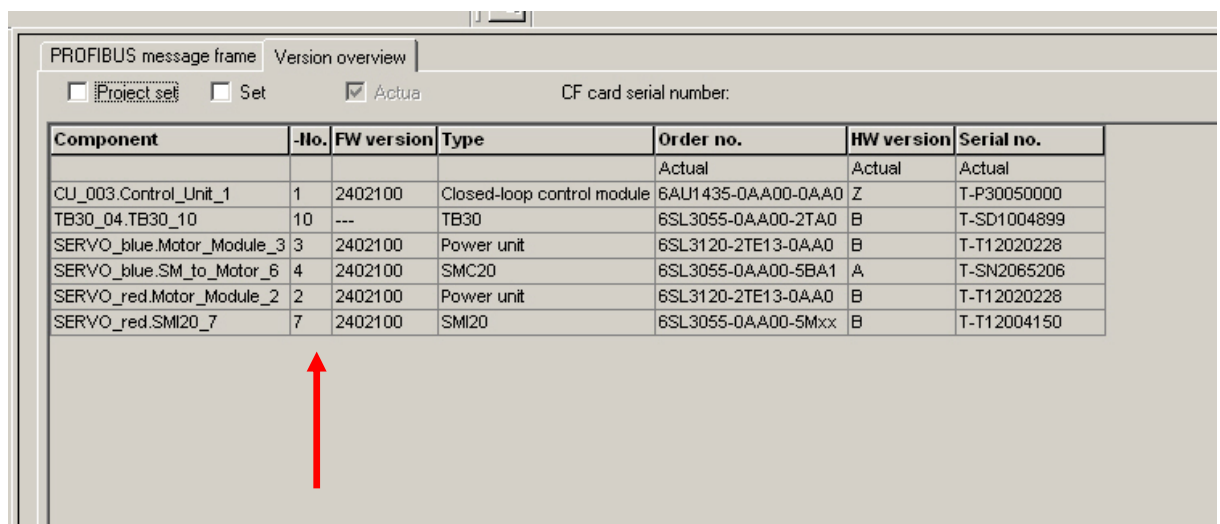
While the update is running, each active module is indicated by flashing green:



At the end of the update process, an information window will be displayed.



- After the firmware update, switch off and on the 24 VDC supply power. Only then is the new version shown in the version overview.



- The drive device is now operational again.

3.3 Restoring the SIMOTION Platform Data

The data saved before updating the SIMOTION platform can now be created in the device using the **Restore variables** SCOUT function.

Procedure

1. Go online on the SIMOTION device (in the STOP mode)
2. Now perform the **Restore variables** SCOUT function.
Detailed information is contained in the SCOUT Configuration Manual, Section 3.11.

Note: The data for the absolute value calibration is not saved. This means an absolute value calibration is required after the update.

4 Updating a C230-2 Device

Prerequisites:

- Windows PC
- Card reader for MicroMemoryCard (MMC)
- **C230_2fw.zip** update file

Procedure

Warning:

The upgrade action will delete all project data, parameters and licenses on the MMC! The data (e.g. retain data) on the SIMOTION platform should have been saved beforehand (prior to the upgrade of the project) as described in Section 2.1.

Prior to the upgrade to a new version, a system reset or "delete user data on the card" is necessary (for further details, refer to the documentation C230_operation.pdf, Section 8.5). This action clears the NVRam. As a consequence, however, a new absolute value encoder calibration is required when absolute value encoders are used.

For the upgrade to a hotfix, the NVRam does not need to be cleared and the absolute value encoder offset remains valid for the same technology object names.

Unpack the firmware Zip file (\3_C230\Firmware\V4.0\c230_2fw.zip) contained on the SCOUT add-on CD and use Explorer and the card reader to copy the c230_2fw.bin file to the MMC card. Any firmware file that already exists on the MMC must be overwritten. Insert the MicroMemoryCard in the C230-2, switch on and wait until the update has completed.

(Also refer to the description on the SCOUT add-on CD at 5_Documentation\English\5_SIMOTION_C/C230-2_operation.pdf, Sections 8.4, 9.1)

5 Updating a P350 Device

An update of the so-called V1 box (Pentium III, 500 MHz, 6AU1 350-1AF1x-1BC1) or of a V2 box (V2 box processor, 1.2 GHz Celeron) to version V4.0 is **NOT** possible.

An update is ONLY possible for the V2 box with 1.26 GHz Pentium III (6AU1 350-2AH2x-1BE1). **Thus, the release for the version V4.0 is made only for the V2 box** (6AU1 350-2AH2x-1BE1) **and the V3 box** with 2 GHz Pentium M (6AU1 350-3AK4x-1BE2).

- Although for version 3.1.1, Simatic Net V6.2 is already installed on the P350, Simotion V4.0 requires SIMATIC NET V6.2 SP1. You will be requested during the setup start to insert the SIMATIC NET V6.2 SP1 CD supplied with SCOUT V4.0. This initiates the installation of the SIMATIC NET SP1 and then automatically the SIMOTION version V4.0.
- This is not necessary for the SIMOTION P350 V3.2 version because SIMATIC NET V6.2 SP1 is already installed. In this case, you can begin immediately with the next item.
- For **SIMOTION P350**, the Setup on the SCOUT add-on CD is used for the update. The SETUP.EXE program is located at \3_P350\Firmware\V4.0\Disk1. Start SETUP.EXE with a double-click. The update, however, can also be made simply by using a Recovery CD with V4.0.

Note:

To update the P350 V2 box from V3.1.1 to V4.0, the CD supplied with the delivery may not be used, but rather SIMATIC NET 6.2 SP1;

- It is supplied with SIMOTION V3.2 SP1;
- SIMATIC NET CD V6. 3 HF1 + HF6 is supplied for SIMOTION V4.0. The supplied HF6 must itself be updated.

Warning:

- Before starting the update, close the SIMOTION P runtime in the P350 ControlPanel.
- The data (e.g. retain data) on the SIMOTION platform should be saved beforehand (before updating the project), as described in Section 2.1.
- Prior to the update, the old firmware must be deinstalled and the NVRam or "Restore factory setting" deleted (the P350 documentation contains further details).
- After the update, you may need to use the SIMOTION P Control Manager to reset the computation time-slicing values for Windows and the SIMOTION P kernel to the previously set values.

Also check the name of the P350 in the Station Configurator. This name (for example, PCStation) must be the same as the name under object properties in the HW-Config. Only then can you go online!