SIEMENS

SIMOTION

SIMOTION SCOUT
V5.3 SP1

and SIMOTION Runtime software for

SIMOTION C V5.3 SP1
SIMOTION D V5.3 SP1
SIMOTION P V5.3 SP1

Readme

04/2019

Unrestricted
Siemens AG
Digital Factory

Ⓟ 04/2019 Subject to change without prior notice

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1 Notes on use

1.1 SIMOTION V5.3 SP1

These notes take priority over statements made in other documents.
Read these notes carefully as they include important information regarding the installation and use of the software.

Version V5.3 SP1 is the first release of SIMOTION V5.3.

1.2 General notes

Information about the new functions of version V5.3 SP1 can be found on SCOUT DVD 1 at:\AddOn\1_Important\English\Features

Note Section 4.4 for the upgrade of older SIMOTION versions to V5.3 SP1.

Also note Section 9.11 Important notes for use as well as the Changes in behavior as a result of error corrections described in Section 11.

Information about SIMOTION in the Online Support
Overview of the most important technical information and solutions for SIMOTION in the Industry Online Support.

SIMOTION motion control system: https://support.industry.siemens.com/cs/ww/en/ps/14505

SIMOTION at a glance: https://support.industry.siemens.com/cs/de/en/view/109480700

All information about service and support in the industry online support:
Internet link: Service and support in the Industry Online Support
(https://support.industry.siemens.com/cs/de/en/)

Here you can also subscribe to the newsletter that provides you with the latest information relating to your products.

Further technical support and information about the SIMOTION product can be found

- in the Internet at https://www.siemens.com/simotion
- as well as in the SIMOTION Utilities & Applications (DVD 2 of the SCOUT software package)

1.3 Security notes

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit https://www.siemens.com/industrialsecurity.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under https://www.siemens.com/industrialsecurity.

Security updates
To protect your engineering computer, it is recommended that you activate the automatic update services (if available) for the operating system and the programs installed thereon (e.g. Adobe Acrobat, Flash, Internet Browser or Oracle). Information on how to activate the update services is available on the manufacturer's home pages.
In this way, the latest updates are installed automatically on your computer so that known security gaps are corrected as quickly as possible and without you intervening.

This recommendation does not apply to the SIMOTION P.

1.4 Software compatibility

The combination possibilities of all the relevant software products that can be used with SIMOTION are contained in a compatibility list. The list shows which versions of the individual products (engineering tools, HMI tools, SIMOTION Runtime and drive firmware versions) have been released for use together. The list can be found in the Internet at:
https://support.industry.siemens.com/cs/ww/en/view/18857317.

1.5 Test certificates

The Safety Integrated functions of SINAMICS are generally certified by independent institutes.
An up-to-date list of certified components is available on request from your local Siemens office.
If you have any questions relating to certifications that have not been completed, consult your Siemens contact partner.

The current status of the available certificates with regard to international standards and machine safety (TÜV, IFA) can be found at:
https://support.industry.siemens.com/cs/de/en/ps/14505/cert

More detailed version information about the SINAMICS Integrated firmware for SIMOTION D, incl. the Safety versions, can be found at:
https://support.industry.siemens.com/cs/ww/en/view/31045047

2 Scope of delivery

This software package contains version V5.3 SP1 for SIMOTION SCOUT and the SIMOTION devices.

The software package consists of various parts that are represented by individual directories on three DVDs.

DVD designation	Directory on the DVD	Content
SCOUT V5.3 + SP1 DVD 1 (VOL1)	InstData HELP	SIMOTION complete setup SIMOTION SCOUT V5.3 SP1
	Addon CamTool	SIMOTION AddOn V5.3 SP1 SIMOTION Extensions CamTool V4.3 SP1
SCOUT V5.3 + SP1 Documentation Utilities_Applications DVD 2 (VOL2)	Documentation Utilities_Applications SIMOSIM	V5.3 SP1 documentation Utilities & Applications V5.3 SP1 SIMOSIM setup
SCOUT TIA V5.3 + SP1 DVD 3 (VOL3)	SCOUT TIA MigTool	SIMOTION complete setup SIMOTION SCOUT TIA V5.3 SP1 SIMOTION SCOUT Migration Tool Plug-In V5.3 SP1

SCOUT V5.3 SP1 DVD 1

Root directory, SCOUT complete setup

The root directory contains the complete setup to install the components of the SCOUT V5.3 SP1 software package.
The SIMOTION SCOUT V5.3 SP1 version is a complete installation of SCOUT.

InstData, HELP SIMOTION SCOUT V5.3 SP1

SIMOTION SCOUT V5.3 SP1, incl. online help

AddOn V5.3 SP1

The AddOn directory contains important information for V5.3 SP1 as well as all the information about SIMOTION IT (at 4_Accessories).

The current firmware versions can be found on the SIMOTION product support Internet pages:
SIMOTION D firmware →https://support.industry.siemens.com/cs/ww/en/view/31045047

SIMOTION C firmware →https://support.industry.siemens.com/cs/ww/en/view/31263919

SIMOTION P setup →Consult your local Siemens contact partner.

Firmware Support Package →https://support.industry.siemens.com/cs/ww/en/view/33119786

SIMOTION Extensions CamTool V4.3 SP1

The CamTool software simplifies the creation of cams. CamTool is an optional package for SIMOTION SCOUT.
The installation files are required only for the installation with SCOUT.
For SCOUT TIA, CamTool can be installed as part of the SCOUT TIA installation (optional).

In both cases, CamTool must be licensed separately.

SSP_... SINAMICS Support Package

Additional SINAMICS firmware versions are stored as SINAMICS Support Packages (SSPs). The contents of SSP_... can be selected individually for installation via the SCOUT setup. It is also possible to install individual SSPs later by calling the SCOUT setup again.
For detailed information, see Section 4.2.5, Installation of SINAMICS Support Packages or visit the SIEMENS product support Internet page:

https://support.industry.siemens.com/cs/ww/en/view/109477641

SCOUT Documentation and Utilities DVD 2

V5.3 SP1 documentation

The Documentation directory contains the SIMOTION documentation in German, English, Italian and French in PDF format.

Utilities & Applications V5.3 SP1

The free-of-charge Utilities & Applications provide important background information about SIMOTION, tools, special functions, blocks and SIMOTION sample projects, as well as ready-to-use standard applications (e.g. handling, cross cutter, etc.) for demonstration purposes or use in your projects. You can also find detailed information there about scripting and many sample scripts that facilitate working with SIMOTION.
Of particular interest here is the "SIMOTION easyProject" section with which projects can be generated very easily with standard blocks. You can find more information in Section 9.7 SIMOTION easyProject ProjectGenerator.

An HTML user interface enables easy navigation through the comprehensive contents of the Utilities & Applications.
Start the navigation by opening the "index.htm" file in the Utilities_Applications directory.

The software on Utilities & Applications may be used, changed and extended by SIMOTION customers in applications and executed in SIMOTION Runtime systems free-of-charge. Any required Runtime licenses for the execution of the software are not included in this free use, and must be ordered and licensed separately. The type of use of this software means that it is subject to the following limited liability.

Limitation of liability for Utilities & Applications
The sample applications and the associated documentation on Utilities & Applications are provided free-of-charge. With the software, the customer receives the non-exclusive, non-transferable right to use the software without charge; this includes the right to modify the software, to reproduce it in modified or non-modified form and to link it to the customer's own software.

The software has not been tested with the normal software system test by Siemens AG.

We do not assume any liability - irrespective of the legal grounds - especially for faults in the software or associated documentation or damage on account of consulting unless the same is to be attributed to us, for example, for willful damage, gross negligence, damage to life, body or health, taking over of a procurement guarantee, willful concealment of defects or violation of important contractual liability. This does not entail a change in the burden of proof to the disadvantage of the customer.

German law applies. The Erlangen courts have exclusive jurisdiction.

SCOUT TIA V5.3 SP1

SCOUT TIA complete setup root directory

The root directory contains the complete setup to install the components of the SCOUT TIA V5.3 SP1 software package (internal identifier: 05.30.26.00).
Prerequisite is the installation of a TIA Portal Framework as of V15.1 Upd1. This also applies similarly for the Migration Tool Plug-In V5.3 SP1.

Licenses

Licenses contains the license conditions.

SCOUT TIA

SIMOTION SCOUT TIA V5.3 SP1, incl. CamTool (without license) and online help.

MigTool

SIMOTION SCOUT Migration Tool Plug-In V5.3 SP1

3 Third-party software - License conditions and copyright notes

Copyright notes for the third-party software contained in this product, in particular the open source software, as well as the applicable license conditions, can be found in the Read_OSS file on the SCOUT DVD at \OSS_Information. This file is also displayed during the setup by clicking the "Open source license agreement" button.

Special note for resellers:
The notes and the license conditions contained in the Read_OSS file must be passed on to the purchaser in order to avoid the reseller and purchaser from violating the license conditions.

4 SIMOTION SCOUT V5.3 SP1

The installation notes contain important information which you require for the installation of the software. Read these notes before you start the installation.

4.1 Installation of SCOUT TIA

!!! Note the separate Readme in HTML format on the SCOUT TIA DVD!!!

This contains the installation notes and usage notes for SCOUT TIA that are also integrated during the setup.

Supported operating systems for SCOUT TIA
- Windows 7 SP1 Professional/Ultimate/Enterprise (64-bit)
- Windows 10 Pro/Enterprise (64-bit) Version 1803

4.2 Installation of SCOUT

4.2.1 Hardware requirements

The following minimum hardware requirements must be fulfilled for installation of the "SIMOTION SCOUT" software package:

Processor:	Intel® Celeron® Dual Core 2.2 GHz (Ivy / Sandy Bridge)
RAM:	8 GB
Screen resolution:	1024 x 768

Recommended hardware requirements:

Processor:	Intel® Core™ i5-3320M 3.3 GHz or faster
RAM:	8 GB or more
Screen:	15.6" full HD display (1920 x 1080 or higher)

4.2.2 Memory requirement

For a complete installation, SIMOTION SCOUT V5.3 SP1 requires approx. 9 GB of memory space on your hard disk.
You should reserve at least another 200 MB for your projects.

An important requirement for the installation is that there is at least 3 GB of temporary memory available on drive C:\. This is also required when the installation is to be performed on a drive other than C:\.

4.2.3 Software requirements

4.2.3.1 Operating system

The software requirements for SIMOTION SCOUT V5.3 SP1 are:
- Windows 7 SP1 Professional/Ultimate/Enterprise (64-bit)
- Windows 10 Pro/Enterprise (64-bit) Version 1803

- Microsoft Internet Explorer V11.0

You must have administration rights to install SIMOTION software packages. You may be reminded of this during the installation.
Because of the access rights under Microsoft Windows 7 / Windows 10, the user must be entered and registered in the "SIMOTION TIA Engineer" group. Without this authorization certain functions, such as "Set PG/PC interface", cannot be used.
We recommend that the task bar be left switched on so that requirements of other applications can be identified.

The installation on an operating system that does not use the western character set is possible only with an operating system in the MUI (Multilanguage User Interface) version.

4.2.3.2 Runtime environment

The deployment of STEP 7 V5.6 SP1 is prerequisite for the installation.

Note the **important note** in Section 9.12Important note for use as of STEP 7 V5.5 SP3.

WinCC flexible 2008 SP5 Upd1 is available for visualization and has also been released for integrated use in SCOUT V5.3 SP1.
More detailed information can be found in the user notes in Section 9.8, HMI configuration.

The software requirements for using PROFIsafe in conjunction with
SIMATIC F-CPUs and SIMOTION/SINAMICS are:

- **S7 F ConfigurationPack V5.5 SP13**
  Distributed Safety V5.4 SP5 Upd2

S7 F ConfigurationPack can be found as download in the Siemens Industry Online Support at: https://support.industry.siemens.com/cs/ww/en/view/15208817

There is no guarantee of executability in a software configuration other than that specified above.

Compatibility list
Detailed information on the combination of software products can be found in the compatibility lists for SCOUT and SCOUT TIA in the Internet at:
https://support.industry.siemens.com/cs/ww/en/view/18857317

A detailed, regularly updated list of I/O modules released for SIMOTION as well as notes on their application can be found
in the Internet at: https://support.industry.siemens.com/cs/ww/en/view/11886029

The SINAMICS commissioning tool STARTER as well as SIMATIC S7-Technology (STEP 7 option for the configuration of the CPU 31XT-2 PN/DP) are integrated in SIMOTION SCOUT V5.3 SP1.

Caution:
Simultaneous operation of the SIMOTION SCOUT, STARTER, SIMATIC S7-Technology, SIMATIC NCM PC and STEP 7 Micro/WIN variants on one PC/PG is not supported.

4.2.4 Installation of SCOUT

A setup can only be performed with administrator rights. Make sure that the login after the reboot is performed with the same login (with administrator rights) as for the setup.

For the upgrade of a STEP 7 environment to STEP 7 V5.6 SP1, it is recommended that first all option packages be uninstalled, then STEP 7 upgraded and then the required option packages installed.

You can remove your authorization for older versions beforehand, but existing authorizations are retained during an installation.

The SCOUT installation must not be interrupted by a computer restart.

Installation of WinCC flexible
If WinCC flexible is installed on your computer in one of the following versions, it does not have to be uninstalled.

WinCC flexible 2008 SP5 Upd1

If you have installed WinCC flexible on your computer in another version, it has to be uninstalled before starting the SCOUT installation, and the installation sequence described below followed.
Install the software in the following sequence. Problem-free operation will only be ensured when you observe this installation sequence.
1. SIMATIC STEP 7
2. SIMOTION SCOUT (CamTool optional)
3. WinCC flexible

Installation of SIMOTION SCOUT
Insert DVD1 SIMOTION SCOUT V5.3 + SP1 in the drive. SIMOTION SCOUT V5.3 SP1 is installed using a user-defined setup that you start by double-clicking in the Microsoft Windows Explorer on the SETUP.EXE program.

It consists of the following products:
- Automation License Manager V6.0 SP2
- SIMATIC CFC V9.0 SP2
- SIMOTION SCOUT V5.3 SP1

  consisting of the components:
  SIMOTION SCOUT V5.3.1.0 (internal identifier: 05.30.26.00)
  SIMOTION technology packages V5.3 SP1 (internal identifier: 05.30.26.00)
  SIMOTION OM V5.3.0.1 (internal identifier: V05.03.00.01_05.30.13.05)
  DriveES Slave OM V6.3.0.2 V06.03.00.02_05.30.13.06
  DriveES Drive OM V6.3.0.1 V06.03.00.01_05.30.13.05
  DCBLIB SIMOTION/SINAMICS
  DCC Editor SIMOTION V3.3.1.0 (internal identifier: V03.03.01.00_05.30.26.00)
  DCC Editor SINAMICS V3.3.0.1 (internal identifier: V03.03.01.00_05.30.13.05)
  DCC help system V3.3.0.1 (internal identifier: V03.03.00.01_05.30.13.05)
  SSPs …
  SIMOTION Task Profiler V2.2

Note:
The STARTER functionality integrated in SIMOTION SCOUT V5.3 SP1 is based on STARTER V5.3 HF1.

For further information about the conditions for use of the integrated STARTER, see the Readme and the general conditions list for STARTER V5.3 HF1 at:
\Addon\1_Important\English\GeneralConditions\STARTER

The first step (check SIMOTION SCOUT requirements) checks whether the requirements placed on the operating system are met.
During the setup, you can select which SSPs of the SINAMICS families together with their firmware versions are to be installed.
The SSP SIMOTION SINAMICS Integrated is always installed.
For detailed information, see Section 4.2.5, Installation of SINAMICS Support Packages.

If the software was downloaded, unpacking creates the VOL1, VOL2 and VOL3 directories that correspond to the DVD numbers.
If you want to install SIMOTION SCOUT from the hard disk, copy the contents of DVD 1 and DVD 2 to the appropriate directories VOL1 and VOL2, and start the SETUP.EXE program from VOL1.

Installation Automation License Manager (ALM) V6.0 SP2
During the installation of SCOUT V5.3 SP1, the Automation License Manager V6.0 SP2 is selected in the installation setting if an earlier version or no ALM is installed on the computer.
ALM V6.0 SP2 is installed when the Automation License Manager V6.0 Upd1 is selected.
When deselected, ALM V6.0 SP2 is not installed and the already installed ALM is retained.
For security reasons, it is strongly recommended to upgrade to Automation License Manager V6.0 SP2. ALM V6.0 SP2 can also manage old licenses. If the ALM V6.0 SP2 is installed, the following must be taken into account when connecting to a license server:
With the ALM V6.0 SP2, communication to a license server is via port communication. This means that when the SCOUT software is started, a connection to an already existing license server no longer functions. The connection to the license server has to be established again. Port number 4110 is then automatically entered for this connection. This port number may have to be entered in firewalls as an exception.
If an Automation License Manager version less than V4.0 is installed on the license server, the call/assignment of the licenses from the client computer with ALM V6.0 SP2 does not function. The license server must then also be upgraded to ALM V6.0 SP2, or the installation of the ALM V6.0 SP2 deselected before installing SCOUT.
Further information about the Automation License Manager V6.0 SP2 can be found in the Readme and in the ALM online help.

Installation of Drive Control Chart (DCC)
DCC SIMOTION V3.3.1.0 contains the CFC editor V9.0.2.2 and the **DCB** libraries (**block libraries**) for SIMOTION and SINAMICS.
DCC SIMOTION V3.3.1.0 can be installed in SIMOTION SCOUT V5.3 SP1. When installed in SCOUT V5.3 SP1, the libraries for SIMOTION and SINAMICS are installed in addition to the editor.

With SCOUT V5.3 SP1, DCC SIMOTION/SINAMICS is installed automatically with SCOUT, **provided the installation of the CFC editor is also selected during the setup.**

Note on the CFC editor:
DCC charts that have been converted to a later version and DCC charts that have been created with the new CFC version can no longer be opened with an older CFC version.
- A backward conversion of DCC charts to an older CFC version is not supported by CFC.
- Saving in the old project format does not result in a reconversion of the charts to an earlier CFC version.
- A reconversion can be forced via an XML export / XML import of the DCC charts: XML export with a current CFC version and XML import on a computer with an earlier CFC version.
- The CFC version is not relevant when uploading DCC chart sources from the target device.

Engineering licenses are required to use the DCC SIMOTION/SINAMICS functions. They are contained in the DCC SIMOTION delivery package as floating licenses.

Only the software that can be installed is contained in the SIMOTION V5.3 SP1 scope of delivery.
Any existing licenses for DCC V2.1, V2.2 SP1, V2.3, V2.4 and V3.2 SP1 remain valid for DCC V3.3 SP1. A new order is not required and DCC V3.3 SP1 is installed with the SCOUT installation as described above.

If DCC SIMOTION/SINAMICS is to be installed in a STEP 7 environment with CFC for STEP 7, note that the CFC editor in version V9.0.2.2 is also required/installed for STEP 7. When the CFC editor V9.0.2.2 is installed, a floating license for V9.0 is required for SIMATIC CFC.

Installation of the SIMOTION Task Profiler
The SIMOTION Task Profiler is also installed with the SCOUT setup.
The SIMOTION Task Profiler is an application for displaying the data recorded from the SIMOTION task trace. Because the SIMOTION Task Profiler is a Java application, it requires the installation of a Java Runtime Environment (JRE).

Information about user entries required during setup
The drive on which you install SIMOTION SCOUT V5.3 SP1 cannot be selected. It is always installed in the STEP 7 directory!
Sufficient disk memory space must be available.

Interruption of the installation through a restart
The computer may have to be restarted while performing the setup of SIMOTION SCOUT. The setup automatically continues with the installation after the restart. The data medium from which the setup was started must **not** be removed during the restart.
If you have started the setup from a network drive, the setup may be aborted with an error message after the restart. In this case, check whether the network drive was connected correctly at the restart. If not, reconnect the network drive. When the network drive is available again, restart the setup, which then continues with the installation.

Before you can use SIMOTION SCOUT V5.3 SP1, Microsoft Windows must be restarted (a prompt appears at the end of the installation). This step will activate all Microsoft Windows entries.
If you do not restart Microsoft Windows, SIMOTION SCOUT V5.3 SP1 will only have limited functionality and there may be data loss.

Silent installation
With version V5.3 SP1, SCOUT and its additional option packages can be installed via a silent mode. This means that on the PC where the installation is to be performed, no keyboard entries are required during the setup. The entire installation can be performed without any user entries.
A SetupMode.ini control file is available to the user for control of the setup via silent mode. This file is stored on the Installation DVD. This file must be manipulated to control the silent setup. The appropriate control parameters are described in the file in German and English.

The SetupMode.ini can be copied locally and changed appropriately for the installation from the supplied DVD. To accept the changed file, the changed SetupMode.ini must now be transferred to the setup as parameters.
For example:
If a changed SetupMode.ini has been stored on drive C:\ in the \temp directory, the setup is started with the following command:
DVD drive: Setup.exe C:\temp\SetupMode.ini

4.2.5 Installation of SINAMICS Support Packages

Additional SINAMICS firmware versions are provided as SINAMICS Support Packages (SSPs).
The contents of SSP_... can be selected individually for installation via the SCOUT setup. It is also possible to install individual SSPs later by calling the SCOUT setup again (does not apply to SCOUT TIA).

The selection of the SSPs to be installed is made in the SCOUT setup in an initial step as preselection for the SINAMICS families.
The individual firmware versions can then be selected specifically.

4.2.6 Authorization of SCOUT

Follow these notes carefully to ensure error-free authorization:

To operate SCOUT, you must make sure that the Automation License Manager is installed. Before you can start working with SCOUT, you must transfer the license key for SCOUT (usage authorization) from the authorization data medium to the computer.

There are two ways to perform the authorization:

During the setup:
After the installation of the Automation License Manager (ALM), you are prompted to perform the authorization for SIMOTION SCOUT V5.3 SP1.
After the setup:
If the authorization cannot or should not be installed during the setup, continue with the setup without installing the authorization. Then restart the computer and install the authorization later via the SIMATIC \ License Management \ Automation License Manager start menu item. In Windows 7, the call is from the Start menu at "All Programs > Siemens Automation > Automation License Manager".

SIMOTION SCOUT V5.3 SP1 continues to run with the V5.2 license key. This license key may also be used for SCOUT versions V5.1, V4.5, V4.4, V4.3, V4.2, V4.1 and V4.0.

Using the trial license
If no valid license key is installed for SCOUT V5.3, a trial license key can be used which is supplied and installed by default with SCOUT. SCOUT can only be used for 21 days with this license key. When SCOUT is started for the first time without a valid license key, activation of the Trial License Key is offered.

Detailed information on the upgrade of the authorization to version 5.2 can be found in an FAQ of the SIMOTION Utilities & Applications. The SIMOTION Utilities & Applications can be found on the SCOUT Documentation DVD.
Start the navigation by opening the "index.htm" file in the Utilities_Applications directory. You can find the FAQ at "FAQs" > "Upgrade".

4.2.7 Uninstallation

All software products must be uninstalled in the usual Microsoft Windows way.
To do this, remove the individual software components via the Microsoft Windows application "Software" (in the Microsoft Windows task bar via Start > Settings > Control panel > Software).
Sequence of the uninstallation:
1. WinCC flexible
2. SIMOTION SCOUT (if required, CamTool first)
3. SIMATIC STEP 7

Dynamically created files from SIMOTION SCOUT may remain after the uninstallation. This is detected by the uninstall tool and the following message displayed,
"Some elements could not be removed. Check the individual objects manually. These dynamically created files can, but do not need to be deleted.

4.3 Installation of SIMOSIM

As of SIMOTION V5.1, the simulation for SIMOTION D4x5-2 in the Engineering is available to the user for testing software modules. With V5.3 SP1, the SIMOSIM software must be installed separately for the individual Runtime versions. The required Setups can be found on DVD2 (VOL2) in the "SIMOSIM" directory and must be installed individually for each version.

Important notes:
Before installing a SIMOSIM version from the SIMOSIM directory, any existing SIMOSIM versions must uninstalled manually. Once all previous SIMOSIM versions have been uninstalled completely, the computer must be restarted before reinstalling a SIMOSIM version.
The virtual Compact Flash data of any previous simulations must also be deleted. For this purpose, SCOUT V5.3 SP1 provides the new "Delete DSIMOSIM data..." function in the "Project" main menu.
The non-observance of these notes can cause malfunctions when using the simulation in the Engineering.

4.4 Upgrading projects to SIMOTION SCOUT V5.3 SP1

The upgrade procedure is described in detail in an FAQ of the SIMOTION Utilities & Applications. The SIMOTION Utilities & Applications can be found on the SCOUT Documentation DVD.
Start the navigation by opening the "index.htm" file in the Utilities_Applications directory. You can find the FAQ at "FAQs" > "Upgrade/Downgrade" > "Upgrade".

4.4.1 Supported versions

As of SCOUT V4.5, SIMOTION versions V3.2 and V4.0 are no longer supported. If a SIMOTION CPU less than V4.1 should be upgraded, the project must first be opened with SCOUT V4.1 – V4.4 and the CPU upgraded to a later version. The project with SCOUT V5.3 SP1 can then be upgraded to version V5.3.

Note:
Note that the discontinued SIMOTION C230-2, D410, D4x5, P320-3 and P350-3 modules no longer support the Kernel/Runtime version as of V4.4.

4.4.2 Before the upgrade

Before the upgrade, you can back up your project with Save and export (XML export) in a version-neutral format.
The upgrade of the hardware and the technology packages to the new version is described in the SCOUT Configuration Manual (on SCOUT Documentation at: \Documentation\English\1_Engineering_System_Handling\SCOUT_configuration.pdf, Section 8) as well as in detail in an "Upgrade" FAQ on Utilities & Applications.

Before upgrading a SIMOTION platform to a new Kernel version, you can back up the current machine data (retain data and user data sets).
The SCOUT functions "Save variables" and "Restore variables" are available for this. The backup must be performed ONLINE before upgrading the SCOUT project. This is possible for a version upgrade with the "old" SCOUT version or the "new" SCOUT version.

4.4.3 Converting the project data

When first opening a project created with an older SIMOTION SCOUT version, an automatic conversion of the engineering project to SIMOTION SCOUT V5.3 SP1 is performed.
However, this conversion only applies to the format of the data storage.
The Kernel versions of the configured devices (e.g. SIMOTION C240) remain unchanged.

The project format changes, for example, from SCOUT V5.2 to V5.3. This means projects created with SCOUT V5.2 must be converted with SCOUT V5.3.

Older projects can be converted only when they can be written. If, for example, you have copied the project from a CD-R to your hard disk, all files are automatically assigned the "write-protected" attribute by Windows.
Proceed as follows to remove the write protection:

- Open an MS DOS prompt
- Switch to the directory that contains your project data, e.g.
  CD C:\SIEMENS\STEP7\S7PROJ
- Reset the write protection for all project files (including all subdirectories)
  ATTRIB -R *.* /s

If required, the upgraded project can be subsequently converted back to the project format of the older version (for re-editing with an older SCOUT).

However, if you want to use new Kernel versions on the SIMOTION device, it must also be upgraded in your project. A detailed description can be found in the SIMOTION SCOUT Operating Instructions (on SCOUT Documentation at:
\Documentation\English\1_Engineering_System_Handling\SCOUT_configuration.pdf, Section 8).

4.4.4 After the upgrade

The following adaptations may be required after upgrading the SIMOTION devices:

- **Adapting the SIMOTION devices supported by libraries**
  Check and adapt the specifications for the SIMOTION devices supported by libraries to the current device versions. These changes must be made via the **Properties** context menu of the library.
  Then save and compile the libraries.
  Note that devices less than version 4.1 are no longer supported as of SCOUT V4.5.
  Note:
  If devices with versions less than V3.2 are selected in the library, the error message "Unknown devices" is issued during compilation.
  In this case, deselect the appropriate device versions.

- **Adaptation of address overlaps**
  If for diagnostic purposes, you have declared the output addresses of TOs at the same time again in your I/O addresses, you must assign them the attribute "read-only" there (if not already so declared).

- **Correction of error messages**
  During the technology package upgrade, messages such as "Not up-to-date" or "The

setting of property ... has failed" can appear sporadically. In this case, you must save and compile the project again at the end of the upgrade.

- **Possible structure extension of system variables**
  It is possible that system variable structures are extended for new SIMOTION versions (for example for V4.2, the extension of the systemLoad device variable structure with additional task components). When using such extended structures in the user program, compiler errors may be signaled after the upgrade.

4.4.5 Download after the upgrade

After upgrading the project and firmware of the SIMOTION device, the project must be downloaded again to the target device.

4.5 Virtualization platforms and virus scanners

Virus scanners should be deactivated during the installation of SIMOTION SCOUT.

Current information about the supported virtualization platforms and virus scanners can be found on the SIMOTION product support Internet pages:

https://support.industry.siemens.com/cs/ww/en/view/109743477

5 SIMOTION D V5.3 SP1

5.1 Upgrading SIMOTION D

Upgrading to V5.3 SP1 via the device update tool

The **device update tool** can be used for upgrading to V5.3 SP1.
Details about using the device update tool can be found in Section 8, "Upgrading via the device update tool".

Installation notes:

The firmware for the **SIMOTION D** Control Units is supplied on CF cards:

- CF card for D410-2 Control Units: Article number 6AU1400-1PA23-0AA0
- CF card for D4x5-2 Control Units: Article number 6AU1400-2PA23-0AA0
- CF card for D4xx Control Units: Article number 6AU1400-2PA02-0AA0

The current firmware versions can be found on the SIMOTION product support Internet pages. Detailed version information about the associated firmware versions can also be found there.
https://support.industry.siemens.com/cs/ww/en/view/31045047

The upgrade procedure is described in detail in an FAQ of the SIMOTION Utilities & Applications. The SIMOTION Utilities & Applications can be found on the SCOUT Documentation DVD.
Start the navigation by opening the "index.htm" file in the Utilities_Applications directory. You can find the FAQ at "FAQs" > "Upgrade/Downgrade" > "Upgrade".
Further information on upgrading and downgrading can also be found in the Commissioning and Hardware Installation Manuals for SIMOTION D on the SCOUT Documentation DVD at \Documentation\English\5_SIMOTION_D\

SIMOTION D410 and D4x5
As already announced with SIMOTION V4.3, as of V4.4, no firmware is available for the SIMOTION D410 and D4x5 Control Units being phased-out.
The previous firmware versions can be found on the SIMOTION product support Internet pages: https://support.industry.siemens.com/cs/ww/en/view/31045047

Until further notice, SCOUT versions ≥ V4.4 will support the configuration of the SIMOTION D410, D425, D435 and D445-1 with SIMOTION V4.3 functionality and the SIMOTION D445 with SIMOTION V4.2 functionality.

The engineering framework Totally Integrated Automation Portal (SCOUT TIA in the TIA Portal)
only supports the newer SIMOTION D410-2 and D4x5-2 Control Units. It is not possible to configure SIMOTION D410 and D4x5 Control Units in the TIA Portal.

5.2 CompactFlash cards with V5.3 SP1 firmware

Detailed notes on the "CompactFlash card ⇔ Boot loader version ⇔ SIMOTION D hardware ⇔ SIMOTION firmware version" compatibility relationships can be found in the software compatibility list.
https://support.industry.siemens.com/cs/ww/en/view/18857317

Boot loader
We recommend that the latest boot loader is used.
The latest boot loader can be loaded with SIMOTION SCOUT and is contained in the scope of delivery of SIMOTION SCOUT.
Information on how to upgrade the boot loader of a CF card or how to load the firmware to a CF card can be found in the Commissioning and Hardware Installation Manuals for SIMOTION D on the SCOUT Documentation DVD at:
\Documentation\English\5_SIMOTION_D\

5.3 Device replacement to SIMOTION D4xx-2

For the changeover from SIMOTION D4x5 to D4x5-2 and D410 to D410-2, see the Commissioning and Hardware Installation Manuals for SIMOTION D4x5-2 or D410-2, Section Migration.

Components that can be used with SIMOTION D4x5-2
A CBE30-2 can be used only with SIMOTION D4x5-2 DP/PN.
The CBE30-2 cannot be used with the D4x5-2 DP or D4x5.

6 SIMOTION C V5.3 SP1

6.1 Upgrading SIMOTION C

Upgrade as of V4.1 SP2 to V5.3 SP1 via the device update tool

The **device update tool** can be used for the upgrade as of V4.1 SP2 to V5.3 SP1.
A card size of 64 MB is available for the C240. Transfer of the upgrade data via SIMOTION IT is possible up to a project size of approx. 16 MB.

With immediate effect, newly ordered MMC memory cards for SIMOTION C240 and C240PN will be supplied with FW version V5.3 SP1.

Details about using the update tool can be found in Section 8Upgrading via the device update tool.
The following installation notes are then not relevant for this.

Installation notes

The firmware for the **SIMOTION C** motion controllers is supplied on MMC cards:
MMC card for C240 / C240 PN motion controllers: Article number 6AU1720-1KA00-0AA0

The current firmware versions can be found on the SIMOTION product support Internet pages. Detailed version information about the associated firmware versions can also be found there.
https://support.industry.siemens.com/cs/ww/en/view/31263919

The upgrade procedure is described in detail in an FAQ of the SIMOTION Utilities & Applications. The SIMOTION Utilities & Applications can be found on the SCOUT Documentation DVD.
Start the navigation by opening the "index.htm" file in the Utilities_Applications directory. You can find the FAQ at "FAQs" > "Upgrade/Downgrade" > "Upgrade".
Further information on upgrading and downgrading can also be found in the SIMOTION C Operating Instructions. The manual can be found on the SCOUT Documentation DVD at:
\Documentation\English\5_SIMOTION_C\

The C230-2 with article no. "6AU1230-2AA01-0AA0" is no longer supported as of the V4.2 Runtime system. However, it can still be configured with SCOUT V5.3 SP1 with a runtime system < V4.2.

6.2 Upgrading note

Firmware version V4.5 of the production version FS "G" is required for SIMOTION C240/C240 PN to be upgraded. All lower revision levels can be operated only up to firmware version V4.4.

A special FAQ is provided for version V4.4:
https://support.industry.siemens.com/cs/ww/en/view/98754349

7 SIMOTION P V5.3 SP1

7.1 Upgrading SIMOTION P

SIMOTION P350-3 and P320-3 are supported only by firmware versions ≤ 4.3 and therefore no V5.3 SP1 firmware is available. An upgrade to the current version (V5.3 SP1 firmware) is not possible.

For SIMOTION V5.3 SP1, the two platforms

- SIMOTION P320-4 **E**mbedded (6AU1320-4DE65-3AF0) and
- SIMOTION P320-4 **S**tandard (6AU1320-4DS66-3AF0)

are released with V5.3 SP1 firmware.

The firmware for the P320-4 is upgraded for version V5.3 SP1 using Setup. The appropriate Setup files can be found in SIOS or consult your Siemens contact partner. If you want to reinstall a firmware on the SIMOTION P320-4, use the restore stick of the V5.2.1 and then upgrade the V5.3.1 firmware using Setup.

7.2 Documentation notes

In the "Operating" Manual of the P320-4, the possible states of the LED L3 are described in Section 4.4, "Status indicators".
Change:
The function of LED L3 has been omitted. The PROFINET state can be checked via SP state under Windows.

7.3 Note on the system behavior

The operating system behavior of the P320-4 during the Logoff command corresponds to that during shutdown.

7.4 Note on the Web browser

The current revision level of the Internet Explorer (IE11) is installed for the supplied SIMOTION P320-4 E/S.

8 Upgrading via the device update tool

The device update tool can be used to upgrade SIMOTION devices as of V4.1 SP2 to V5.3 SP1.
The Firmware Support Package V5.3 SP1 for SCOUT V5.3 SP1 is required for this.

The current Firmware Support Package can be found on the SIMOTION product support Internet pages.
https://support.industry.siemens.com/cs/ww/en/view/33119786

Observe the Readme included with the Firmware Support Package.

SIMOTION C240 notes:
For SIMOTION C240 / C240 PN >= V5.2, the function is not possible because of the available memory space on the MMC.

Note:
After upgrading the D4xx-2 firmware with the device update tool, downgrading (using the SVC=B switch setting or the SIMOTION IT Web page) to the previous version is not directly possible currently. After a downgrade, the configuration is no longer operational. [3423328]
Remedy:
Create a backup copy (card image) of the CF card before upgrading the firmware. If the upgrade was not successful, use the backup copy for the downgrade.

9 Further user notes

9.1 Software product certificate

The software product certificate is part of the general conditions belonging to the scope of delivery regarding the deployment of SIMOTION software.
Quote the identification number of the software product certificate in all correspondence.

9.2 Innovations and changes compared to earlier versions

What's new in SIMOTION V5.3 SP1 compared to version 5.2 SP1?
Information about the new functions of version V5.3 SP1 can be found on the SCOUT DVD 1 at: \AddOn\1_Important\English\Features

9.3 Runtime performance

For a more accurate performance estimate, use the
SIZER for Siemens Drives configuration tool.

To prevent CPU stops at load peaks (IPO overflows), we recommend that a toleration of level overflows be set in the IPO cycle clock. Up to five IPO overflows in succession can be tolerated. This can be set in the runtime system for the IPOSynchronousTask.

9.4 Documentation

The documentation for SIMOTION can be found on the Documentation DVD at \Documentation.
You require Acrobat Reader to display and print the PDF documents.

After installing SIMOTION SCOUT, the documentation is also available in the SCOUT online help.

9.5 Online help

Getting Started
The Getting Started provides a brief overview of how you can work with SIMOTION SCOUT. A typical example is used to show you the different steps required to create a project and introduces the configuration, programming, and diagnostic tools.
You can load the completed SIMOTION SCOUT V5.3 SP1 projects directly from Utilities & Application for Getting Started (see Section 9.6). Also observe the tutorials on Utilities & Applications.

Full text search
Enclose the search terms with * in the full text search (e.g. *variable*) to also display results that contain the search term (system variable, variable assignment, etc.).
A better overview of the titles found is obtained when you click the "Position" column header. This sorts the titles found according to topic or document.

Context-sensitive online help
You can access context-sensitive help for dialog boxes and windows by clicking the Help button of the dialog box / window or by pressing the SHIFT+F1 key combination or the "?" icon in the menu bar and moving the mouse pointer that has changed to a question mark to the individual parameter or click in the window for which you require help. The F1 key always opens the entire help of the application. Notes on how to use the context-sensitive online help can be found on the start page of the entire help (via F1).

FAQ Going online
With the installation of SCOUT, an FAQ Online is also stored on the hard disk of the PG/PC. You can find this FAQ via Programs > SIMATIC > Documentation > English > SIMOTION SCOUT manuals. This FAQ can also be opened directly via the SCOUT online help.
The updated version of the FAQ Online can be found in the Utilities & Applications at FAQs > Engineering > Setting up online connections.

9.6 Sample projects and libraries

The free-of-charge **Utilities & Applications** provide numerous SIMOTION sample projects, libraries and a wealth of important information and tools for SIMOTION.

Getting Started
For **Getting Started**, which is described in the online help, you can load the ready SIMOTION SCOUT V5.3 SP1 projects directly from Utilities & Applications. Start the navigation by opening the "index.htm" file in the Utilities_Applications directory. The projects can be found via main menu "Examples" and submenu "SIMOTION getting started".
First copy the appropriate project (ZIP file) to your hard disk (right-click "Save target as..."). Use the sample_c project for the SIMOTION C240 platform, the sample_d project for the D435 and the sample_p project for the P320-4.
Then use the "Dearchive" function in SCOUT and the project can be edited in SCOUT.
Note: The trace parameterization is not included in the project. When recording with the trace function, the parameterization must be performed as described in the online help.

9.7 SIMOTION easyProject ProjectGenerator

The free-of-charge Utilities & Applications also provide the SIMOTION easyProject ProjectGenerator.

Basic functions required in practically every application can be integrated quickly and easily in a new or existing project with the aid of SIMOTION easyProject. This saves costly programming time and at the same time creates the requirements for a uniform and therefore standardized project structure.

The required functions (standard blocks) are selected and configured via dialog boxes. This configuration also contains the automatic creation of an HTML page for the diagnostics and operation of the standard block (option).
The result is a loadable, executable basic project with the basic machine functions that can already be visualized and operated using a Web browser - without any programming.

An executable project can therefore be created much quicker. The SIMOTION easyProject is also designed so that you can integrate your own blocks in this generic workflow of the automatic application creation.

The SIMOTION easyProject ProjectGenerator cannot be used with SCOUT TIA.

9.8 HMI configuration

For the **integrated/non-integrated** use in SCOUT V5.3 SP1,
WinCC flexible 2008 SP5 Upd1 has been released.

Observe the notes on the installation/uninstallation as described in Section 4.

Before projects that contain a WinCC flexible HMI component (variant integrated in SCOUT) are downloaded to the target devices, "Save and recompile all" must be performed.
If SIMOTION projects are edited in WinCC flexible standalone, "Regenerate all" must be triggered.

WinCC flexible
In order to be able to configure a connection to an HMI station in a STEP 7 project with at least one SIMATIC and one SIMOTION controller in NetPro, WinCC flexible must be closed.

9.9 SIMATIC NET

SIMATIC NET V15 SP1 has been released for Microsoft Windows 7 (64-bit) and Windows 10 (64-bit).

OPC export
The default setting as of SCOUT V4.3 SP1 for the OPC export is the new ".ati" format.
If a project of version V4.1 or V4.2 is to be exported, the format must first be changed manually to ".sti" so that this project can be imported again with SCOUT V4.1/V4.2.

The OPC export must be performed in the following directory:
Windows 7 / Windows 10:
C:\ProgramData\Siemens\SIMATIC.NET\opc2\binS7\simotion\xml\

9.10 SIMOTION IT

SIMOTION IT functions are included in the standard firmware of the SIMOTION devices.
Associated information and configuration files are stored on SCOUT DVD 1
at \AddOn\4_Accessories and on Utilities & Applications.
The Runtime licenses for SIMOTION IT and OPC XML-DA are required only for SIMOTION Kernel < V4.2.

Important security notes:

HTTPS and certificate handling as of V5.3

- Created master and server certificates with the associated key files must be copied to the CF card.
  Target directories: master certificate and associated key file:
  /USER/SIMOTION/HMICFG/certstore/CA/
  Server certificate and associated key file:
  /USER/SIMOTION/HMICFG/certstore/ServerCerts/

Web browser support
SIMOTION IT V5.3 SP1 supports the following Web browsers:

- Internet Explorer 11 (32-bit and 64-bit Windows)
- MS Edge (64-bit Windows)
- Mozilla Firefox (the latest version, 64-bit Windows)
- Google Chrome (the latest version, 32-bit and 64-bit Windows)

Upgrade and project update via SIMOTION IT
After an upgrade of the controller, the SIMOTION IT display in the browser must be updated. To do this, press the F5 key, click the "Reload" button in the toolbar of the browser or close the browser and open it again.

During a device or project update via SIMOTION IT (Send new update data), the message "SIMOTION successfully loaded" appears after a successful download of the update package.
If the available memory on the module has been largely used up by the download of the update package, the memory may not be sufficient for the subsequent unpacking of the package. This is shown by the associated error message in the system log (ERROR: Could not decompress archive).

A device (firmware) update via SIMOTION IT is not possible for SIMOTION P.

Upgrading via IT Diag from V4.1 SP1 to V5.3 SP1
A direct firmware upgrade via SIMOTION IT from V4.1 SP1 to V5.3 SP1 is not possible.
The upgrade of V4.1 SP1 to V5.3 SP1 must be performed via V4.1 SP2 or V4.1 SP4.

WebTraceViewer
The WebTraceViewer is in the SIMOTION D card image as well as in the SIMOTION P firmware. The WebTraceViewer can be installed via the Trace standard page of SIMOTION IT.
For SIMOTION C, because of the memory size, the WebTraceViewer is not contained on the MMC card.
The WebTraceViewer is also contained in the SIMOTION Utilities & Applications at:
"SIMOTION IT > Tools and Information > WebTraceViewer".
The SIMOTION Utilities & Applications can be found on the SCOUT Documentation DVD.

As of SIMOTION Runtime V4.5, the new HTML5-based trace visualization embedded in the standard Web pages of the SIMOTION Web server can also be used directly.

As of V4.4, the WebTrace measurements (*WTRC) can also be opened in SCOUT device trace.

OPC UA communication via NAT router
To ensure OPC UA functions even via an NAT router, enter the IP address that the OPC UA client claims as target address before the NAT router as end point in the WebCfg.xml.

Example:
<OPCUAAPPLICATION READ="Anyone" WRITE="Anyone">
<ENDPOINTDESCRIPTION URL="X130:4840"/>
<ENDPOINTDESCRIPTION URL="opc.tcp://10.168.2.90:4840"/>
</OPCUAAPPLICATION>

9.11 Important notes for use

Important note on axes with drive and encoder assignment later
Special attention must be paid to axis configurations with assignment of the encoder later.
Caution:
For example, if the axis is connected to a real drive, but the active encoder will be configured via "Define assignment later", the axis will move uncontrolled at maximum speed when it is first switched on until the following error responds.
If the hardware limit switch of an axis is activated, but not assigned to any digital input, as of V5.3 SP1, this configuration can be loaded into the controller without any error message. The hardware limit switch monitoring, however, does not have any effect.

Windows 7
In Windows 7, fonts may be entered in the Registry that are not suitable for the set display enlargement. This can cause layout errors in the dialog boxes that use these fonts.
Details can be found at:
https://support.microsoft.com/kb/2396756

Online operation
In online operation, SCOUT attempts to conduct online operation with all hardware components contained in the project. This means that the time needed for going online increases. We recommend that you make settings for SCOUT so that online operation is made only with those components currently needed. The setting can be found at "Target system > Select target devices..." in the menu. The selection and deselection of the devices in the online state can be made via the context menu on the device.
This procedure (deselection of the online connection to SINAMICS Integrated) is also advantageous for SIMOTION D when the configuration of the integrated SINAMICS is completed.

Important note on using the axis and drive control panel
Axis control panel in RUN mode
As of V4.4, it is also possible to assume control priority on the axis control panel in RUN operating state.
The user program remains active during the control of the axis.
Observe the notes provided in the documentation / online help.

The response time from the pressing of the spacebar until the stopping of the axis depends on the specific project and the system utilization.
The activation of the application monitoring ensures that the axis stops within the set time even in a system operating at full capacity. If the application monitoring is deactivated, the stopping of the axis cannot be guaranteed!

Apart from application monitoring, SIMOTION and MICROMASTER also have the so-called connection monitoring, i.e. the axis is stopped immediately by unplugging the bus connector.

Caution:
SINAMICS drives do not support connection monitoring!
Connection monitoring is only performed based on the technology objects. Only a failure of the cable is detected in the drive control panel.

Caution:
Neither connection monitoring nor application monitoring are sufficient for safety-critical scenarios, i.e. in the case of potential dangers for humans and the machine if an axis continues to turn.
The control panel must not be used in such scenarios.
There must be an EMERGENCY STOP circuit in the hardware.
As of V4.0, abort with "Escape" (Esc) is no longer supported for reasons of harmonization between the axis and the drive control panel as well as for a uniform procedure for safety reasons.

Caution:
When using the CP5711 USB PROFIBUS adapter and the axis control panel, SCOUT sporadically no longer responds to user entries (e.g. update of alarms, switching modes to traverse the axis). Any potential rotating axis can, however, still be stopped using the space bar.
This behavior is possible when using the CP5711 USB PROFIBUS adapter.

System variables changed online:
If system variables changed online are to be saved in the project, they must be entered again in the offline view.
After a project download and "Copy RAM to ROM", the changed values are also stored as non-volatile data in the device (on the memory card).

MCC - single step for know-how protected subprograms
If a know-how-protected subprogram is called in single step mode without entry of the password to cancel the know-how protection, the commands contained in the subprogram are automatically advanced by the system. This requires a certain execution time, depending on the scope of the subprogram, during which you have to wait.
The MCC function Stepping is also available as of V4.4; the wait time is omitted here.

Pragmas in MCC and LAD/FBD declaration tables
As of SIMOTION SCOUT V4.2 SP1, pragmas are possible in MCC LAD/FBD declaration tables. These pragmas are only copied when entire UNITS are copied.
When individual lines are copied from a declaration table, the pragmas must subsequently be created again manually.

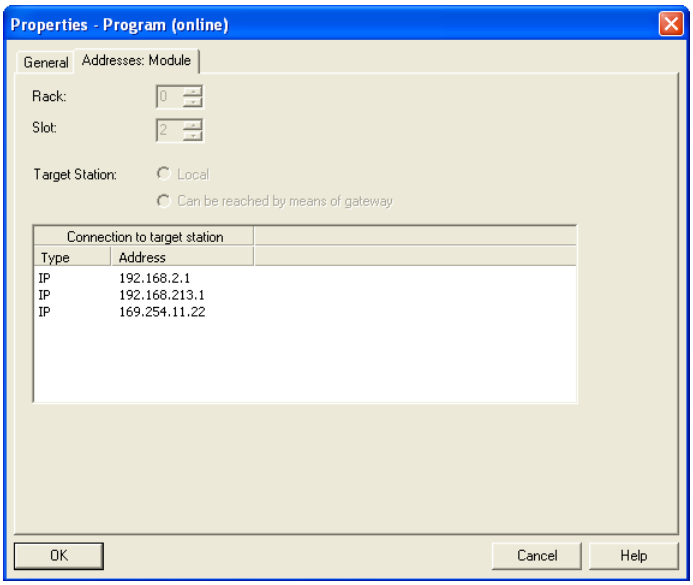
Distance-coded measuring systems
In contrast to SINAMICS, distance-coded measuring systems cannot be used on the linear motor.

"High-priority ramp-up" for GSD files
The "High-priority ramp-up" setting can be activated in GSD files.
This mode, however, is not supported as controller or I-device for SIMOTION.

9.12 Important note for use as of STEP 7 V5.5 SP3

SIMATIC STEP 7 V5.6 must be installed on the PC as the runtime environment for SIMOTION SCOUT.
As of STEP 7 V5.5 SP3, any configured access address is evaluated when you go online.
This address takes precedence over the configuration in HW Config / Netpro.

Where is the access address set?
The following dialog is opened via the context menu of the CPU "Target device > Online access...":



Any selection of an entry with subsequent confirmation of the dialog with "OK" is stored as access address in the STEP 7 project database. This applies to all previous SIMOTION and STEP 7 versions. As of STEP 7 V5.5 SP3, this data is evaluated for the first time by STEP 7 itself.
If an access address is defined, this takes precedence as of STEP 7 V5.5 SP3 over the configuration in HW Config / Netpro, and an online connection might not be established.

The following sentence is displayed in the output window for improved transparency in the event of a fault (if an access address is configured):
"Access address <192.168.213.1> has been used to establish the connection."

SCOUT provides a new function for deleting the access address. You can access this via the context menu of the CPU "Target device > Delete access address".
After deleting the access address, going online then takes place in accordance with the configuration in HW Config / Netpro.

9.13 Notes for SINAMICS Safety Integrated in conjunction with SIMOTION

The software requirements for using PROFIsafe in conjunction with
SIMATIC F-CPUs and SIMOTION/SINAMICS are:
S7 F ConfigurationPack V5.5 SP13 and Distributed Safety V5.4 SP5 Upd2

S7 F ConfigurationPack can be found as download in the Siemens Industry Online Support at: https://support.industry.siemens.com/cs/ww/en/view/15208817.

Important notes for the upgrade:

SINAMICS Safety Integrated Basic Functions via PROFIsafe
If a SIMOTION D4xx module is replaced by a SIMOTION D4xx-2 module and therefore the SINAMICS firmware upgraded from V2.x to V4.x, a zero in the delay time of SS1 is now evaluated as "Shutdown of the function".
Consequently, no safety function is executed!
With V2.x, the secondary function "STO" (analog to the terminal functionality) is selected directly with a delay time of "zero".

Memory cards with several configurations and Safety configurations
Note the information in the SIMOTION Basic Functions for Modular Machines Manual in Section 6.1 Activating a configuration.

9.14 Notes for data transfer during the project comparison

Observe the following notes for the data transfer rules:

- As of V5.1, it is possible for occupied object address to perform a transfer and to accept objects that exist only for partner B.
- An object can be accepted, even when it is not available in the opened project. TOs or a program entry in the runtime system then still need to be linked manually.

10 General conditions and function restrictions

10.1 General conditions and function restrictions with V5.3 SP1

The complete general conditions for V5.3 SP1 can be found on SCOUT DVD 1 at:
\AddOn\1_Important\English\GeneralConditions

10.2 General conditions corrected with V5.3 SP1

The general conditions corrected with V5.3 SP1 are contained in the list of corrected general conditions at: \AddOn\1_Important\English\GeneralConditions

10.3 SINAMICS general conditions

A SINAMICS drive control is integrated in the SIMOTION D Control Units. For this reason, the SINAMICS general conditions always also apply to SIMOTION D.
This means:

- CU310-2 general conditions always also apply to D410-2
- CU320-2 general conditions always also apply to D4x5-2/CX32-2
- General conditions for further components such as TMs, SMCs, etc. also apply to the connection to SIMOTION D

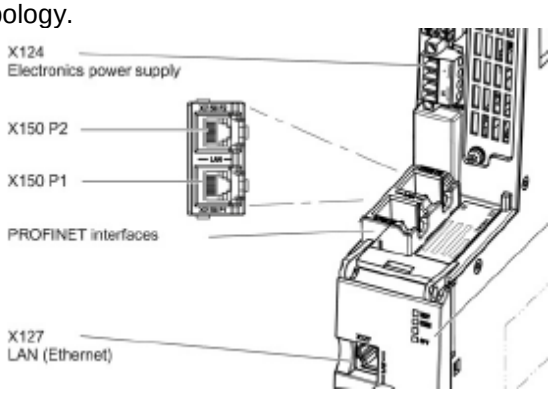
The SINAMICS general conditions are described in the associated SINAMICS publications, e.g. on the product support Internet pages:
https://support.industry.siemens.com/cs/ww/en/ps/13229/dl

11 Changes in behavior as a result of error corrections

11.1 Changes in behavior as a result of error corrections as of V4.5

DRIVE-CLiQ communication time for TM31 and TM15 DI/DO
As of SINAMICS V4.8, the value of p4099 is taken into account for the DRIVE-CLiQ communication time for TM31 and TM15 DI/DO.
With values of p4099 > 250 µs, it may be that the delay times have increased compared to the previous version.
As a remedy, the value in p4099 should be decreased.

SCOUT TIA: Display of the PROFINET ports of S120 CU320-2 PN in HWCN
As of SCOUT TIA V4.5 SP1 (TIA Portal V14), the PROFINET port P1 is shown at the bottom and P2 at the top in the device and topology views. This corresponds to the actual arrangement on the CU.
The changed sequence should be taken into account in the graphic interconnection of the topology.



Acknowledgment of alarm 50007
As of SIMOTION V4.5 SP1, the _resetTechnologicalErrors() function acknowledges the signaled alarm 50007.
Up to SIMOTION V4.4, the alarm could not be acknowledged.

Alarm 40201 - Synchronous operation tolerance exceeded on gear axis
Up to version V4.5 SP1, occasionally an alarm was not output when the synchronous operation tolerance was exceeded in the calculation.

Synchronization with dynamic response specification for geared synchronous motion
Up to version V4.5 SP1, occasionally synchronization was performed even when the specified dynamic response values were exceeded.
In V4.5 SP1 a more precise check is performed for a dynamic response violation and when the dynamic response is not sufficient for the synchronization, the synchronization is performed in the next cycle.

11.2 Changes in behavior as a result of error corrections as of V4.4 SP1/2

Changed behavior of the TO state variables for the removal of the axis enable
As of V4.4, the system support for brake control is activated for newly created axes. Therefore, at the removal of all axis enables (_disableAxis, RELEASE_DISABLE), first the brake is closed and then the power disconnected. This results in a changed chronological behavior of the "actormonitoring.power" and "actormonitoring.drivestate" system variables. During the transition to state S5 (Switching off), the "actormonitoring.power" system variable is set to INACTIVE, and only after the closing of the brake in the S1 or S2 (Ready for switching on) state are the remaining enables removed and therefore the "actormonitoring.drivestate" system variable set to INACTIVE.
Up to and including V4.3, "actormonitoring.drivestate" was set first to INACTIVE and then "actormonitoring.power".

Save as
When executing the SCOUT function "Save as", the project is saved directly with the new specified project name.
Previously, the open project was first saved, and then copied under the new specified project name.

Temporary IP address
For the IP address assignment on a PROFINET device (via DCP), the PROFINET standard offers the following options:

- Permanent IP: The device retains the IP address after Power OFF/ON.
- Temporary IP: The device has "forgotten" the IP address after Power OFF/ON and no longer has an IP address.

Previously, with the "Temporary IP" option, the old IP address that was present before setting the temporary IP would be activated again after Power OFF/ON.
As of V4.4, the PROFINET controller always assigns a temporary IP during ramp-up with the "Temporary IP" option. This ensures that when a device is removed and installed at a different location, it no longer has an IP address and no IP address conflicts occur in the factory.

totalOffsetValue for absolute adjustment
totalOffsetValue is no longer summed up.

Minimum factor for the ratio of Servo_fast to Servo increased from 2 to 4
Servo_fast must be at least 4-times faster than Servo at 125 µs and 250 µs.
For the cycle clocks > 250 µs, the minimum factor remains 2.

Upgrade from V4.3 to V4.4 for applicative use of DSC spline
If DSC spline is activated on the drive, but the TO configuration data enableDSCSpline = BY_APPLICATION is not set, SIMOTION generates a PROFIdrive telegram 125 for the axis as of V4.4 when "Symbolic assignment" is activated in the project. This may cause errors in the consistency check and you must adapt the configuration (e.g. set the telegram configuration to "user-defined").

Weighting factor for analog sensors
The scaling or conversion in the value of the configuration data ConversionData>factor for the position of the analog sensor has changed in V4.4.
As of V4.4, the values are entered directly in INCH and no longer converted from MM to INCH for the configured INCH unit system.
This can result in a higher velocity being detected (by a factor of 25) if it is an axis that works in INCH.
Up to V4.3, the values were entered in MM and then converted to INCH (1 INCH corresponds to 25 MM).
Check the values entered for "factor" in older projects and correct them when necessary.

Change of the condition for starting a UserInterruptTask
Unit variables from the interface section of a program source can be specified as condition for starting a UserInterruptTask (via formulas).
When upgrading the device to a SIMOTION Kernel version as of V4.4, you may have to adapt the syntax of the start condition.

- Up to and including SIMOTION Kernel V4.3:
  Only specification of the <VariableName>.
- As of SIMOTION Kernel V4.4:
  The program source must also be specified in the form
  _device\<UnitName>.<VariableName>
  (example _device\mySourceFile.myVar).
  As previously, global device variables can only be specified directly via the variable name.

Measurement job with _enableMeasuringInput temporarily in the WAITING state
Previously, a measurement job issued with _enableMeasuringInput was immediately set to the ACTIVE state.
As of V4.4, the command state is set to WAITING between the issuing and processing of the command. As soon as the command is processed by the TO, the state is ACTIVE.
The state can be determined with the _getStateOfMeasuringInputCommand command.
The measuring input command now behaves identically to all other commands.

False polarity of the hardware limit switches now only returns alarm 50007
When a hardware limit switch is overtraveled, false polarity of the hardware limit switch wiring may be detected.
Alarm 50007 "False polarity of the limit switch (can only be cleared with a new technology object configuration or Power On)" which is issued, can no longer be acknowledged as of V4.4. The error state must be corrected before the axis can be traversed again.

Results of the (L)REAL <-> STRING conversions standardized
(L)REAL_TO_STRING:
Change of the output decimal places:
REALs 10 significant decimal places, LREALs 17 significant decimal places.
This results in a longer output string than previously for most values. Fewer positions than previously are only output for the LREAL values between 1.0e11 and 1.0e16.
During the conversion with REAL_TO_STRING of positive integers in the range 1.0e00 .. 1.0e06, the result string contained no decimal places. These numbers are now also output with 10 significant places, i.e. with the corresponding number of zeros after the decimal point.
REAL_TO_STRING:
Values in the range -1.0e10 .. -1.0e-04 and 1.0e06 .. 1.0e10 are now converted to decimal representation (as previously also values in the range 1.0e-04 .. 1.0e06).
Exponential representation uniformly with lower-case e (previously for positive numbers up to 1.0e16 with upper-case E).
LREAL_TO_STRING:
Values in the range -1.0e16 .. -1.0e-04 are now converted to decimal representation (as previously also values in the range 1.0e-04 .. 1.0e16).
STRING_TO_LREAL:
If the string contains invalid characters or has an invalid format, TSI#ERRNO is no longer set to 3 when a valid number is detected at the start of the string.
Differences (to older versions) are possible starting at the 16th decimal place.

11.3 Changes in behavior as a result of error corrections as of V4.3 SP1 HF9

Following value for absolute camming with slaveMode:=ABSOLUTE
Up to and including V4.3 SP1 HF3, a random offset could occur for the absolute position of the following axis.
As of V4.3 SP1 HF9, the following axis takes up the exact absolute position after the synchronization.

Absolute synchronous operation in the case of previously speed-controlled traversing of the following axis
Up to and including V4.3 SP1 HF3, only a relative synchronous operation was activated in the case of a substituted absolute synchronous operation command to a following axis moved with _move(SPEED_CONTROLLED). The consequence of this was, for example, that the following axis remained in its last position with a stationary master value.
As of V4.3 SP1 HF9, an absolute synchronous operation is activated according to the programmed synchronous operation command. As a consequence of this, for example, with a stationary master value, the following axis now positions itself at the absolute position of the master value.

11.4 Changes in behavior as a result of error corrections as of V4.3 SP1 HF3

Dynamic response adaptation for path interpolation
The command for dynamic response adaptation of the path interpolation results in a greater load in the interpolator cycle. Previously, the dynamic response adaptation had no effect.

Display of the dynamic path response adaptations
The system variable on the path object path.dynamicAdaption (specifies whether path dynamic response adaptations are active/inactive) displayed the programmed behavior up to now and was therefore not very useful.
As of V4.3 SP1 HF3, the effective behavior is now displayed.

11.5 Changes in behavior as a result of error corrections as of V4.3 SP1

Function of the mode selector switch in SCOUT
The "MRES" function of the mode selector switch in SCOUT only functions when the "STOP" operating state has been selected first. The "MRES" button is grayed-out in the "RUN" and "STOP U" operating states and therefore has no effect.
In previous software versions, a message was output that "MRES" is only possible in the "STOP" operating state when the "MRES" button was actuated in the "RUN" and "STOP U" operating states. This message is omitted in V4.3.

Search via "Accessible nodes"
If a SIMOTION device is found via "Accessible nodes", the IP address of the device is displayed twice in the "Assign target device" dialog box in certain situations. This is always displayed in V4.3 when the networking allows access to the device via two different paths (direct and routing). In V4.2 only direct accessible nodes were found. Nodes that could be accessed via routing were not displayed. The search algorithm has been improved in V4.3

and nodes can now also be found via routing.

Changed return values of the system functions _getStateOfSingleDPSlave and _getStateOfAllDPStations
Concerns the querying of the interface status of your own I-device configuration (not the placeholder via GSDML) which has not yet established a connection to a master.
_getStateOfSingleDpSlave:
Old behavior: NOT_PRESENT
New behavior: IN_OPERATION
Reason: Communication interface is ready to establish a connection. Therefore IN_OPERATION.
_getStateOfAllDpStations:
Old behavior: IN_OPERATION
New behavior: DISTURBED
Reason: Communications interface is ready to establish a connection, but as the peer is not connected yet, the configured I/Os are disturbed.
The cumulative status is therefore DISTURBED.
Also note the FAQ at: https://support.industry.siemens.com/cs/ww/en/ps/14515/faq.

11.6 Changes in behavior as a result of error corrections as of V4.2 SP1

Project-wide unique logical addresses of the PROFIsafe slots
As of SIMOTION SCOUT V4.3 SP1 in conjunction with the versions of the F-Configuration Pack released for this, the behavior is the same again as before version V4.2 SP1.
This means that PROFIsafe slots of the SIMOTION devices (SINAMICS Integrated) can have the same logical addresses again.

PLCopen block _MC_POWER
Previously the Mode=Drive could not be used usefully.
As a result of the error correction, Mode=Drive now switches on the drive (incl. power) STW1 bit 0 - bit 6 (previously STW1 bit 4 - bit 6 was set / no power).

PLCopen block for external encoder
When the enables of an external encoder are removed, the system variable motionstate.velocity is also set to 0 as soon as control = INACTIVE.

PLCopen block _MC_CamOut
Previously, desynchronization was performed immediately, irrespective of the specified desynchronization position of the master value.

Torque limiting B+/B- is limited to the maximum reference torque
As of V4.2, with activated torque limiting B+/B- (_enableAxisTorqueLimitPositive()/_enableAxisTorqueLimitNegative()), the maximum value set in ~.DriveData.MaxTorque or MaxForce is transferred to the drive with the setting TypeOfAxis.SetPointDriverInfo.DriveData.torqueReference = MAX_VALUE.
In the versions <V4.2, up to 200% of this value is possible with activated torque limitation.
If the torque limiting function B+/B- is not activated, the maximum value set in ~.MaxTorque is transferred in V4.2 and also in the versions < V4.2.
As the 100% reference value must be set in ~.MaxTorque for the torque transfer to the drive with the setting ~.torqueReference = MAX_VALUE, i.e. the value corresponding to P2003 (reference torque), a larger maximum torque may be possible in the drive, corresponding to the value in P1520 (maximum torque).
The separation of reference and maximum torque has been introduced in the reference variables with V4.2.
In projects that are upgraded to V4.2, the new configuration data ~.torqueReference is set to MAX_VALUE. In this way, only the reference torque value can be set as maximum torque limiting without changing the project.

Workaround:
If, in the case of activated torque limiting, a value greater than the reference value in P2003 is to be transferred to the drive, ~.torqueReference = NOMINAL_VALUE must be set, and the value corresponding to P2003 is to be entered in ~.NominalTorque, and the value corresponding to P1520 is to be entered in ~.MaxTorque.
If the torque limiting function B+/B- is deactivated, the value set in MaxTorque is transferred to the drive.
For new TOs created in V4.2, ~.torqueReference = NOMINAL_VALUE is set as well as the reference values for ~.NominalTorque and ~.MaxTorque taken from the drive during runtime, for the adaptation set per default.

CASE statements with floating-point values
Previously it was possible to compile the following construct error-free, even though the selector had to be of the ANY_INT or enumeration data type:

```
CASE real_var OF
1: ;
ELSE
;
END_CASE;
```

An alarm is issued with V4.2 SP1. However, if the value is also specified as a floating-point value in the value list (e.g. 1.0: ;), an error message is issued.

Faulty reference to an FB from an MCC chart
If a chart that has previously been used as a subprogram is moved to a library, the calling blocks are then no longer correct (also applies when a library block is moved to a chart).
The compiler cannot detect the error during compilation, because the entered block call commands are correct.
After moving, the calling blocks must be modified.
To do this, open the appropriate calling block in each chart with the FB call.
The previous configuration is now visible.
Change the entries as follows:

- Instead of "Function" -> "Library function"
- Instead of "Function block" -> "Library function block"
- Instead of "Program" -> "Library program"

Then select the relevant library in the combo box that appears.
Now click the "Update" button.
The declaration locations of the data types are still in the fields as comments for the data types. If required, these entries can be changed manually.
Close the screen form with "OK".

Changing MCC units through compiler settings in the debug mode
Editing can also be performed in the debug mode in the ES with Version 4.2. To do this, the debug mode is first deactivated in the RT after a prompt for the user, and stopped tasks continued.
It is also possible however to change the source text of a unit through compiler settings, such as program status, single step or trace. The unit becomes inconsistent online after 'Save and compile' and cannot be loaded during RUN mode.
The debug mode must be exited before compiler settings are changed. To do this, the operating mode must be changed on the CPU.

MCC units with distributed synchronous operation for V3.2
Projects of Version 3.2.x that contain a distributed synchronous operation and reset the master value of a master controller in MCC commands, cause errors when opened as of SCOUT V4.2.1. The corresponding commands must be adapted manually (commands are displayed for a consistency check and when saving and compiling the relevant unit).
If the project is then to be processed further in V3.2, the synchronous operation commands have to be adapted again with SCOUT V3.2 after the "Save in old project format".

Upgrade project from SCOUT V3.2 with distributed synchronous operation - MCC units
Projects of Version 3.2.x that contain a distributed synchronous operation and reset the master value of a master controller in MCC commands, cause errors when opened as of SCOUT V4.2.1. For this reason, the corresponding commands must be adapted manually before upgrading (commands are displayed for a consistency check and when saving and compiling the relevant unit).

Compilation behavior between ST and MCC/LAD/FBD has been aligned
The compilation behavior has changed from V4.1 to V4.2. In V4.1, a smart compile was performed to make the variables known to the system when saving a unit in MCC and LAD/FBD. The result was that the unit became inconsistent online without compilation. The behavior in V4.1 was therefore different between ST and the graphic languages.
In V4.2, the behavior between ST and the graphic languages has been aligned. Newly created variables only become visible in the symbol browser when the unit has been compiled.

Maximum size of script files in SCOUT
Because of a change in the Windows mechanisms of Microsoft, the maximum size of script files has been limited to 1 MB. This means that scripts with a file size greater than 1 MB cannot be opened or saved in SCOUT V4.2. Therefore, before upgrading in SCOUT versions before V4.2, check whether this size has been exceeded by script files. In normal script files, this size is reached at approx. 10,000 lines of code (with 100 characters per line).

Checksums of the safety program must be regenerated
Because of an error correction of STEP 7, the F safety program must be regenerated after the upgrade of a V4.1.x project with PROFIsafe communication to V4.2.1.

Project-wide unique logical addresses of the PROFIsafe slots
Only the F-Configuration Pack V5.5 SP8 has been released with SIMOTION V4.2.1.
If several I-slave couplings are made on an F-CPU with this F Configuration Pack in V4.2.1, FMS couplings cannot be created for either V4.1 devices or V4.2 devices when the PROFIsafe slots of SIMOTION devices (SINAMICS Integrated) have the same logical addresses (e.g. as is the case with: SIMOTION D is configured completely and an additional SIMOTION D is inserted in the project using Copy/Paste).
This was possible in V4.1 with the F-Configuration Pack V5.5 SP5.
For this reason, project-wide, unique logical addresses must be assigned for the PROFIsafe slots in SIMOTION SCOUT V4.2.1 when new PROFIsafe slots are created or added, irrespective of the used device version.

Upgrade of ET200HS from V2.0 to V3.0
A SIMOTION CPU V4.2 can only be used with an ET200HS of Version 3.0. During a module replacement of the ET200HS in HW Config (to upgrade the ET200HS from V2.0 to V3.0), HW Config closes without a message.
The ET200HS cannot be upgraded through a module replacement. The module must be deleted manually in HW Config and then created again with the desired version.

11.7 Changes in behavior as a result of error corrections as of V4.1 SP5

"Opening of a command block that is no longer up-to-date" message in MCC libraries
The above message can appear when opening an MCC command in an MCC library, which indicates that the technology object used therein has been changed.
Background:
The contents of the MCC screen forms for the technology commands depend on the properties of the technology objects used therein. For example, the screen form for the MCC command "Output cam on" is totally different depending on whether the output cam is assigned to a linear or a rotary axis.
When using technology commands in libraries, technology objects are not specified directly, but only via variables (variables of the data type of the technology object). A technology object is only assigned to variables during the runtime of a program.
For this reason, it is sufficient for some commands, e.g. for "Output cam on" or "Synchronous operation on", to only enter "<Reference>" in the "Axis" or "Following Axis" dialog box, because a variable of the output cam type is only linked to a real axis during runtime and an axis variable no longer needs to be entered specifically for the command parameterization (see also MCC Programming Manual, Section 4.4.3.2 Using variables of the technology object data type).
Previously in MCC commands, a variable of this technology object data type could also be entered here instead of "<Reference>", even though this was not relevant in the libraries and had no effect.
As of V4.1 SP5, the name <Reference> is automatically entered in the input field instead of the name when a command is opened. However, with some commands, the above message appears.
Procedure:
With "Yes", there is an update with the entry of <Reference>.
With "No", there is no update in the screen form. The "Update" button is then displayed in the opened MCC command, and can be used for the subsequent update to <Reference>.

11.8 Changes in behavior as a result of error corrections as of V4.1 SP4

Changed behavior for output variables and error analysis of the PLCopen blocks
As part of the error correction, the behavior of some output variables and the error outputs of the PLCopen blocks has been changed (applies to the InVelocity, InGear, InSync, Error, Error ID and Command Aborted outputs). Previously the behavior of the error outputs was not clear and not adequately documented.
With SCOUT V4.4, you can directly specify the behavior of the PLCopen blocks for devices of version V4.1, by specifying the TP revision level of the CAM/PATH/CAM_EXT technology packages.
All SIMOTION devices as of version V4.2 have this new behavior.
For more detailed information, refer to the FAQ PLCopen in the SIMOTION Utilities & Applications or at: https://support.industry.siemens.com/cs/ww/en/view/37865127

Changed behavior for PLCopen block _MC_STOP
The output bit "Active" remains TRUE as long as the block is being processed (the disable for motion commands is active). The block is only terminated when "Execute" = FALSE. The outputs "Done" and "Active" are then set for one cycle.
The changed behavior corresponds to the documentation.

Linear measuring system with configuration of 25-bit message length and 24-bit data, right-justified
Up to V4.1 SP4, the value was calculated twice on the TO with a configuration of 25-bit message length and 24-bit data, right-justified, as the offset of one bit (25 - 24 =1) was not taken into account. Twice the traversing distance is then shown in the display.
Upgrade from V4.1.x.x to V4.1.4.1 or higher:
The offset is now taken into account. The grid line spacing value on the encoder should be set to that on the data sheet. The grid line spacing is now calculated correctly.

11.9 Changes in behavior as a result of error corrections as of V4.1 SP2

Calculation results with constant expressions
As of SIMOTION SCOUT V4.1 SP2, there is a different behavior as a result of an error correction on the compiler.
The old behavior was not correct for calculation results with constant expressions and also did not comply with the IEC. This was corrected with SIMOTION SCOUT V4.1 SP2.
For more detailed information, see the FAQ at:
https://support.industry.siemens.com/cs/ww/en/view/36455413

Changed behavior with "global measuring inputs"
As part of an error correction, the measuring position for global measuring inputs was applied to the value before the filter of the actual position. The actual position belonging to the measuring event is now measured exactly.
If a position measuring value in relation to the filtered actual position is still required, see FAQ at: https://support.industry.siemens.com/cs/ww/en/view/36455413

11.10 Changes in behavior as a result of error corrections as of V4.1 SP1

Changed comparison operator in V4.1 SP1
In versions < V4.1, the operator notations ">=" and "=>" could be used for the "greater than or equal to" comparison function. In V4.1, the notation "=>" is no longer permitted for the comparison. If a SIMOTION CPU is used in the project with a firmware version less than V4.1, SIMOTION SCOUT issues an alarm at the places where "=>" is found during the compilation. The project can be used and also loaded.
If a SIMOTION CPU with firmware V4.1 is configured in the project, SCOUT issues an error at the places where "=>" is found during the compilation. The assignment operator must then be changed from "=>" to ">=" so that the project can be loaded to the SIMOTION CPU.
If version-neutral libraries are used, the syntax check remains the same as for CPUs with V4.0 or lower. The operator with the "=>" notation can be retained. An alarm is issued during compilation.

Behavior of OFF2/Bit1 in STW1
Previously, when the controller was already in closed-loop control, explicit/exclusive setting of OFF2/Bit1 and/or OFF3/Bit2 and subsequent removal of the signals again without cancellation of the switch-on inhibit (edge change at STW1 OFF1/Bit0), there was an immediate return to closed-loop control.
As of V4.1 SP1, the switch-on inhibit must be cancelled explicitly, i.e. an edge change created at STW1.Bit0 by the user. Therefore, a _disableAxis (disableMode=ALL or disableMode=POWER) or an explicit cancellation is required, before STW1.Bit0 is set again with _enableAaxis (enableMode=ALL or enableMode=POWER) or explicitly.

Programs/FBs and global device variables with the same name
If in programs or FBs (e.g. with name FOO) a global device variable with the same name (e.g. FOO) was accessed, the V4.0 compiler issued a warning in this case (program name hides global variable). This is illegal programming in ST, but could still be retained in V4.0.
This name assignment is not permitted as of V4.1 SP1 and the compiler issues an error message.
Error message 6003: *"%s" is not a variable identifier*

Checking of the max. speed at project upgrade from V4.0 to V4.1 SP1 and higher
Maximum speed greater than 2 x reference speed:
In V4.0, a value greater than 2 x reference speed could be specified for the maximum speed in the motor data during the configuration of an axis. However, the transfer of a higher value (as 2 x reference speed) to the drive was not possible in V4.0 because of the PROFIdrive profile.
As of V4.1 SP1, an error (20006) is output in this case (maximum speed is greater than 2 x reference speed) at a download or restart. The value of the maximum speed must be corrected when this error occurs.

MCC: Effect of activation of "Reset master value"
Up to and including V4.0, a synchronization command (synchronous operation / cam on) with new master caused an immediate switchover to the new master.
As of V4.1 SP1, this switchover is only after the synchronization command has taken effect.

Torque limiting B+/B-
If the manipulated variable is inverted on the Axis technology object, then B+/B- are also reversed on the Axis technology object.
This must be considered when specifying the torque limits B+/B-.

Configuration data for extrapolation filter
The default setting of the configuration data for the extrapolation filter of the actual velocity value (TypeOfAxis.Extrapolation.Filter.mode = default_mode) has been changed.
For V4.0: Averaging (ratio of interpolator cycle to position control cycle relevant)
For V4.1: No filter (actual velocity not smoothed)
Background to the change: A filter setting should not be determined depending on other variables (IPO/servo ratio in this case).

End